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# Greece's Loan Facility: Facilitating Corporate Investment through NextGenerationEU

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## Greece's Loan Facility: Facilitating Corporate Investment through NextGenerationEU

Judit Antal, Manos Sfakianakis, Philipp Pfeiffer and Eduardo Llobell

### Abstract

The Greek economy has experienced low levels of corporate investment for many years. The Loan Facility is a component of Greece's Recovery and Resilience Plan (RRP), in the context of the EU-wide NextGenerationEU initiative. Worth about EUR 18 billion, it is the largest measure funded by the EU across all RRP in terms of percentage of national GDP. The instrument was designed to tackle this critical issue of low investment by facilitating lending to the corporate sector. This paper presents the main features of the Loan Facility from its launch in mid-2022 to the first quarter of 2024. During this period, the loans issued in this context accounted for more than one fifth of new corporate lending in Greece. We find that the terms of the Loan Facility are more favourable than market terms, which has contributed to mitigate the impact of rising interest rates and to support corporate credit demand. We estimate the price (interest rate) advantage at an average of 4.1 percentage points, which is higher for small and medium-sized enterprises (SMEs). The paper also gives a first assessment of the instrument's economic impact based on data available and simulations, by using the European Commission's QUEST model. Simulations suggest a sizable positive impact in Greece: private investment may increase significantly and the cumulative impact on GDP between 2022 and 2030 is estimated to reach 5.3% compared to a no-Loan-Facility scenario. The overall impact remains dependent on the pursuit of favourable framework conditions, such as sustained demand. Further structural improvements in investment conditions would be important to prolong the legacy of the Loan Facility beyond its lifetime.

**JEL Classification:** E22, E27, E44, E61.

**Keywords:** Recovery and Resilience Facility, investment, access to financing, macroeconomic impact, QUEST III model.

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# CONTENT

- INTRODUCTION.....3
  
- 1. LOW INVESTMENT IS A KEY CHALLENGE IN GREECE.....4
  - 1.1. Corporate Investment has been low for long 4
  - 1.2. Financial constraints have been binding 5
  
- 2. FUNCTIONING OF THE LOAN FACILITY.....7
  - 2.1. The set-up 7
  - 2.2. Conditions, requirements and safeguards 8
  
- 3. EXPERIENCE AND POTENTIAL OF THE LOAN FACILITY.....9
  - 3.1. Strong loan take-up 9
  - 3.2. Very favourable terms compared to market-based alternatives 11
  - 3.3. Access to financing and investment 14
  - 3.4. The potential economic impact of the Loan Facility: a model based simulation 15
  
- 4. CONCLUSIONS.....18
  
- REFERENCES.....19
  
- ANNEX.....20

## INTRODUCTION

The Greek economy has experienced persistently low levels of private investment over many years. This situation was aggravated by the COVID-19 pandemic, with Greece's real GDP collapsing by 9.3% in 2020. The loan component of Greece's Recovery and Resilience Plan (RRP)<sup>1</sup>, adopted in 2021, was specifically designed to tackle this critical issue. This loan component consists in a single measure, the Loan Facility, which is the largest measure in the Greek RRP, as well as across all RRP in terms of GDP.

The Loan Facility was established in 2021 to support corporate financing by offering new financing options with more favourable terms than those typically available through market-based alternatives, which can be particularly beneficial for small and medium-sized enterprises (SMEs)<sup>2</sup>. The Loan Facility consists of three distribution channels: i) the provision of loans to companies through international financial institutions and commercial banks (EUR 16.7 billion of loans financed by the RRP); ii) equity support to innovative mid-caps and SMEs through two Fund-of-Funds managed by the Hellenic Development Bank for Investments (EUR 0.5 billion); and iii) a guarantee under the InvestEU programme<sup>3</sup> provisioning for loans financing green, digital, and competitiveness projects (EUR 0.5 billion).

Table 1: **Loan Facility Distribution Channels**

<b>Distribution channel</b>	<b>Amount in the RRP</b>	<b>Implementing partners</b>
Provision of loans to companies through financial institutions	EUR 16.7 billion	EIB, EBRD, Commercial banks
Equity support through establishment of funds	EUR 0.5 billion	Hellenic Development Bank for Investments
Guarantees - InvestEU Member State compartment	EUR 0.5 billion	EIF, EBRD

Source: European Commission, Greece's Recovery and Resilience Plan.

This paper focuses on the first and largest distribution channel of the Loan Facility, i.e. the provision of loans to companies<sup>4</sup>, and the investment challenges it seeks to address. Considering the co-financing by financial institutions<sup>5</sup>, the loans provided to companies through the Loan Facility can potentially translate into approximately EUR 26 billion (13% of 2022 GDP) of private sector loan financing. This order of magnitude is significant in a Greek context: it represents approximately 25% of the domestic non-financial corporations' loans outstanding at the end of 2022.

<sup>1</sup> Greece's RRP is worth EUR 35.9 billion, with EUR 18.2 billion in grants and EUR 17.7 billion in loans, financed by the EU Recovery and Resilience Facility. The plan includes 76 reforms and 103 investments, with objectives to address Greece's economic challenges, support the green and digital transition, strengthen social resilience and modernise public administration. More information can be found on the following website: [https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/greeces-recovery-and-resilience-plan\\_en](https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/greeces-recovery-and-resilience-plan_en).

<sup>2</sup> The definition of Small and Medium-sized Enterprises (SMEs) is understood in the meaning of the EU recommendation 2003/361. The main factors determining whether an enterprise is an SME are: if staff headcount is below 250 and turnover equals or is below EUR 50 million or the balance sheet equals or is below EUR 43 million.

<sup>3</sup> The InvestEU programme provides long-term funding by leveraging private and public funds in support of Europe's sustainable recovery. It consists of three components: the InvestEU Fund, the InvestEU Advisory Hub and the InvestEU Portal. The InvestEU Fund is implemented through financial partners that invest in projects, benefitting from the protection of EU budget guarantee. InvestEU also provides for an opportunity to Member States to add funds to the EU guarantee's provisioning by voluntarily channelling a part of their RRF funds to the Member States compartment for each policy area. More information on InvestEU can be found on the following website: [https://investeu.europa.eu/index\\_en](https://investeu.europa.eu/index_en).

<sup>4</sup> For the rest of this paper, the reference to the 'Loan Facility' only refers to its first distribution channel, i.e. the provision of loans to companies through financial institutions.

<sup>5</sup> The RRP loans cover a maximum of 50% of the investment costs for each project, while the remaining costs are covered by financial institutions' co-financing loans with a minimum of 30%, and by the companies' own participation with a minimum of 20%.

The paper is organised as follows. The first section recalls the main factors behind the long period of slow corporate credit growth and low corporate investment in Greece. The second section summarises the functioning of the Loan Facility, looking at its main conditions, requirements and safeguards put in place. The third section provides our analysis of the experience and potential of the Loan Facility, looking at its use until the first quarter of 2024 and showing the results of our model-based simulations of potential impact on macroeconomic variables such as GDP and private investment. The fourth section concludes.

# 1. LOW INVESTMENT IS A KEY CHALLENGE IN GREECE

## 1.1. CORPORATE INVESTMENT HAS BEEN LOW FOR LONG

The Greek corporate investment ratio (as percentage of GDP) has been significantly low (Figure 1 panel a) compared to peer countries, like Italy, Spain and Portugal. Even during the boom years of the early 2000s, the corporate investment ratio never reached double digits in Greece: it averaged 7% of GDP in the pre-global financial crisis decade. This suggests that a set of structural features are present in the Greek economy that discourage companies from seizing investment opportunities, independently of the economic cycle<sup>6</sup>, which weighs on Greece's growth prospects.

The Greek sovereign debt crisis – which started in the aftermath of the global financial crisis of 2007/2008 – was accompanied by a long period of economic recession and had a detrimental impact on investment dynamics. The aggregate investment ratio, which fluctuated around 24% of GDP, i.e. at a level comparable to the average in the EU and the euro area (EA) between 2000 and 2007, declined substantially in subsequent years. This fall resulted from a combination of rapidly deteriorating financing conditions, poor growth prospects, heightened uncertainty about the future, a sharp drop in demand, and low profitability. Other most affected countries, such as Italy, Spain and Portugal, also experienced a severe drop in real investment during the first stages of the global financial crisis, but, in those countries, the drop was smaller and investment levels recovered much faster. This was also the case in the EA/EU on average (Figure 1 panel b).

A sectoral decomposition of investment over 2000-2022 shows that the sharp drop in investment in Greece was largely driven by household investments in dwellings, reflected by the collapse in property prices following the construction boom of the 2000s (Figure 1 panel c and d). Over the same period, corporate and public investment suffered a reduction with a slow recovery as well. Corporate investment ratio averaged at around 5.5% from 2008 onwards, i.e. 1.5 pps below its pre-crisis level. The decomposition of total investment by type in the period after the crises and before the COVID pandemic (2013-2019) shows Greek investment growth underperforming relative to its EA peers in all categories except ICT equipment (Figure 1 panel c).

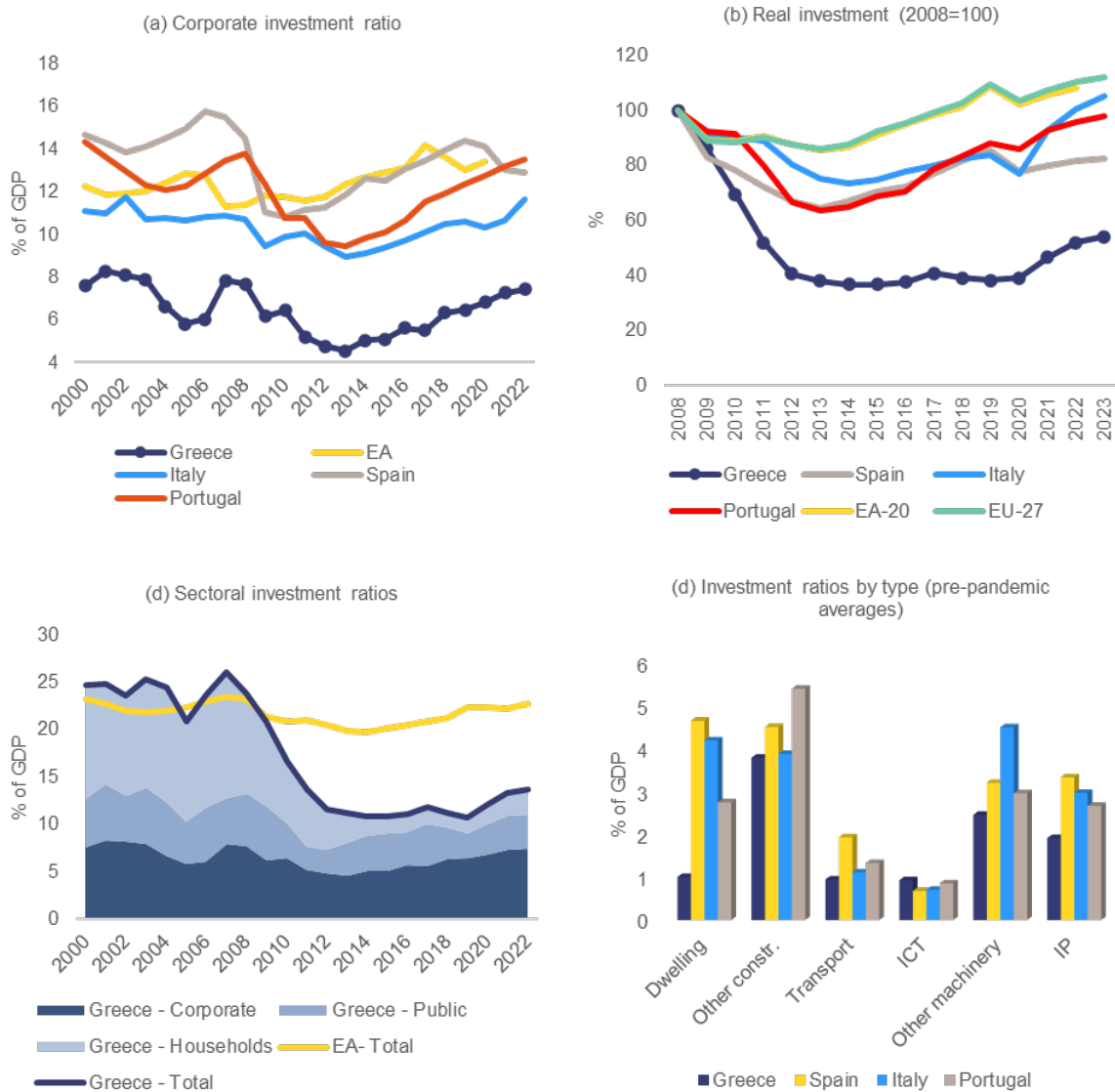
According to the EIB's database of Group Survey on Investment and Investment Finance (EIBIS)<sup>7</sup>, the ratio of Greek companies reporting that investment had been below the optimal level in the preceding year has fluctuated between 15-25%, averaging 19.5% over 2016-2022. Greek companies reported higher exposure to several of the dimensions of impeding factors compared to EU peers (Figure 2 panel a). Business regulations were cited as an obstacle by almost 20% more firms in Greece than in the EU on average, while over 25% more Greek firms reported financing as an impediment, and almost 20% more Greek firms pointed towards uncertainty.

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<sup>6</sup> It should be noted that the sectoral breakdown of investments is likely to be distorted due to small and micro enterprises reporting as households.

<sup>7</sup> See <https://www.eib.org/en/publications-research/economics/surveys-data/eibis/index.htm?sortColumn=startDate&sortDir=desc&pageNumber=0&itemPerPage=10&pageable=true&language=EN&defaultLanguage=EN&tags=5bf8095afa70f13f9d3b51b3&ortags=true&orCountries=true>.

Figure 1: Investment dynamics



Source: Eurostat, European Commission calculations.

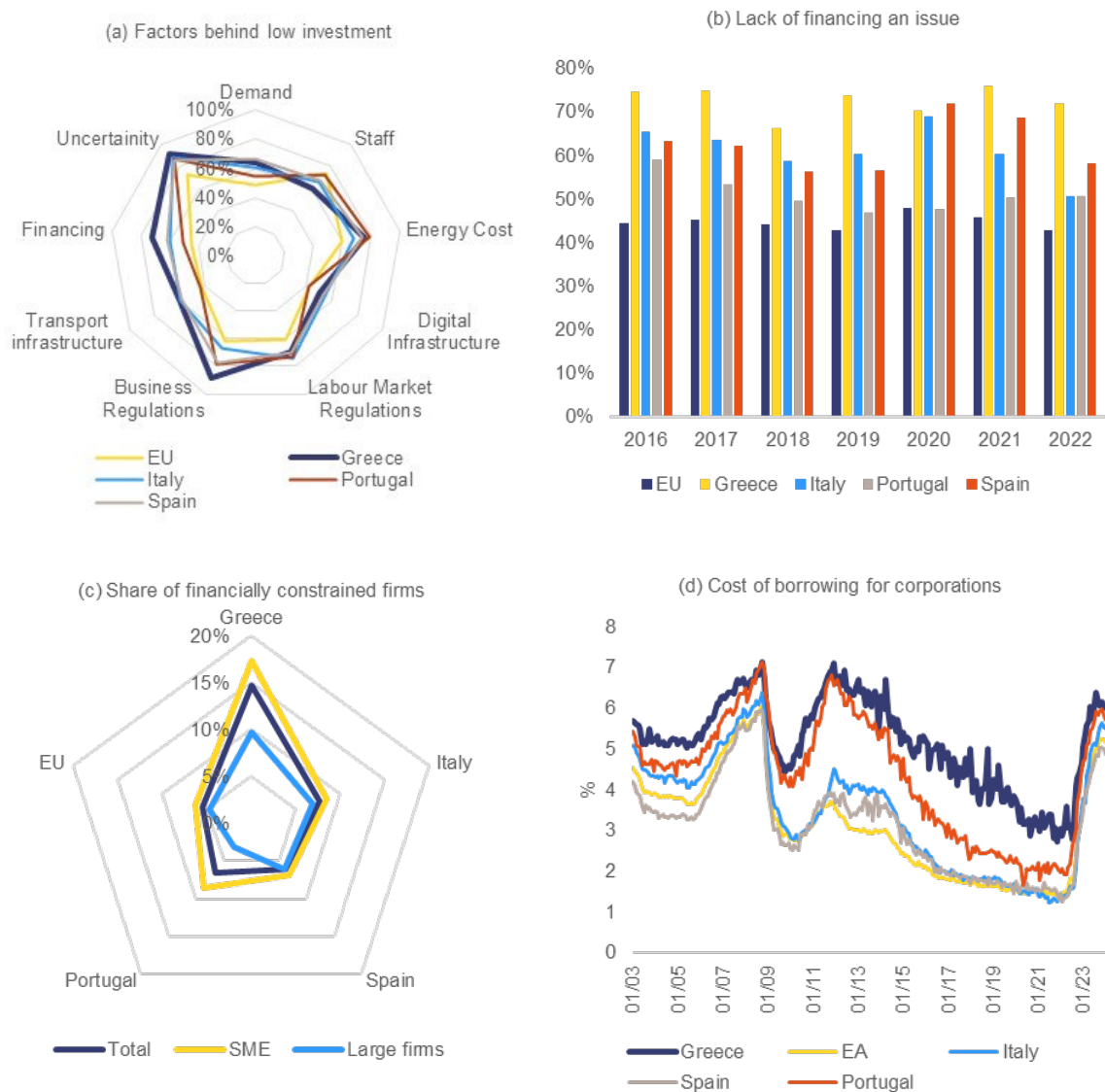
Notes: (a) Real Gross Fixed Asset Accumulation (2008=100) / (b) and (d) Nominal Gross Fixed Asset Accumulation in percent of GDP / (c) Nominal Gross Fixed Asset Accumulation in percent of GDP by type, average of 2013-2019.

## 1.2. FINANCIAL CONSTRAINTS HAVE BEEN BINDING

The share of Greek firms reporting that the lack of financing constrained their investment activity has been consistently higher than in peer countries (Figure 2 panel b). Surveys suggest that SMEs, which account for the majority of the Greek economy's value added and employment, are disproportionately financially constrained (Figure 2 panel c). The cost of financing, i.e., the bank lending rates for corporate loans, has also been consistently higher in Greece than in peer countries (Figure 2 panel d).



Figure 2: **Factors behind low investment among firms**



Source: (a), (b) and (c) EIB investment surveys (2016-2022) / (d) ECB.

Notes: (a) and (c) Ratio of companies reporting that the given factor constrained their investment activity in the preceding year, average of 2016-2022 / (b) Ratio of companies reporting that they faced financial constraints in the preceding year, average of 2016-2022 / (d) Interest rate of new corporate loans.

As regards investment and credit demand, Greece's economy is characterised by a prevalence of the low-tech service sector, which is typically less capital-intensive, implying lower investment needs. In addition, the Greek corporate sector is dominated by micro and small enterprises which tend to be risk averse and more reluctant or unable to scale up their operations. Moreover, low profitability since the onset of the sovereign debt crisis has constrained companies' investment activities, with the gross return on capital of non-financial corporations collapsing from 34% in 2008 to a historic low of 13.7% in 2019, 10 pps. below the euro area average. Greek corporates also continue to face relatively high debt-to-



income ratios in the euro area, as the workout of legacy non-performing loans (NPLs) in the economy remains slow, despite the clean-up of banks' balance sheets <sup>8</sup>.

Credit supply appears to be constrained by another set of factors. From the banks' perspective, the absence of external ratings increases the difficulty faced when assessing the risk associated with financing small and micro businesses in the context of standardised mechanisms prepared by bank analysts<sup>9</sup>. Despite the significant reduction of non-performing exposures on banks' balance sheets since 2019 and the recovery in new loan disbursements as well as net credit growth rates towards non-financial corporations compared to the pre-pandemic period, the still relatively high NPL ratio in comparison to euro area average continues to dampen credit expansion. Moreover, a large share of Greek companies remains in the process of deleveraging from legacy NPLs, limiting the number of bankable businesses as banks eschew those companies as borrowers. More generally, the decade following the sovereign debt crisis was characterised by insufficient domestic savings that limited the financial resources available to be channelled for corporate investment. In the context of high financing costs for banks since 2009 and constrained credit supply, the cost of available credit offered by banks to companies has been consistently higher than in the rest of the euro area, although the differential has been reduced recently (Figure 2 panel d).

All in all, besides cyclical issues and the structural weaknesses associated with the predominantly small size of Greek companies, the lack of access to financing stands out as a key factor constraining corporate investment. The Loan Facility was designed to mitigate these limitations, by offering an external source of financing at preferential rates for firms, with the banking sector as an intermediary. It is an innovative financial instrument in Greece with unique operational features. A similar instrument that was set almost a decade ago, the Joint European Support for Sustainable Investment in City Areas (JESSICA), provided capital, loans or guarantees to finance urban development projects. Compared to the Loan Facility, JESSICA was a much smaller programme in terms of available funds (EUR 258 million) with a limited scope. Still, lessons learnt from its functioning were integrated in the Loan Facility design, which is currently being implemented as a much larger-scale program supporting private investments in a broad range of strategic policy areas.

## 2. FUNCTIONING OF THE LOAN FACILITY

### 2.1. THE SET-UP

To support investment in a targeted manner, the first distribution channel of the Loan Facility (so-called 'on-lending' channel) provides loan financing in five strategic areas: the green transition; digitalisation; increasing export capacity; economies of scale via mergers and acquisitions; and research, development, and innovation. The funds are allocated to the following financial institutions for this channel:

- (i) European Investment Bank (EIB);
- (ii) European Bank for Reconstruction and Development (EBRD);
- (iii) Commercial banks<sup>10</sup>.

By mid-2022, Greece signed operational agreements with the participating financial institutions that, together with the applicable legislative framework, govern the operation of this distribution channel. The same approach applies across the board: the loans under the Loan Facility provided by the financial

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<sup>8</sup> The stock of non-performing loans (NPL) on banks' balance sheet has been declining since 2016. However, a large part of the legacy NPL is held by specialised non-bank financial institutions (servicers) and the workout of these NPLs has been slow. The stock of NPLs held by servicers amounted to 31.5% of GDP at end-2023.

<sup>9</sup> Small and micro businesses often face challenges in obtaining credit ratings due to the cost implications, the lack of financial history or the lack of sufficient expertise and resources to present the data requested by Credit Rating Agencies.

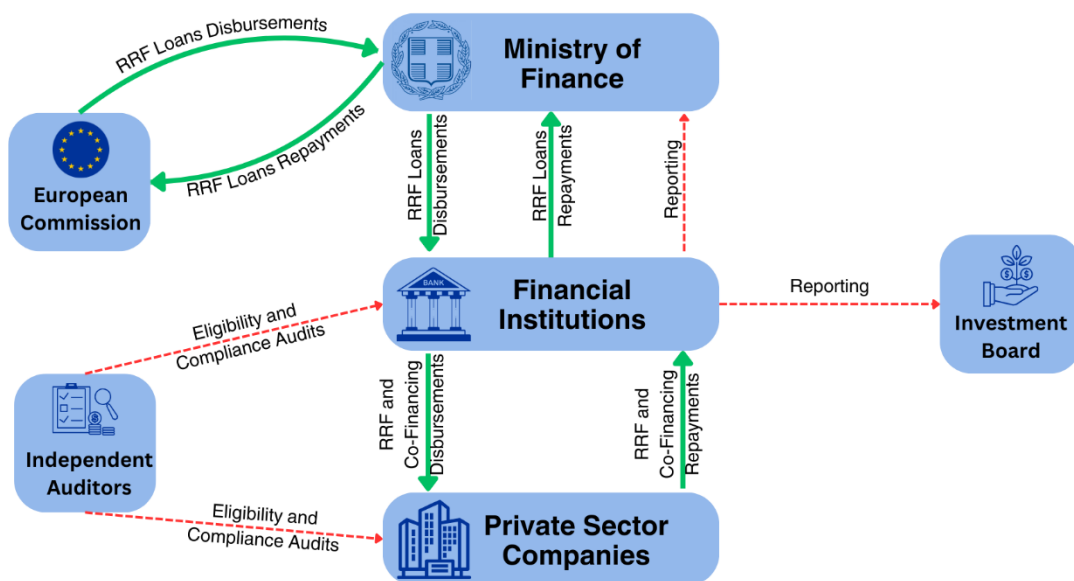
<sup>10</sup> Until March 2024, the commercial banks participating in the scheme are: National Bank of Greece (NBG); Piraeus Bank; Eurobank; Alpha Bank, Optima Bank, Pancretan Bank.

institutions to the companies (not including the co-financing part, *RRP loans* hereafter) cover a maximum of 50% of the investment costs for each project, while the remaining costs are covered by financial institutions' *co-financing loans* with a minimum of 30%, and by the companies' *own participation* with a minimum of 20%.

In line with the performance-based logic of the EU Recovery and Resilience Facility, the RRP funding is disbursed by the European Commission to Greece at regular points in time based on the satisfactory fulfilment of milestones and targets, which are linked to sequential RRP loan payment requests spread throughout the timeline of the RRP (from 2021 to Q2 2026). For the Loan Facility, the first milestones consisted of the establishment of the operational framework (e.g. legislation, agreements with implementing financial institutions) and subsequent targets relate to progress with the signature of loan contracts between financial institutions and firms.<sup>11</sup>

Following the loan disbursements to Greece, the funds are transferred in tranches to the financial institutions participating in the on-lending channel. In accordance with their internal processes, the financial institutions then enter into loan agreements with companies that implement eligible long-term projects. Finally, a reverse disbursement path is followed for the repayment of those loans to the relevant creditors (i.e. from the companies to financial institutions, then to Greece, and then to the European Commission).

Figure 3: **Loan Facility flows and actors involved**



Source: European Commission.

## 2.2. CONDITIONS, REQUIREMENTS AND SAFEGUARDS

An important feature of the Loan Facility is that the participating financial institutions are only facilitators of the loan disbursements, i.e. the share of the loan financed via the RRP does not enter their balance sheet. Therefore, the RRP loan part is not subject to capital requirements and this facilitates

<sup>11</sup> Link to the Annex to the Council Implementing Decision for Greece's RRP including relevant milestones and targets: <https://data.consilium.europa.eu/doc/document/ST-15831-2023-ADD-1-REV-1/en/pdf>.

freeing up capital from these financial institutions for other lending activities. This characteristic of the Loan Facility has a double advantage as it helps extend the loan supply in the economy both directly (volume) and indirectly (no capital requirements for banks), thereby increasing the additionality of the instrument. At the same time, both the financial institutions and benefitting companies are required to contribute to the financing of the investments, and the State and the implementing financial institutions participate *pari passu* in potential loan losses.

As regards specific requirements, the Loan Facility finances eligible projects that are aligned with the five strategic areas and comply with the requirements of the RRP regulatory framework, as well as with State aid rules. There also arrangements to ensure that the measure complies with the Do No Significant Harm Technical Guidance<sup>12</sup>. In addition, financial institutions committed to ensure that the funds are used to support the climate and digital transitions<sup>13</sup>.

The scale of the instrument and the sizeable number of different parties involved required to set up solid safeguards and a robust monitoring and control mechanism to ensure financial viability and repayment of funds. In this respect, investments are required to have positive expected net present values, ensuring that the financing decision is based on sound economic criteria. The government is not involved in project selection and does not provide guarantees. Moreover, the refinancing of outstanding loans is not permitted.<sup>14</sup> In addition, beyond the regular RRP audits conducted by European Institutions, three layers of assessments and audits are carried out by independent auditors and national authorities.<sup>15</sup> In terms of monitoring, an independent Investment Board monitors the Loan Facility's progress and Key Performance Indicators concerning, for example, loan values signed / disbursed, interest paid, deferred loan service payments and performing versus non-performing loans. Greece has also introduced additional requirements that must be met to allow financial institutions to request subsequent Loan Facility tranches.<sup>16</sup>

The legal framework that is established for the Loan Facility provides for further details on how the aforementioned requirements and safeguards should be met and enforced, as well as the roles and responsibilities of the different actors involved (e.g. the State, financial institutions, companies as recipients of funds, independent auditors).

## 3. EXPERIENCE AND POTENTIAL OF THE LOAN FACILITY

### 3.1. STRONG LOAN TAKE-UP

Since its launch mid-2022, the Loan Facility has been received positively by the private sector, and the loan absorption has been gaining pace. Corporate credit demand has been supported by the very favourable terms and pricing of the RRP loans. In the meantime, the facts that the RRP loans do not

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<sup>12</sup> Link to the Do No Significant Harm Technical Guidance (2021/C58/01): <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021XC0218%2801%29>.

<sup>13</sup> More information on the Loan Facility's requirements can be obtained in the Annex to the Council Implementing Decision for Greece's RRP, see link in footnote above.

<sup>14</sup> In accordance with the Loan Facility's operational framework, RRP loans cannot be used to refinance outstanding loans of participating companies, as they are only intended to support new investment projects.

<sup>15</sup> Specifically, these concern: (i) assessment by the financial institution on eligibility and creditworthiness; (ii) assessment by independent auditors prior to the loan contract signature; (iii) ex-post assessment of the Loan Facility's overall operation and 'system' audit. The assessment by independent auditors (point (ii) above) takes place before the loan contracts are signed and serves to verify various key aspects of the project proposals, such as the eligibility, compliance with the Do No Significant Harm Technical Guidance and State aid rules, the non-existence of double funding, and the contributions towards the green and digital commitments.

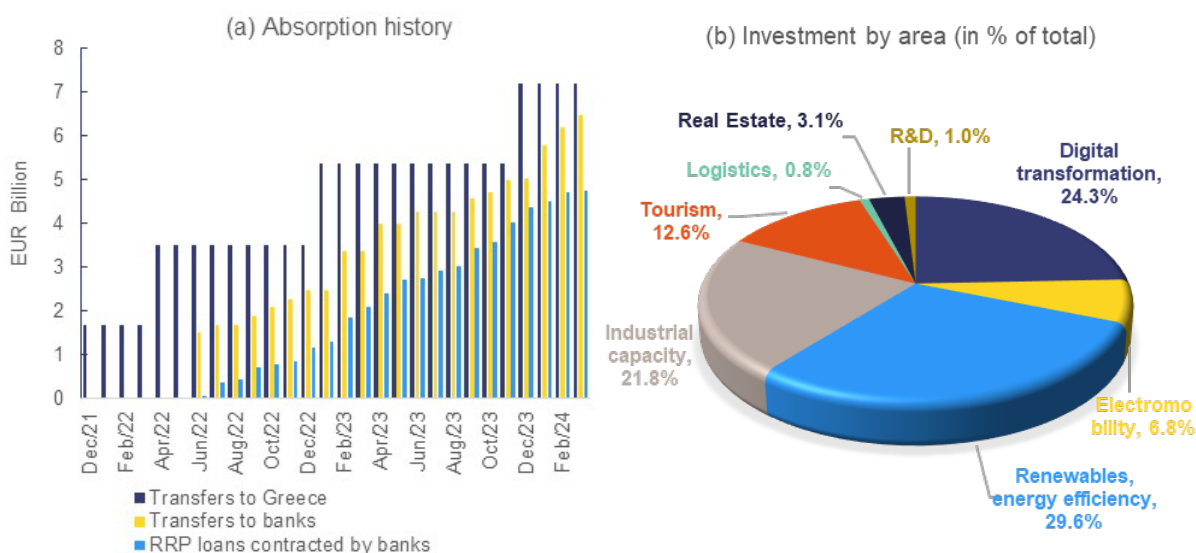
<sup>16</sup> These include, for example: (i) requirements concerning progress with the absorption of funds, i.e. disbursements to financial institutions and companies; (ii) that the amount of non-performing loans should not exceed 5% of the overall funds signed; (iii) that the green and digital commitments regarding previous tranches received should be complied with.

enter the banks' balance sheet, and that the risks associated with the RRP lending tranche are exclusively born by the State, have created additional loan supply<sup>17</sup>.

By end March 2024, the participating financial institutions have signed 280 RRP loan contracts with the final beneficiaries, for a total amount of loans of EUR 4.8 billion<sup>18</sup>. This corresponds to three quarters (73.4%) of the RRP loans financing transferred to the banks until that date (Figure 5). Considering co-financing by the financial institutions as well, the corporate lending mobilised under the Loan Facility amounted to EUR 8.5 billion. With the own participation of the companies (own capital, etc.) added, the total amount of investments financed via the Loan Facility reached EUR 11 billion. Out of this total amount, 42.7% has thus been financed directly via RRP loans, 33.8% via co-financing loans, while 23.5% has been covered by own participation of firms.

In terms of investment by area, the green transition (such as renewables, energy transition and electromobility) has accounted for the highest share, with a ratio of 36.4% of total investments financed by the Loan Facility, while the digital transition and industrial capacity expansion were the second and third areas in terms of investment share, with a ratio of 24.3% and 21.8%, respectively (Figure 4).

Figure 4: **Absorption history (cumulative amounts) and the investments financed by the Loan Facility by area**



Source: Ministry of Economy and Finance (MoEF), European Commission calculations.

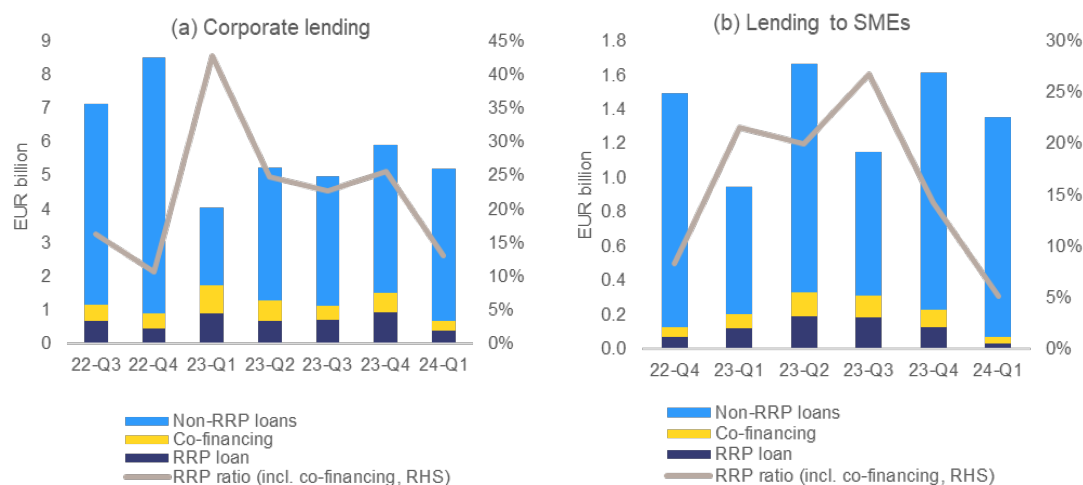
In the same period, from mid-2022 to Q1 2024, loans issued in the context of the Loan Facility (i.e., RRP loans and co-financing loans) accounted for more than one fifth (20.5%) of new corporate lending issued (Figure 5 panel a). Nearly half of the loan contracts (48.6%) were signed with SMEs. In terms of volume, RRP loans to SMEs compared to the total amount of RRP loan signed was 17.5%. This ratio is somewhat below the ratio observed for bank lending (21%) in the year before the launch of the Loan Facility, meaning that the Facility somewhat underperformed the market in providing access to financing for SMEs. We also need to keep in mind that the average size of loans to SMEs under the Loan Facility is relatively high (EUR 5.4 million)<sup>19</sup>, suggesting that, beyond the large corporates, it is mostly middle-sized companies and small businesses in the high-end of the size spectrum of the small-cap universe that has made use of these loans so far.

<sup>17</sup> See Annex 1 on discussions of the additionality of the Loan Facility.

<sup>18</sup> Including the management fee for the financial institutions.

<sup>19</sup> The loan size for the total RRP lending averaged at EUR 14.9 million, while in the case of large companies, the average loan size was EUR 21.3 million.

Figure 5: **The role of RRP loans and RRP co-financing within corporate lending (amount of loan contracted)**



Source: Bank of Greece (BoG), MoEF, European Commission calculations.

Note: Definition of Small and Medium-sized Enterprises (SMEs) is provided in the EU recommendation 2003/361<sup>20</sup>. The main factors determining whether an enterprise is an SME are: if staff headcount is below 250 and turnover equals or below EUR 50 million or the balance sheet equals or below EUR 43 million.

### 3.2. VERY FAVOURABLE TERMS COMPARED TO MARKET-BASED ALTERNATIVES

The main reason behind this strong loan take-up in the initial phase is that the Loan Facility offers long-term, fixed rate loans, on very favourable terms compared to exclusively market-based alternatives. Historically, Greek banks only provide short-term or long-term floating rate loans, while the non-bank financial sector is nascent, therefore no financing source with similar characteristics is available on the market.<sup>21</sup>

The maturity of the RRP loans contracted by the banks with the final beneficiaries until end-2023 ranges between 5 and 20 years and the weighted average maturity of the total RRP loan portfolio is 14.2 years. The interest rates of the RRP loans are fixed and have varied between 0.35% and 5.8%, with a weighted average of 2.0% (see below a box on the pricing mechanism of RRP loans). Given that the pricing mechanism (indirectly) relates to the short-term local money market rates<sup>22</sup>, the RRP loan rates have increased since the launch of the instrument in mid-2022. However, the increase in those interest rates has been modest compared to the rise of the short-term money market rates. Still, a potential future increase in Greek money market rates can reduce the demand for the Loan Facility.

The variation of the weighted average RRP loan rates has been driven by the proportion of loans provided at the minimum interest rates (Figure 6 panel b). The co-financing loans are provided by the disbursing banks with the same maturity as the RRP loans, albeit with a floating interest rate with fully market-based pricing.<sup>23</sup>

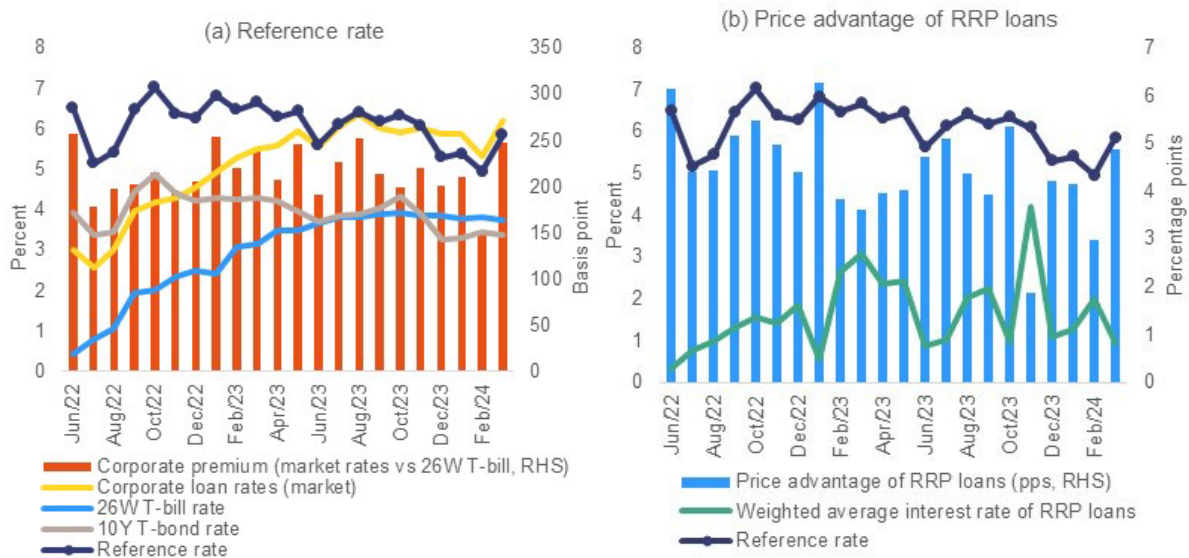
<sup>20</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003H0361>.

<sup>21</sup> Some banks offer interest rate swaps to cover the interest rate risks associated with the floating rate credit, but corporations have made limited use of the swaps.

<sup>22</sup> Short term money market rates enter the pricing of the RRP loans via the application of the state aid rules, which in the case of Greece take into account the Greek 1-year Treasury bill rates (see Box 1).

<sup>23</sup> No data is available for the interest rates of the co-financing loans.

Figure 6: **The reference rate and the price advantage of RRP loans**



Source: BoG, MoEF, Public Debt Management Agency (PDMA), European Commission calculations.

As similar market-based alternatives of long-term fixed rate loans are not available, estimating the price advantage of the RRP loans is not straightforward. Therefore, we construct a pseudo market rate (reference rate) that can serve as a basis for comparison. The reference rate is estimated as a sum of the long-term government bond rate and an estimated “corporate credit premium”. Considering that the corporate loans provided by banks have a short tenor or a short repricing period, we estimated the “corporate credit premium” as the difference between the corporate loan interest rates<sup>24</sup> and the T-bill rates (26-week). On this basis, the estimated corporate credit premium has been volatile, but on average remained broadly unchanged over the period examined, and it has fluctuated around 215 basis points since the launch of the loan facility in mid-2022 (Figure 6 panel a). As a next step, we added the estimated “corporate premium” to the 10-year government bond yield, to reflect the long-term and fixed interest rate characteristics of the RRP loans<sup>25</sup>. The reference rate constructed in this manner has fluctuated around 6.1% since end-2022 (Figure 6).<sup>26</sup>

The price advantage of the RRP loans, estimated as a difference between the reference rate (pseudo market alternative) and the RRP loan rates, has averaged 4.1 pps., varying between 1.9 pps. and 6.3 pps. (Figure 6). When examining by company size, we see that the price advantage of the SME portfolio has averaged 4.7 pps., significantly above the 3.9 pps. level estimated for large companies. The higher price advantage for SMEs can be explained by two main factors: (i) bank lending rates and hence the estimated reference rate is generally higher for the SMEs due to the higher risk associated with smaller companies, (ii) the weighted average RRP loan rates - thanks to the lower rates offered for the midcaps (firms with 50-250 employees) - are smaller for SMEs than for large companies.

Overall, given the terms of corporate financing currently available in Greece, the Loan Facility offers a unique form of financing. Thanks to its long tenor and stable, hence, predictable cost, that is significantly below market rates, the RRP loans can play an important role stimulating corporate investments.

<sup>24</sup> Aggregate interest rate statistics published by the Bank of Greece ([https://www.bankofgreece.gr/RelatedDocuments/Rates\\_TABLE\\_1+1a.xls](https://www.bankofgreece.gr/RelatedDocuments/Rates_TABLE_1+1a.xls)). We decided to use the “Loans with a defined maturity” as for this category there is data for SMEs.

<sup>25</sup> The maturity of the RRP loans averaged close to 14 years, hence the 15-year government bond yields could be the natural choice. However, there has been only few issuances at this maturity and this market segment is illiquid. Therefore, we decided to use the 10-year bond for constructing the pseudo market rate.

<sup>26</sup> The riskiness of a loan usually increases with the tenor of the loan, as the potential risk of a default is higher over a longer period. Therefore, the corporate risk premium for loans with similar tenors to the ones of the RRP loans could be above the estimated levels and hence our estimation can be seen as a lower bound of the reference rate.



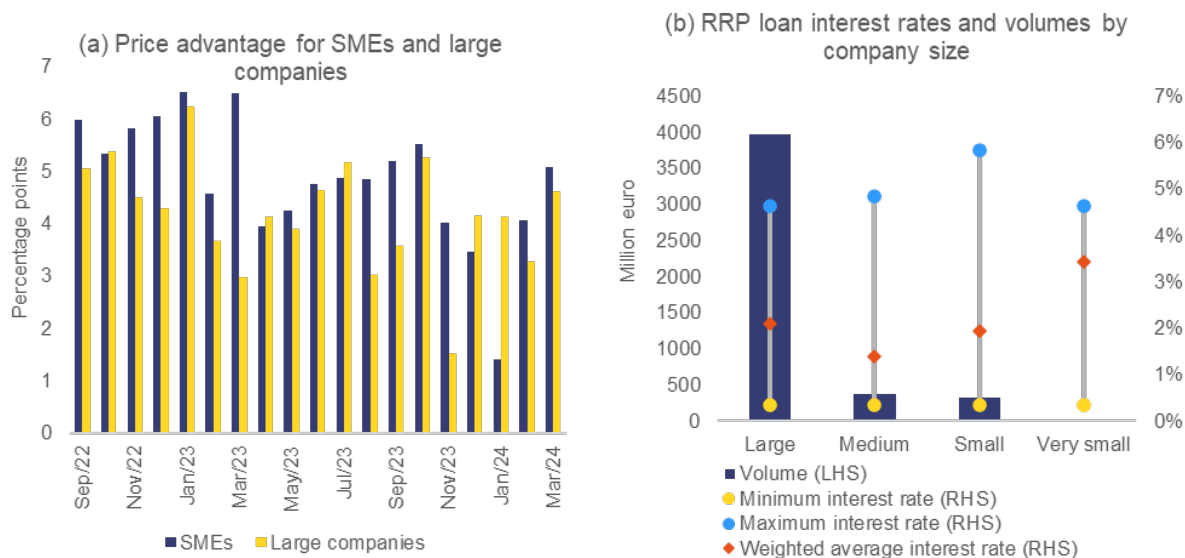
### BOX 1: PRICING OF THE RRP LOANS

The interest rates of the RRP loans are determined by the “minimum interest rates” defined by the Greek State and the Greek and EU laws and regulations regarding state aid. The government set the minimum interest rates at 0.35% for the micro and small enterprises and 1% for medium and large companies. According to the state aid rules, if the interest rate of the loan is at or above a country-specific reference rate set by the Commission based on the Greek 1-year Treasury bill rates, the loan does not constitute a state aid. As the minimum rates set by Greece have been below the reference rate since November 2022, compliance with the state aid rules must be assessed for each potential eligible projects and if necessary, the interest rates need to be aligned with state aid rules.

The state aid rules consider (1) the risk associated with the credit taking into account the rating (or credit history) of the borrower and the collateral provided; (2) socio-economic factors like the size of the company for projects below EUR 50 million (up until this threshold, the rules allow for an increased state aid ceiling for SMEs), and the region (differences in the socio-economic development allows for different state aid ceilings), as well as (3) the amount of eligible costs (for every amount between EUR 50 million and EUR 100 million there is a reduction of 50% of the state aid granted, while no eligible costs can be taken into account above EUR 100 million).

The actual pricing of the RRP loans suggests that the estimated risk associated with the loans has an important role in the determination of the interest rate: the average interest rate of RRP loans is the lowest for medium sized companies and highest for the micro-companies, while RRP rates for large and small companies are at comparable levels.

Figure 7: RRP loan interest rates by company size and the estimated price advantage of RRP loans



Source: BoG, MoEF, PDMA, European Commission calculations.

Note: (a) Price advantage defined as the difference between the reference rate (estimated market-based loan rates) and the RRP loan rates. (b) Definition of Small and Medium-sized Enterprises (SMEs) is provided in the EU recommendation 2003/361<sup>27</sup>.

<sup>27</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003H0361>.

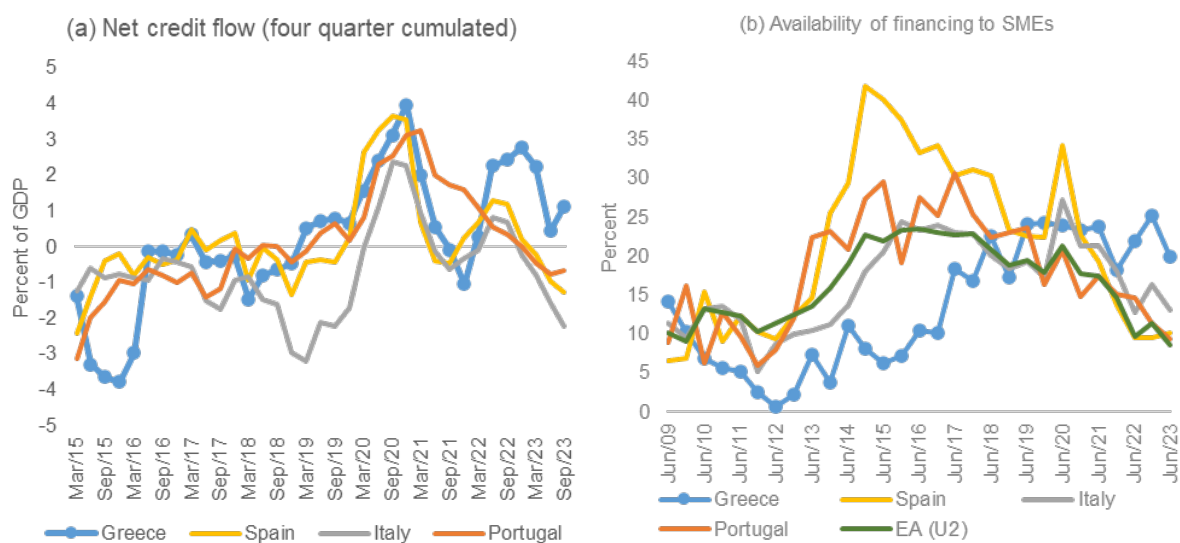


### 3.3. ACCESS TO FINANCING AND INVESTMENT DYNAMICS SINCE THE LAUNCH OF THE LOAN FACILITY

At the time of writing, in Spring 2024, the Loan Facility was less than midway through implementation: started mid-2022, the disbursements to Greece in the context of the Recovery and Resilience Facility are due to be completed by end 2026.<sup>28</sup> Thus, the full impact can only be assessed in the future. This is especially the case for the real impact of the supported investments as their full effect is likely to materialise with a significant lag only. Still, there are already some positive signs that can be observed with respect to corporate lending and SMEs financing.

Compared to peer countries, corporate lending has kept up well in Greece in recent years. The tightening of monetary conditions since early 2022 and a parallel increase in uncertainty due to heightened geopolitical tensions have triggered a slowdown in corporate lending in the euro area, including in Greece. The net credit flow (the change in corporate credit stock) has declined in Greece but it has remained well above the level recorded in peer countries. While the four-quarter cumulated net credit flow was positive in Greece, it turned negative and averaged -0.8% of GDP in Spain, Italy and Portugal in 2023 (Figure 8 panel a). New loan disbursements to non-financial corporations also remain well above the annual average of the period 2015–2019, despite some retrenchment in 2023. The Loan Facility is likely to have contributed to the relative improvement in credit dynamics as RRP loans together with the co-financing have accounted for almost one-fifth of the total corporate credit flow between mid-2022 and Q1 2024.

Figure 8: **Net credit flow and access to financing for SMEs**



Source: (a) Eurostat, European Commission calculations, (b) ECB SAFE Survey.

Memo: (b) The ratio of SMEs responding that their access to financing has improved over the previous six months.

Note: (b) EA (U2): euro-area countries, excluding Estonia, Cyprus, Latvia, Lithuania, Luxembourg, Malta, and Slovenia.

In addition, survey data suggest an improvement in corporate access to financing in 2023. The proportion of firms that reported to be financially constrained declined to 7.9% in 2023, compared to 16% in 2022 and 14.4% recorded on average in the period of 2016–2022<sup>29</sup>. This decline brought the ratio close to the EU average of 6.1% in 2023. Furthermore, Greek firms were less likely to consider the availability of finance as an impediment of investment: 62% of firms reported that access to financing

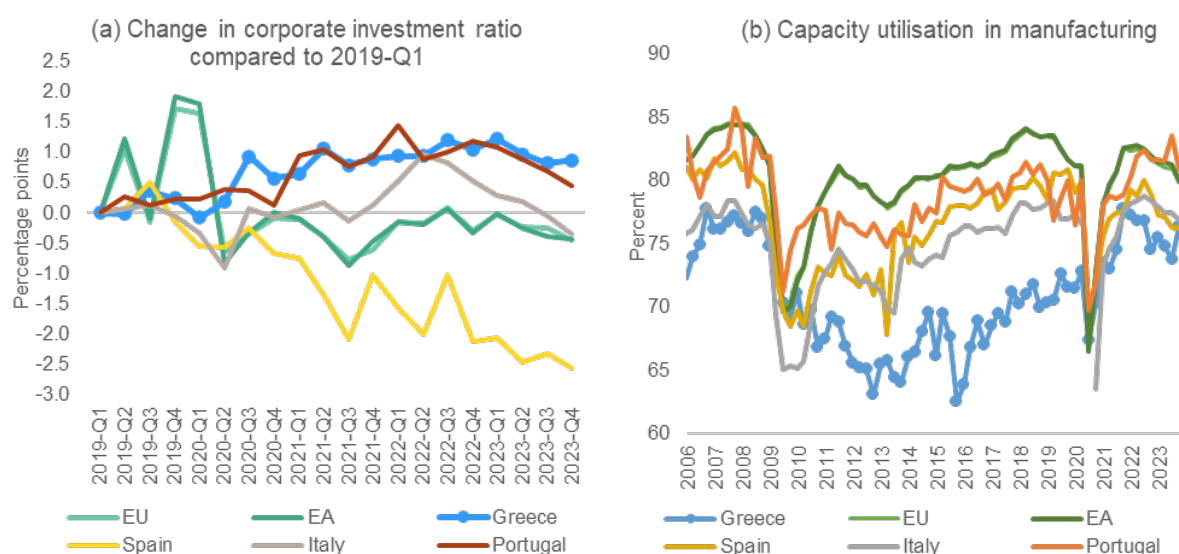
<sup>28</sup> The cut-off date for the data for the preparation of this Discussion Paper was 15 April 2024.

<sup>29</sup> See EIB Investment Survey Country Overview 2023: Greece (<https://www.eib.org/en/publications/20230340-econ-eibis-2023-greece>).

was an obstacle for investment versus the average of 72% over 2016-2022. Still, this ratio remains well above the EU average of 44%.

SMEs' access to financing has also improved in cross-country comparison. According to survey data, the share of SMEs responding that their access to financing has improved over the preceding six months has remained broadly unchanged in 2022-2023, while peer countries experienced a significant deterioration in the same period (Figure 8 panel b). Furthermore, the share of companies that received all bank loans they had applied over the preceding six months also increased in Greece. In 2022, it has approached the level of its peers for the first time since the global financial crisis (early 2009).

Figure 9: **Change in corporate investment ratio and capacity utilisation**



Source: (a) Eurostat, (b) European Commission.

Memo: (a) Year-on-year real growth rate of gross fixed capital formation; (b) Survey based measure of capacity utilisation in the manufacturing sector, seasonally adjusted data, in percent of total capacities.

Note: EU- 27 countries (from 2020), EA – 20 countries (from 2023).

Corporate investment dynamics in Greece have also gained momentum since late 2020. Between Q4 2022 and Q4 2023, the increase of corporate gross fixed capital formation as a share of GDP exceeded that of the EU and the euro area and was among the highest compared to peers (Figure 9 panel a). However, a general rebound in the economy with recovering domestic demand and improving profitability played an important role in the pick-up in investments. Capacity utilisation increased and reached its highest level since 2008 (Figure 9 panel b). Still, the fact that Greece has outperformed its peer countries both in terms of corporate credit and investment growth can be partly related to the positive expectations about the economic outlook, as well as the actual impact of the Loan Facility.

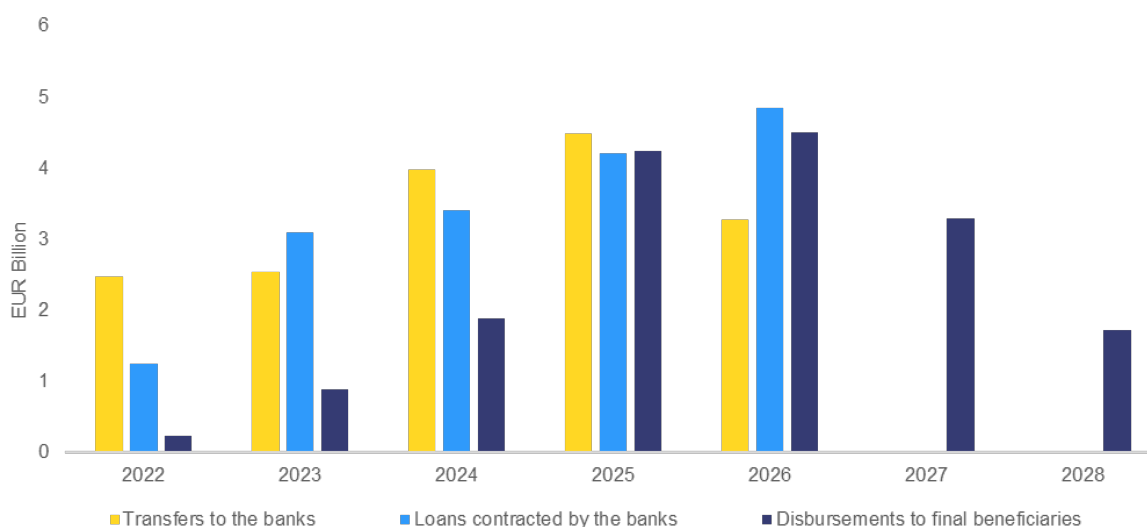
### 3.4. THE POTENTIAL ECONOMIC IMPACT OF THE LOAN FACILITY: A MODEL BASED SIMULATION

Taking a step back, it is possible to estimate the broader economic impact of the Loan Facility by using model-based simulations based on a three-region version of the QUEST-RD model (Roeger et al.,

2022)<sup>30</sup>. This can serve to estimate the potential shorter- and longer-term impact on investment and other macroeconomic aggregates such as GDP, inflation, labour market and the external sector.

In the simulations, we use the total loan allocation of EUR 16.7 billion, approximately 8% of annual GDP (2022). The time profile is relevant. The Loan Facility is available between 2022-2026, and the full available amount is assumed to be “absorbed”, i.e. contracted by the banks within this period. In the meantime, the actual disbursement of RRP loans to the final beneficiaries is expected to take place between 2022-2028 as it is matched with the cash flow of the particular investment financed via the Loan Facility. The assumed time profile of disbursements is based on the estimations provided by the Greek authorities (Figure 10).

Figure 10: **Transfers to the banks, RRP loan contracts and disbursements to final beneficiaries**



Source: MoEF, European Commission calculations.

A key further assumption relates to the additionality of the financing provided by the Loan Facility, compared to a no-Loan-Facility scenario. In the central scenario, 75% additionality is assumed for the RRP loans, that is equivalent to a 37.5% additionality compared to the total amount of funds (i.e. the RRP loans, the co-financing loans and own-participation mobilised by the Loan Facility).

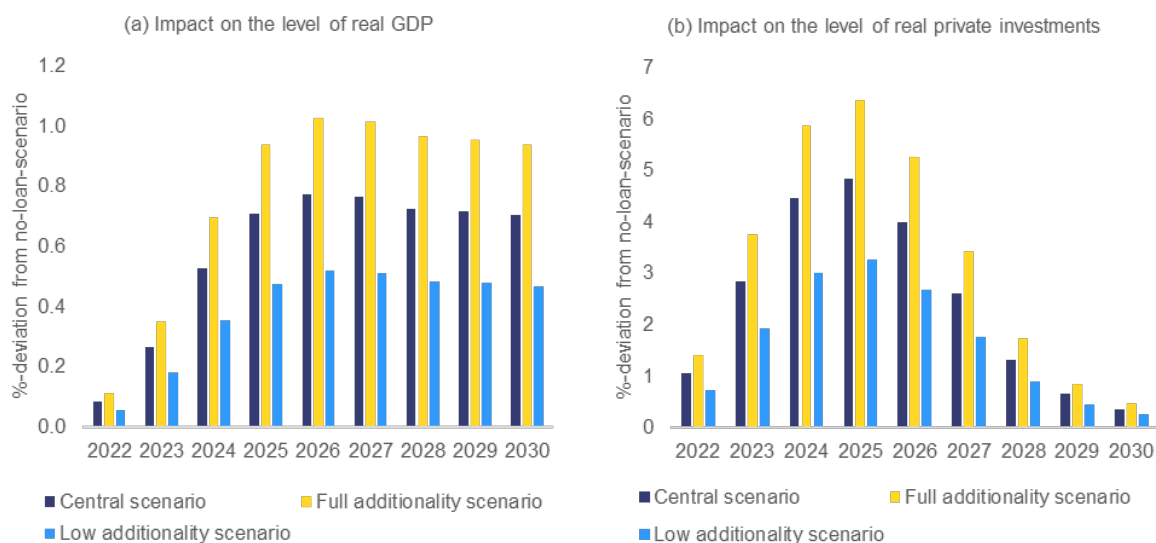
Alongside this central scenario, we consider two alternative stylised scenarios to explore the sensitivity of assumptions on additionality. The “full additionality scenario” assumes 100% additionality for the RRP loans (i.e., 50% additionality compared to the total amount of funds), while in the “low additionality scenario” we assume that the additionality will be 50% (25% for the total financing). The simulation results also hinge on (i) how this extra financing is used in the economy (treatment of the additional financing) and (ii) the initial state of the economy in terms of availability of financing and the initial investment gap (i.e., whether the private capital stock is below its long-run equilibrium level). In our simulations, the largest part of the RRP loans is treated as a subsidy for investment, while corporate investment is assumed to be below its steady state level due to the persistent adverse impact of the sovereign debt crisis (see Annex 1 for a detailed discussion of the modelling assumptions).

<sup>30</sup> This version of the QUEST model covers Greece as an open economy in a monetary union, the rest of the euro area, and the rest of the world. The model core consists of optimising households and firms, including frictions in goods, labour, and financial markets. The model captures both investments in tangibles and intangibles. In this model variant, technological change and productivity dynamics are (semi-)endogenous. More on the QUEST model: [https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-research/macroeconomic-models/quest-macroeconomic-model\\_en](https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-research/macroeconomic-models/quest-macroeconomic-model_en).

The simulation results generate overall macro relevant results (see Figure 11 and Annex 1). Investment as well as real economic activity increases gradually compared to a no-Loan-Facility scenario. Economic effects are persistent as the capital stock remains substantially above the no-Loan-Facility scenario and investment increases productivity.

Thanks to the favourable conditions of the RRP loans, the initial investment gap and the assumed 75% additionality, the Loan Facility triggers a sizeable increase in private investment that peaks at 4.8% compared to the no-Loan-Facility scenario in 2025 under the *central scenario*. The impact on the annual growth rate of investment is estimated to average 0.8 pps. over the period of 2022-2026. Given the high import dependence of the Greek economy, there is a substantial increase in imports as investors source investment goods and services from abroad. As a result, the trade-balance-to-GDP ratio declines by up to -0.6 pps. in 2025. This “import leakage” effect reduces the direct impact of the Loan Facility on domestic GDP. Overall, the real GDP is estimated to increase 0.8% above the scenario without the Loan Facility by 2026 and the (undiscounted) cumulative impact on GDP between 2022 and 2030 is estimated to reach 5.3% compared to the no-Loan-Facility scenario indicating the relevance of the Loan Facility at macro level. The Loan Facility’s effect on the annual real GDP growth rate over the period of 2022-2026 is estimated to average 0.15 pps. and to peak at around 0.25 pps. in 2025.<sup>31</sup> (see Annex 1 for further details on the results and modelling caveats). Should productivity gains and capital stock improvements fully unfold, the impact remains highly persistent, potentially resulting in substantial long-run multipliers.<sup>32</sup>

Figure 11: **Simulation results: impact on real GDP and real private investments under different scenarios (%-deviation from no-loan-scenario)**



Source: European Commission calculations.

Note: The charts report variables in %-deviation from a scenario without the Loan Facility in Greece.

<sup>31</sup> The results of the simulations presented are not directly comparable with the previous ex-ante QUEST model simulations capturing the impact of the RRP (see Pfeiffer et al., 2023) or the results presented in the Mid-Term Evaluation of the RRF (See Mid-term Evaluation of the Recovery and Resilience Facility, Staff Working Document, 2024) due to several reasons. Firstly, the QUEST simulation presented in these documents considered the entire Next Generation EU (NGEU) package, i.e. the grant *and* the loan component of the RRP including NGEU funds (around 15% of the total) beyond the RRP. Secondly, it emphasised spillover effects from other countries (examined the NGEU as synchronised stimulus). Thirdly, the benchmark scenario assumed full absorption and 100% additionality for grants and the time profile of spending was more compressed, and thus, the peak GDP impact was larger. Finally, those QUEST simulations assumed that the funds will be used to increase public investments.

<sup>32</sup> In the long run (by 2033), the estimated cumulative impact on the GDP exceeds to the total RRP loan allocation of approximately 8% of annual GDP (2022). As a result, the undiscounted cumulative multiplier is well above one.

In the alternative scenarios, the changes in the GDP effects are (approximately) proportional. Under full additionality, the Loan Facility increases the level of real GDP by 1% above the no-Loan-Facility scenario by 2026, while the impact on private investment peaks at 6.4% in 2025 (Figure 11). Under the low additionality scenario, the Loan Facility increases the level of real GDP by 0.5% above the no-Loan-Facility scenario by 2026, while the impact on private investment peaks at 3.3% in 2025 (Figure 11).

## 4. CONCLUSIONS

The Greek economy has suffered from structurally low investment for many years. The Loan Facility put in place and financed under the Recovery and Resilience Facility aims to address part of this challenge. Set up in 2021 and fully operational by mid-2022, the Loan Facility has been an attractive financing source, also for SMEs, with favourable terms compared to market-based alternatives, supporting credit demand. Furthermore, as the RRP loans do not enter the banks' balance sheet and hence do not reduce banks' financing capacity, the Loan Facility provides additional supply of financing to the economy. Progress in terms of absorption seems satisfactory at the time of writing (Q2 2024).

Cross country comparisons indicate that access to financing has improved since the launch of the Loan Facility: net lending to corporates has outperformed peer countries and access to financing for SMEs has also improved. Survey data suggest an improvement in corporates' access to financing in 2023. The proportion of firms that reported to be financially constrained halved to 7.9% in 2023, bringing the Greek ratio close to the EU average of 6.1%. Furthermore, Greek firms were less likely to consider the availability of finance as an impediment to investment. Investment dynamics gained momentum since late 2020 and between Q4 2022 and Q2 2023 and the quarterly real growth rate of gross fixed capital formation has even exceeded that of the peers (though largely driven by dwelling construction and accompanied by a substantial increase in capacity utilisation).

We estimate the average price advantage of the RRP loans at 4.1 pps., varying between 1.9 pps. and 6.3 pps. That average price advantage is higher for SMEs (4.7 pps.) than for large corporates (3.9 pps.). Therefore, the Loan Facility, with its better terms (favourable and fixed pricing together with their longer tenor), has the potential to provide businesses in Greece with much-needed funding, enabling them to invest, grow and enhance their competitiveness and sustainability in the long term. Despite the larger price advantage for SMEs, the Facility somewhat underperformed the market in providing access to financing for SMEs.

Stylised model-based simulations suggest that the Loan Facility has a sizeable positive impact on private investment and GDP in the short run. Private investment is estimated to increase by almost 5% by 2025 compared to a scenario without Loan Facility, while the level of GDP is estimated to peak 0.8% above the no-loan-Facility scenario. The cumulative impact on GDP between 2022 and 2030 is estimated to reach 5.3% compared to the no-Loan-Facility scenario. If productivity gains and capital stock improvements fully materialise, the effect is very persistent, leading to potentially large long-run multipliers.

The overall impact of the Loan Facility remains dependent on the pursuit of favourable framework conditions, such as sustained demand, predictability and continuous mobilisation by all actors concerned during the lifetime of the RRP. The Loan Facility, however, remains a temporary instrument. As such, sustained efforts to further improve the business environment, infrastructure and investment conditions beyond the implementation of the RRP are also essential to ensure that achievements made so far are lasting.

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## ANNEX

### 1. MODELLING ASSUMPTIONS

*Additionality:* Additionality, in the context of the RRP loans, refers to the extent to which these loans enable private investments or R&D and innovation that would not have occurred without the Loan Facility. Our “central scenario” assumes 75% additionality, i.e., that three-quarter of the RRP loans will be used to directly finance additional private investments or R&D and innovation. This relatively optimistic assumption on additionality is justified by two factors. Firstly, thanks to its design, the Loan Facility is assumed to mobilise extra financing via the co-financing and the own participation, which altogether must account for minimum 50% of the final investment, that can be partially additional, as well. The assumed 75% additionality for the RRP loans is therefore equivalent to a 37.5% additionality compared to the total amount of funds (the RRP loans and the funds mobilised by the Loan Facility). Secondly, additionality is reinforced by the fact that the RRP loans do not enter to banks’ balance sheet, therefore it does not “weigh” on the banks’ risk taking and financing capacity. Moreover, by providing longer-term, fixed rate loans at favourable terms, the Loan Facility boosts credit demand compared to a no-Loan Facility scenario, thus further improving additionality. Given the inherent uncertainty surrounding additionality, two alternative scenarios shed light on the impact of these assumptions.

*Treatment of additional financing:* In all scenarios, the largest part of the Loan Facility is treated as a subsidy for investment. In general, macroeconomic theory suggests that the intertemporal elasticity of investment, i.e., how much firms decide to frontload investment because of the policy, is typically high because the capital stock is a very long-lived asset. Firms that would have purchased new capital equipment in the future instead make their purchases during the programme period (see House and Shapiro, 2008). The investment increase unfolds gradually, owing to adjustment frictions and the assumed profile for loans disbursement. In addition, a smaller share of the additional funds (25%) is modelled as subsidy to R&D and credit support for innovation. In the model, these policies reduce the costs of intangible assets, stimulating more innovation activity. As a result, private sector productivity increases in the medium to long run.

While credit (investment) subsidies can stimulate economic activity, modelling studies including heterogeneous firms suggests that their effectiveness can vary significantly based on their design and implementation. According to Buera, Moll, and Shin (2013), short-lived subsidies might be more successful than permanent ones, as they can provide a timely boost with lower long-term distortions. Additionally, Jo and Senga (2019) highlight that the assumptions about the firm distribution play a crucial role. Although their main scenario based on indicates positive general equilibrium effects, different assumptions can lead to varying outcomes.

*State of the economy:* The effectiveness of the Loan Facility can vary depending on the economic context or “state” of the economy. Historically, investment ratios, particularly following the sovereign debt crisis, have been notably low, leading to subdued capital accumulation. Our simulation accommodates this historical context by simulating a no Loan Facility scenario, that approximates these features. Corporate investment is assumed to be below its steady state level since the crisis. The initial gap is estimated against a benchmark approximated by the historical average of the private investment ratio over the period of 1995-2022 (13.8% of GDP). Measured against this historical benchmark, the private investment gap has widened after the crisis, and has started to narrow gradually after 2017, reaching 3.6% of GDP in 2022. Accounting for lower capital accumulation increases the GDP gains mainly because the model predicts a higher marginal product of a lower capital stock. It should, however, be noted that historically the largest decline was recorded in investment in dwellings.

### 2. RESULTS OF THE CENTRAL SCENARIO AND CAVEATS

Besides the impact on investments, GDP and the trade balance described in the main text, the Loan Facility impacts the labour market, consumption, inflation and real interest rates. In the labour market, increased economic activity leads to employment gains (around 0.2% by 2025). The higher capital stock is mostly reflected in higher real wages that can peak 0.7% above compared to the no-loan-scenario in 2025-2026. With a slight increase in inflation and negligible changes in nominal interest rates (given the



monetary union), the real interest rate declines initially, muting potential crowding-out effects in consumption. Over time, supply-side improvements, also including productivity gains, reduce the inflation.

Table 2: **Central scenario for the main macroeconomic aggregates (in %-deviation to the no-loan-scenario)**

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Real GDP	0.1	0.3	0.5	0.7	0.8	0.8	0.7	0.7	0.7
Private investments	1.1	2.8	4.4	4.8	4.0	2.6	1.3	0.6	0.4
Private consumption	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Imports	0.3	0.8	1.3	1.3	0.9	0.5	0.1	-0.1	-0.2
Employment	0.1	0.2	0.2	0.2	0.1	0.0	-0.1	-0.1	0.0
Real wage	0.1	0.3	0.6	0.7	0.7	0.6	0.5	0.5	0.5
TFP (Solow Residual)	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3
Inflation	0.1	0.1	0.0	-0.1	-0.2	-0.2	-0.1	0.0	0.0
Trade balance	-0.1	-0.4	-0.6	-0.6	-0.4	-0.2	0.0	0.1	0.1

Notes: This table reports all variables in %-deviation from no-loan-scenario without RRP loans in Greece (except the trade-balance-to-GDP ratio and inflation, which are expressed in percentage point deviation).

It is crucial to acknowledge the stylised nature of the modelling assumptions. For example, for modelling purposes, we have treated the RRP loans as investment subsidies (with different degrees of additionality). This approach, however, might not fully reflect risks and interactions within the banking sector<sup>33</sup>. Additionally, our model captures barriers to investment via adjustment costs. The estimation of these parameters is notably uncertain due to, e.g., technological advancements and regulatory changes. Lower adjustment costs, indicative of advantageous market conditions, can expedite investment adjustment, thus enhancing economic benefits. Conversely, high costs imply more modest investment and GDP gains in the short run. Similarly, a greater import dependency for investment goods might lessen the domestic economic stimulus. Finally, altering the model's tax and labour supply structure impacts the outcomes. For example, a more elastic labour supply leads to a larger economic expansion, as it enhances the labour market's responsiveness. Beyond highlighting the sensitivity of our findings, these considerations also suggest potential synergies with other fiscal measures and economic reforms.

<sup>33</sup> For example, NPL developments or changes in banks' capital position and risk-taking capacity are not captured by the model. However, the fact that the legacy of the Greek sovereign debt crisis has had a protracted negative impact on the loan supply is taken into account in the simulation indirectly, via the assumed initial investment gap.



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