Lessons from financial assistance to Greece – Technical appendix

11 June 2020

Contents

Summary

This technical appendix was compiled to provide further background to the second ESM evaluation focusing on financial assistance to Greece. Its purpose is to enhance transparency on the technical aspects of the conduct of the evaluation exercise, and the various strands of analysis. The evaluation was designed to ensure maximum impartiality, within the available organisational set-up, and methodological rigour. By describing the process and the various strands of analysis, the appendices support the evaluation's credibility.

This evaluation adopted the same general approach as the first ESM evaluation in 2016–2017, using the mixed-methods approach and an external evaluator as the report owner. In addition, an external advisory group reviewed various elements of the evaluation and advised on quality issues.

The terms of reference approved by the ESM Board of Governors on 13 June 2019 have been made public in their original form in Appendix 1. Appendix 2 describes the evaluation process and methodology.

Appendix 3 provides further analysis on bond market spillovers discussed in Box 3.2 of the evaluation report. Appendices 4 and 6 contain additional charts supporting the assessment on programme effectiveness and sustainability. Appendix 5 relates to the efficiency chapter and contains a technical assessment of short- and medium-term debt relief measures. Appendix 7 supports the chapter on cooperation and partnerships.

Appendix 8 presents a technical paper on the online and social media analysis, and the final appendix lays out the crisis timeline.

1. Terms of Reference – ESM evaluation of financial assistance to Greece[1]

[1] As approved by the ESM Board of Governors on 13 June 2019.

1.1 Introduction

The main objective of ex post evaluation is to seek lessons from past interventions and to support a learning organisation. A secondary objective is to provide transparency and promote accountability. Independent evaluation supports informed policy decision-making processes going forward. Moreover, drawing lessons from the financial assistance further enhances the ESM's ability to tackle potential future crises.

In June 2016, the Board of Governors (BoG) mandated the ESM to carry out an evaluation of financial assistance provided by the European Financial Stability Facility (EFSF and the European Stability Mechanism (ESM). At the ESM Annual Meeting on 15 June 2017, Ms Gertrude Tumpel-Gugerell, the High-Level Independent Evaluator for the first evaluation exercise, presented her final findings and recommendations to the BoG. Subsequently, the BoG issued a statement welcoming the report and mandating ESM management to address some of the specific findings and recommendations. In its statement, the BoG called, among other things, for "conducting an evaluation of the Greek programmes after completion as these were not covered by the current report."[2] On 21 February 2019, the BoG Chairperson appointed Mr Joaquín Almunia to lead the independent evaluation that will focus on the EFSF/ESM financial assistance programmes provided to Greece.

In the absence of a specific ESM evaluation policy, these Terms of Reference (ToR) and the good practices of the international institutions guide this independent evaluation's approach.

1.2 Context

The Greek crisis that surfaced in 2009 resulted from sizeable macroeconomic imbalances that had accumulated in the years following the introduction of the euro. This accumulation weakened the long-run prospects and fundamentals of the economy. It also undermined market confidence, as evidenced by escalating borrowing costs after 2009.

The accumulation of Greece's economic imbalances led eventually to its loss of market access at sustainable rates, which was seen as a challenge for the financial stability of the entire euro area. Greece requested financial assistance and conducted three economic adjustment programmes. During Greece's initial years under adjustment programmes, overall economic output fell by 26% while private investment collapsed and unemployment rose sharply. Overall, programme financing to Greece amounted to €298 billion – almost 170% of GDP.

The first programme (2010–2012) focused on the correction of pressing fiscal imbalances. The substantial output losses during the first programme had adverse implications for debt dynamics, which resulted in turn in the second programme's (2012–2015) emphasis on regaining debt sustainability and promoting reforms. Policy implementation allowed Greece to achieve an incipient market access in 2014. Following national elections in early 2015, a new government took office and its policy course reversed market confidence. As the prospects for

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[2] https://www.esm.europa.eu/press-releases/esm-board-governors-statement-evaluation-report.

market access faded, a third programme was needed to stabilise banks and the economy. Capital flight and a liquidity crunch led to a collapse in confidence and investment. Once Greece had reaffirmed its policy resolve vis-à-vis the European counterparts, a new three-year assistance package (2015–2018) was negotiated to provide a framework for addressing the main challenges of the Greek economy and bringing it to a sustainable path. The aim was to establish a basis for sustainable recovery by restoring fiscal sustainability and safeguarding financial stability along with reforms conducive to growth, competitiveness and investment, and modernising the public sector. Annex 1.1 depicts an overview of the financing provided to Greece.

Main objectives of the three financial assistance programmes provided according to the relevant Memoranda of Understanding (MoU)

Table 1.1

Main objectives of the three financial assistance programmes provided according to the relevant Memoranda of Understanding (MoU)

Programme	Objective
First programme (Greek Loan Facility)	Short-term: restore confidence and maintain financial stability. Medium-term: improve competitiveness and alter the economy's structure towards a more investment- and export-led growth model.
Second programme (EFSF)	Place Greek public finances and economy back on sustainable footing and thereby safeguard Greek and euro area financial stability.
Third programme (ESM)	Provide a strategy to restore sustainable growth, create jobs, reduce inequalities, and address the risks to Greek and euro area financial stability. The strategy was designed to accommodate the need for social justice and fairness, across and within generations.

Institutional context

The institutional framework governing euro area financial support to Greece has evolved significantly over the three programmes. At the eruption of the global financial crisis preceding the assistance to Greece, the institutional arrangements for euro area crisis resolution had not yet been established. Therefore, the first programme was supported by the Greek Loan Facility (GLF), an ad hoc bilateral loan arrangement by the euro area member states. The second and third programmes were supported by the EFSF and ESM, respectively.

The EFSF was established as a temporary entity to financially support euro area member states in financial difficulties that threaten the financial stability of the euro area and its member states. Financial assistance was provided jointly with the International Monetary Fund (IMF) whenever possible. The EFSF's role was technical and broadly limited to mobilising financing compatible with the member states' debt sustainability and establishing the technical financing term.The ESM Treaty sets the ESM's mandate as mobilisation of funding and provision of stability support under strict conditionality to the benefit of ESM Members that are experiencing, or are threatened by, severe financing problems, if indispensable to safeguard the financial stability of the euro area as a whole and of its member states. This has often been interpreted as enabling the Member to regain sustainable market access, but other, less explicit objectives, such as the integrity of the euro area, may have played a role as well.

EFSF and ESM financial assistance is provided in a cooperative framework with the European Commission and the European Central Bank (ECB), and whenever possible in cooperation with the IMF. EFSF financial assistance was provided under the EFSF's Framework Agreement, while ESM financial assistance was provided under the ESM Treaty. These are supplemented by various guidelines. EFSF programme-related decision-making took place in the Eurogroup or Eurogroup Working Group (EWG) and the EFSF Board of Directors. As for the ESM, all programme-related decisions have formally been taken by its dedicated governing bodies, the Board of Governors, composed of the euro area finance ministers, and the Board of Directors (BoD), comprising their deputies.

In practice, a considerable degree of informality characterised programme governance and management, despite the codification of the inter-institutional cooperation with the entry into force of the Two Pack regulations in May 2013 and in particular, the Memorandum of Understanding[3] between the Commission and the ESM in 2018. More specifically, the Eurogroup's central role, together with its EWG format, has extended to the ESM framework. The EFSF's financing decisions were taken by the finance ministers representing their respective sovereigns as guarantors. The European Commission published an ex ante social impact assessment before the approval of the third programme.

1.3 Evaluation purpose and scope

The BoD discussed these Terms of Reference and the BoG approved them at the 2019 Annual Meeting. The purpose of this evaluation is to assess the relevance, effectiveness, and sustainability of financial assistance provided to Greece, with a focus on the third programme. The evaluation will also examine related efficiency and cooperation/partnerships aspects.

Scope

The BoD discussed and provided further guidance on the scope of the evaluation exercise. The evaluation period starts with the 2012 private sector involvement and covers the post-programme engagement up until the end of Q3 2019. This period encompasses the programme activities relevant to the ESM's long-term engagement with Greece and its role as a lender. While this exercise will not evaluate the first Greek programme as it predates the EFSF, it will assess the programme's implications for the subsequent financial assistance packages.

Striking the appropriate balance between adjustment, fiscal sustainability, and growth objectives is a key challenge for programme design and implementation. Therefore, the evaluation needs to assess the extent to which attention was given to reforms that were growth-enhancing and fostered fiscal resilience over the period relevant to EFSF/ESM involvement in Greece.

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[3] https://www.esm.europa.eu/sites/default/files/2018_04_27_mou_ec_esm.pdf.

Themes

The evaluation will seek lessons on the following themes through the development of evaluation questions such as those in Annex 1.3:

- Contribution of the Greek programmes to euro area financial stability, including spillovers to other member states, and the evolving crisis management framework
- Relevance of the programme strategies to sustainable and inclusive growth in Greece; and the programme's implications for resilience to economic and financial shocks
- Whether key risks to the EFSF/ESM were identified upfront and alternatives assessed, and how programmes adapted as adverse outcomes materialised
- Debt sustainability assessment in light of programme objectives; to examine the assumptions used for the analysis, and the extent to which debt sustainability assessments influenced the EFSF/ESM programme objectives and design
- Efficiency and effectiveness of the ESM's engagement with the national and international partners over time

Limitations

Given the ESM's long-term engagement with Members and its perspective as a lender, as set out in the MoU between the Commission and ESM, the evaluation needs to assess the programme measures for relevance and effectiveness. Repayment capacity is, among other matters, a function of long-term sustainability. Given the challenge in assessing sustainability at this stage, a first milestone is ensuring a return to market access. The evaluation will neither examine individual sectoral policies in-depth, nor focus on the actual detailed implementation of the conditionality clauses, for which other institutions are responsible. This differentiates this evaluation's approach from that of the partner institutions and other relevant EU institutions.

The Debt Sustainability Assessment and Early Warning System (EWS) are key instruments for ESM's (post-)programme engagement. The evaluation will assess their role and the assumptions that defined them, but it will not provide a fully-fledged technical assessment of them. Similarly, the evaluation will not address the efficiency of ESM funding or the technicalities of the short- and medium-term debt relief measures; instead, the focus is on the effectiveness and sustainability of such measures.

The scope needs to take into account the evolution of the mandates while focusing on the ESM's role. Given that the GLF predates the establishment of the two institutions, the evaluation will not cover this programme in full, but will only assess its implications for the second and third programmes. Similarly, the private sector involvement operation, which was designed during the GLF as a precondition for the EFSF programme, will be assessed only in its implications for the two subsequent programmes.

Lastly, the High-Level Independent Evaluator may adapt the scope to the availability of resources and data to protect the credibility of the exercise. If issues outside the evaluation's formal scope were to serve as explanatory factors for the effectiveness of the programme and the ESM's role, they might nevertheless be addressed.

Criteria

In line with best practice, a critical step in an effective evaluation is to frame the evaluation questions so that they are answerable with evidence likely to be available and anchored to the ESM's mandate and interests. In this context, the evaluation criteria will further steer the approach to addressing the stakeholders' interests. The definitions presented in Box 1 are drawn from good evaluation practice and are also in line with those of the first evaluation report.

Box 1 Evaluation criteria

Relevance

Relevance as an evaluation criterion assesses the extent to which the objectives of an intervention are consistent with country needs, the institutional mandates, and partners' policies or, where relevant, global priorities.

Programme effectiveness

Effectiveness reflects the extent to which the financial assistance programme's objectives were achieved, or are expected to be achieved, taking into account their relative importance.

Efficiency

A measure of how economically resources and inputs are converted into results (outputs/outcomes). As in the first ESM evaluation report, this subsumes an assessment of the ESM's agility in responding to the financing needs and managing processes, and covers issues such as organisational set-up, timelines, and quality of the programmes.

Sustainability

Sustainability captures the continuation of benefits from a financial assistance programme after it has been completed, the likelihood of those long-term benefits, and the resilience to risks of the net benefit flow over time.

Cooperation/partnerships

This criterion considers the level and quality of cooperation both between the programme partners and including the ESM Beneficiary Member. It allows an assessment of the extent to which there was effective coordination among the institutions and authorities, the extent to which partnerships' responsibilities were effectively discharged, and the extent to which partnerships' inputs were of quality and timely.

1.4 Roles and responsibilities

Key actors

ESM Board of Governors and Board of Directors are the key evaluation stakeholders, together with ESM management. As the primary decision makers, they will also be the main addressees for the Evaluator's recommendations.

The High-Level Independent Evaluator and evaluation team consulted, where relevant, with the ESM partner institutions – the European Commission and the ECB – on the scope of the evaluation and the Terms of Reference and will consult the partners further during the evaluation process, but solely with reference to their partnership with the EFSF/ESM, therefore as key informants.

The Evaluator and the evaluation team may approach the IMF and other relevant institutions when collecting primary and secondary data. IMF staff will be offered the possibility to participate in the consultation on the Evaluator's draft report.

Upon completion of the independent evaluation exercise, the Evaluator will present his findings and recommendations to the BoG during its annual meeting in June 2020.

The roles of the other actors in the evaluation project are defined in the following section.

Resources and roles

The project actors are the **High-Level Independent Evaluator (Evaluator)**, ESM project sponsor, ESM evaluation team and evaluation manager. The team will be supported by external advisors.

The ESM BoG Chairperson has appointed Joaquín Almunia, a former Vice President of the European Commission, as the Evaluator to lead the exercise. Annex 1.2 includes the appointment letter. The main tasks of the Evaluator consist of:

- agreeing on the Terms of Reference with the BoG,
- reviewing the draft report,
- participating in the consultation with the BoD on the draft report,
- ensuring balanced final evaluation judgements,
- reporting to the ESM BoG, and
- promoting outreach.

The Evaluator will address his conclusions or assessments to the ESM BoG Chairperson. Based on the findings, the Evaluator is expected to submit a set of recommendations to the ESM BoG to improve the functioning of the ESM and the relevance and effectiveness of its financial assistance. The report will be published under the Evaluator's auspices on the ESM website.

The **ESM project sponsor**, Chief Economist Rolf Strauch, will ensure that the Evaluator receives full support, by assuring the Evaluator's instructions and guidance are implemented, the evaluation exercise has sufficient resources to execute its tasks in a timely manner, and the evaluation team receives unhindered access to information. Together with the Evaluator, he will also ensure that cooperative relations with the relevant institutions, such as the partner institutions, are maintained. Both the ESM project sponsor and the evaluation manager are responsible for keeping the project timetable on track.

The independent evaluation exercise will be conducted with the support of an ESM expert team and benefit from the advice of senior evaluation experts from other international financial institutions.

The **evaluation manager** will organise and coordinate the daily work of the ESM evaluation team, striving to ensure the relevance and credibility of the process. He will promote a common understanding of the basic objectives, values, and assumptions underlying the analysis among the evaluation team. He will also ensure that evaluators protect the anonymity and confidentiality of the information and data gathered, where not publicly available. Moreover, the evaluation manager may liaise with the Evaluator, key stakeholders, partner institutions and other informants within the remit of the evaluation plan. The **external advisor** will be consulted to ensure effective use of the best available expertise during the process. The evaluation manager will liaise with the Evaluation Reference Group to help organise its work.

The **evaluation team** working under the coordination of the evaluation manager will:

- design and execute background studies, surveys, and interviews,
- collect necessary secondary data,
- draft a report for review by the Evaluator,
- organise a consultation of the BoD on the draft report,
- incorporate feedback into the final report in cooperation with the Evaluator, and
- support the Evaluator in reporting to the BoG.

The evaluation team, drawn from ESM staff members with differing areas of expertise and experience, will deploy a qualitative data analysis software package to support the reliability and validity of the mixed methods approach on which the evaluation is based. The evaluation team may be further strengthened by external technical expertise, if needed. When designing the evaluation methodology, the team will pay due attention to avoid overburdening the ESM Beneficiary Member with requests while ensuring appropriate participation.

ESM internal services will provide support, in particular, with the editing and publication of the final documents, with administrative tasks, such as contracting and procurement, and travel and meeting arrangements. Where necessary, the ESM may enlist external assistance to help, for example, with initial training, preparation of interview transcripts, and logistics for fieldwork or further analytical support. The ESM Communications team will handle relations with the public and specific external stakeholders, providing due assistance to the Evaluator.

Governance

ESM Members as represented in its governing bodies and ESM management are the primary audience of the evaluation report. The Evaluator will present his report to the ESM BoG Chairperson who will submit it to the ESM BoG. The report will be published following a BoG discussion.

The ESM Managing Director will ensure appropriate follow-up to the evaluation report and its recommendations with the governing bodies.

Together with the Evaluator, the project sponsor, in facilitating the implementation of the Evaluator's task, will support an independent and impartial evaluation process free from undue management influence. The evaluation team will report to the Evaluator, and seek advice as needed from the external advisor and the Evaluation Reference Group to support independence.

ESM staff members who participated directly in the design and implementation of the EFSF/ESM programmes concerned will be excluded from the evaluation team, although their input will be gathered and integrated into the analysis.

Quality assurance

The appointment of the High-Level Independent Evaluator reflects the ESM's intention to mitigate any potential conflicts of interest with ESM staff or management with respect to the evaluation exercise.

These Terms of Reference have been prepared in cooperation with the Evaluator, following the scoping discussion by the BoD which confirmed the general approach proposed as desirable. To draw up these Terms of Reference, an initial evaluability assessment was conducted using an evaluability assessment tool designed for ESM country programmes. It assessed financial assistance arrangements provided to Greece against three concepts of evaluability (in principle, in practice, and in context). This process led to the sample evaluation questions listed in Annex 1.3. Evaluability assessment will be completed as part of the design of the evaluation methodology.

The evaluation team will exercise a coherent evaluation process and present verified evidence. The Evaluator will review the draft report for consultation and ensure balanced judgements for the final report.

As a further quality assurance method, a former deputy director of the IMF Independent Evaluation Office will support the evaluation team in the design and analysis phases as external adviser. He will chair the **Evaluation Reference Group**, which will engage with the evaluation team on specific occasions, such as on an inception report on the methodology and the Evaluator's draft report. As a first step, the group was consulted on the draft of these Terms of Reference. While they provide expert guidance to the evaluation process and intermediate products, their engagement will be purely advisory. The evaluation manager will act as the secretary for the Evaluation Reference Group. The evaluation team will organise the meetings and assist the group's chairperson in summarising the proceedings for the Evaluator.

1.5 Evaluation work plan

Table 1.2
Project milestone schedule

Date	Action
31 January 2019	Evaluation planning presented to BoD for information
Early February 2019	Appointment of the High-Level Independent Evaluator mandated by the BoG (consultation on a no-objection basis)
Mid-February 2019	The BoG Chairperson appoints the High-Level Independent Evaluator and the work on the ToR for the evaluation starts
26 March 2019	Consult BoD on the Scoping note
2 May 2019	Draft ToR presented to BoD for endorsement
13 June 2019	ToR approved by BoG
July 2019–March 2020	Evaluation work ongoing Consultation on the Inception report 30 August 2019 Interviews in Greece and with stakeholders October–December 2019 Synthesis and report drafting January–March 2020
December 2019	The Evaluator's progress report to BoG
March–May 2020	Draft findings presented to BoD
June 2020	Findings and recommendations presented to BoG
July 2020	Publication of report

Methodology

Conducting a reliable and credible evaluation requires the use of a robust design that reduces the risk of irrelevant, biased, or invalid findings. This evaluation's methodology will reflect the complexity of financial assistance activities and study questions. The evaluation will take a mixed methods approach based on a triangulation of various data sources, data collection, and analysis methods. The purpose is to profit from the advantages of both quantitative and qualitative approaches and to overcome their drawbacks by mixing them. This approach will help corroborate findings by another data type and strengthen the inference process.

The evaluation team will develop an intervention logic for the Greek programmes to frame the analysis and guide the operationalisation of the evaluation questions. This will take into account ESM procedural aspects in the institutional framework.

The evaluation team will develop an inception report that outlines the data collection and analytical methodologies, including a proposed mapping from the core evaluation questions to the types of evidence to be used, and key data sources. The Evaluation Reference Group will be consulted on the note which the Evaluator will subsequently review.

This evaluation will examine sustainability from the perspectives of public finances, higher resistance to economic or financial shocks, and more resilient public institutions. Quantitative analysis will draw on existing data from the programme partners, national authorities or other international institutions. The evaluation team may approach relevant institutions or academia to draw on their research.

Qualitative data collection methods will include semi-structured interviews, focus group discussions, document studies, and surveys. The evaluation team will make field visits to the beneficiary country and meet relevant institutions to supplement the findings of background studies and to conduct interviews with both open and non-open ended questions, including potential focus group discussions on the evaluation themes. The interviews may be refined based on a parallel analysis of the first interview experiences.

Interviewees will be selected based on their knowledge and roles in the country programme and availability (purposive sampling). Interviewees will have the opportunity to suggest further interviews with people relevant to specific evaluation questions. To the extent possible, interviews will be recorded and transcribed. A minimum of two team members will analyse each interview transcript. Further measures will be taken to limit personal bias in interpretation.

The team will survey ESM management and staff as well as the governing bodies to the extent relevant. Reports by other institutions and academia will be examined for evidence to the evaluation questions and to identify additional specific questions of relevance to the evaluation mandate. The interview and survey responses will be stored in a secure database with access limited to the Evaluator and the evaluation team.

ANNEX 1.1 – Financial assistance provided to Greece by European entities

	First programme (2010–2012)	Second programme (2012–2015)	Third programme (2015–2018)
Initial programme amount	€110 billion	€164.5 billion	€86 billion
Total amount disbursed	€73 billion	€153.8 billion	€61.9 billion
Lenders	Euro area countries (except Slovakia) under Greek Loan Facility (GLF) managed by the EC: €52.9 billion; IMF: €20.1 billion	EFSF: €141.8 billion (including €48.2 billion for bank recapitalisation, €34.6 billion for private sector involvement and bond interest facilities), of which €10.9 billion for bank recapitalisation was not used by the Hellenic Financial Stability Fund (HFSF) and was returned to the EFSF; IMF: €12 billion	ESM: up to €86 billion (including up to €25 billion for bank recapitalisation); IMF: €1.6 billion approved in principle, but stand-by arrangement did not become effective
Grace period and maturity	GLF loans extended in 2012 to 10 and 30 years from three and five years	EFSF loans initially extended in 2012 to a maximum 32.5 years from 17.5, finally extended to a maximum of 42.5 years in December 2018	Maximum weighted average maturity 32.5 years
Key areas of legislated reforms	Pension system, health system, public financial management, state budget, public sector benefits, labour market, closed professions	Labour market, income tax, public administration, social protection, health system, public financial management, business environment	VAT, income tax, pension system, insolvency law, out-of-court debt workout, sales and servicing of loans (NPLs), public revenue collection, management of state assets, public administration, social protection
EFSF/ESM focus	Not involved	Funding	Debt sustainability assessment, banking, privatisation, funding

ANNEX 1.2 – Mandate of the High-level Independent Evaluator

Luxembourg, 21 February 2019

Appointment of High-Level Independent Evaluator

Following the agreement of the Board of Governors on 16 June 2016 to conduct evaluations of EFSF/ESM stability support programmes as well as the Board of Governors' commitment from 15 June 2017 to carry out an evaluation of the Greek programmes following their completion, I am pleased to hereby appoint Mr Joaquín Almunia as High-Level Independent Evaluator for the evaluation of financial assistance to Greece.

Upon careful review of his qualifications and experience, Mr Almunia was nominated in consultation with the Managing Director. Subsequently, the Board of Governors gave me the mandate to appoint Mr Almunia as High-Level Independent Evaluator.

Mr Almunia will take up his duties as of 21 February 2019 and will lead the independent evaluation that will focus on the ESM financial assistance programmes provided to Greece. The Terms of Reference for the independent evaluation will be brought forward for approval by the Board of Governors on the occasion of the 2019 Annual Meeting.

Mr Almunia has extensive experience in the field of financial stability, economic policy research as well as EU affairs and will bring to the role the requisite degree of authority and expertise to ensure independence, depth, and quality of the evaluation.

The independent evaluation will help to further improve the relevance and effectiveness of the ESM programme-related activities and will support informed policy decision-making processes going forward. Moreover, drawing lessons from the assistance provided to Greece will further enhance the ESM's ability to tackle potential future crises.

The independent evaluation exercise will be conducted with the support of an ESM expert team and benefit from the advice of senior evaluation experts from other international financial institutions. Upon completion of the independent evaluation exercise, the High-Level Independent Evaluator's findings and recommendations will be presented to the Board of Governors during its annual meeting in June 2020.

Yours faithfully,

Mário Centeno
Chairperson of the Board of
Governors European Stability
Mechanism

ANNEX 1.3 – Example evaluation questions by evaluation criterion and programme period

Evaluation criterion	Example question
Relevance	How did the Greek programmes contribute to ensuring the euro area's financial stability?
	How did the stakeholders assess the adopted crisis resolution strategy in various stages of the crisis?
	How did various stakeholders understand the programme objectives and priorities? What level of consensus existed on them? Were the key objectives and underlying assumptions realistic, given the prevailing circumstances?
	Were alternative strategies or designs considered? Was/were the option(s) chosen the most appropriate in view of country and stakeholder needs?
	How does DSA contribute to the programme partners' common understanding of the prospects of success? How did DSA contribute to decision-making?
	How have banking sector issues influenced programme design?
Effectiveness	What were the programme outcomes and how well did they address programme objectives?
	What, if any, were the unintended consequences?
	How did the key stakeholders assess the outcomes of the crisis resolution strategy at the various stages of the crisis?
Sustainability	To what extent did the programme strategies support sustainable and inclusive growth?
	To what extent have the PSI/bond exchange, and the short-term debt measures, including bond exchange, swaps etc., contributed to the sustainability of Greek public finances?
Efficiency	How did the institutions adapt as adverse outcomes materialised? Were lessons from cross-country cases used?
	Banking sector reforms: to what extent did programme design consider options from the perspective of impact on Greek growth? How did related efficiency and ESM risk considerations balance?
Cooperation/ partnerships	From the perspective of managing the ESM's risks, what was the achieved degree of effectiveness of collaboration and interactions between the various programme partners and stakeholders?
	In their work together, have the institutions sought complementarities, optimised synergies, and avoided duplications?
	After the programme exit, how effective was the interaction between the institutions' key assessment frameworks (ESM's EWS, Commission's Enhanced Surveillance framework, and the IMF's post programme monitoring)?
	What role did ESM Board representatives, management and staff play in the engagement and communication with Greece? How was ESM engagement in Greece perceived by the authorities, academics and the general public?

ANNEX 1.4. – Acronyms and ESM evaluation definitions

Term	Definition
EFSM	The European Financial Stabilisation Mechanism is a lending arrangement guaranteed by the European Union budget.
ESM BoD	ESM Board of Directors
ESM BoG	ESM Board of Governors
ESM partner institutions	Institutions directly involved in programme design and financing, as referenced in EFSF/ESM governing documents: the European Commission, the European Central Bank and, where relevant, the International Monetary Fund.
Evaluation Reference Group	An informal group of experienced evaluators, selected by the evaluation team in cooperation with the sponsor and the external advisors, representing primarily inter-governmental organisations. The external adviser chairs the advisory group.
EWS	ESM's Early Warning System is a procedure set up to determine a programme country's ability to repay its loans. It seeks to detect loan repayment risks and allow for corrective actions.
External adviser	Adviser contracted to contribute to quality assurance of the evaluation process and assist the evaluation team in the design and analysis phases. The responsibilities are advisory.
External stakeholders	Institutions other than the key stakeholders that are affected, including academia and the general public
Ex post evaluation	An evaluation conducted after the completion of an adjustment programme, as opposed to ex ante or mid-term evaluations. They focus on intervention outcomes and impacts.
Finding	A finding uses evidence from one or more sources to allow for a factual statement.
GLF	The Greek Loan Facility is a set of bilateral loans by euro area member states, pooled by the European Commission, to support the first Greek programme in 2010.
IMF	International Monetary Fund
Impact	Positive and negative, primary and secondary long-term effects produced by a financial assistance programme, directly or indirectly, intended or unintended.
Impact evaluation	An impact evaluation quantifies the net change in outcomes that can be attributed to a specific project or programme, usually by the construction of a plausible counterfactual.
Inclusive growth	Inclusive growth is economic growth that is distributed fairly across society and creates opportunities for all. (OECD definition) Key indicators: Income inequality (Gini coefficient), employment indicators etc.
Intervention logic	Such logic, also known as programme theory or causal model, explains how a programme or a policy is understood to contribute to a chain of results that produce the intended or actual outcomes or impacts. There are various ways, such as a flow chart or a results chain, to illustrate it.
Key stakeholders	ESM Members and management
Lessons learned	Generalisations based on evaluation experiences with financial assistance programmes and related policies that abstract from specific circumstances to broader situations. Frequently, lessons highlight strengths or weaknesses in preparation, design, and implementation that affect performance, outcome, and impact.
Mixed methods approach	Research approach using quantitative, qualitative, and blended approaches to information collection and analysis, widely accepted as a good-practice strategy for the evaluation of complex programmes.
Outcome evaluation	Evaluation of the likely or achieved short- and medium-term effects of a financial assistance programme's outputs.
Output	The support and services derived from a financial assistance programme; this may also include resulting changes which are relevant to the achievement of outcomes.
Primary audience	The addressees of the evaluation report, including ESM Members, as represented in its governing bodies, and ESM management.
Process evaluation	An evaluation of the internal dynamics of implementing organisations, including their policy instruments, service delivery mechanisms, management practices, and

	the linkages among these. It may further expand to cooperation with partner institutions and member states.
Programme partners	ESM partner institutions and the EFSF/ESM.
PSI	Private Sector Involvement, a voluntary debt restructuring scheme for Greek public debt held by private investors in March 2012.
Purposive sampling	Non-probability sampling typically associated with qualitative research in which a relatively small number of persons, cases or other units of analysis are selected because they can provide particularly valuable information related to the research questions. Also known as judgmental, selective, or subjective sampling.
Short and medium term measures	A series of debt relief measures agreed by the EFSF/ESM decision-making bodies
Stakeholders	Key stakeholders and external stakeholders
ToR	Terms of Reference for the evaluation

Note: The definitions listed provide broad guidance on the general evaluation terminology used in these Terms of Reference.

2. Methodology

2.1 Introduction

This chapter reports on the evaluation process and methodology, complementing chapter 2 of the evaluation report.

The governance and organisational structure for the conduct of the evaluation was set in the Terms of Reference (Chapter 1) at the end of the planning stage. The High-Level Independent Evaluator led the exercise reporting to the ESM governing body. The ESM Sponsor assured the availability of resources for the conduct of the exercise. A specific external advisory group for quality assurance was established to support the evaluation team's work.

This evaluation was structured in six phases, with some overlaps, as indicated in Figure 2.1.

Figure 2.1
Main evaluation process phases

- **Planning phase (February to June 2019)**: Scoping and consultations | Approval of Terms of Reference | Structuring and procurement
- **Inception phase (June to September 2019)**: Conceptualisation | Background studies | Workplan elaboration
- **Data generation phase (August to December 2019)**: Interviews and document studies | Surveys and other QUAN data | Backgroup paper production
- **Data analysis phase (December 2019 to January 2020)**: Coding of interviews | Survey analysis | Social and online media analysis
- **Inference and drafting phase (February to April 2020)**: Additional document analysis | Emerging theories and explanations
- **Consultations (February to April 2020)**: Reviews by HLE | Evaluation Reference Group | Partner institutions
- **Report finalisation (April 2020)**: ESM BoD feedback | Review and approval by High-Level Independent Evaluator
- **Report production (May to June 2020)**: Layout | Production of technical appendices

Source: ESM evaluation team

Planning phase

In the planning phase, the ESM began to conceptualise the evaluation and agreed on an organisational model, including engaging an external evaluator and an external advisory group to strengthen quality assurance of the evaluation given the expected political and societal attention the report could receive. This was formalised in the Terms of Reference.

The mandate for the evaluation came from the ESM Board of Governors (BoG), the highest governing body of the organisation, while the BoG Chairperson appointed the High-Level Independent Evaluator. Following this, a scoping note was presented for discussion at the ESM Board of Directors (BoD). The outcome of the BoD discussions guided drafting of the Terms of Reference (ToR). Drafting also observed the publicly available United Nations Evaluation Group guide for terms of references.

The Evaluation Reference Group reviewed the draft ToR in a teleconference, before the final proposal was discussed by the BoD. The ToR were formally approved and the evaluation launched at the ESM Annual Meeting on 13 June 2019. The BoG Chairperson announced the evaluation in a press conference and a press release.

The ToR outlined the evaluation process milestones, key themes, evaluation criteria, and expected limitations. It put forward some sample evaluation questions.

The evaluation team was formally established after the approval of the ToR. It consisted of six experienced ESM staff members with broad backgrounds in financial assistance policies and policy analysis, who were not involved in the Greek EFSF/ESM programme operations or decision-making. Two consultants joined the team in the inception phase. Four team members held PhDs in a relevant subject matter. The High-Level Independent Evaluator has had a distinguished career in national and European policymaking. Two team members were Greek nationals who provided insights into Greek circumstances, culture, and practices.

Inception phase

In the absence of a formal ESM evaluation policy, the mandate of the High-Level Independent Evaluator, the ToR, and the good practices of international institutions guided this independent evaluation's approach. The inception report translated the ToR into an operational work plan. While the evaluation team conducted some feasibility assessments in this phase, some uncertainties remained on access to the most relevant interviewees and certain data, and the effective resourcing of the evaluation team, given that most team members also had other responsibilities.

Indeed, early engagement with the interlocutors showed that it was not feasible to conduct a planned network mapping study of sufficient coverage among the institutional and political influencers. This study would have helped to position the ESM in the financial assistance operations. As a consequence, it was decided to concentrate on an online and social media analysis for which data access did not rely on interviews or surveys. This analysis is reported in chapter 8.

In the inception phase, the evaluation team held onboarding sessions to create a common understanding of the purpose and objectives of the evaluation exercise. In team meetings with ESM country experts, the evaluation team developed a programme intervention logic. The final result is presented in the infographic on pp. 30 and 31 of the evaluation report. The inception report developed a research strategy for each evaluation criterion and elaborated further on the ToR's sample evaluation questions, mapping potential indicators and available data sources. The team also created a crisis timeline, with contextual references, to support the evaluation process, in particular in preparation for stakeholder interviews.

The High-Level Independent Evaluator endorsed the Inception report. The mandate, ToR, and the inception report guided the evaluation process throughout the evaluation work plan.

2.2 Evaluation strategy

This evaluation used quantitative, qualitative, and blended approaches to collect and analyse data, widely accepted as best practice for the evaluation of complex programmes. Such a mixed-method approach relies on multi-level triangulation of data types, sources, and/or researchers. It can entail parallel or sequential designs of data collection and analysis. The advantage of this approach is the ability to simultaneously ask exploratory and confirmatory questions to better understand the phenomena in context. An intervention logic was set as a theoretical benchmark against which the programme design and implementation was reflected. Individual inferences were made upon collection and analysis of data. Meta-inferences became the evaluation's conclusions, which fed into the High-Level Independent Evaluator's reflection on his recommendations to key stakeholders. The evaluation criteria structured the analysis and the evaluation report.

Data generation and analysis

This evaluation drew upon existing public and internal documentation related to the Greek programmes, documented interactions with a large number of internal and external stakeholders, and various sets of quantitative data. Given the attention the Greek programmes attracted, the available material is abundant and it was unrealistic to study all of it. The team nevertheless searched various libraries for relevant studies that could be used to corroborate the findings made, deadlines permitting.

Document analysis thus took place in the inception, data analysis, and inference phases depending on the strand of work. For example, detailed analysis of the EFSF and ESM financing to Greece was prepared in the inception phase. Similarly, the team prepared contextual analysis that helped frame various events and identify key influencers.

After the inception phase, document analysis and interviews were conducted in parallel. The analysis concentrated on researching official documents on the sustainability aspects and studying recent publications on the Greek crisis resolution.

Sampling

The driving sampling strategy was a type of non-probability sampling, where cases are selected on a judgement basis – known as purposive or selective sampling. It can also be characterised as reputational sampling because the purpose was to extract information from individuals with particular expertise relevant for the study.

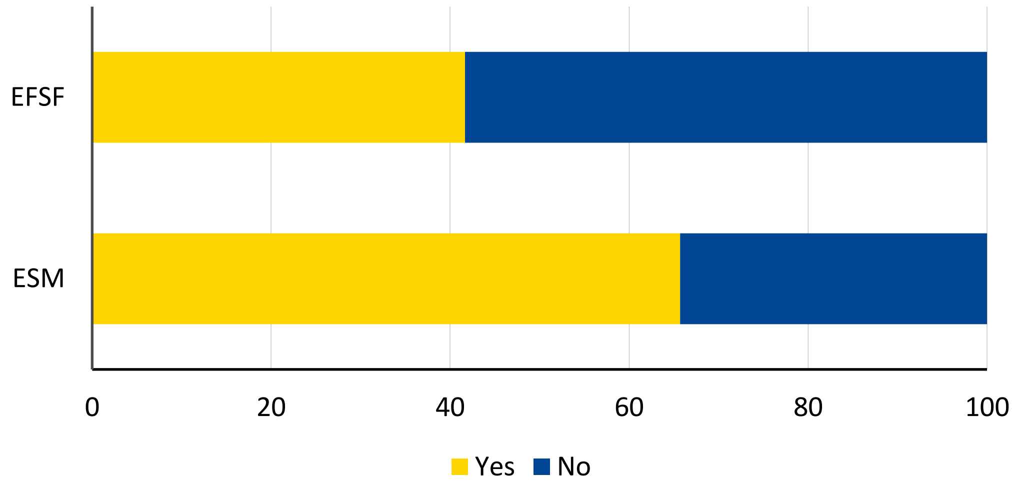
Surveys

- A country expert survey was addressed to selected current and former ESM team members and their managers. All responses were collected but 27% of them were incomplete. This survey included roughly 100 questions and played a role in the evaluation team's preparation for interviews with country authorities and other international institutions. One ESM staff member tested it before its launch.

- A board survey was addressed to current, and in some cases, former members of the BoG and BoD, as well as their alternates, and their staff. In some cases, ESM Members proposed a broader set of respondents from their countries. In total, the survey was made available to 80 respondents. The response rate was 40%, with responses from 14 out of 19 euro area member countries. The board survey provided information to corroborate various issues from the country expert survey and interviews. Some questions also offered additional nuances for the inference stage. Figure 2.2 shows the greater involvement of the survey respondents in the governance of the ESM, the focus of the evaluation, than in the EFSF.

- Both surveys included closed and open-ended questions, and most board survey questions were included in the country expert survey.

Figure 2.2
Board survey respondents' participation to EFSF and ESM board preparations or discussions
(in %)



Source: ESM evaluation team

The surveys were conducted online on a commercial platform that keeps respondents' identity private. Anonymised reports were used for the analysis of the results. Owing to the timing difference between the two surveys, each of them played a specific role in the evaluation process:

- The country expert survey supported preparations for the interviews and further document reviews in addition to providing comparison data for the board survey and the interview results.
- The board survey, conducted later in the process, mainly offered a dataset to corroborate interview results.

Time constraints did not enable a thorough integration of the survey data into the coded interview data set. The board survey results were instead addressed question by question when drafting the evaluation report; the open-ended questions offered particularly valuable information to complement and expand on the understanding gained through programme document and interview analyses.

In the analysis phase, the two survey sets were further compared and contrasted to understand differences and alignments in views.

Interviews

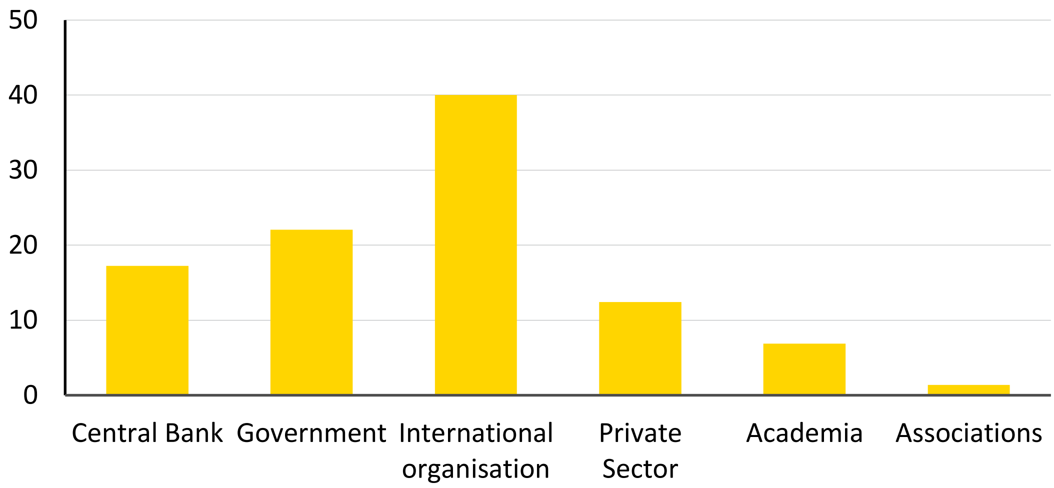
Several strategies were used to approach interviewees.

- The evaluation team approached relevant institutions based on the ESM country expert team's input and previous knowledge about the primary stakeholders of the EFSF and ESM Greek programmes. The partner institutions were free to broaden the list of interlocutors.
- One institution preferred to organise the interaction as technical focus group discussions.
- The evaluation team approached a number of European decision makers and academics directly. The High-Level Independent Evaluator took part in high-level interviews, leading the discussion.

- Where possible, interviews were organised on the premises of the authorities or the Institutions. However, occasionally other fall-back arrangements, such as video conferencing, were used to enable sufficiently broad representation.

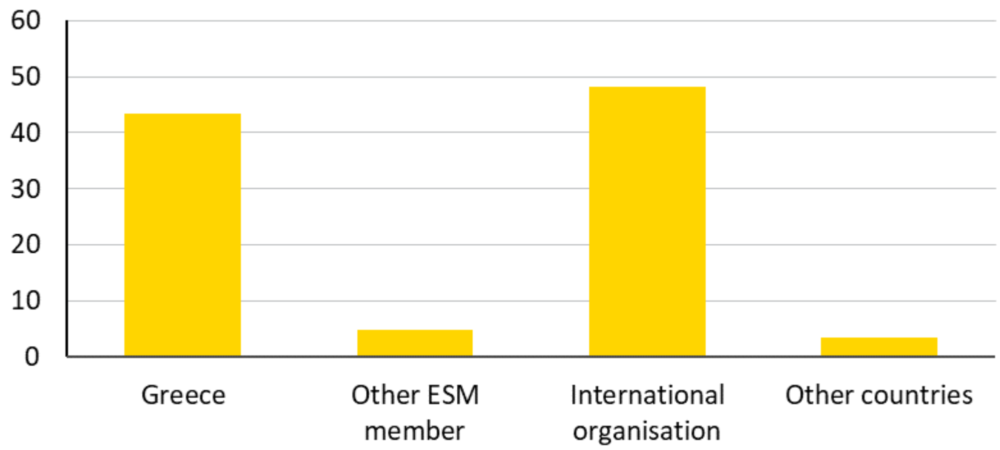
In total, 145 people participated in the interviews. The evaluation team estimated that 30% of the interviewees had held a political position at one point in their careers. Figures 2.3 and 2.4 describe the composition of the participants by their institutional stakes and institutional or country representation at the time of the interview. Figures 2.5 and 2.6 depict the extent of involvement across time, and their roles during the programme involvement.

Figure 2.3
Share of interviewees, by type of institution at the time of interview
(in %)



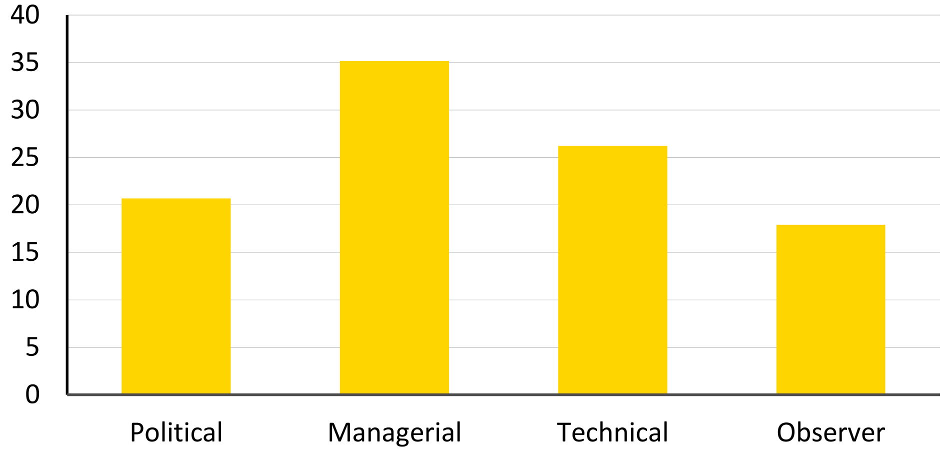
Source: ESM evaluation team

Figure 2.4
Interviewees, by country type
(in %)



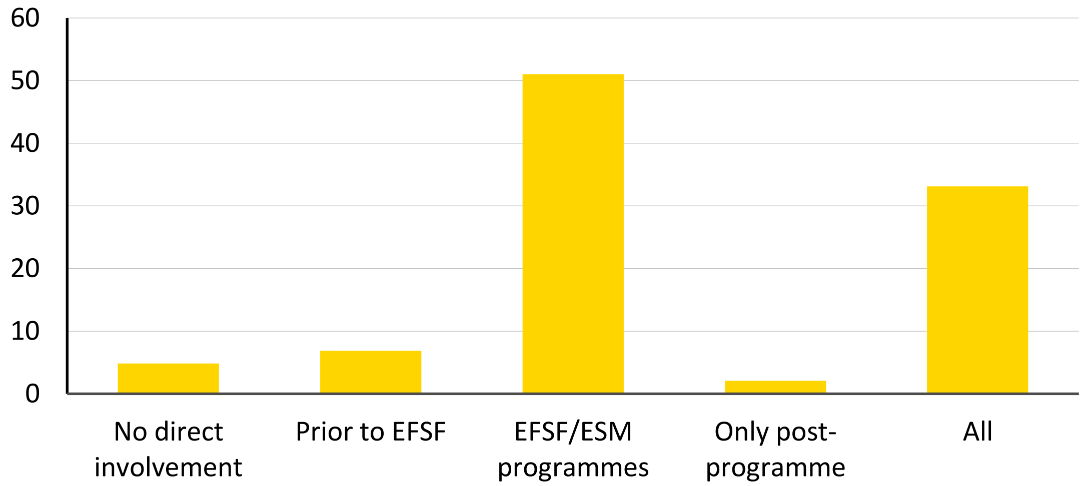
Note: 'Other countries' stands for ESM non-member countries; 'International organisation' depicts persons working for an international organisation or an EU body or agency.
Source: ESM evaluation team

Figure 2.5
Share of interviewees, by role during programme period
(in %)



Note: 'Political' denotes political appointees according to the evaluation team's judgement; 'Managerial' denotes managerial or team leadership; positions in government, central banks, or the Institutions, while 'Technical' denotes technical or expert positions in them. 'Observer' stands for interviewees from the private sector, academia, or who have an implementing role in the public sector.
Source: ESM evaluation team

Figure 2.6
Share of interviewees, by programme involvement
(in %)



Notes: 'EFSF/ESM programmes' denote either of the two programmes or both. 'All' denotes involvement across the crisis period up to 2019.
Source: ESM evaluation team

Interviews were recorded solely with express permission. The audio files were used to produce transcriptions with the help of an automatic transcription service and the results were corrected and verified by a team member against the recording as the quality of the initial transcription did not meet the necessary standard. Another team member checked the outcome before it was uploaded to a secure database for coding, with access restricted to team members only.

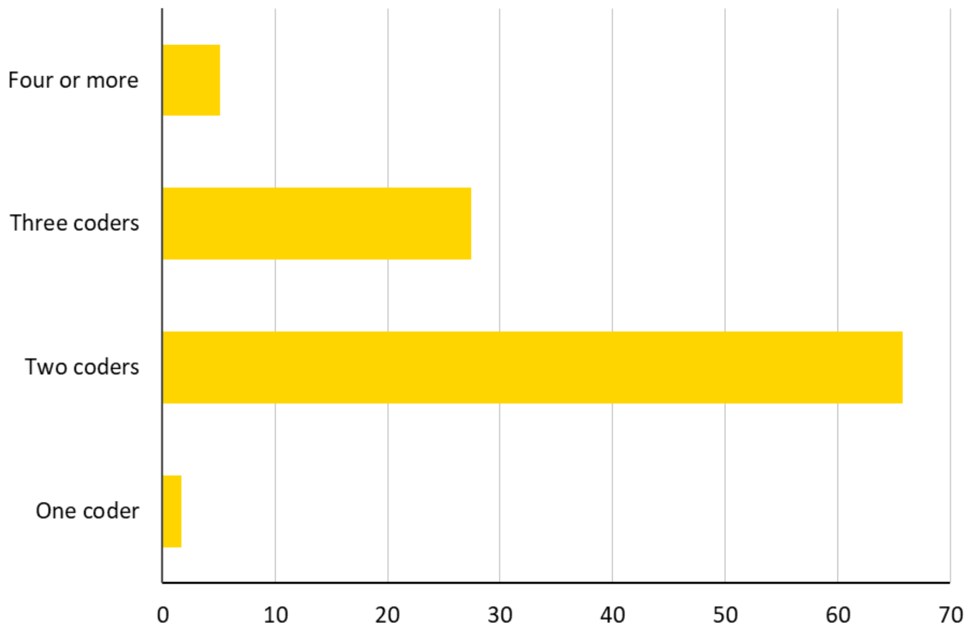
Coding

To analyse the interviews and documents, the evaluation team used a recognised qualitative data analysis software (Nvivo 12 Plus for teams) that allows researchers to organise and analyse a wide variety of data, including documents, images, audio, questionnaires, and web/social media content. The software enabled simultaneous access to sources and tools by team members and incorporates an audit trail.

A training session and test coding helped the team to standardise coding. Each source was entirely coded, known as vertical coding. Following an initial coding round, the coding scheme was enriched but the coders were also allowed to create additional nodes in personal folders as they found relevant topics. The coding policy was based on a principle that one of the two interview team leaders code each interview (Figure 2.7). Time constraints in the analytical phase did not allow for large-scale additional horizontal coding by specific theme.

The team established 19 headline nodes (or themes) most of which contained child nodes for a more detailed analysis. The greatest number of documents was coded to sustainability (124), context (116), cooperation (113), policy area (112), and crisis timeline (112). The greatest number of references nevertheless pertained to the policy area node (1,218), banking (1,056), success factors (965), cooperation (870), financing (844), and crisis timeline (843) themes. The coding policy instructed to focus coding on child nodes. The above numbers reflect the results after aggregation to the headline nodes.

Figure 2.7
Coders, by interview
(in %)



Source: ESM evaluation team

Evaluation phase and consultations

To supplement their own analysis, the evaluation team procured five quantitative and qualitative background papers from various authors as validating input to the evaluation report. In addition, one analysis on Greek debt reprofiling measures was requested internally from the ESM (see Annex 5.3) and the team received further input on bond market evolutions (see Chapter 3.1). These inputs were incorporated in the analysis. The background papers represent solely the views of their authors and have been published in parallel with the evaluation report as ESM discussion papers.

Triangulation

Each assessment topic had a lead evaluator who drafted initial assessments, complementing the findings with documentation and primary or secondary data reviews, following the coding exercise. These assessments were discussed within the evaluation team and, in a second phase, shared with the High-Level Independent Evaluator for feedback. This allowed a second level of inference.

In the report drafting process, the lead evaluator for each chapter involved one or more team members to comment and complement the assessment, integrating understandings developed from other evaluation criteria. The evaluation team manager also commented on each chapter. The efficiency assessment in particular profited from evaluator triangulation.

Inference approach by chapter

The practice of data and evaluator triangulation as well as peer reviews or consultations reduce bias and the uncertainty of interpretation.

The Evaluation Reference Group commented on the first report draft, leading to further specification of the analysis and additional triangulation. It also supported the formulation of draft recommendations. The ensuing draft was circulated to the partner institutions for comment, and the final draft was reviewed and commented on by the ESM's BoD. The evaluation team assessed the extensive comments and the High-Level Independent Evaluator commented on each version and approved the revisions.

The relevance chapter was written using evidence from all the evaluation sources: interviews, board and country expert surveys, programme documents, books, academic literature, and the background paper on spillovers. Interview and survey statements were compared with other interview statements, and against documentary evidence. Almost no inconsistencies were found between factual statements – neither when compared with other statements nor documentary evidence. In those few cases where sources contradicted each other on facts, this could not be triangulated with documentary sources. These cases were not mentioned in the report, though they could have illustrated certain findings. A small number of views were truly outliers and are not represented in the report. Occasionally, outliers were also excluded from a few cross-country comparisons, where special characteristics of certain (mostly small) countries made the presentation difficult. However, the exclusions do not reflect a bias or affect the conclusion drawn in the analysis.

The effectiveness chapter compares publicly available macreconomic, public finance, and banking sector data with the assumed targets laid down in a large number of programme documents. The conclusions drawn are further tinctured by qualitative information gathered during the interview and survey process as well as academic literature in order to provide a more balanced assessment, emphasising the variety of views and different interpretations of the programme elements. Part of the programme financing analysis was conducted during the inception phase. Then the information was processed in a parallel manner. In cases where opposing views or outliers were found during the interview process, the observed economic trends were used to extract policy conclusions. The assessment of the effectiveness chapter was also based on comparisons of the Greek economy with the euro area average and member states with similar structures and fundamentals.

The efficiency chapter benefitted from a sequential analysis of all available evaluation resources and was triangulated across sources and researchers. In the inception phase, programme financing data was analysed by an evaluation team member who changed roles and was later replaced by another researcher (researcher triangulation). A similar approach was adopted when analysing ESM implementation of short-term measures that were first analysed by ESM staff (see Annex 5.3). Another researcher analysed the information submitted and drew conclusions for the report. The sequential approach also characterised the analysis of evaluation interviews. The evidence based on interviewees' views was cross-checked against other available sources, namely programme documentation, academic literature, publicly available economic data, analysis by other institutions, and EFSF/ESM internal documentation. Sections related to the private sector involvement (PSI) reflect the conclusions and information presented in Cheng (2020). Analysis of the assistance to banking sector reform included a data transformation to illustrate differences between the EFSF and ESM programmes. This analysis used programme documents including banks' restructuring plans as well as results from the interviews and survey. The chapter highlights areas where lacking evidence prevented the evaluation team from providing clearcut and reliable conclusions.

The sustainability chapter was also based on a sequential strategy: first document studies helped identify key issues that were then corroborated or contrasted with interview and survey results.[4] Further document reviews and secondary data analysis[5] enriched and expanded the assessment in a last step. Furthermore, an assessment of the contribution of banking sector reforms to sustainability was based on secondary data, document, and interview analysis. The chapter was complemented by the background papers of Cheng (2020) assessing the 2012 private sector involvement linked to the EFSF programme, and Ramaswamy (2020) examining Greek banks' capacity to finance growth. Furthermore, OECD (2020) contributed on the long-term and inclusiveness aspects of programme measures, and Clancy (2020) illustrated the interdependencies among euro area countries. These papers supplemented the evaluation of the sustainability criterion.

The cooperation and partnerships chapter drew from interviews, board and staff surveys, programme documents, previous evaluations, academic papers, and other written sources that include credible accounts by key stakeholders involved in the Greek programmes. Since cooperation considerations and effectiveness of partnerships tend to be based on perceptions, an online and social media analysis was commissioned to triangulate the findings from other sources (for more on this analysis, see Chapter 8 of this Technical appendix). In particular, the online and social media analysis was embedded in the inference process on communication and ESM engagement in Greece, which also profited from data transformation from interviews. However, this analysis also corroborated key findings on ownership and challenges in reform implementation. The Greek crisis was a high-profile event, which at times dominated global headlines. It generated particularly large volumes of newspaper articles, academic papers, evaluations by other institutions, books by policy makers and researchers, documentary series, and even a feature film. Issues covered in cooperation and partnerships drew considerable attention and were the subject of many of these different formats. The evaluation team, therefore, primarily drew from interviews and surveys, and used other sources to complement and triangulate these findings. In this sense, the big data approach of the online and social media analysis provided an important reference point, and ended up corroborating most of the preliminary findings based on the primary sources – interviews, surveys, programme documents, and other evaluations.

Previous evaluations by other international institutions further informed the overall inference process. Their key findings were reported in Box 7.2 of the report.

In the consultation phase, about 63% of comments received during the ESM BoD consultation

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[4] The documents include the official programme and post-programme monitoring documents and mission reports of the institutions (European Commission, ESM, ECB, and IMF), ESM staff and ESM board documents, Eurogroup documents, including official statements, summing-up letters and remarks by the Eurogroup president, as well as reports, studies, and papers by private and public institutions (e.g. OECD, ECA), think tanks (e.g. Bruegel), academia, rating agencies, and press articles.

[5] These include key macroeconomic and financial data for Greece and the euro area average from programme documents, Greek national authorities (e.g. PDMA), international institutions (e.g. World Bank, OECD, Eurostat) and databases (e.g. Ameco).

had an effect on the final report drafting, increasing the accuracy of the reporting. The informal comments from the peer consultation were also considered.

Limitations and risks of the evaluation

The inception phase included a risk analysis. Table 2.1 includes the initial assessment and highlights some key effects.

The evaluation agenda was adjusted to available resources and data access as foreseen in the ToR. Initially a stakeholder network analysis was planned to accompany the online and social media analysis conducted. However, during the interview phase it became evident that the organisational culture did not consider it appropriate for people to identify their key counterparts or collaborators. Data collection required for the network mapping was therefore not possible to an extent that would have allowed a sufficiently robust study. It was considered that the concerns were likely to exist also in a survey-based data collection.

The evaluation plan was also adjusted to take resource constraints into account. The reporting deadlines created a strained work process combined with the part-time availability of most team members for the exercise given their regular duties. This led procedurally to some loose ends and additional iterations. For example, the reconstitution of the intervention logic was not fully complemented with interview findings, especially for the causal pathways between strategies and effects, and the assumptions, which would have been a challenging task in any case. Where necessary, the team reflected instead on a more generic model from its 2017 evaluation of financial assistance. This compensates somewhat for the omission. More elaborated causal pathways would have been necessary if the evaluation had endeavoured to assess sectoral polices in detail and make policy recommendations at that level. The composition of the interview team was also constrained at times due to limited subject matter expert availability.

One comment received during the consultation process was that Greece was too special a case to make generalised recommendations. A few reflections are warranted here:

1. The purpose of the evaluation was to support the ESM as a learning organisation, and to learn lessons for future stability programmes. It did not aim to evaluate Greece itself but rather the ESM's provision of assistance, including its partnership with other institutions for the Greek programmes. The lessons, key takeaways, and contributions by experts and decision-makers both involved in the programmes and independent thereof should enable the institutions to take precautions when a future occasion presents itself against the many inefficiencies incurred or understandable mistakes made.
2. The argument of Greece being a unique case is frequently presented as an elegantly veiled excuse for missing programme objectives. The ESM and its partner institutions nevertheless need to be able to conduct relevant and effective financial assistance in a range of countries that are diverse and that have developed unique economic, legal, and societal norms and institutions. While these may provide challenges, the institutions should be able to foresee the circumstances, and strive to develop the necessary skills and guidance to cope with them. Allowing for uniquely special cases may inhibit organisational learning.
3. Though each country is unique, none has developed in complete isolation. Past and recent exchanges have resulted in important parallels between individual countries and groups of countries, which were probably magnified by a process of European integration and the interdependencies inherent to a currency area. Many interviewees spontaneously mentioned important parallels between Greece and other countries, and presented their lessons learned in specific contexts. Although the experience of a

country programme could never be extrapolated to another country – or even the same country, since circumstances change, too – insights emerge that can be used in other cases.

This evaluation's recommendations are firmly rooted in its findings, but they have been abstracted from the specific country case. They are directed at the ESM's leadership, which is expected to consider them and provide follow-up – or not, to the extent it deems appropriate or feasible. Moreover, many findings and conclusions reflect issues already highlighted in evaluations of other programmes conducted by other institutions.

The evaluation team conducted an initial risk assessment during the inception phase and identified potential issues as indicated in Table 2.1.

Table 2.1
Risk assessment

Risks	Foreseen mitigation measures	Realisation
Time constraint	Reduced depth of analysis. Prioritisation on the scope.	Focus on institutional partnership instead of deep sectoral analysis. Some text boxes were added for better coverage when time allowed. An in-depth evaluation of the Greek Early Warning System process was not possible with the resource envelope.
Access to key stakeholders	Early contacts with the Institutions. Requested a contact point from the Greek authorities. Several missions organised to Greece. Involvement of High-Level Independent Evaluator in high-level meetings.	A very small number (fewer than 10) of envisaged high-level and technical interviewees were not available on scheduled travel dates or for phone interviews. Board survey response rate was low despite extended response time.
Challenging access to required documentation	ESM's internal filing plan may help. Access to early Committee/policy documents and write-ups related to Greek crisis and PSI may require contacts with the Commission and the member states.	Document access was in general terms satisfactory. But programme period calendars of key persons were not available.
Key person risks	Documents and data are kept on shared workspaces. Early teamwork and engagement in evaluation to increase commitment. Discussions with project sponsor on allocation of	One team member left the ESM. Replacement happened in the analytical phase. Consultant workload increased in various phases of the evaluation. One study foreseen was conducted outside the evaluation team.

Risks	Foreseen mitigation measures	Realisation
	team members' time and external resource use.	
Availability and reliability issues of primary or secondary data	Use proxies or alternative estimation approaches (quantitative or qualitative).	Granular Early Warning System reporting data was not accessed which could have helped to further corroborate some interview and survey narratives. Reporting lags of some official statistics limited the most up-to-date analysis. In some cases recent forecasting data was used to compensate.
Transcription phase may consume analysis time	Explore external services of quality. Limit transcription to interviews in which narrative extraction is a priority.	Although automated transcription service eased work load slightly, transcription tasks extended too much as the output quality still required manual checking, which delayed the start of the coding phase. It was not considered possible to outsource transcriptions to external persons given the confidentiality of the interviews.
Lack of Theory of Change (TOC)	Team reconstructs the TOC in consultation with the ESM country team and other stakeholders in an iteration. Avoid inventing detail that does not exist.	No explicit consultation on the TOC was conducted with external stakeholders. Iterations on the intervention logic supported team alignment.
Getting lost in complexity	Creating awareness of: - attribution difficulties due to numerous participants/measures - partners usually have differing perspectives and incentives, formal objectives, criteria for participation, decision-making processes; - lacking coherent programme goals. Structuring the evaluation team of senior experts with subject matter knowledge and experience, supported by external high-level leadership and guidance.	The advisory group proved to be of valuable support and the involvement of the High-Level Independent Evaluator required the team to explain and clarify assessments. The external peer review consultations were nevertheless hampered by the Covid-19 pandemic, limiting consultations to a teleconference and written comments.
Common understanding of the	Team training, group discussions, and workshops.	Own quantitative research was eliminated from the work plan upon

Risks	Foreseen mitigation measures	Realisation
approach and methodologies	Keep methodologies as straightforward as possible.	advice from the Evaluation Reference Group to save resources.
Consistent approaches in qualitative data collections	Interview protocols to guide towards consistent results. Teamwork on the intervention logic supported focus on essentials.	
Political constraints in addressing institutional arrangements	November 2018 joint position on future cooperation between the ESM and the European Commission as a starting point for assessing how post-programme activities serve the ESM's purposes.	The evaluation approach took the arrangements as a given but the results from the various data sources pointed to incompleteness, which led to some recommendations by the High-Level Independent Evaluator. The fluidity of the practices over the Greek crisis nevertheless complicated the reporting process, and did not always contribute to detailing the exact timing, e.g. between the EFSF and ESM programmes, or institutional attribution of a particular feature.

Source: Evaluation team

2.3 Elaboration of intervention logic

An intervention logic or theory of change is a detailed description of the mechanisms through which a change is expected to occur in a particular situation.[6] The Kellogg Foundation provides well-known models and guidelines, some of which were used to develop the intervention logic for this evaluation.[7]

Though a common tool for programme design and evaluation in the development community, its use in sovereign crisis interventions is – unfortunately – less widespread. None of the Greek financial assistance programmes were designed or implemented through the use of an intervention logic. Therefore, the evaluation team resorted to reconstituting an intervention logic. On the basis of programme documentation, the team identified the various components that make up an intervention logic: central problem, strategies, assumptions, community needs, and effects. Each of these components are described further below. The creation process included consultations with the ESM country expert team.

The team faced a few formidable obstacles in resconstructing an intervention logic for the consecutive financial assistance programmes for Greece. It is a complex subject with numerous interlinkages between the financial sector and the real economy, and the societal and political processes involved have a large number of stakeholders across many policy areas. These factors made it impossible to map all the programmes' causal pathways (identified to assess effectiveness), and difficult to map even the most important ones.

Given the high level of abstration, it was at times difficult to assign programme aspects to a specific part of the intervention logic. For example, the team initially mentioned euro area integrity cumulatively under context, community needs, programme strategies, and assumptions. In the end, it was represented as a strategic objective, but only after it became apparent from some of the interviews that it featured as paramount among decision-makers – rather than an assumption underlying the programmes, or an influential factor outside the programme's direct sphere. But in addition, the topic features under community needs – both for the euro area and for Greece – and under assumptions, which shows how fundamental it was for the programmes, albeit probably to varying extents during various phases of the programmes.

Another obstacle was that even if legally and formally separate, the programmes in fact presented a continuum, where both programme conditionality and its effects spilled over from one to the other. Intervention logic is often used to evaluate projects or programmes that are more concrete or that cover a more limited period of time, which better allows to take a 'snapshot' of the situation. But the Greek programmes cover a time span of almost a decade, and various intervention logic components evolved during this period. Even the central problem (threatened loss of market access – fear of contagion – concerns on euro area integration) evolved over time, as the instability in Greece presented fewer spillovers to other euro area member states in the later programmes than in the early programme years. Another example is programme ownership: it was challenging to draw a 'static' picture of this contextual component of the intervention logic, as it was assumed to be present in the early phases and to be lacking later on, which led to micromanagement. This in turn exacerbated implementation capacity issues, etc.

Despite those challenges, the reconstituted intervention logic is as follows.

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[6] Definition taken from the World Bank, accessible at http://dimewiki.worldbank.org/wiki/Theory_of_Change, which provides further useful reading.

[7] See https://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide for further information.

The **central problem** is represented as a vicious circle: the threat of loss of market access for one country (Greece) leads to concerns about the euro area's integrity (forced exit, not legally but de facto), which raises fears of spillover and contagion and feeds back into a threat of loss of market access. Though these concerns and fears probably flared and tapered over time, the team saw this as the dynamic at play.

The **programme strategies** were identified as prioritisation of public deficit and debt reduction; an improvement in production and competitiveness and long-term growth, the restoration of confidence and payment culture; the minimisation of contagion; and the disbursement of large cash buffers as a primary exit strategy. The programme documents (MoUs, reviews) and the interviews provided ample evidence that these were the main strands of the programme strategies, even if there were overlaps (for example between prioritisation of public deficit and debt reduction on the one hand and restoration of debt sustainability on the other – or between improving inclusive growth and debt sustainability). Also, some strategies featured less prominently on paper than they did in other evaluation sources, like the interviews or background papers. And some strategies, even if present on paper from the early phases, were implemented only later, or with lesser ambition.

Influential factors (or context) in a series of country programmes like these (and in crisis times as covered by this evaluation) are many. Repercussions of the global financial crisis influenced policymakers' thinking, even if to a lesser degree as time went on. Greece having a fixed exchange rate as a feature of being in the euro currency area also had a fundamental impact on programme design, and limited policy options to internal devaluation (as for other EFSF/ESM Members). Another influential factor were the ECB's non-standard monetary policies: without them, the Greek programmes would have looked very different – the effects being many, and through different channels – even though a number of interviewees highlighted that, ironically, some of the bond-buying programmes were criticised for being distortionary in some countries whereas they did not directly benefit the country that needed them most, as Greece was not eligible. Another factor that had a major influence on the programmes were the capital controls that were imposed. It was often cited how this produced unintended consequences especially on payment culture.

Though the evaluation focuses on the role of the Institutions and not of Greece, administrative capacity and low levels of trust were identitied as having substantial influence on the programmes' design and implementation. A country's administrative capacity is a key variable of programme implementation that fed back into programme design. The effects of low levels of trust were seen surfacing in many areas, ranging from (the need to increase) the functioning of the judicial system to programme ownership and negotiation dynamics. Given that the influence channels are many, more research on how trust affects country programmes could prove valuable to increase the relevance and effectiveness of programmes in countries with similarly low levels of trust. Also on the Greek side, fiscal and reform fatigue were seen as important influential factors – and a better understanding of how to prevent or reduce it could inform future programmes, especially where deep structural reforms that require time to produce effects are needed.

Progress on banking union was also considered an important influential factor in the Greek programmes – especially single supervision and harmonised rules on restructuring and resolution had important ramifications for the EFSF and ESM programmes. The importance of statistical misreporting as an influential factor was highlighted not only because it was (perceived as) the trigger for the Greek programmes, but also because the programmes (and their credibility) rely on accurate and timely data. The last influential factor identified in the intervention logic were the challenges of inter-institutional cooperation – not least for the programme country.

Identifying the **assumptions** underlying the programmes was the most challenging part as programmes like these tend to be connected with (economic) world views, and the team didn't venture too far into that territory. In fact, the assumptions shown should be seen as examples rather than a comprehensive list, as the team did not want to lend more credibility to one over another. The first assumption was that the fiscal policy mix chosen would be effective to attain the programme objectives, and that this would also be true in the context of an internal devaluation. The integrity of the euro area being a red line was corroborated – both by the facts and in the interviews – but as set out in the introduction this was also defined as a strategic objective, which shows is was not an assumption shared by all, or at all times throughout the programmes. The default of a three-year programme period also featured as an assumption, and one on which the report takes a more explicit position. Another assumption was: PSI sets investor incentives right. This was indeed questioned by some interviewees – but at the same time the team found limited evidence that this assumption drove decision-making on the 2012 debt restructuring. The assumption on ownership and administrative capacity, and how it changed over the life cycle of the programmes has already been described in the introduction, and the assumption that granularity of conditionality improves implementation should be seen as a corollary assumption to that. The last assumption posited that a recapitalised banking sector would promote growth.

The box on **community needs** reflects what the team identified as the broader community needs, with a distinction between the Greek and euro area levels, for the Greek programmes. At the euro area level, the team identified a need for the countries and the institutions involved to develop a capacity to act as one because cross-border crisis resolution requires decisive steps that are supported by all involved. Euro area integrity as an assumption was already discussed in the introduction, both from the euro area level and for Greece. An immediate need identified for Greece was to obtain emergency funding, being a key feature of the ESM intervention. To have sustainable and inclusive growth in the country was also defined, which could have also featured at the euro area level as a precondition for country ownership, societal support, transformation, and repayment capacity. The same can be said for employment, financial stability, and political ownership. The team identified the restoration of sustainable public finances and of competitiveness to demonstrate that with a 15% twin deficit, a change naturally needed to occur. A few interviewees, including from Greece, highlighted this point, stressing that however brutal the programmes' effects, the counterfactual scenario would have been worse.

Another community need identified was that of a modern social safety net (which the county was found to lack). This is arguably the case for any civilised country, but it became especially evident in the context of a country programme in a currency area which implied internal devaluation. This community need was mentioned several times as an important lesson for potential future programmes. The notion of internal devaluation points to some overlap with another community need mentioned namely to change the distribution of the burden of the adjustment, which became explicit during the ESM programme.

The last community needs mentioned relate specifically to the role of the programme institutions: to develop a profound understanding of the country and its economy, the need to come up with a shared diagnosis of the problems and to develop effective solutions customised to the country context. Many interviewees also highlighted the need to have reforms explained to the public, primarily by the government but also by the institutions involved in co-designing them.

The team attempted to disentangle the most important programme **effects**, distinguishing between **immediate and intermediate outcomes**, and a more long-term contribution of the intervention called **impact**. Theoretically, the subject of the evaluation (the ESM, including its partner institutions) would have the most control over the short-term effects, less over the medium-term, whereas its control over the long-term would be limited to a contribution to the efforts made by other actors. As a first immediate outcome, the team identified a deep reduction of public expenditure and increased public revenue. Labour and product market reforms also feature as having effects in the early programme phases, and the country’s gross financing needs were covered by financial assistance: programme disbursements, the PSI sweetener and in kind bank recapitalisations (obviously the PSI generated revenue directly but this is not mentioned as this did not come from EFSF/ESM). Short-term outcomes were also achieved in the area of strengthening and furthering the independence of institutions. However, this came with unintended consequences, essentially a deep recession in which there were many bankruptcies and unemployment soared. Public investment also dried up and healthcare and education systems were damaged.

Then, as more medium-term effects of the programmes, the team identified a balanced budget (later primary surplus), a process of internal devaluation, and increased confidence and market access. In the financial sector, asset quality improved and credit activity restarted. Also, in the later programme phases, the burden of the adjustment was thought to be shared more fairly, and administrative capacity improved.

In the long term, the programmes should show an impact on the sustainability of public finances, restored competitiveness and growth, improved debt sustainability, and a restoration of financial stability. One would also expect a degree of societal transformation to have taken place, and a sustainable improvement in the quality of life. To loop it back to the ESM – and to illustrate the interdependence of euro area countries – this should enable the repayment of the loans provided.

A keen observer will have noted that some of the short-term effects have already materialised (at least to some extent), while some of the intermediate outcomes were in process at the end of the evaluation period. As highlighted in Chapter 6 of the evaluation report on sustainability, it is too early to witness substantial lasting impacts of the Greek financial assistance programmes.

ANNEX 2.1 Evaluation schedule

Phases	Activities	Key dates
Planning	The BoG Chairperson appoints the High-Level Independent Evaluator (HLE)	21 February 2019
	Consultation of BoD on a scoping note	26 March 2019
	ERG review of draft ToR	14 April 2019
	Draft ToR presented to BoD for endorsement	2 May 2019
	ToR approved by BoG	13 June 2019
Inception	HLE briefing on the work plans	17 July 2019
	Consultation of Evaluation Reference Groupon draft Inception report	30 August 2019
	Inception report to HLE	6 September 2019
Data generation and analysis	Conduct of ESM staff and management survey	9 September to 4 October 2019
	Interview schedule initiated	11 September
	HLE briefing to ESM Board of Auditors	17 September 2019
	Interviews with the Institutions and Greek authorities completed	28 November 2019
	HLE interim reporting to BoG	4 December 2019
	Interview transcripts and coding	November 2019 to January 2020
	Draft report structure	5 December 2019
	Board survey	Up to 16 December 2019
	Social and online media analysis	December 2019 to January 2020
	Complementary interviews completed	21 January 2020
Inference and consultations	Review of initial draft assessments	31 January 2020
	First draft Evaluation Report	24 February 2020
	ERG review of draft report	28 February 2020
	Second draft Evaluation Report	13 March 2019
	Definition of draft recommendations by HLE	13-19 March 2019
	Third draft of Evaluation Report	18 March 2019
	Consultation with management	18 March 2019
	Briefing to BoG Chairperson	21 March 2020
	Consultation with Institutions	25 March 2020
	Draft report shared with BoG Chairperson	26 March 2020
	Draft submitted for consultation with BoD	30 March 2020
	HLE briefing to the ESM Board of Auditors	1 April 2020
	Consultation with BoD	6 April 2020
	Collection of written comments	9 to 15 April 2020
	Processing of written comments	13 to 22 April 2020
	Report approval by HLE	28 April 2020
	Distribution to BoD	30 April 2020
Reporting, dissemination	Final layout	4 June 2020
	Publication and reporting to the BoG	11 June 2020

3. Appendices to Chapter 3 – Relevance

This appendix complements the evaluation report's Chapter 3 assessing the relevance of the Greek programmes. It contains further background analysis on bond market spillovers by experts outside the ESM evaluation team.

Contribution of Greek financial assistance programmes to reduce spillover risks

Authors: Martin Hillebrand, Peter Schwendner

Contagion risks originating from Greece significantly decreased during the GLF and EFSF programmes, and mainly disappeared during the ESM programme when Greek bond market dynamics decoupled from the rest of the euro area, as bond spread correlations demonstrate. This suggests that the Greek financial assistance programmes contributed to the improved overall euro area financial stability.

During the Greek programmes, news on Greek financial stability drove daily bond market movements. Strong positive bond return correlations indicated that such news reports had similar effects on the correlated bond markets. Both the announcement of a referendum on the conditions of the third programme on 27 June 2015, and the outcome of this referendum on 5 July 2015, exemplify the impact of news on euro area markets. While synchronous market behaviour is not a negative pattern as such, it can signal spillover risk in times of distress. More specifically, correlations between bond price changes may depict flight-to-safety patterns: investors reduce their portfolio risk in response to adverse news by selling a riskier bond while buying less risky ones. In reaction to good news, they tend to re-allocate their capital into riskier bonds.

Pairwise bond return correlations help detect such patterns of financial distress. Bonds of some countries (Greece, Italy, Spain, Portugal, Ireland, initially Belgium) developed positive correlations among each other, while negative correlations prevailed towards other bonds (Germany, Netherlands, Finland, Austria, and France). The former group is labelled 'periphery' and the latter 'core'. Figure 3.1 displays the pairwise country correlations, which are dominated by core-periphery structures.[8] Highly positive correlations appear in dark blue and low correlations in green to orange; dark red signals a significant negative correlation.

This study investigated market sentiment during and between the three Greek assistance programmes to identify contagion risk in these periods. Notably, when defining the start- and end-dates of each time window, the analysis was not necessarily restricted to the formal signature dates. Instead, time windows were selected using moments when publicly available information led markets to believe, or 'price in', a high probability of the event taking place. The windows are hence selected based on a combination of news flow and market data analysis resulting in the following observation windows: May 2010 to September 2011 (GLF financed programme), February 2012 to June 2015 (EFSF programme), July 2015 to August 2018 (ESM programme), the period between the GLF and the EFSF programme, and the time after the ESM programme.

During the GLF programme, contagion fears hit the periphery bond markets. Greek bonds moved in significant negative correlations (red colours) to the core bloc (Figure 3.1a): Greek bond yields rose while the core market yields declined. This took place as news impacting market

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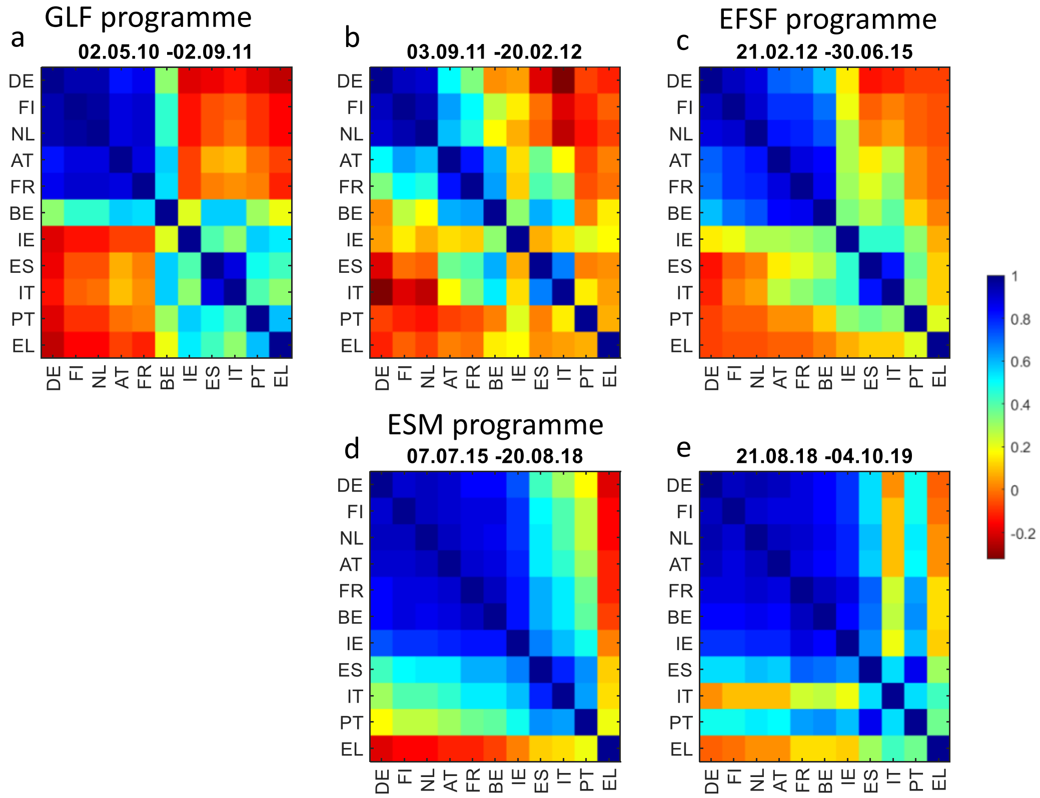
[8] Further explanations to this approach can be found in "European Government Bond Dynamics and Stability Policies: Taming Contagion Risks" (with Peter Schwendner, Martin Schuele, Thomas Ott), Journal of Network Theory in Finance 1 (4), 2015.

participants' assessment of Greek solvency led to flight-to-safety patterns. Other peripheral countries (Portugal, Spain, Italy) also showed similar patterns. Investors assumed that there was a substantial likelihood that market participants would reallocate investments from periphery bonds into safe havens. In other words, they assumed a flight-to-safety risk for the bonds issued by the periphery countries, which we can interpret as contagion fear.

Figure 3.1
Correlation heatmaps of bond returns



Note: Every coloured tile in the heatmap represents the correlation between the 10 year bond returns of the countries of the respective row and column. Correlations range between -0.3 (30% negative correlation, bond returns mostly move in opposite directions, dark red) to 1 (100% positive correlation, bond returns always move in the same direction, dark blue).
Source: Own calculations, Bloomberg

In the autumn of 2011, the euro area financial crisis was broadening. Greece remained the member state under the most severe financial stress, and fears about the breakdown of the programme were mounting.[9] Investors increasingly discussed the possibility of a debt restructuring, which had been suggested on the political level.[10] These discussions fuelled market concerns that this could set a precedent for other euro area member states, adding to the perceptions of contagion risk from Greece.

Figure 3.1b shows that in the six months leading up to February 2012, Greece and Portugal were negatively correlated (red colours) to both the core and semi-core bloc, i.e. market participants deemed these two countries the most vulnerable. Spain and Italy remained negatively correlated only to a reduced core bloc (red colours only between Italy, Germany, Netherlands,

[9] https://www.bruegel.org/2011/09/greece-quo-vadis/.

[10] https://www.reuters.com/article/us-eurozone/greek-debt-write-down-must-be-larger-german-finance-minister-idUSL5E7LG0LK20111016.

Finland). The other part of the core bloc was slightly drifting towards the periphery, due to the downgrades of Austria, France, and Belgium. Market participants labelled this second group of countries a as 'semi-core' bloc. The blue colours between the countries of the semi-core confirm this label. Hence, overall, contagion risk remained, with an increasingly complex and multi-tiered market structure. Greece in particular remained negatively correlated to the core bloc, and the correlation with the other peripheral countries was close to zero, a first sign that Greece was separating from other peripheral countries, as market sentiment shifted.

During the EFSF Greek programme, contagion risk measured by the bond market correlations was contained to the periphery and had diminished slightly. In the heatmap for the period between February 2012 to June 2015 (Figure 3.1c), the negative correlations (red colours) of Greece and the rest of the periphery with the core bloc appear to be slightly less negative than before, though they increased on average by 8%. This simplified view indicates that contagion risk was gradually decreasing. The correlations between the core and semi-core blocs increased again (blue colours with far less substructure compared to Figure 3.1b). Overall, the correlations indicate that markets were regarding the crisis as contained to the periphery (the core bloc had re-established itself), but the structural financial problems were not yet solved (the periphery remained negatively correlated to the core). The dominating role that the programme-related news played for the euro area bond market suggests that the EFSF Greek programme may have contributed to the stabilisation of overall sentiment in the euro area.

The transition to the ESM from the EFSF programme in 2015 was procedurally complex. In late-June 2015 it was becoming increasingly unclear if Greece would apply for a programme extension, and market concerns culminated around the Eurogroup of 7 July.[11] Subsequently, the anxiety eased by the Euro Summit on 13 July, which signalled the likely start of the third programme, financed by the ESM[12] – even if it was formally launched only in August.

During the ESM programme, contagion risk from Greece declined considerably even within the periphery. Greece showed significant negative correlations to the core bloc and correlations close to zero to Spain, Italy, and Portugal (Figure 3.1d) from July 2015 to August 2018. The core and semi-core markets consolidated into one as the substructure disappeared, and Ireland fully reconnected to the core bloc. The markets acknowledged Greece as a special case that was contained by the assistance programme.

After the ESM programme (August 2018–October 2019), all previous programme countries' bond markets were reconnecting to the core bloc, except for Greece. We attribute this to a further decrease of contagion. Furthermore, the correlations of Greek sovereign bonds with the core bloc were becoming less negative, a sign of further confidence in Greek financial stability. Even temporary disturbances in other peripheral markets such as the European Commission's budget negotiations with the Italian government[13] did not worsen the Greek correlations compared to the period of the ESM programme (Figure 3.1e).

3.1 Methodological background

The methodological approach used in this study evaluates financial market contagion risk from Greece based on bond price dynamics. Changes in bond spreads reflect adjustments in investors' risk assessment as a consequence of political or economic events. The model's fundamental behavioural assumption of investors is their reallocation of capital (sovereign bond

[11] https://www.consilium.europa.eu/en/press/press-releases/2015/07/07/dijsselbloem-statement/.

[12] https://www.consilium.europa.eu/en/press/press-releases/2015/07/13/press-remarks-dijsselbloem/.

[13] https://ec.europa.eu/commission/presscorner/detail/en/IP_18_6174.

holdings) to safe havens when the perceived ratio of risks to returns in specific markets disproportionately deteriorates, also known as flight to safety. As a proxy for such political or economic shocks that drive flights to safety the study uses major news events related to the Greek crisis and the respective financial assistance programmes. All relevant news that the study is referring to can be found in Bloomberg and Reuters, which are the main news sources for most market participants.

To identify the periods where markets diverge, react synchronously, or adversely, the study analyses correlations of sovereign bond yield returns. These correlations do not imply any causality. Instead, the interpretation of the correlation patterns relies on plausibility and judgement. Also, this method does not involve any time lag. It addresses only simultaneous effects, consistent with the assumption that news impacts bond prices simultaneously.[14]

3.2 Conclusion

Overall correlation patterns show that contagion risk from Greece had decreased from the first to the second programme, and was virtually eliminated with the third programme. Dynamics of the Greek bond market have decoupled from peer markets, such as Portugal and Spain. Given the Greek financial situation was dominating the news and affecting the euro area bond markets during the programmes, this hints to the success of the three programmes and improved news flow on Greece over time. After the end of the third programme, news on Greece was no longer dominating the bond markets in the financial press, and other reports were not creating similar correlation patterns over longer periods: recent disturbances, like those stemming from the Italian budget negotiations, did not spill over to other markets.

3.3 References

Peter Schwendner, Martin Schuele, Thomas Ott, Martin Hillebrand (2015), "European Government Bond Dynamics and Stability Policies: Taming Contagion Risks", Journal of Network Theory in Finance 1 (4).

Peter Schwendner, Martin Schüle and Martin Hillebrand (2019), "Sentiment Analysis of European Bonds 2016–2018" Front. Artif. Intell. 2:20

3.4 Further reading on bond market spillovers

Acharya, V., Drechsler, I., and Schnabl, P. (2014). A pyrrhic victory? Bank bailouts and sovereign credit risk. The Journal of Finance 69, 2689-2739.

Afonso, A., Arghyrou, M.G., and Kontonikas, A. (2015). The determinants of sovereign bond yield spreads in the EMU. European Central Bank Working Paper Series No 1781.

Afonso, A., Arghyrou, M.G., Gadea Rivas, M., and Kontonikas, A. (2017). Whatever it takes to resolve the European sovereign debt crisis? Bond pricing regime switches and monetary policy effects. Cardiff Economics Working Papers, No. E2017/12.

De Bruyckere, V., Gerhardt, M., Schepens, G. and Vander Vennet, R. (2013). Bank/sovereign risk spillovers in the European debt crisis. Journal of Banking & Finance, 37, 4793-4809.

[14] More details on the methodology and about related approaches can be found in Peter Schwendner, Martin Schüle and Martin Hillebrand (2019), "Sentiment Analysis of European Bonds 2016–2018" Front. Artif. Intell. 2:20.

Delatte, A.L., Fouquau, J., Portes, R. (2017). Regime-dependent sovereign risk pricing during the euro crisis. Review of Finance, 21, 363–385.

Ehrmann, M. and Fratzscher, M. (2017). Euro area government bonds–Fragmentation and contagion during the sovereign debt crisis. Journal of International Money and Finance 70 (2017): 26-44.

Gilberts, N (2019) Euro area sovereign risk spillovers before and after the ECB's OMT Announcement, De Nederlandsche Bank working paper No. 636, May 2019.

De Santis, R.A., (2014). The euro area sovereign debt crisis: Identifying flight-to-liquidity and the spillover mechanisms. Journal of Empirical Finance, 26, 150-170.

De Santis, R. A. and Zimic, S. (2017) Spillovers among sovereign debt markets: identification by absolute magnitude restrictions, ECB Working paper No 2055, May 2017.

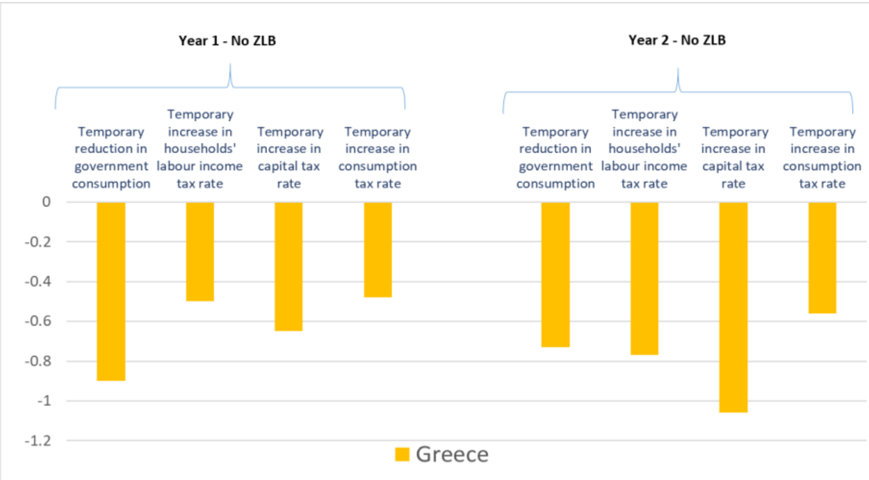
4. Appendices to Chapter 4 - Effectiveness

This appendix complements the evaluation report's Chapter 4 on assessment from an effectiveness perspective. It displays quantitiative evidence that supported the assessment of the feasibility of fiscal policy targets and the adherence to a growth-friendly policy mix. (Chapter 4.1) In addition, this appendix provides additional evidence for the macroeconomic adjustment with a view to cost competitiveness, e.g. inflation (Chapter 4.2). The appendix contains quantitiative and qualitative information on certain characteristics of the banking sector discussed in Chapter 4.6 of the report. It provides further details on Greek banks' liquidity and capital position, historical and international comparison of market concentration, and the effectiveness of loan enforcement measured by the World Bank Doing Business Indicators. Differing interviewee views about the possibility of setting up an asset management company and the evolution of commercial banks' board compositions are summarised in various charts.

The charts presented are prepared based on publicly available data and interviews conducted by the Evaluation Team.

According to Kilponen et. al. (2019), in the presence of no zero lower bound conditions, while in the first year after the shock government consumption spending multipliers are slightly higher than the revenue multipliers, in the second year the cumulative multipliers for revenue categories (capital and labour income taxes) are higher than the government consumption multiplier.

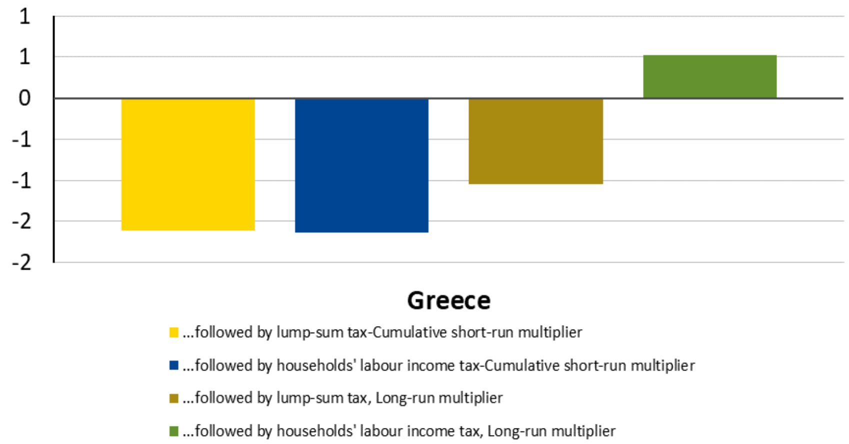
Figure 4.1
Fiscal multipliers in Greece–temporary shocks and actual deviations from the baseline steady state



Note: Figure for endnote 47. 'ZLB' depicts zero lower bound interest rate constraint.
Source: OECD (2020)

In the long run, there are positive growth effects from a ''budget neutral' reduction in government spending followed by a reduction in labour income tax.

Figure 4.2
Short- and long-run fiscal multipliers: Permanent reduction in government consumption



Note: Figure for endnote 47.
Source: Kilponen et al. (2019)

The European institutions and Greece agreed to maintain a high primary balance surplus of 3.5% of GDP until 2022, before gradually bringing it down to 2.25% of GDP after this period. There is, however, some debate over the available budget choices. According to the OECD (2020), a less restrictive fiscal policy designed to increase public investment and strengthen some areas of social spending would have encouraged stronger and more inclusive growth.

Nevertheless, such a large change in the budgetary stance risked compromising the objectives of bringing down Greek public debt. The choice of the authorities to maintain a significant primary balance surplus is consistent with the requirements under the European Fiscal Framework as such a surplus was assessed to be necessary to maintain debt sustainability. This was important to reinforce the credibility of the existing reform strategy, take advantage of low interest rates to finance the economy, and sustainably improve living standards.

In order to examine the role of public investment, a scenario analysis was performed by the OECD (2020) assuming a fall in Greece's primary surplus to 1½% of GDP allowing for the increase in public investment by an equal amount (See page 59 of the background paper for details). The OECD scenario shows an increase in public investment made possible by a less ambitious primary surplus objective would have enabled a gradual increase in capital stock in the economy, and would have strengthened output (Figure 4.3). Over 10 years, GDP would increase by around 1½% compared to the baseline. This increase in activity would also generate additional income for public administrations. Accordingly, the initial increase in the public deficit resulting from the additional spending would be gradually absorbed before being completely offset after around ten years. The increase in public debt, which would peak at 5 percentage points of GDP after five years, would then progressively fall to below its baseline level after 30 years.

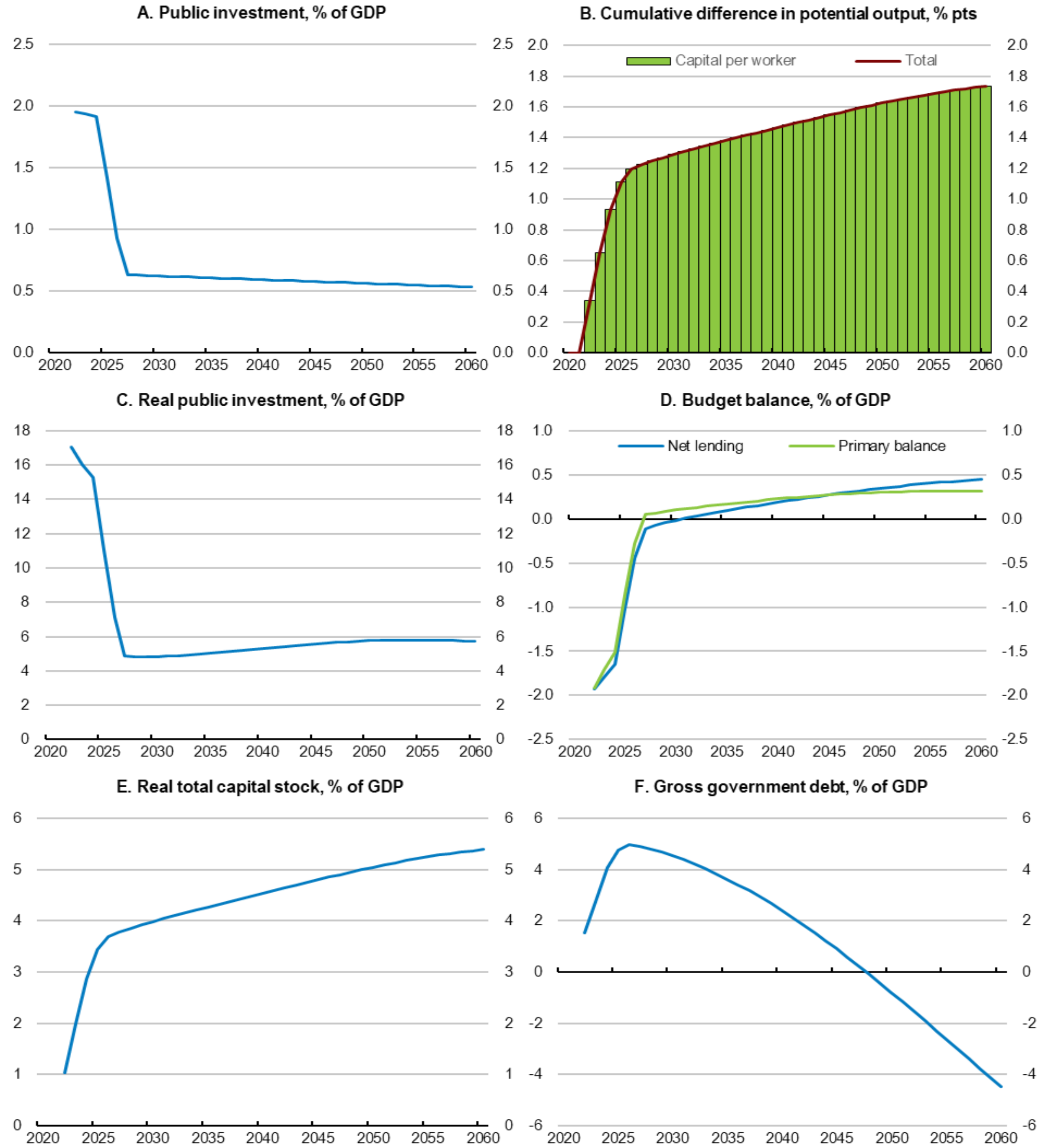
The baseline comparison scenario was developed using the OECD long-term model (Guillemette and Turner, 2018). The design of the model, used regularly to extrapolate the OECD's short-term outlook, makes it possible to analyse policies with effects on supply conditions, via the availability of labour, the existing capital stock and the efficiency of labour, and their repercussions on public finance from a long-term perspective. But it does not integrate demand and Keynesian effects associated with fiscal shocks. Only effects affecting potential output and supply conditions, i.e. the availability of production factors or trend productivity, are taken into account.

Figure 4.3

A rise in public investment could improve public finances in the medium term

Difference with baseline

(in %)

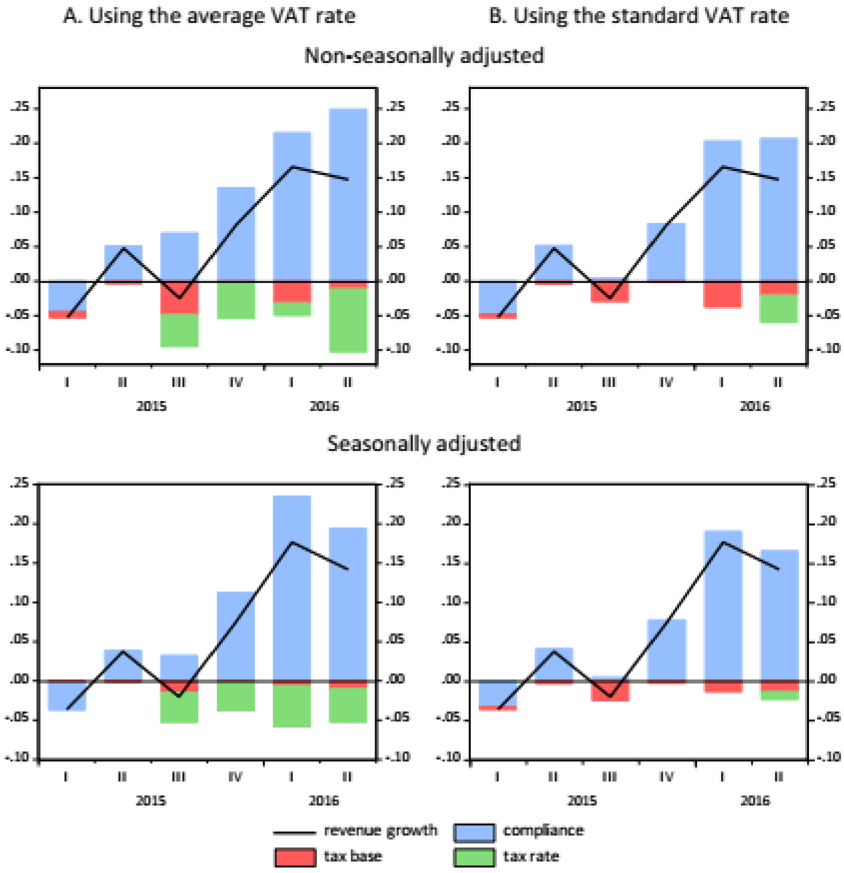


Source: OECD calculation based on the OECD Long Term Model (Guillemette and Turner, 2018)

Improvements in reforms to improve tax collection remained slow during the Greek programmes. However, the wider use of electronic transactions had a positive direct effect on VAT compliance. According to Hondroyiannis et. al., 2017, the restrictions on cash withdrawals introduced in July 2015 triggered a surge in card payments and consequently VAT revenue collections. It is concluded that a one percentage point increase in the share of card payments in private consumption resulted in approximately 1% higher revenue through increased compliance. Facilitating card transactions may support further tax buoyancy (Figure 4.4)

Figure 4.4

Decomposition of year-on-year growth in VAT revenue

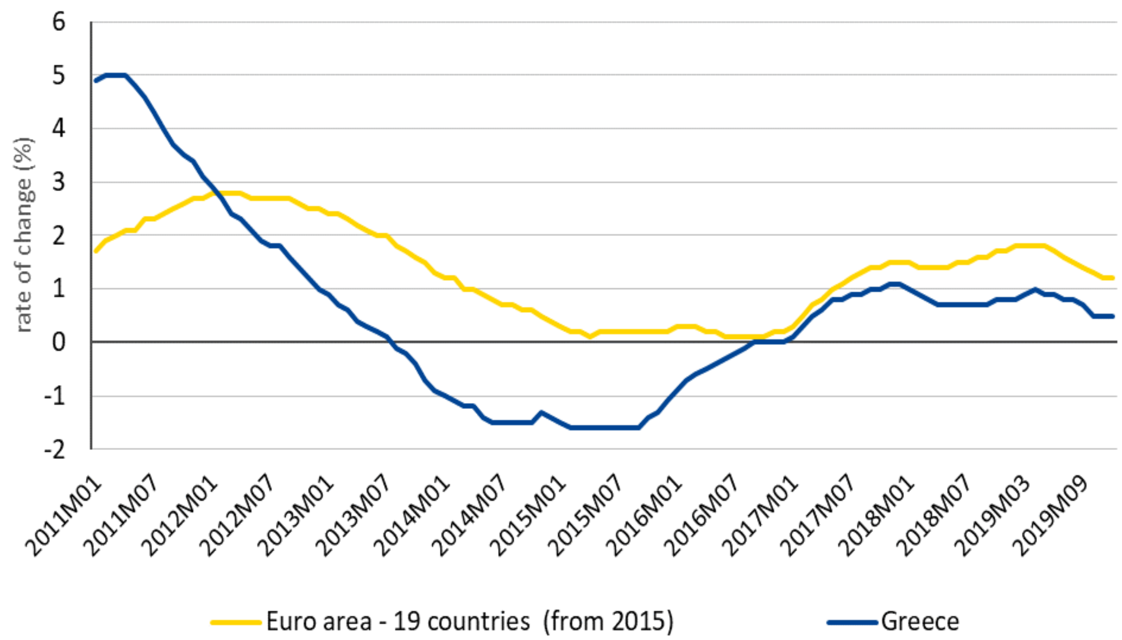


Notes: Using the post-tax measure of the tax base.

Source: Hondroyiannis, G. and Papaoikonomou, D. (2017): The effect of card payments on VAT revenue: New evidence from Greece. Economics Letters 157 (2017): 17-20. Accessible at: https://www.bankofgreece.gr/Publications/Paper2017225.pdf

The EFSF programme saw some clear improvements in the inflation differential against the euro area providing clear signs of competitiveness improvements that are also seen though to a lesser extent during the ESM programme (Figure 4.5). Developments since 2019 confirm the partial improvements seen in the structural reform front. Another important element from these dynamics is the low euro area inflation that made the structural adjustment for Greece more painful.

Figure 4.5
Inflation differential between Greece and the euro area
All-items HICP (moving 12-month average rate of change)



Source: Eurostat

Greek banks' liquidity position improved considerably by repaying the ELA, but their attractiveness to private investors remains weak due to the high level of DTCs (Figures 4.6 and 4.7).

After the EFSF programme, the five largest banks' share in the banking system's total assets – a standard euro area concentration measure – reached almost 100% level (Figure 4.8) establishing a highly concentrated banking sector by international comparison (Figure 4.9). The banking sector's landscape is further limited by the fact that the four largest banks follow the same universal banking business model.

Reforms have not yet increased the effectiveness of loan enforcement procedures with collateral enforcement and insolvency still taking longer than before the crisis (Figure 4.10). According to the World Bank, among countries that underwent economic adjustment programmes, Greece remains with the highest NPL ratio and the least efficient legal framework (Figure 4.11).

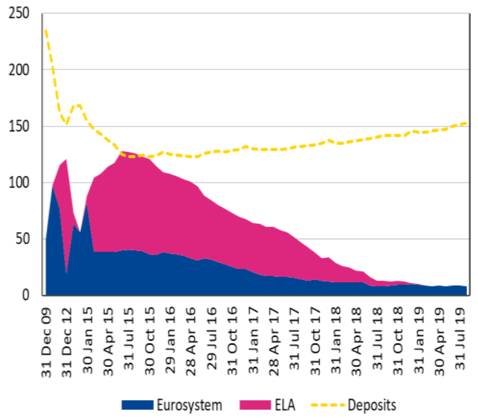
Beside the reasons mentioned in the evaluation report, the interviews revealed that numerous stakeholders considered – with the benefit of hindsight – the decision not to implement an AMC within the programmes as a missed opportunity (Figure 4.12).

The governance system overhaul during the ESM programme meant, some banks experienced a relatively high turnover in their boards (Figure 4.13), which was partly due to the strengthened fit and proper assessment of the shareholder and the supervisor.

Figure 4.6

ELA in the Greek banking system

(€ billion)

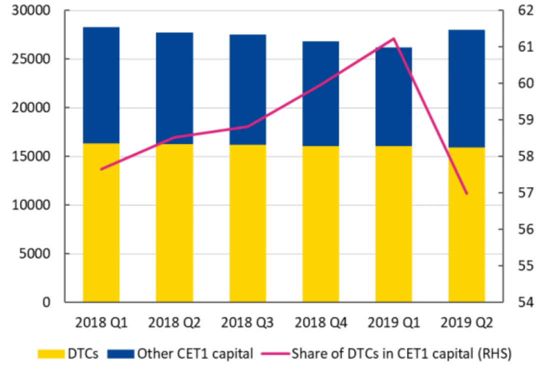


Source: Bank of Greece

Figure 4.7

Share of DTCs in CET1 capital

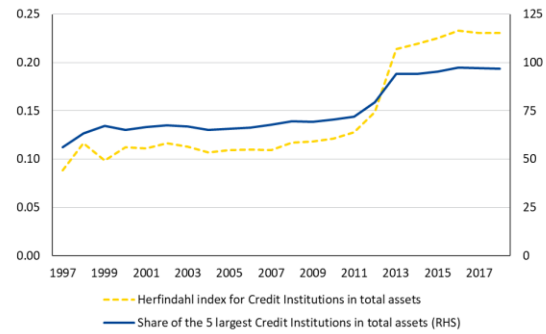
(left hand axis in million of EUR, right hand axis in %)



Source: Bank of Greece, SNL, FitchConnect, ESM

Figure 4.8

Herfindahl index and the share of the five largest credit institutions in total assets

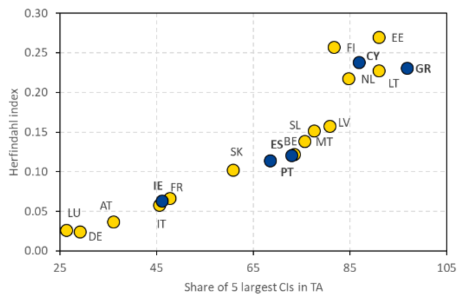


Source: Bank of Greece and ECB

Figure 4.9

Herfindahl index and the share of the five largest credit institutions in total assets

(international comparison)

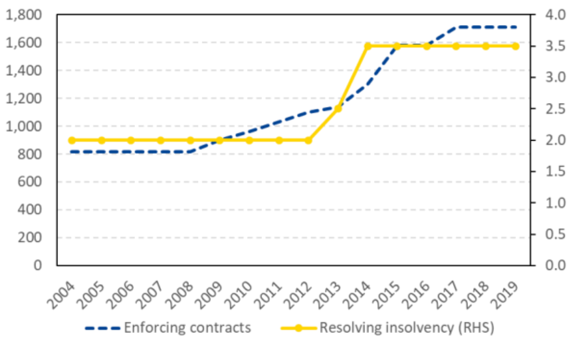


Source: Bank of Greece

Figure 4.10

Time to enforce contracts and resolving insolvency in Greece

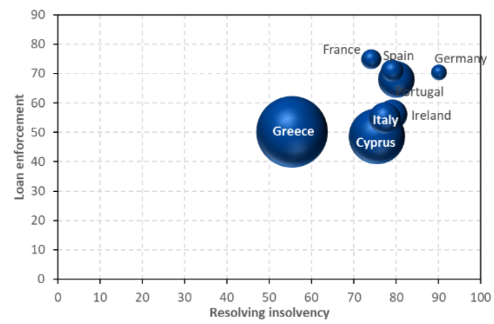
(left hand scale in number of days, right hand scale in number of years)



Source: World Bank Doing Business Indicator

Figure 4.11

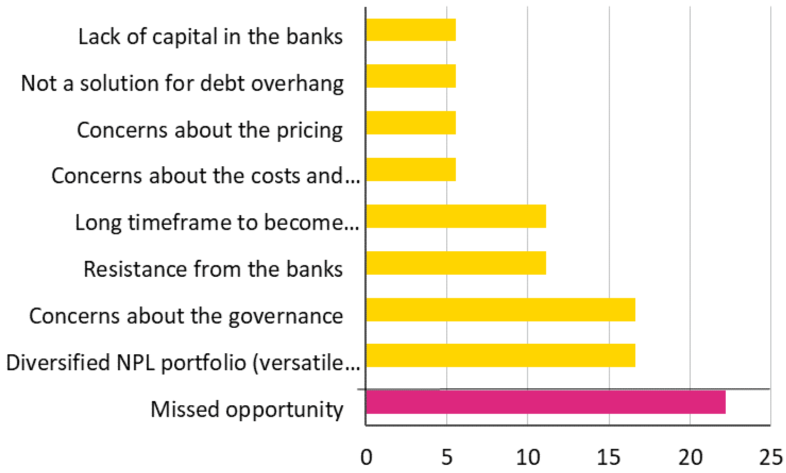
Effectiveness of the loan enforcement and insolvency procedures in select euro area countries



Note: The size of the bubbles represents the NPL ratio in the country in 2019 Q3.

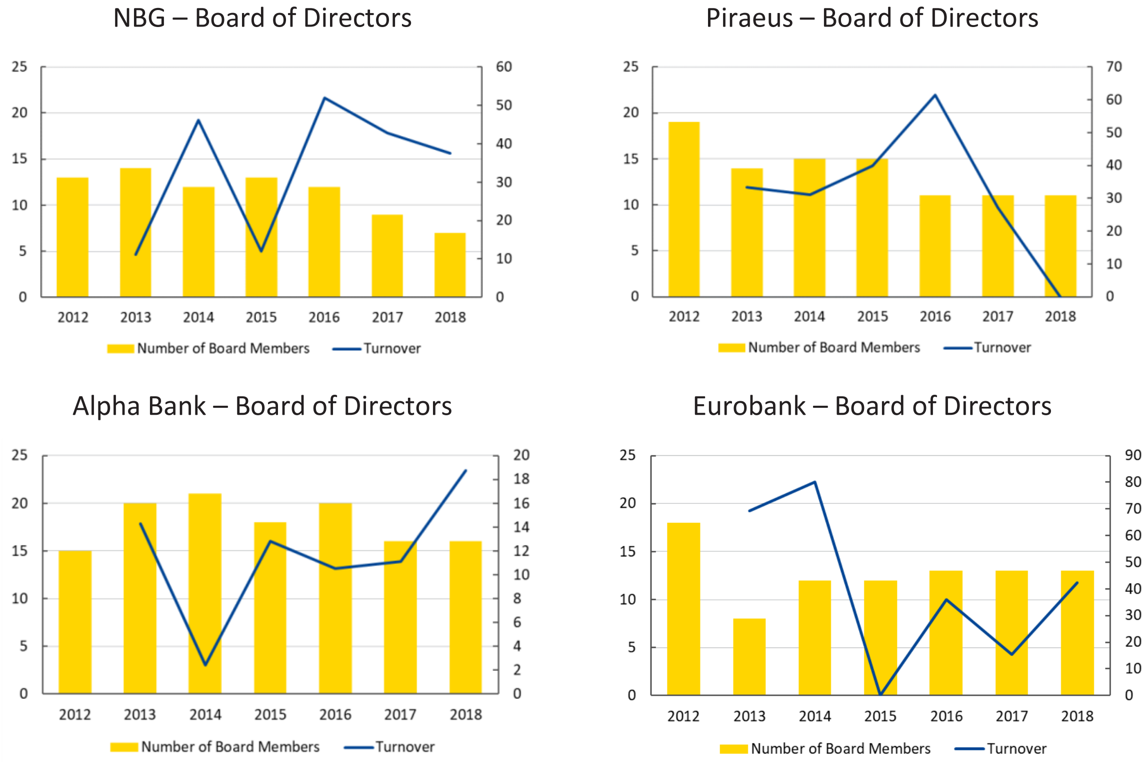
Sources: World Bank Doing Business Indicators, SNL, FitchConnect

Figure 4.12
Reasons mentioned in the interviews for not implementing an AMC in Greece



Source: ESM Evaluation team interviews

Figure 4.13
Turnover of Board Members in the four largest Greek banks
(right hand scale in %)

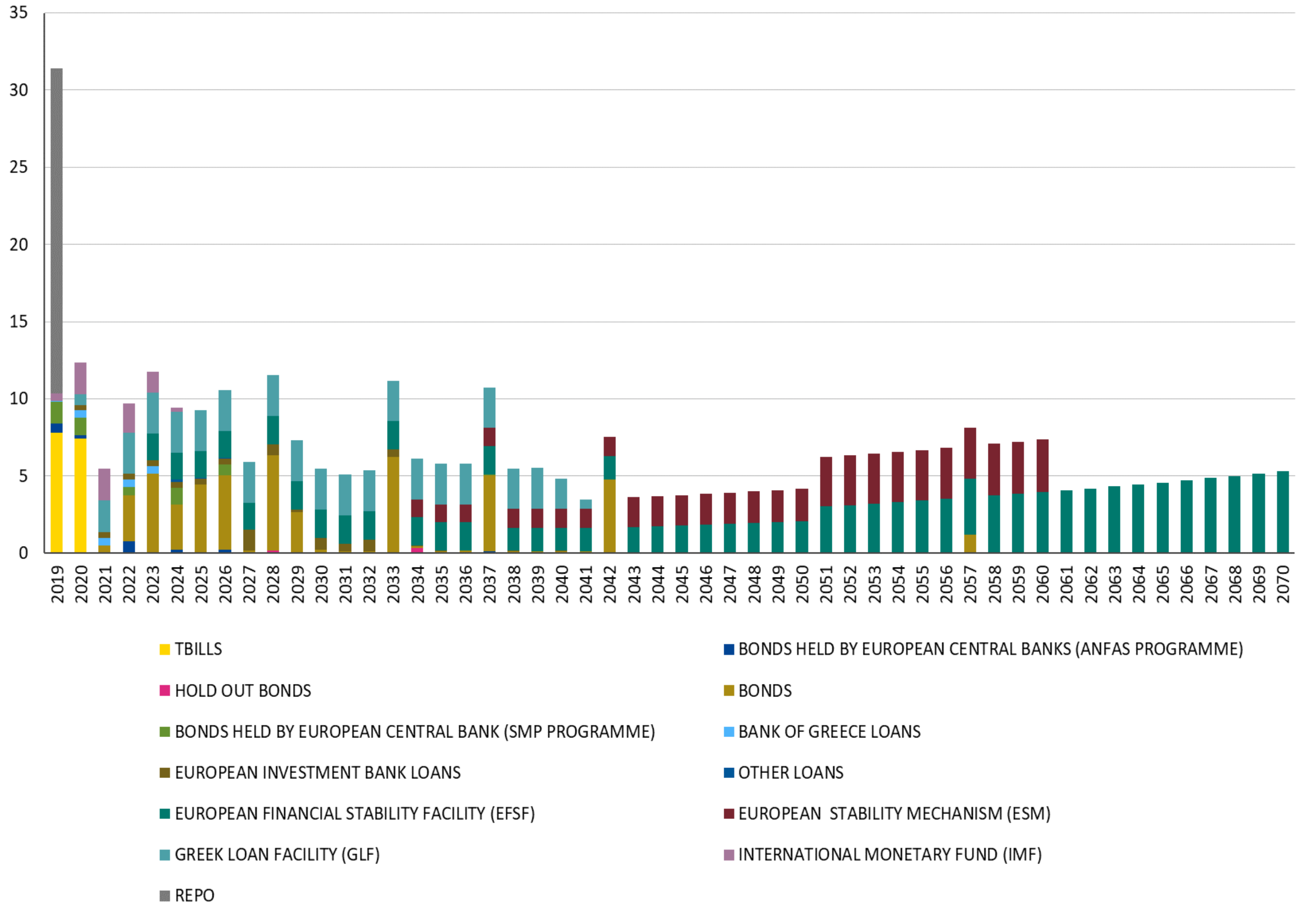


Source: Banks' annual reports

5. Appendices to Chapter 5 – Efficiency

This appendix complements the Evaluation Report's Chapter 5 on efficiency. It contains additional data on EFSF/ESM programmes such as an overview of Greek government debt schedule and the use of EFSF and ESM financing. Supplementary charts provide details on ESM disbursement process and evidence on the fact that interviews repeatedly suggested the link between liquidity constraints and disbursement of EFSF/ESM funds. The Evaluation Report analysis was was unfortunately unable to confirm this link due to a lack of sufficiently granular data. The annexes in these appendices increase transparency on the mechanics of the bond exchange and on conditionality compliance assessments based on programme documents. Moreover, Olivier Pujal's analysis of ESM documents brings new information on the short-term debt measures implemented at the Greek government's request.

Figure 5.1
Greek central government debt schedule
(as of 30 September 2019, in € billion)



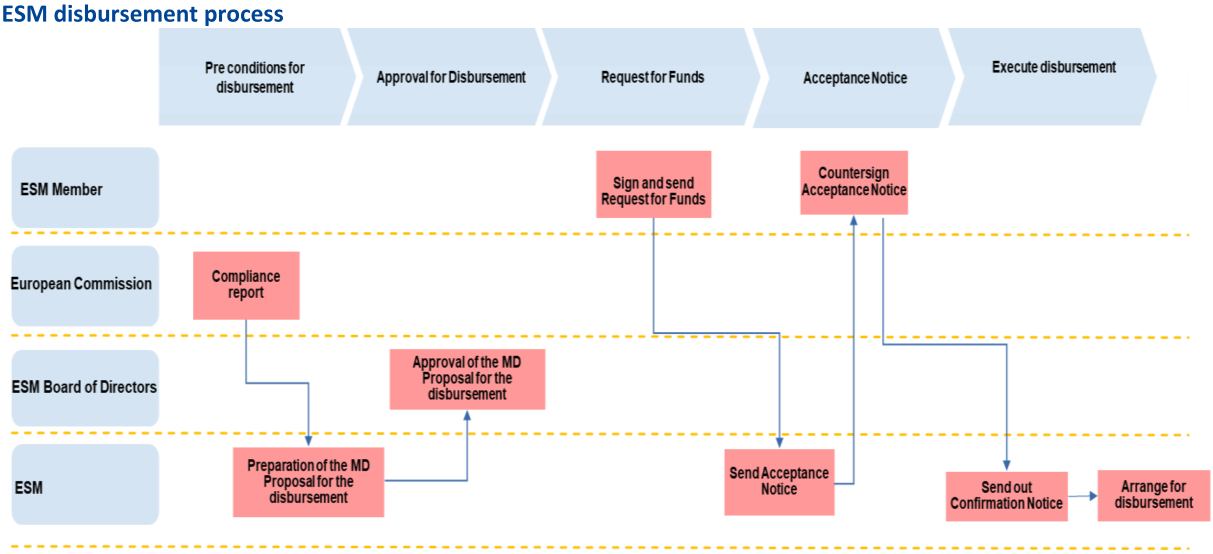
Source: Public Debt Management Agency of Greece

Table 5.1
Details on use of financial assistance provided by the EFSF and ESM programmes
(in € billion)

	EFSF outstanding	ESM outstanding
Budgetary financing (cash)	47.80	
Budgetary financing and debt servicing (cash)		54.47
Bank recapitalisation (in kind)	37.27	5.40
PSI sweetener (in kind)	29.69	
Accrued interests (in kind)	4.86	
Debt buy back (in kind)	11.29	
Repayment[15]		2.03
Total	**130.91**	**59.87**

Notes: The initial EFSF programme amount for Greece was €144.6 billion. This final amount is derived by excluding the undisbursed amount of €0.95 billion of the private sector involvement facility as well as €10.93 billion Bank Recapitalisation Instalment and €1.81 instalment of the MFFA, whose availability periods have ended and are therefore no longer available.
Out of the committed €86 billion of the ESM programme for Greece, the ESM disbursed a total €61.9 billion. Following expiration of the availability period on 20 August 2018 the remaining €24.1 billion was no longer available for disbursement.
The ESM repayment was due to a contractual obligation following sale of assets of recapitalised NBG bank.
Source: ESM calculations

Figure 5.2
ESM disbursement process



Source: ESM presentation based on ESM 2017 internal sources

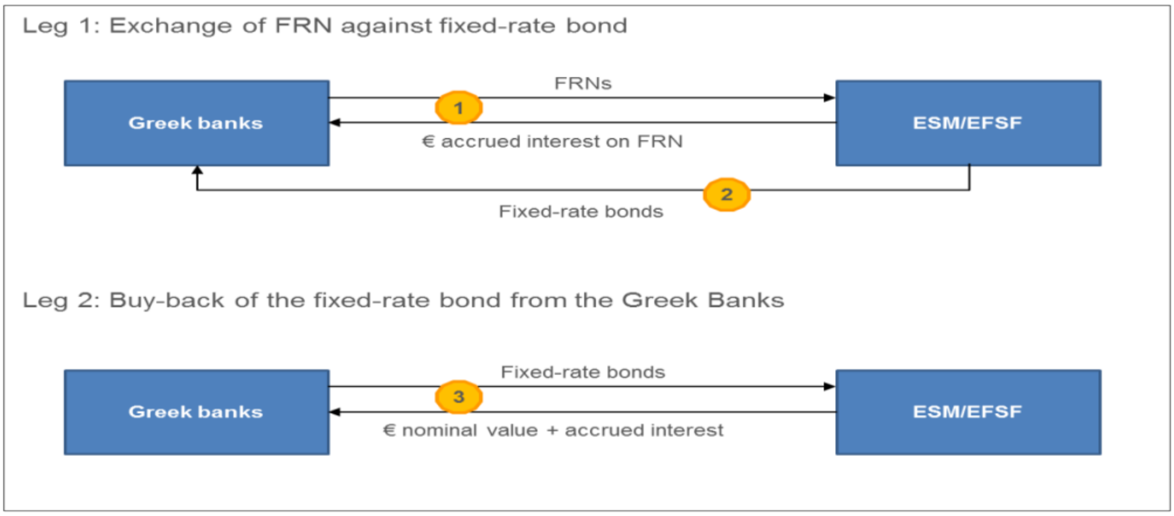
ANNEX 5.1. Mechanics of bank bond exchange

The bond exchange with the Greek banks was carried out between February 2017 and January 2018, as part of the short-term debt relief measures to reduce the long-term interest rate variability for Greece. It involved exchanging the majority of the outstanding floating rate notes (FRNs), issued by the ESM and EFSF to recapitalise the Greek banks, into fixed rate bonds and their redemption into cash within the same month. This was a major transaction undertaken by the ESM/EFSF, providing a key contribution to the short-term debt relief measures for Greece. It is the largest consensual par or near par bond exchange that has occurred across the globe. The structure met the objectives and exceeded the original expectations in its impact on

[15] This repayment was due to a contractual obligation following sale of assets of recapitalised NBG bank.

Greece' debt to gross domestic product over the longer term. The successful operation of the bond exchange, which occurred 11 times between February 2017 and January 2018, required substantial time commitment from ESM staff each month. Thirty-six steps were required for each month's exchange to take full effect, in a sequential and time-critical manner. A bond exchange cycle consisted of two phases, i.e. 'legs'. First, the ESM/EFSF issued a fixed rate bond that it exchanged against FRNs held by the Greek banks. In a second step, the ESM/EFSF bought back the fixed-rate bond against cash, using the proceeds of newly raised long-term fixed rate funding.

Figure 5.3
Two legs of the bond exchange



Note: 'FRN' stands for fixed rate notes.
Source: ESM internal source

ANNEX 5.2. Review of conditionality compliance assessments based on programme documents

Taxonomy used in	2012	2013	2014	2015	2016	2017	2018
First compliance report	Observed Not observed Partially observed Observed and on-going On-going Not observed: progress made Observed and on-going[1]	The reports provide detailed summaries of state of play on selected measures[2],[3]	Observed[4]	Done Pending Pending check of adopted Law NOT APPLICABLE– repeal not possible without creating legal vacuum, legislation will be changed by October 2015 Partially done;[5]	Done Partially done[6]	Done Partially done Done subject to final verification Done(ii) awaiting external verification[7]	Done[8]
Second compliance report	Observed Partially observed Ongoing Observed with delay Not observed Ongoing with delay Essentially observed Partly observed Largely observed[9]	Observed Not observed Observed ongoing Observed continuous[10]	Additional reports referred to the completion of the milestones[11]				Done[12]
Third compliance report		Observed Not observed re-phased Observed – on-going Not observed Under review[13]	Done Done with clear implementation risks Pending[14]				
Report on Greece's compliance with the second set of milestones of December 2015			Done Done follow up needed[15]				

Notes:

1: EC (2012), The Second Economic Adjustment Programme for Greece First Review - December 2012, Occasional Papers 123, December 2012 Available at: https://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp123_en.pdf.

2: EC (2013), Report on Greece's Compliance with the Milestones for the disbursement of the January 2013 sub-tranche (14 January 2013) Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_reportcompliancedisbursement-012013_en_0.pdf.

EC (2013), Report on Greece's Compliance with the Milestones for the disbursement of the February 2013 sub-tranche, Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_reportcompliancedisbursement-022013_en_0.pdf.

3: Report on Greece's compliance with the Milestones for the disbursement of the second tranche of 0.5bn of the fifth instalment to the Hellenic Republic under the second programme (16 December 2013), Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_reportcompliancedisbursement-122013_en_0.pdf.

4: EC (2014), The Second Economic Adjustment Programme for Greece Fourth Review – April 2014, Occasional Papers 192, April 2014, Available at: https://ec.europa.eu/economy_finance/publications/occasional_paper/2014/pdf/ocp192_en.pdf.

5: EC (2015), Report on Greece's compliance with the draft MOU commitments and the commitments in the Euro Summit statement of 12 July 2015. 14 August 2015. Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_report_on_compliance_with_prior_actions_en_0.pdf .

6: EC (2016), Compliance Report The Third Economic Adjustment Programme for Greece, First Review, June 2016. Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/cr_full_to_ewg_en_0.pdf.

7: EC (2017), Compliance Report: The Third Economic Adjustment Programme for Greece. Second Review June 2017. Available at: https://ec.europa.eu/info/sites/info/files/compliance_report-to_ewg_2017_06_21.pdf.

8: EC (2018), Compliance Report ESM Stability Support Programme for Greece Fourth Review, July 2018 Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/compliance_report_4r_2018.06.20.docx.pdf.

9: EC (2012), The Second Economic Adjustment Programme for Greece. Occasional Papers 94, March 2012, Available at: https://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp94_en.pdf.

10: EC (2013), The Second Economic Adjustment Programme for Greece Second Review – May 2013, Occasional Papers 148, May 2013, Available at: https://ec.europa.eu/economy_finance/publications/occasional_paper/2013/pdf/ocp148_en.pdf.

11: EC, IMF, ECB (2014), Report on Greece's compliance with the Milestones for the disbursement to the Hellenic Republic of the second tranche of EUR 1.0bn of the EFSF instalment related to the fourth review under the second programme (3 July 2014), Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_reportcompliancedisbursement-072014_en_0.pdf.

EC, IMF, ECB, (2014), Report on Greece's compliance with the Milestones for the disbursement to the Hellenic Republic of the third tranche of EUR 1.0bn of the EFSF instalment related to the fourth review under the second programme 11 August 2014, Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_reportcompliancedisbursement-082014_en_0.pdf.

12: EC (2018), Compliance Report ESM Stability Support Programme for Greece. Third Review March 2018. Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/compliance_report_3r_to_ewg_2018_03_02_1.pdf.

13: EC (2013), The Second Economic Adjustment Programme for Greece Third Review – July 2013, Occasional Papers 159, July 2013, Available at: https://op.europa.eu/en/publication-detail/-/publication/11398044-8e4a-4c53-8adf-79421f2c190c/language-en.

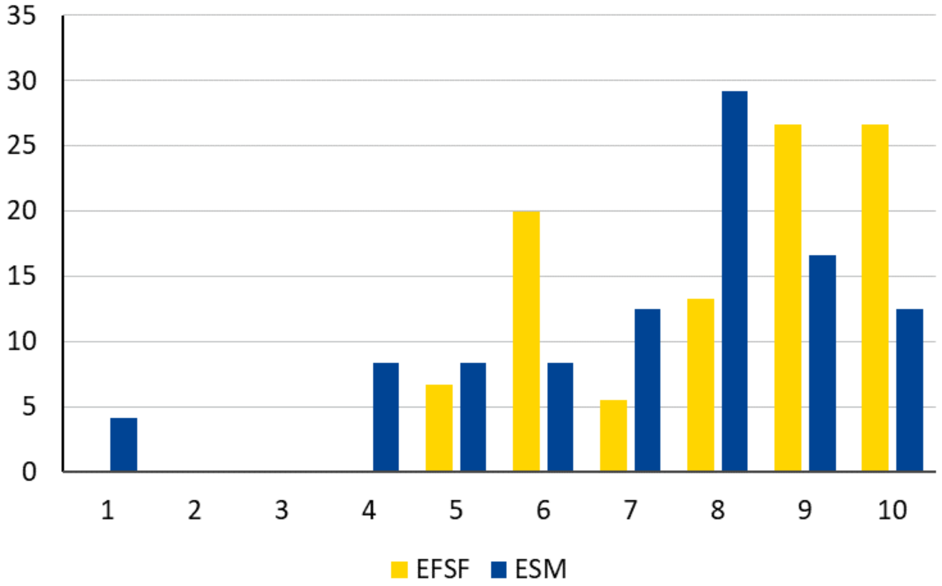
14: EC (2015), Report on Greece's compliance with the first set of milestones of October 2015 and with financial sector conditionality. 20 November 2015. Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_report_on_greece_compliance_october_2015_en.pdf.

15: EC (2015), Report on Greece's compliance with the second set of milestones of December2015, 21 December 2015, Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ecfin_report_on_greece_compliance_december_2015_en.pdf.

Figure 5.4

Survey responses related to the link between Greek government liquidity position and programme implementation. To which extent do you agree to the following stateyoment: Programme Reviews were concluded more quickly each time the Greek government ran out of liquidity, and the risk of not meeting debt payments increased

(in % of total responses)



Note: 0 = Strongly disagree; 10 = Strongly agree; in total 15 responses for EFSF and 24 for ESM.
Source: ESM board survey

ANNEX 5.3. Short-term debt relief measures for Greece: assessing the efficiency and risks of bond exchange and interest rate swap schemes implemented by the ESM for Greece

Author: Olivier Pujal

This analysis provides an insight into the ESM implementation of the May 2016 Eurogroup agreement on short-term debt measures for Greece. It focuses on two sets of transactions conducted: a) bond exchange and b) interest rate swap schemes. Based on internal documents, it considers the efficiency of the ESM response against the risks implied by exceptional undertakings. The bond exchange was, worldwide, the largest consensual par or near-par bond exchange, totalling €29.6 billion and representing 17% of the ESM and EFSF outstanding loans to Greece. It resulted in fixed interest rates for an average maturity of about 24 years. The interest rate swap scheme concerned the ESM only, because EFSF guidelines do not allow the use of derivatives. The strategy implemented by the ESM consisted of using interest rate swap instruments to reduce interest rate variability for the ESM loans to Greece while maintaining the flexibility to issue ESM bonds across all parts of the yield curve. Despite an efficient execution, its complexity put ESM resources under pressure. These findings underpin the Evaluation Report's conclusions that implementing similar operations in the future without changes in the ESM's framework, especially ESM pricing policy and borrowing guidelines, could reduce its efficiency and increase operational risks.

In May 2016, the Eurogroup agreed a package of debt measures for Greece as follows:

For the short-term[16], the Eurogroup agreed on a first set of measures that included:

- Smoothing the EFSF repayment profile under the current weighted average maturity
- Using an EFSF/ESM diversified funding strategy to reduce interest rate risk without incurring additional costs for other programme countries
- Waiving the step-up interest rate margin relating to the debt buy-back tranche for the second Greek programme for the year 2017.

For the medium-term[17], the Eurogroup asked for a second set of measures that would:

- Abolish the step-up interest rate margin related to the debt buy-back tranche of the 2nd Greek programme as of 2018
- Use of 2014 SMP profits from the ESM segregated account, and Restoration of the transfer of Agreement on Net Financial Assets (ANFA) and Securities Market Programme (SMP) profits to Greece (as of budget year 2017) stored on the ESM segregated account as an ESM internal buffer to reduce future gross financing needs.
- As a feature of liability management, undertake an early partial repayment of existing official loans to Greece by utilising unused resources within the ESM programme to reduce interest rate costs and extend maturities. Due account would be taken of the exceptionally high burden of some member states.
- If necessary, re-profile some EFSF targets to hold the gross financing needs (GFN) below the agreed benchmark to satisfy IMF wishes, without incurring any additional costs for former programme countries or to the EFSF. Some target examples were the extension of weighted average maturities, EFSF amortisation, capping and the deferral of interest payments.

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[16] Eurogroup Statement on Greece, 25 May 2016, Available at: https://www.esm.europa.eu/press-releases/eurogroup-statement-greece-25-may-2016.

[17] Ibid

For the long-term, the Eurogroup agreed on a debt contingency mechanism to be activated after the ESM programme that would ensure long-run debt sustainability should a more adverse scenario materialise. Such a mechanism could entail measures such as further EFSF re-profiling, capping and interest payment deferrals.

In January 2017, the ESM governing bodies approved the Greek short-term measures, following a Eurogroup 5 December 2016 mandate.

One of the agreed short-term measures was a reduction in the interest rate risk for Greece without incurring additional costs to other programme countries, or causing any negative impact on Greece's long-term debt sustainability. To do so, the EFSF/ESM implemented these schemes:

- A bond exchange that exchanged existing floating rate notes, used by Greece for bank recapitalisations, for fixed-rate bonds with longer maturities
- An interest rate swaps (IRS) programme, aimed at reducing Greece's interest rate risk on the ESM pool-funded loans over the life of the loans.

To avoid any negative impact on long-term debt sustainability, the ESM implemented a calculation for the break-even interest rate above which entering into long-term payer IRS would be detrimental to any Greek debt sustainability assessment. Control was established at inception so that all executed bond exchange and IRS transactions complied with the break-even rate constraint.

The bond exchange operation started in February 2017 and was completed in August 2017 for the ESM and in January 2018 for the EFSF. The operation converted €5.4 billion of ESM Greece loans and €24.2 billion of EFSF Greece loans to long-term fixed-rate funding from floating-rate financing.

The IRS scheme started in May 2017. The ESM entered into long-term payer swaps that reduced interest rate variability over a period up to 30 years on the equivalent amount of pool-funded ESM loans to Greece. In parallel, the ESM entered into IRS receiving fixed rates to offset the rate the ESM paid on the pool issuances.

Bond exchange

The bond exchange was a major transaction undertaken by EFSF/ESM, a key contribution to the short-term measures for Greece. It was, worldwide, the largest consensual par or near-par bond exchange, totalling €29.6 billion and representing 17% of the ESM and EFSF outstanding loans to Greece, and it resulted in fixed interest rates for an average maturity of about 24 years.

The bond exchange was a simple concept, but demanded complex operations to complete. It involved exchanging about €3.0 billion of floating rate notes (FRN) into fixed rate bonds each month for 11 months, then buying back the fixed rate bonds from the Greek banks intra-month for cash. It involved two phases, or 'legs':

- First, the EFSF/ESM issued long-term fixed rate bonds that were exchanged against the FRNs held by the Greek banks
- Second, some 15 to 20 business days later, the ESM and EFSF bought back the fixed rate bonds for cash, using proceeds from the newly raised long-term fixed rate funding. The new long-term fixed rate funding meant the EFSF/ESM locked in prevailing low market interest rates at the time of execution.

The ESM executed the bond exchange efficiently.

- **The bond exchange was executed in compliance with the ESM legal framework**. The ESM created an ad hoc silo for the EFSF and another compartment for the ESM, so isolating the funding and related costs linked to the bond exchange. The proceeds of pool issuances then could be split between the pools established in the diversified funding strategy on the one hand, and the Greek silo for the ESFF or the Greek compartment for the ESM on the other. Such an approach ensured all costs related to the bond exchange were passed through to Greece without impacting any other beneficiary member states.

- **The bond exchange was executed according to the ESM market strategy.** The EFSF/ESM had been established in the market as issuers of large benchmark transactions across the yield curve, providing the flexibility required to execute large complex funding programmes with a minimal impact on the market environment. By establishing a regular market presence, the strategy delivered immediate access to a wide range of different investors; the smooth execution of the €29.6 billion long-term funding programme within 12 months proved the strategy worked and was crucial to the ESM's ability to fulfil its mandate.
- **Implementing the one-off bond exchange scheme was carefully planned.** The bond exchange needed to operate to a precise timetable during each month. Most steps operated within the ESM's normal course of business, but such a project had never previously been undertaken in the sequence or volume expected, which demanded a detailed step-by-step timeline - the 'operational manual' - that listed the necessary actions, specifying timings and responsibilities.
- **The EFSF/ESM completed the bond exchange in the shortest expected time**. The bond exchange with Greece and the Greek banks took place from February 2017 to January 2018. This timetable protected the projects' effectiveness by minimising the risk of any interest rates rise, helped by the relative stability of market rates during 2017. Little benefit would have flowed from achieving the exchange any faster; it might even have caused a market saturation of EFSF/ESM paper, and higher coupons.
- **Executing the bond exchange required flexibility to take advantage of long-term market funding opportunities.** This involved exchanging within the same month all the outstanding FRNs issued by ESM and EFSF to recapitalise the Greek banks into fixed rate bonds, and then their redemption into cash. A target of €3 billion per month was set, using a schedule agreed between the parties. The structure established complete precision about the exchange mechanics, but deliberately did not establish any contractual obligation on the monthly exchange volume, therefore designed in way that meant the EFSF/ESM could take advantage of available market depth and not become over-committed when market capacity was limited.
- **The EFSF/ESM managed to fix a consistently low cost of funding** throughout the bond exchange period, at an average 1.54% rate. Before any EFSF/ESM funding started, a break-even analysis each month calculated the break-even rate below which funding would be favourable for Greece. Any interest rate risk reduction depended on the ESM/EFSF's ability to raise sufficient long-term fixed-rate bonds at an acceptable coupon.

However, some operational risks could have been handled better.

- **It would have been beneficial to initiate an internal Project Manager when the project started in** November 2016, rather than in December 2016. Having such a project manager earlier would have fostered more efficient management of the dependencies and synergies between the bond exchange and the interest rate swap projects – and address any impact on other existing projects. It would have meant earlier information technology team involvement and an earlier definition of the important financial technology requirements especially for the booking system for ESM transactions. Similarly, discussions with Greek banks should have started earlier in the process, before the formal Eurogroup approval of the Greek short-term measures on 5 December 2016. Timelier consultations would have enabled the ESM to anticipate important objections raised by the Greek banks about settlement chains and exchange modalities.
- **Implementing the bond exchange alongside the interest rate swap scheme placed ESM resources under pressure.** Completing the two legs of each transaction successfully required the involvement of many different teams, notably the back office team to supervise the process, legal team for documentation preparation, lending team for loan documentation reviews and amendments, and

the funding team for the new bond issuances. Altogether, nine teams were involved in the complex and time-sensitive tasks during the bond exchange execution period.

- **The teams faced four common challenges:**
  - Firstly, the bond exchange project added to normal business activities and an already-full project agenda
  - Secondly, only a limited amount of the required ideal automation could be initiated into the bond exchange – and minimum testing – given the time pressures to start execution as soon as possible in 2017; this was in order to benefit from supporting investor demand and to meet a Board of Directors request to execute within the shortest possible time. Partial automation imposed manual processes on many of the teams, especially for the back office, middle office, asset liability management and lending. These manual commitments stretched already-tight resources and introduced a higher degree of operational risk.
  - Thirdly, requests from the ESM Board of Auditors and Board Risk Committee since the inception of the EFSF and the ESM have meant implementing a greater number of internal policies that intensified complexity, and this weighed on the ESM's ability to react to specific, and immediate, requests from ESM member states.
  - Fourthly, the need to separate bond exchange transactions to avoid any impact on other beneficiary member states also injected complexity, and an extra commitment to daily liquidity management; then liquidity buffers used for the EFSF and ESM had to be duplicated to manage the liquidity of the ad hoc Greek silo (EFSF) and Greek compartment (ESM).

  In the 11 months of the bond exchange implementation, one serious operational risk incident took place, but the ESM did not incur any financial loss; in July 2017, a custodian central bank – one of ESM's post-trade service providers and custodians – delivered the fixed rate bonds to the Greek banks before the completion of the 'issue and repurchase' process with a banking counterparty. This meant that bonds were sent to the Greek banks without being validly issued under applicable law. The root cause stemmed from a liquidity shortage with the banking counterparty, which derailed the process. Thereafter, additional controls were established with the central bank to avoid similar occurrences.

- **Creating the ad hoc silo and the compartment to isolate the long-term funding of the EFSF and ESM loans to Greece that were impacted by the bond exchange diverged from the diversified funding strategy principles**, although still in line with the ESM's legal framework. The strategy implies that ESM pool-funded loans with different beneficiary member states be financed by a common pool of ESM issuances with maturities across the whole yield curve. The creation of an ad hoc silo in the case of the EFSF and an ad hoc compartment in the case of the ESM to allocate long-term funding to some specific EFSF and ESM loans to Greece dented the fundamental diversified funding strategy principles. This has created a precedent and other beneficiary member states might consider they too could benefit from a similar future arrangement. The ESM may need to revise pricing policy to prepare for such a possibility.

IRS scheme

The IRS scheme concerned the ESM only, because EFSF guidelines do not allow the use of derivatives. The strategy implemented by the ESM consisted of using IRS instruments to reduce interest rate risk for the ESM loans to Greece while maintaining the flexibility to issue ESM bonds across all parts of the yield curve.

In practice, the ESM entered into two series of transactions in parallel:

- Transaction 1: Payer IRS (IRS paying fixed rate and receiving Euribor 6-month) with long-term maturities to stabilise the ESM cost of funding charged to Greece. The ESM computed the maximum amount of payer IRS as the outstanding amount of the ESM loans to Greece, excluding:
  I. bank recapitalisation loans, since these were refinanced by long-term issuances in the bond exchange
  II. the amount of ESM pool-funded loans to Greece maturing before the target maturity of the payer IRS
  III. outstanding amounts of long-term ESM issuances within the ESM pool.
- Transaction 2: Receiver IRS (IRS receiving fixed rate and paying Euribor 6-month) to offset as much as possible the fixed rate coupon payments of issuances.

The IRS scheme started in May 2017. As of Q4 2018, the ESM had entered into long-term IRS agreements paying fixed rates at an average rate of 1.49% to stabilise the interest rate charged to Greece. In parallel, the ESM entered into IRS receiving fixed rates to offset the rate the ESM pays on the pool issuances. The last receiver IRS agreements of the ramp-up period were executed in Q4 2018.

The ESM executed the IRS programme efficiently.

- **The ESM adjusted its arrangements so as to comply with the ESM legal framework**. It created a special portfolio to isolate the IRS and the related costs of implementing the short-term debt relief measures for Greece, a mechanism that ensured all costs relating to the programme were passed through to Greece without impacting any other beneficiary member states.
- **IRS programme execution was scheduled in accordance with the ESM lending plan to Greece**. Unlike the bond exchange measure, the ESM did not set a fixed deadline to implement the IRS programme; it defined a ramp-up period starting in May 2017 and supposed to last until the final ESM disbursement to Greece scheduled for Q4 2018. The ESM could only complete the long-term payer IRS programme once the loans to Greece maturing in the long run had been effectively disbursed.
- **The ESM adopted a flexible execution strategy**. The ESM had to execute the programme to be as market-neutral as possible. It also had to consider how best to strike a balance between a speed of execution that would limit the risk of a rise in market rates and the amount of IRS market liquidity, in particular at the long end of the interest rate curve. The ESM needed flexibility to trade IRS over the shortest possible period without distorting the market. Confidentiality was also important, particularly at the programme's outset, to avoid pre-positioning other market participants – because that would have negatively impacted the IRS pricing. Understanding the flows within the maturity brackets, particular at the long end of the curve, was then essential to determine the best trading window. A flexible execution strategy emerged from the funding team's trading experience and actual markets analysis; and this strategy helped the ESM successfully adjust to the market conditions that prevailed during execution.
- **To avoid the risk of trading at ineffective rates**, the ESM computed break-even rates above which the trading of payer IRS would have been detrimental to Greece's debt sustainability. Controls were established from the start and then the break-even position was updated monthly so that all executed IRS proved beneficial for Greece in terms of debt sustainability.
- **The ESM has created specific liquidity buffers to manage the funding liquidity risk that results from a need for collateral linked to IRS activity.** The ESM opted for the International Swaps and Derivatives Association (ISDA) two-way credit support annex (CSA) contracts to run its IRS activity with banking counterparties. The ESM had to implement some specific metrics that would forecast its maximum future collateral needs – with a sufficient degree of prudence – to ensure such needs would be properly funded. The ESM derived these metrics from the potential future exposure metric defined by the Basel Standard Approach for Counterparty Credit Risk on Derivatives instruments.

However, some operational risks could have been better handled.

- **Implementing the IRS scheme placed ESM resources under pressure.** Adapting the ESM approach to establishing a portfolio – cost of funding calculation, monitoring tools, IT set up and process documentation – for the IRS scheme demanded intense effort from the ESM in a very short space of time, with nine ESM teams involved. The ESM had to define the solution for allocating all the transactions flows solely to Greece; to translate this solution into business requirements that IT department could implement; and then develop the monitoring tools and processes for the execution and governance. The complexity of the hedging strategy in particular needed the development of special tools to determine which amount of IRS to trade for each maturity. And only minimum testing of the tools and processes could be undertaken, given the pressures to start the IRS execution as soon as possible in 2017 in order to profit from favorable market conditions. The additional manual tasks stretched already tight resources and introduced a higher degree of operational risk.
  One serious operational risk incident arose in March 2018; an error in the tool that computed the amounts of IRS to trade for each maturity, together with a control lapse, meant the total amount of receiver IRS exceeded a target by 16% in the short maturity area while remaining within the limits approved by the BoD. A special DSA analysis demonstrated the financial consequences for Greece were limited, but this incident underlined the insufficient time the ESM had to properly develop and test its computation tools. The ESM re-engineered the IRS computation tool using past experience and implemented daily reporting to monitor the IRS positions within limits. It also established a monthly committee meeting to review the hedging strategy implementation and assess its efficiency in replicating the hedged portfolio of short- and medium-term pool issuances. And the ESM also undertook to document the IRS processes according to the Internal Control Framework standards.
- **A lack of experience in defining and implementing a hedging strategy through IRS instruments was a challenge for the ESM.** Before the short-term debt relief measures for Greece, the ESM had never actively managed interest rate risk for a beneficiary member state. The ESM had focused on managing funding liquidity risk by ensuring a wide market presence through regular pool issuances across different tenors, while transferring the interest rate risk to the beneficiary member states, as defined in the ESM pricing policy. The IRS scheme was decided by the Eurogroup to reduce the risk of higher loan rates for Greece as much as possible. The ESM analysed different strategy approaches, from micro-hedging each short- or medium-term ESM pool issuance to macro-hedging by which receiver IRS replicated the average maturity of short- and medium-term ESM pool issuances. Supported by an external consultancy firm, the ESM opted for an intermediate solution – the so-called semi-macro approach – that was more efficient than a pure macro-hedging proposal and more flexible than a micro-hedging approach. However, this solution turned out to be more complex to implement than initially envisaged, so the ESM adjusted the calculation method for target amounts of receiver IRS twice during the implementation period to ensure the relevance and efficiency of the hedge.
- **The specific treatment for Greece, while in line with the ESM legal framework, diverted from the pricing policy principles.** The diversified funding strategy implied that all the costs from the ESM pool issuances be passed through to beneficiary member states according to the amount of their outstanding loans with the ESM. The creation of a specific IRS portfolio for Greece to isolate the costs relating to the hedging and then allocate them to Greece could be undertaken within the ESM legal framework but it was a clear deviation from the spirit of the diversified funding strategy. And, it created a precedent other beneficiary members could wish to derive benefit from. So, the ESM might need to revise pricing policy to prepare for any such an eventuality.
- **The metrics the ESM established to forecast its maximum future collateral needs are still based on an approximate calculation derived from the Basel Standard approach.** A more sophisticated approach should be implemented.

Conclusions

In the very short time of less than six months the ESM delivered two important measures to reduce Greece's interest rate risk. However, a lack of experience at the ESM in the technicalities required entailed a heavy workload and operational risk incidents. The ESM also had to implement technical solutions within its existing framework, in particular the ESM pricing policy and borrowing guidelines, and this compelled it to develop workarounds that would be seen as lacking robustness should similar measures to be requested by other ESM members.

[1] Eurogroup Statement on Greece, 25 May 2016, Available at: https://www.esm.europa.eu/press-releases/eurogroup-statement-greece-25-may-2016.
[1] Ibid

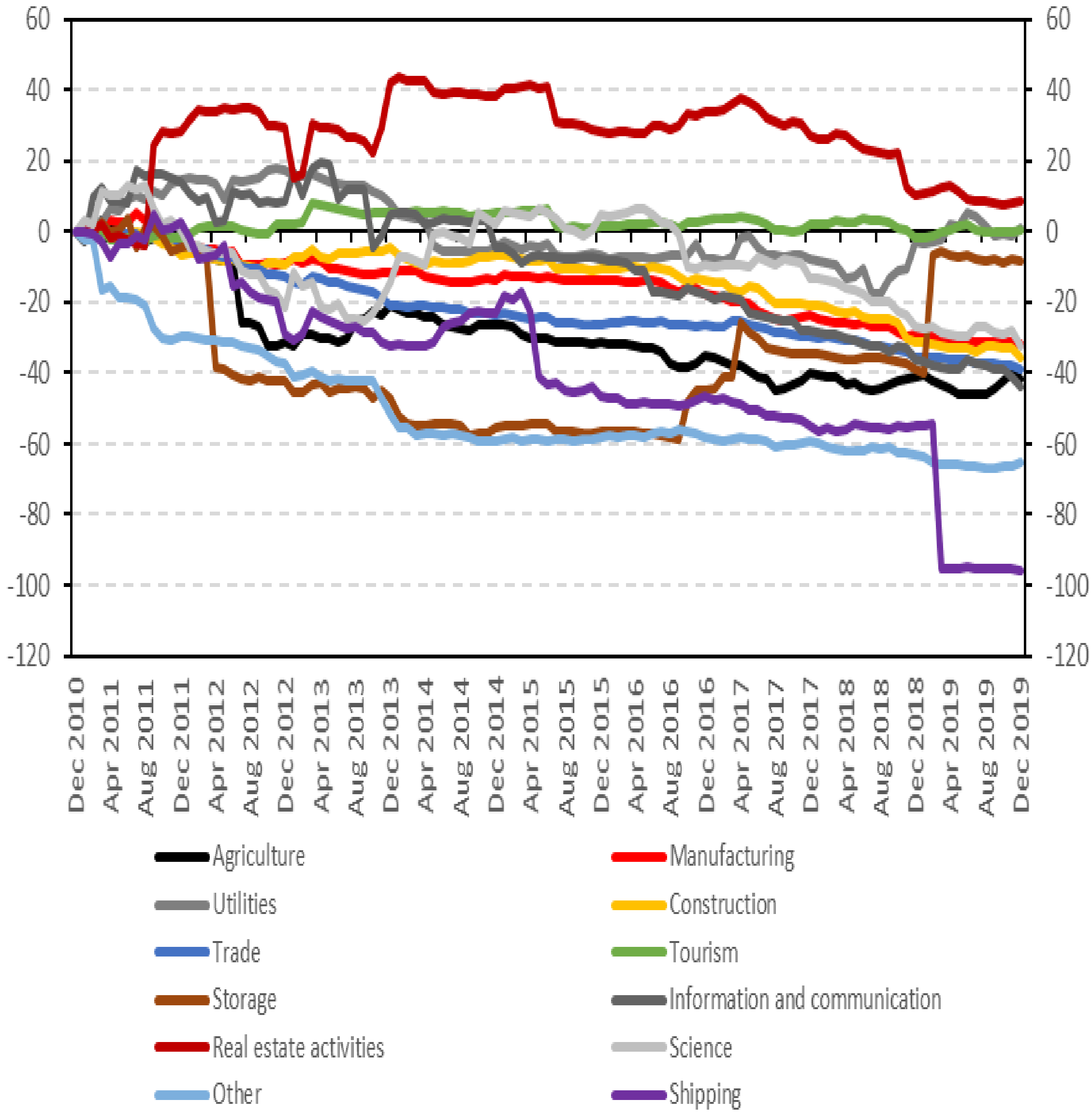
6. Appendices to Chapter 6 – Sustainability

This appendix complements the evaluation report's Chapter 6 on sustainability. It contains a number of supplementary charts on the development of macroeconomic and financial sector indicators (Figure 6.2) to provide a more comprehensive picture of the sustainability and resilience of the Greek economy.

Figure 6.1

Change in NFC loans per economic activity

(Dec. 2010 = 100)

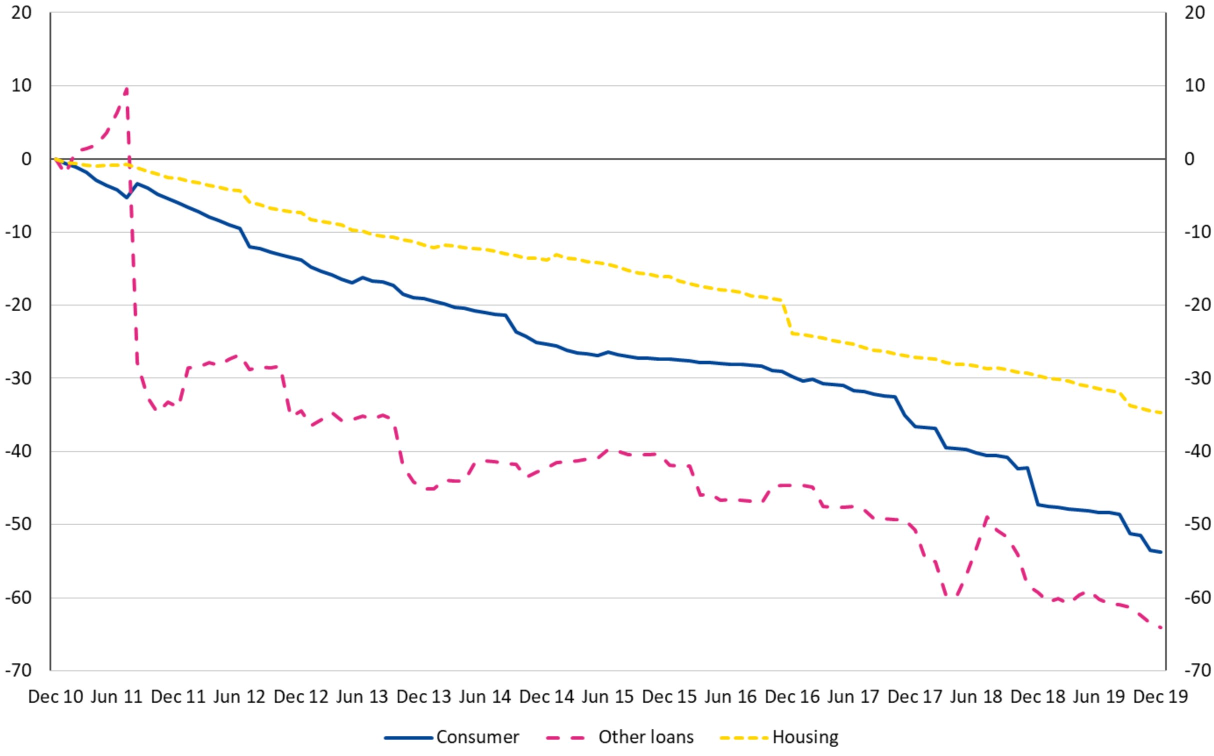


Source: Bank of Greece

Figure 6.*2*

Change in household loans per loan type

(Dec. 2010 = 100)

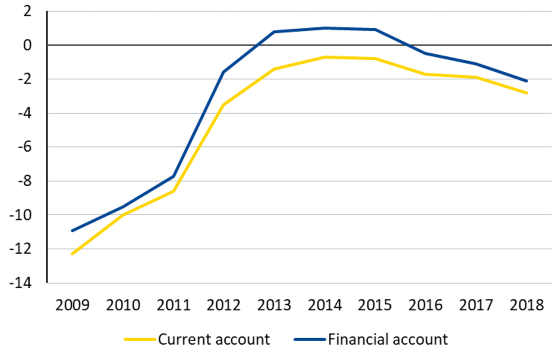


Source: Bank of Greece.

Figure 6.3

Current and financial accounts for Greece

(in % of GDP)

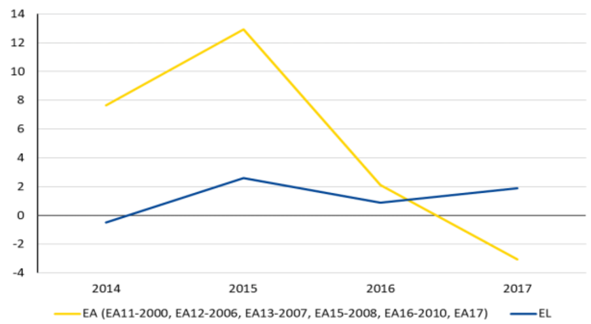


Source: Eurostat

Figure 6.4

Foreign direct investment

(inward flows, in percentage points of y/y change)



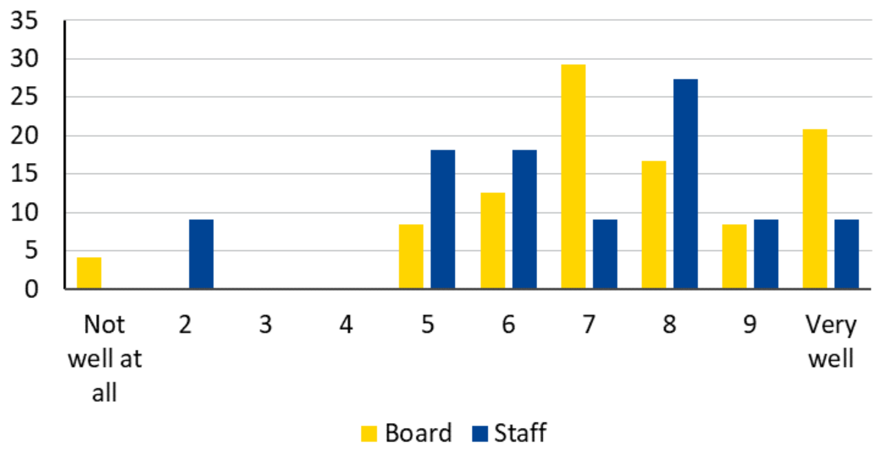
Source: Eurostat

7. Appendices to Chapter 7 – Cooperation and Partnerships

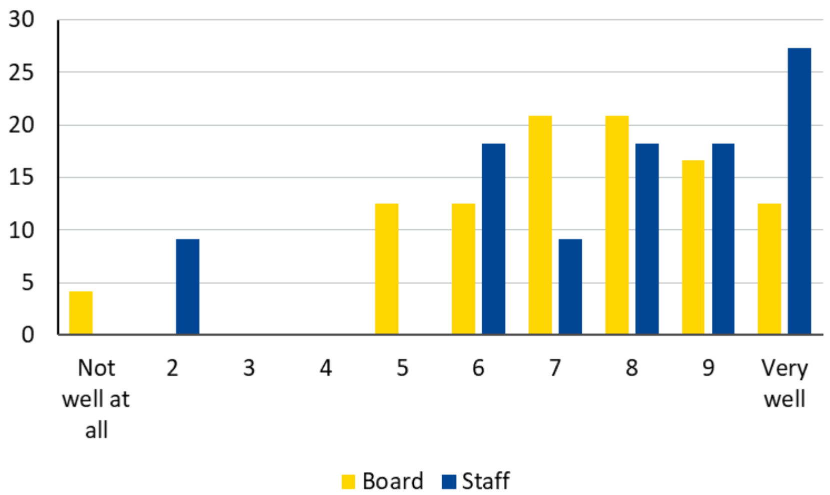
This appendix complements the evaluation report's chapter 7 on cooperation and partnerships. It contains further background on survey results and a summary of the IMF supported arrangements for Greece.

Figure 7.1:
How well were the ESM programme strategies communicated to the following stakeholders in Greece?
(Board and ESM staff survey responses)

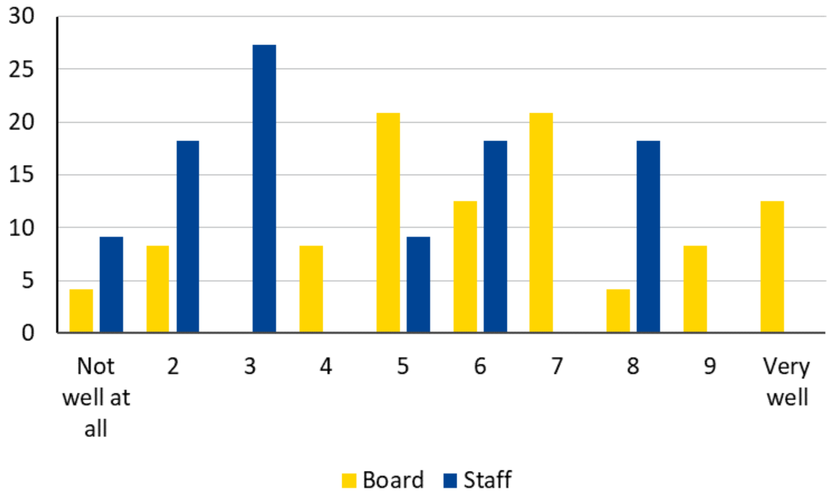
Greek authorities



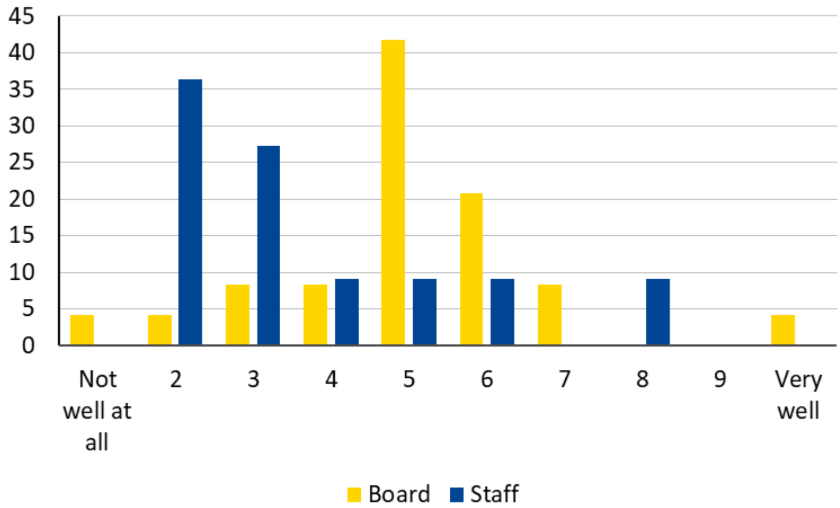
Greek authorities



Greek parliamentarians



Labour unions



Source: Board and staff surveys conducted by ESM evaluation team

Table 7.1

IMF arrangements for Greece

Date/Phase	First IMF Programme	Second IMF Programme	Precautionary Stand-By arrangement
Request date	3 May 2010*	9 March 2012	20 July 2017
Approval date**	9 May 2010***	15 March 2012****	31 August 2018; Approval in principle only, conditional on receipt of debt relief assurances from Greece's European partners
Initial expiry	8 May 2013	14 March 2016	Not activated*****
Exit	Cancelled 14 March 2012	15 January 2016	N/A
Initial duration	Three years Stand-By Arrangement (SBA)	Four years, Extended Fund Facility Arrangement	1 year 1 month
Monitoring	N/A	Post-Program Monitoring	
EFSF/ESM involvement	No	EFSF	ESM
Partners	IMF, EC, ECB	IMF, EC, ECB, EFSF	IMF, EC, ECB, ESM
Focus	Restoring confidence and fiscal sustainability; restoring competitiveness; safeguarding financial stability.	Strengthen competitiveness; Improve fiscal position; restore financial stability; reduce debt levels below 120%/GDP by 2020.******	Policies that can help restore macroeconomic stability in the medium run, while protecting vulnerable groups; a framework for Greece's European partners to provide debt relief.

Notes: *Date for the first Letter of Intent. ** Date on which the Facility agreement was entered into effect. *** IMF (2010). **** IMF (2012a). ***** IMF (2017). ****** Address Greece's balance of payments problems, correct competitiveness gap, support growth and employment; restore public finances to sustainability; secure financial system stability, and to distribute the cost of adjustment (IMF, 2012b).
Source: Compiled by ESM evaluation team from IMF programme documents and web site

Sources

IMF (2010): Press Release No. 10/187. Accessible at:
https://www.imf.org/en/News/Articles/2015/09/14/01/49/pr10187

IMF (2012a): Press Release No.12/85. Accessible at:
https://www.imf.org/en/News/Articles/2015/09/14/01/49/pr1285

IMF (2012b): Greece: Letter of Intent, Memorandum of Economic and Financial Policies, and Technical Memorandum of Understanding. Accessible at:
https://www.imf.org/external/np/loi/2012/grc/030912.pdf

IMF (2017): IMF Country Report 17/229. Accessible at:
https://www.imf.org/~/media/Files/Publications/CR/2017/cr17229.ashx

8. Appendices to Chapter 7 – Online and social media analysis

Perception analysis of the ESM Greek financial assistance programme – a comparative study of online activity around programme exit

Authors: Iakov Frizis, Christine Lugrine, Elissavet Greasidou, Benedikt Jonas, and Fabio D'Aversa

8.1 Introduction

Public perceptions surrounding the provision of financial assistance to a country are a central component affecting programme ownership. They contain information on public confidence in the credibility of a programme vis-a-vis economic recovery and uncertainty over future prospects. Other things being equal, poor credibility and high uncertainty may subdue aggregate demand more than otherwise, thus impairing economic growth (OECD 2016, 2018). Moreover, perceived poor prospects for economic growth coupled with extremely uncertain events (e.g. the 2015 Greek referendum) might trigger capital outflows. In economies such as Greece, where deposits form a major source of bank financing, outflow of funds would reduce the banking system's capacity to finance growth.

This report investigates the volume and sentiment of online and social media publications associated with the ESM Greek financial assistance programme, to better understand changes in public perceptions between two important periods:

- the completion of the European Financial Stability Facility (EFSF) financed assistance and transition to the European Stability Mechanism (ESM) supported assistance (January 2015 to September 2015), and
- the completion of the Greek ESM programme (April 2018 to October 2018).

Developments relating to the Greek financial programme were a key contributor to European market uncertainty during the 2015 period of analysis. Analysis of the volume of online and social media activity helps to develop a proxy for economic uncertainty induced by programme developments. The number of mentions[18] of the Greek financial assistance programme dropped significantly after the agreement on the ESM programme on 15 August 2015, which coincided with a reduction in European stock market volatility. The drop seems to reflect a reduction in international public interest in Greek financial assistance programme developments maybe because the perceived contagion risk had been mitigated. However, Greek public interest barely waned in comparison, with the public continuing to view the economy's future as uncertain.

Low public confidence in the capacity of the implemented Greek financial assistance programme to generate growth dominated the 2015 period of study more than that in the 2018 period. Analysis of the sentiment that online and social media activity reflected helps to develop a proxy of publicly perceived programme credibility. Net sentiment relating to the Greek financial assistance programme had changed from negative to positive at the point where the 2018 study period begins. Austerity weighed heavily on public sentiment during the 2015 study period, with negative sentiment accounting for 52% and positive for 17% of total mentions. Then, during the 2018 study period the Institutions were portrayed more favourably in public debate and expressions of anger relating to austerity were replaced by discussion about

[18] A "mention" is a relevant publication. Its relevancy was first determined by the extraction query. Here, the query was developed to identify publications in online news and social media that discussed the EFSF and ESM financial assistance programmes. The mentions were then separated into three groups: overall mentions; mentions relating to the EFSF and/or the ESM; mentions reflecting Greek perceptions. These three groups could be subdivided into two study periods, one for the 2015 period and another for the 2018 period.

programme exit. The public focused more on the Greek economy's future outlook, past mistakes and whether the programme exit could be deemed as a success. Critics of the programme during the 2018 study period pointed to the excessive socioeconomic costs Greece had incurred. Negative sentiment accounted for 40% of total mentions and positive for 43%.

During the 2018 study period the EFSF/ESM featured more frequently in public debate about the Greek financial assistance, compared to the 2015 study period. The perceived importance of the institution increased, as did its capacity to shape public perceptions relating to the financial assistance provided to Greece. Publicly available metadata on internet-user discussions about the Greek financial assistance helps to investigate the network of online users shaping public perceptions about the programme. An influencer network analysis shows the ESM/EFSF functioned as a central node only during the 2018 study period.

Three interesting findings emerge from a qualitative review of the online generated content, which could motivate further research:

- **Public perceptions sentiment about a given institutional entity, and by association the financial assistance programme, may be subject to change when a personality commonly associated with the institutional entity leaves the stage.** Public perception focused heavily on personalities such as Alexis Tsipras, Yanis Varoufakis, Wolfgang Schäuble, Angela Merkel, Mario Draghi, and Jeroen Dijsselbloem. Public perceptions about a government or institution were linked to the personality commonly associated with the institution involved. As a result, programme communication may be optimised as a function of the individuals publicly involved in the intervention, leading to better publicly perceived programme credibility.
- **The impact of the June 2018 debt relief agreement on public perceptions seemed to be underwhelming, failing to inspire confidence about the future prospects for the Greek economy**. The online community engaged heavily with publicly shared opinions of popular economists who questioned the capacity of debt relief to improve Greek debt sustainability. The structure and/or the communication of the debt relief package offered to Greece may had been suboptimal.
- **Austerity took centre stage in the public discussion about the programme, overshadowing other programme elements.** This heavily impaired the programme's publicly perceived credibility about delivering growth and fostered negative sentiment about the Institutions, which the public viewed as actors imposing a reform programme rather than offering one.

The rest of this report splits into three parts. Section 8.2 presents the approach to query-based text mining, sentiment analysis and influencer mapping; here the paper discusses the caveats that this analysis faced and steps taken to safeguard the consistency and control for bias of the estimator. This section also provides advice about generalising the inferences drawn from the internet-using population discussions on the EFSF and ESM financial assistance programmes, to the entire target population. Section 8.3 discusses the analysis results for three different levels of presentation, namely: overall results; those specific to the EFSF/ESM involvement; and results describing the activity of the Greek online community. Section 8.4 discusses the findings that could motivate further research.

8.2 Methodology

This chapter comprises four sections. Section 8.2.1 introduces the tools and sources for the online and social media analysis. Section 8.2.2 presents the rationale behind the use of online and social media analytics to study public perceptions, and the data extraction approach. Section

8.2.3 discusses caveats, and the final section, 8.2.4, covers the use of results-filtering to hone identification and augment the study's analytical capacity.

8.2.1 Online and Social Media analysis

At its very core, online and social media analytics involve using search queries to mine for relevant information inside (text) data that has been scraped from publicly accessible websites.[19] Examples of such websites include company websites, the website of the European Stability Mechanism, the European Commission, or the Greek Finance ministry, as well as social media pages such as Twitter[20] and news websites like CNN and the Economist.[21] This report looked exclusively at content available on news websites and Twitter[22].

The analysis performed on the scraped data generates two types of volumetric results: number of publications – hereafter referred to as 'mentions' – and engagement. Each mention refers to one publication. This publication may be a news article or a social media post (e.g. tweet). Each engagement refers to an instance of sharing, liking or commenting on a mention.[23]

In addition to the volumetric data, by using natural language processing, machine learning algorithms and principles of social network analysis, the report produced two qualitative metrics: sentiment and top authors. Sentiment is a categorical variable that describes each mention. It can take one of three values: positive, negative or neutral. The sentiment algorithm that this analysis uses complements natural language processing with training data to enable the identification of idiosyncratic characteristics in sentiment analysis on the topic of the Greek financial assistance. The report identifies top authors based on popularity metrics, such as received engagement. Accessing available metadata, such as the author's social media handle, offers a view into demographics (geo-location, gender, language of publication). Accessing Twitter data and observing the references by authors to one another can identify mapping interactions within a given topic between the major authors who generate mentions and amplifiers who share or quote the initial mention.

In this type of study, the quality of results (consistency, lack of bias and power to generalise) rests on the capacity of the query to correctly segregate relevant information from the irrelevant, and a sentiment rule that the learning algorithm can mimic, following the provision of learning data.

To define a consistent estimator of online activity allowing comparisons across time and groups of observations or countries it would be sufficient to work with a representative sample of online activity. This means that any query needs to be conceptually broad enough to capture the entire online conversation or a representative sample of the topics comprising the total online conversation.

To achieve an unbiased volumetric estimator of online activity it is sufficient that any noise observed in the mentions is identically and independently distributed across the different dimensions of observation (topic, country and time). The same applies for noise generated by

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[19] Web scraping means copying (specific parts of) web pages into a local database. Text mining is the process by which research identifies relevant information within the (to be) scraped data. Publicly accessible websites refers to content that is not behind paywalls or protected by privacy settings or regulations.

[20] See. https://twitter.com/explore

[21] See. https://edition.cnn.com/ and https://www.economist.com/.

[22] LinkedIn and Facebook would have been informative but their content is protected by privacy settings and regulations, so it was not be possible to access information on the entire population of users publishing about the Greek financial assistance programme.

[23] In this report we do not use engagement as a raw metric. We only use engagement to produce rankings for authors.

the sentiment algorithm.

To generalise from the sample population[24] to the target population, one of two core identification assumptions needs to hold:

> Assumption 1: The active internet-using population presents a representative sample of the target population on the basis of author and amplifier characteristics, for example age, gender, income group and education.
>
> Assumption 2: Opinions among the active internet-using population, and the internet-using-plus-offline population are similarly distributed.

If neither Assumption 1 nor Assumption 2 hold, then results hold only for the sampled population.

This report posits (without demonstration) that Assumption 2 holds, because the active internet-using population functions as the principal source of information for the target population (Ofcom 2019, Statista 2019, EC 2017). This is likely to manifest itself through information-generation, dissemination or agenda-setting. In line with mainstream communication theories on public perception-shaping, framing and agenda-setting (Jasperson et al 2007), it is reasonable to assume that:

- the more often an individual is exposed to a certain viewpoint the more likely it becomes that the individual will gradually converge towards a viewpoint;
- the more often an individual is exposed to a piece of information/an issue, the more likely it becomes that the individual will treat the information/issue as one of major importance.

Thus, controlling for variation in prevalence of mentions (frequency of like-minded mentions and engagement) within a given topic, one can relatively safely generalise from observing the internet-using population about the target population, which is a mix of individuals with and without an online (active) presence.

This report defines its target population as those with international markets perceptions[25] and perceptions shared by Greek-speaking people.[26] A less conservative reading would involve expanding the target population to include European countries and other countries ranking high in the Education First English Proficiency Index 2015-2018[27] with an interest in the Greek financial assistance programme (see Appendix Figure 8.15).

8.2.2 Rationale

This report investigates the volume and sentiment that described online activity relating to the ESM Greek financial assistance programme, to better understand changes in public perceptions between two important periods:

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[24] Individuals with access to the internet who participate in the online debate about the programme by posting original content.

[25] This is based on the use of English as the lingua franca, especially about economics and financial matters of international importance.

[26] This is based on the use of Greek as one of the two languages used by the identification strategy. Greek is the mother tongue of only two countries – Greece and Cyprus – so the identification is fairly narrow. Cypriot voices will not impair results, given the similarity of perceptions relating to the topic and the small volume of mentions coming from Cyprus compared to Greece.

[27] See. https://www.ef.com/wwen/epi/.

- the completion of European Financial Stability Facility (EFSF) financed assistance and transition to the European Stability Mechanism (ESM) supported assistance (January 2015 to September 2015), and
- the completion of the Greek ESM programme (April 2018 to October 2018).

The data extraction uses a text-mining algorithm to identify mentions of the Greek financial assistance, in Greek and English, from Twitter and online news data. The algorithm has no geographic limitation, except for China, and is based on word queries developed after an exploratory online content analysis, consultations with the ESM evaluation team and a review of publicly available European Commission documents and International Monetary Fund reports (including Article IV).

In line with the ESM evaluation exercise, this analysis focuses on public debate that mentions the EFSF and/or the ESM financial assistance programmes from an institutional perspective, so it identifies only relevant mentions by filtering out discussions about the performance of the Greek government or important political topics in Greece, such as the immigration crisis; these might have coincided with the financial assistance programmes, but had no direct connection to them. (See section 8.2.3 for details).

The rest of section 8.2.2 discusses the calculation of volumetric estimates and the calculation of qualitative estimates.

Volumetric estimates

Volumetric estimates are the direct results of the application of the text-mining algorithm on the scraped data. The text-mining algorithm identified mentions discussing the financial assistance provided to Greece by using topic keywords (e.g. Regling, ESM, troika, financial assistance, economic adjustment, austerity, private sector involvement, debt sustainability) and geographic keywords such as Greece or Hellenic Republic.

To avoid missing relevant mentions, the analysis team initiated a broad set of keywords and then introduced restrictions until no systematic noise was observed.[28] Restrictions involved the use of Boolean operators (e.g. "AND"[29], "OR"[30], "SENTENCE"[31] and "NEAR/n"[32]) to develop complex queries and exclusion filters. Exclusions focused on specific topics or keywords.

Qualitative estimates

Qualitative estimates are the result of sentiment analysis and social network analytics. For the sentiment analysis, based on the mention sentiments, an artificial intelligence algorithm augments the traditional text-mining. For the influencer mapping, Twitter data are used to establish links through quotes, shares or tweets between Twitter users, people who create relevant original mentions and amplifiers, who are people that share the content with a wider audience. In addition, the report investigates the characteristics of the 100 most-engaging

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[28] The approach followed allowed for results to feature in part in English and in part in Greek, also making provisions for the misuse of accents in Greek and the use of 'Greeklish', and Greek language in the Latin alphabet.

[29] Example: Greece AND ESM. Will identify as relevant a mention if the word 'Greece' and the word 'ESM' is included.

[30] Example: Greece OR ESM. Will identify as relevant a mention if the word 'Greece' or the word 'ESM' is included.

[31] Example: Greece SENTENCE ESM. Will identify as relevant a mention if the word 'Greece' appears in the same sentence as the word 'ESM'.

[32] Where, n=10. Example: Greece NEAR/10 ESM would identify as relevant any mention if the word 'Greece' appears in a distance smaller or equal to 10 words from the word 'ESM'. The distance can also be specified to satisfy a certain direction – before or after one of the two words.

authors for 2018 and the 50 top influencers for 2015;[33] this is based on influencer scores and received engagements.

The sentiment analysis augments the traditional natural language processing approach by using training data to categorise mentions into positive, negative or neutral. Native language analysts familiar with the Greek financial assistance programme train the algorithm to recognise topic idiosyncrasies. The training data were drawn randomly from the pool of relevant mentions and the algorithm was asked to evaluate the sentiment of the mentions. The analysts reviewed the sentiment evaluation produced by the algorithm, corrected mistakes and fed the new information back to the algorithm, which then 'learnt' and produced another set of randomly selected results for another review by the analysts. This iterative process ran until a training round of 100 randomly checked mentions erred in less than 5% of cases.

To successfully converge to this 5% threshold after a finite number of iterations, it was imperative that the machine easily identify a pattern in the corrections and adjust its estimates. To achieve this, analysts had to develop a narrow identification rule that would establish consistency when the mentions were categorised into positive, negative and neutral.

The sentiment algorithm was trained using these four principles:

- First, categorised as positive, negative or neutral expressions of opinion, based on basic lexicological rules
- Second, identified as sarcasm, depending on the context. If the text was convoluted, then the check was narrowed to just the title's key point
- Third, categorised as a positive statement of fact if the mention discussed any achievement of programme objectives
- Fourth, categorised as a negative statement of fact if the mention discussed any failure to meet programme objectives (see Appendix section 8.7.4).

These four principles generated these interpretations of negative and positive sentiment:

<u>Negative Sentiment</u>:

Mentions that criticise the Institutions, the programme in general, the design/implementation of conditionality or the capacity/potential of the programme to deliver its objectives. This also includes mentions that communicate steps taken that fail to/adversely contribute towards programme objectives and general economic sustainability, without necessarily spelling out that a programme objective is achieved. It can also refer to mentions communicating the adverse effects of inaction.

<u>Positive Sentiment:</u>

Mentions that praise the Institutions, the programme in general, the design/implementation of conditionality or the capacity/potential of the programme to deliver on its objectives. This also includes mentions that communicate steps taken that positively contribute towards programme objectives and general economic sustainability, without necessarily spelling out that a programme objective is achieved.

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[33] The influence score measures the amount of engagement an author receives from a search query and measures the percentage of posts that mention and/or retweet the user within the search timeframe.

8.2.3 Filters

The analysis employed three filter types:

- topic-specific
- geographic
- exclusion filter.

The filters identify four categories of mentions:

- overall mentions
- mentions discussing the EFSF and/or ESM involvement
- mentions representing the views and interest of Greeks
- mentions not directly relevant to the financial assistance programme.

Perceptions relating to the EFSF/ESM and Greek perceptions can be viewed as a subset of overall mentions. This categorisation supported investigation into:

- how central the public perceived the role of the EFSF/ESM during the two periods and what is the sentiment surrounding the EFSF/ESM involvement in Greece;
- how the public of the beneficiary country perceived financial assistance.

The topic-specific filter extracted results that discussed the work of the ESM in isolation, or with other institutions. This excluded all results that did not discuss the ESM or ESM staff. The geographic filter extracted results that came from Greece, by examining the location of the source of the mention, the general location of its author or the location where the article was written. When this information was not available, the article was attributed to the country that used the language of the mention most frequently (see section 8.2.4 on caveats).

The exclusion query ensured topics not directly related to the financial assistance programme were excluded from the results, a vital step to minimise noise. Following a careful examination of the results, and in line with the rationale described in section 8.2.2, the implemented filter excluded discussions relating to Brexit, Northern Macedonia, the immigration crisis, Greece-Turkey negotiations on disputed territories, Cyprus and energy matters, financing provided from Russia or China, sports, financing/aid for natural disasters in Greece. The exclusion filter also tried to control for comparisons between the Greek crisis features and what was happening in third countries such as Italy or the United States.

8.2.4 Caveats

This analysis faced four principal caveats that could have impaired the validity of the estimates:

- For the 2015 study period, the population of relevant mentions was not available. Instead, the analysis used a representative sample to estimate sentiment
- The geo-location algorithm used for the 2015 study period differed to that used for the 2018 period, which raised comparability issues because volume changes between the two study periods might be attributable to a methodology change or to a change in public interest
- The query was not translated into all the languages in which the Greek financial assistance programmes might have been discussed
- Data needed to identify a mentions' country of origin were incomplete. Section A of the appendix presents a detailed discussion on the caveats and robustness checks.

The paragraphs below explain, in brief, how the analysis addressed each of the caveats.

The use of a representative sample helped address the first caveat. By knowing the distribution of the population of mentions across time, it was possible to extract a representative sample of mentions for each month, which was proportionate to the true contribution of the month to the total population of mentions between January 2015 and September 2015.[34] However, it was not meaningful to produce a mapping of the network of Twitter influencers for the 2015 study period without the entire population of mentions.

A difference arose in the geo-location estimations of mentions sent from Greece between the first and the second study periods because the 2018 period identification rule was less restrictive; this hampered comparisons. To comment on the evolution of public interest about the Greek financial assistance programme, the report examined distributional properties instead of a levels comparison. This involved the implicit assumption that the methodology change might affect the volume, but not the distributional properties of the mentions sample.

Data collection limitations inhibited the production of a query to observe mentions in every possible language. Therefore, the report investigated online activity in the lingua franca of international markets (English) and the national language of the beneficiary country (Greek). The report refrains from presenting an extensive analysis on the country of origin for the mentions.

8.3 Analysis

8.3.1 Summary of findings

This section presents the results of the perception analysis relating to the ESM Greek financial assistance programme involving the investigation into two important periods:

- the completion of the European Financial Stability Facility (EFSF) financed assistance and transition to the European Stability Mechanism (ESM) supported assistance (January 2015 to September 2015), and
- the completion of the Greek ESM programme (April 2018 to October 2018).

Developments around the Greek financial programme were a key contributor to European market uncertainty during the 2015 analysis period. Examining the volume of online and social media activity helps to develop a proxy for the economic uncertainty induced by programme developments. The number of mentions about the Greek financial assistance programme dropped significantly after the August 15th, 2015 ESM programme agreement, and coincided with a fall in European stock market volatility. The drop seems to reflect reduced international public interest in Greek financial assistance programme developments because the perceived contagion risk had been mitigated. However, in comparison, Greek public interest barely declined; the public there continued to view the economic future as uncertain.

Low public confidence in the capacity of the implemented Greek financial assistance programme to generate growth defined the 2015 study period, more than in the 2018 period. Analysis of the sentiment reflected online and in social media activity helps to develop a proxy for publicly perceived programme credibility. Net sentiment about the Greek financial assistance programme changed from negative to positive when the 2018 study period began. Austerity weighed heavily on public sentiment during the 2015 study period, with negative sentiment

[34] Our capacity to extract a perfectly representative sample is only inhibited by an upper extraction bound introduced by the data provider for 2015, at 10,000 mentions a month.

accounting for 52% of total mentions; positive sentiment accounted for 17% of total mentions. During the 2018 study period, the Institutions were portrayed more favourably in public debate. Expressions of anger relating to austerity were replaced by discussion about a programme exit. The public focused more on the Greek economy's future outlook, past mistakes and whether programme exit could be deemed a success. Critics of the programme during the 2018 study period pointed to the excessive socioeconomic costs Greece incurred.

The EFSF/ESM featured more frequently in the public debate on the Greek financial assistance during the 2018 study period. The perceived importance of the institution increased, as did its capacity to shape public perceptions about the financial assistance provided to Greece. Publicly available metadata on internet-users discussing Greek financial assistance online helps investigate the network of online users that shaped public perceptions about the programme and influencer network analysis demonstrates that the institution only functioned as a central node during the 2018 study period.

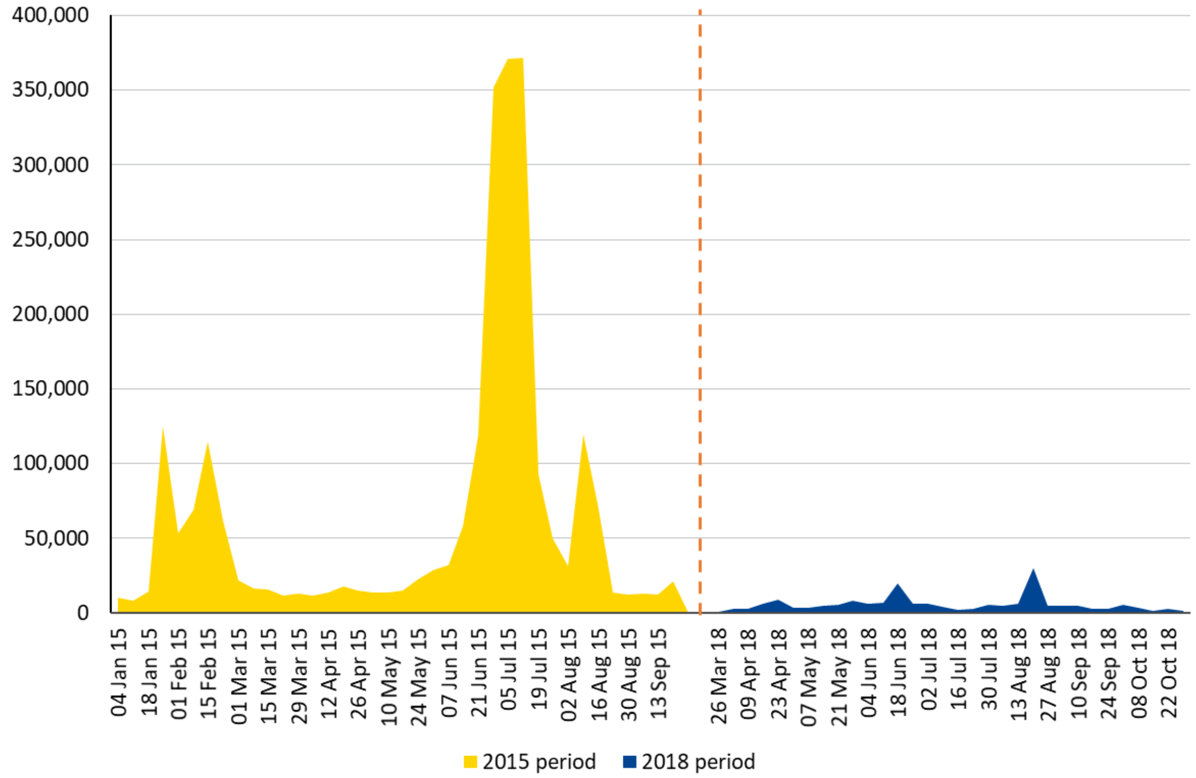
The rest of this section breaks into four sections; the first three present the results of the perception analysis of mentions and sentiment for [a] overall results [b] EFSF/ESM-related sentiment; and [c] Greek perceptions. The last section discusses influencer network maps the analysis produced for 2018.

8.3.2 Financial Assistance Programme – Overall findings

The Greek financial assistance programme received high media coverage. Figure 8.1 presents the time-series of mentions generated from January to September 2015 and April to October 2018. A higher level of sustained activity arose towards the end of the EFSF programme, establishing three distinct spikes associated with key programme developments: early disagreements between the SYRIZA government and the Institutions (EC, ECB and IMF); the Greek referendum; and the approval of the ESM financial assistance programme.[35]

[35] Period 1: mean = 63,917 and median = 21,534. Period 2: mean = 5,620 and median = 4,484.

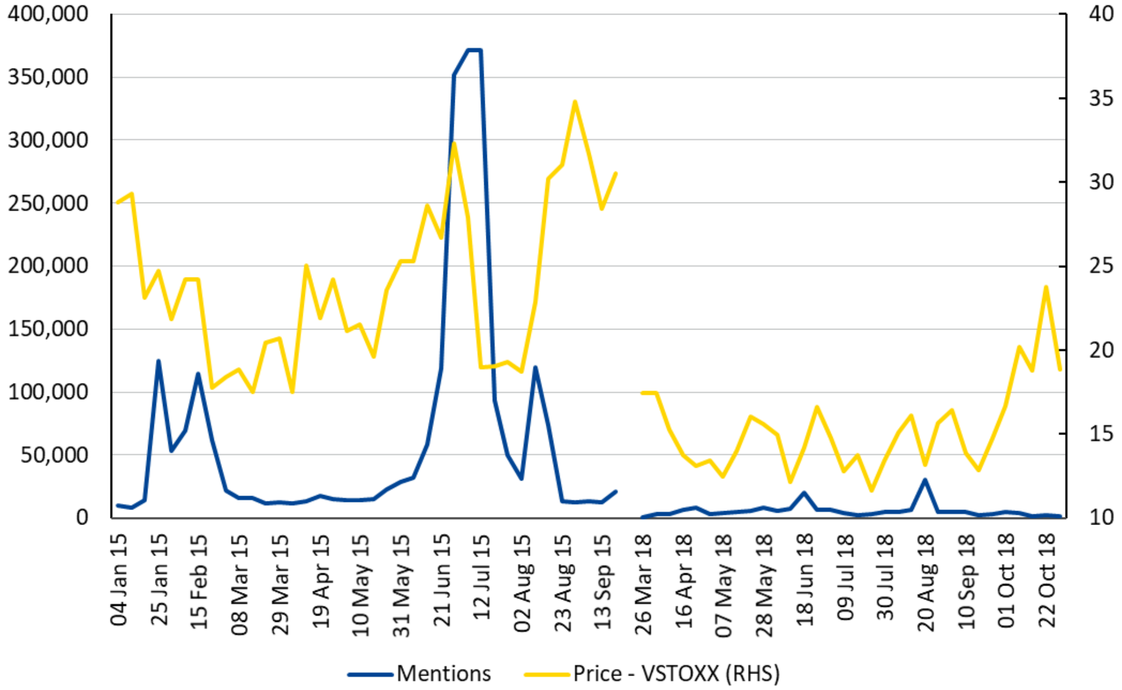
Figure 8.1
Variation in mentions over time
(overall findings)



Source: Own calculations based on publicly available data from Twitter and online news websites

Online activity spikes reflect heightened uncertainty induced by programme developments. The rise to power of the SYRIZA government, with Alexis Tsipras as Prime Minister and Yannis Varoufakis as Finance Minister, signalled the start of a period of uncertainty when markets priced in the impact of a possible Grexit on the European economy. This uncertainty about future collaboration between the Greek government and the Institutions is also visible in the performance of European stock market volatility VSTOXX index (see Figure 8.2). The VSTOXX is the European volatility benchmark on the Eurex Exchange.

Figure 8.2
Uncertainty relating to the Greek financial assistance programme
(left hand scale in number of mentions, right hand scale in €)



Source: Own calculations based on publicly available data from Twitter and online news websites; https://www.stoxx.com/

Table 8.1
Correlation between mentions of the Greek financial assistance and European stock market volatility
(Correlation between Mentions and VSTOXX price)

	Mentions	F.Mentions	F2.Mentions	F3.Mentions	F4.Mentions	F5.Mentions	F6.Mentions	F7.Mentions	F8.Mentions
Correlation	0.347*	0.4351*	0.490*	0.462*	0.447*	0.438*	0.406	0.298*	0.233
St. deviation	0.003	0	0	0	0	0	0.001	0.025	0.088

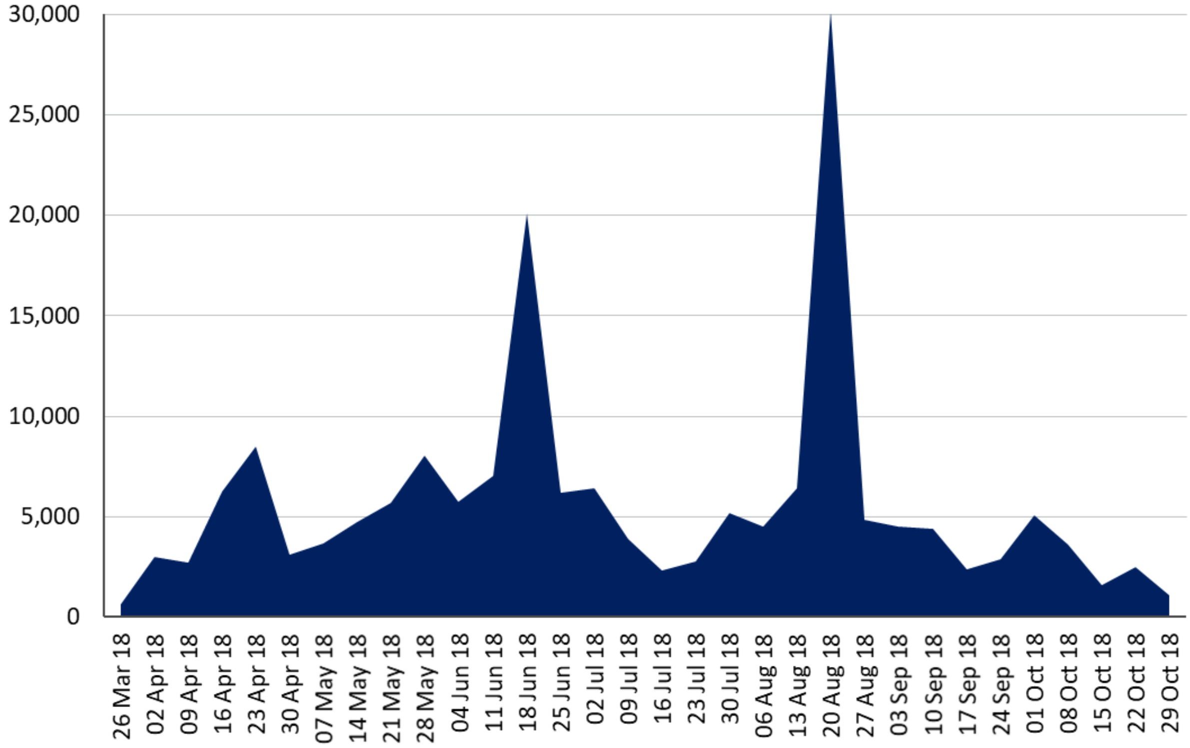
Note: F.Mentions signifies the first lead of the 'mentions' variable. The star signifies significance at p=0.05.
Source: Own calculations based on publicly available data from Twitter and online news websites; https://www.stoxx.com/

During the 2018 study period, Greek financial assistance programme developments did not contribute to European market uncertainty. From April 2018 and October 2018 the Greek financial assistance programme underwent a period marked by fewer events that caught the public interest.[36] Instead, day-to-day developments accounted for most of the online activity. Figure 8.3 draws attention to the two main events that generated a jump in mentions:

- during the week of June 18th, 2018 Euro area countries agreed a debt relief deal for Greece
- during the week of August 20th, 2018 Greece concluded its ESM financial stability programme.

[36] Mean and median are extremely close compared to the first period, the first at 5,620 mentions and the second at 4,485.

Figure 8.3
Variation in mentions over time – ESM programme
(overall findings)



Source: Own calculation based on publicly available data from Twitter and online news websites

The 2015 study period identified low public confidence in the capacity of the implemented Greek financial assistance programme to generate growth. And the debate on the adverse effects of austerity on the Greek economy captured the attention of the public, while the SYRIZA government was trying to renegotiate the financial assistance terms. So in this study period, the Greek government not only exhibited low programme ownership, but also challenged the financial assistance agreement terms. During this period, negative sentiment accounted for 52% of all mentions, followed by neutral sentiment statements at 31% and positive mentions at 17%. The negative sentiment was offset only momentarily (see Figure 8.6) when news broke about the Eurogroup agreement for the ESM Greek financial assistance programme.

Figure 8.4
Word cloud – 2015 period

Source: Own calculations based on publicly available data from Twitter and online news websites

Figure 8.5
Word cloud – 2018 period

Source: Own calculations based on publicly available data from Twitter and online news websites

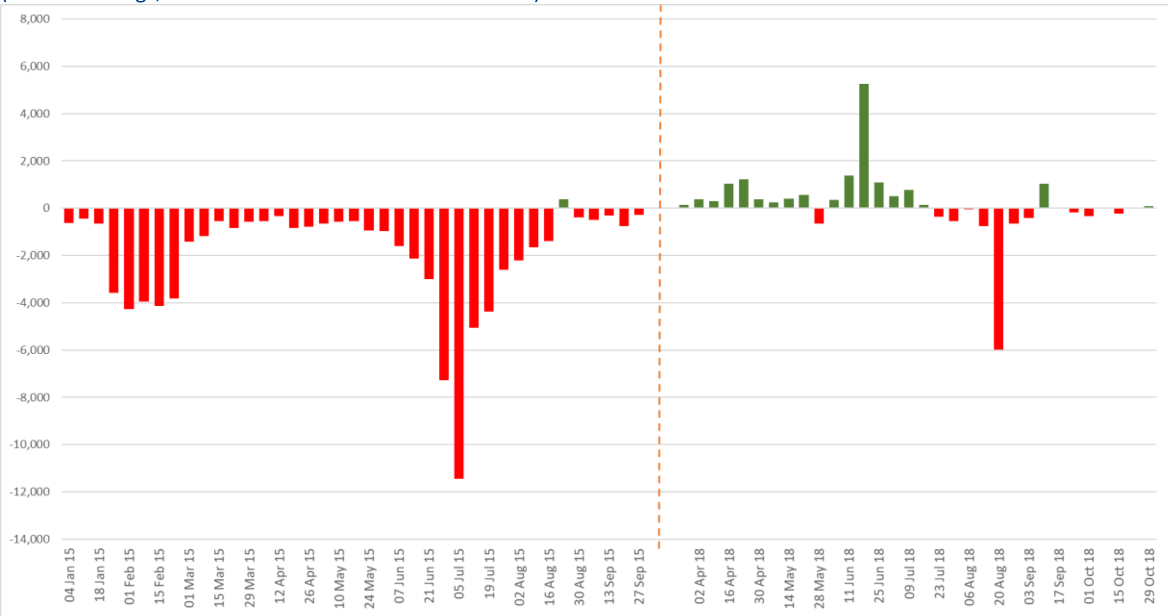
Comparing the 2018 study period with that of 2015 shows public confidence in the capacity of the implemented Greek financial assistance programme to generate growth improved and the net sentiment reversed. During this study period, positive sentiment accounted for 43.6% of all mentions, followed by 40.8% negative and neutral mentions were at 15.4%. Positive sentiment associated with programme completion and an exit to the financial market was offset by strong criticisms pointing to the socioeconomic costs Greece incurred during the adjustment period.

Some proponents, who felt that access to international bond markets marked a historic moment, still felt it was still a pyrrhic victory; this was because of the country's poor economic performance, the impact of austerity on small businesses, high youth unemployment, a brain drain and inadequate safety nets. Concern increased about the possibility of the country failing to meet promises made about future reforms should governments revert to old attitudes.

Figure 8.6

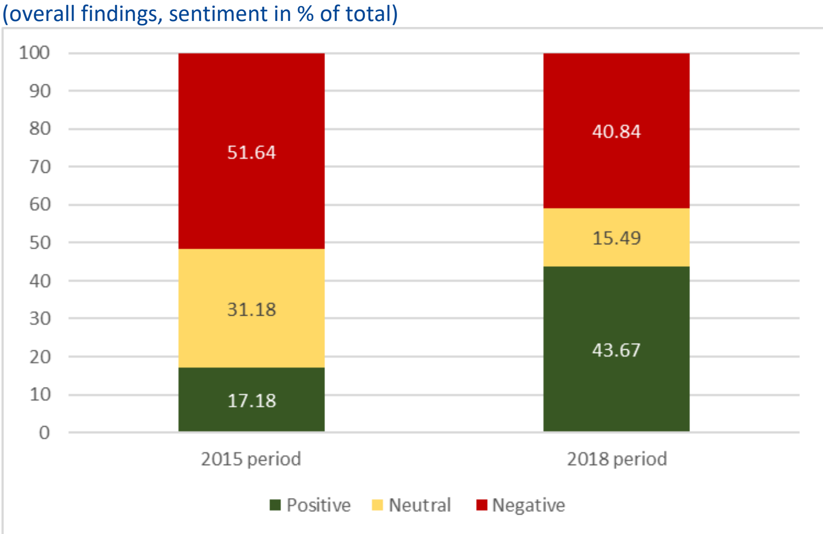
Variation in sentiment over time

(overall findings, net sentiment in number of mentions)



Note: Colouring represents positive (green) and negative (red) values. The net sentiment is calculated as positive-minus-negative mentions. This visual shows within each study period the variation in the intensity of positive and negative sentiment. But the analysis uses samples of different size for the two study periods, so volume comparisons between the 2015 and 2018 study periods could be misleading.

(overall findings, sentiment in % of total)



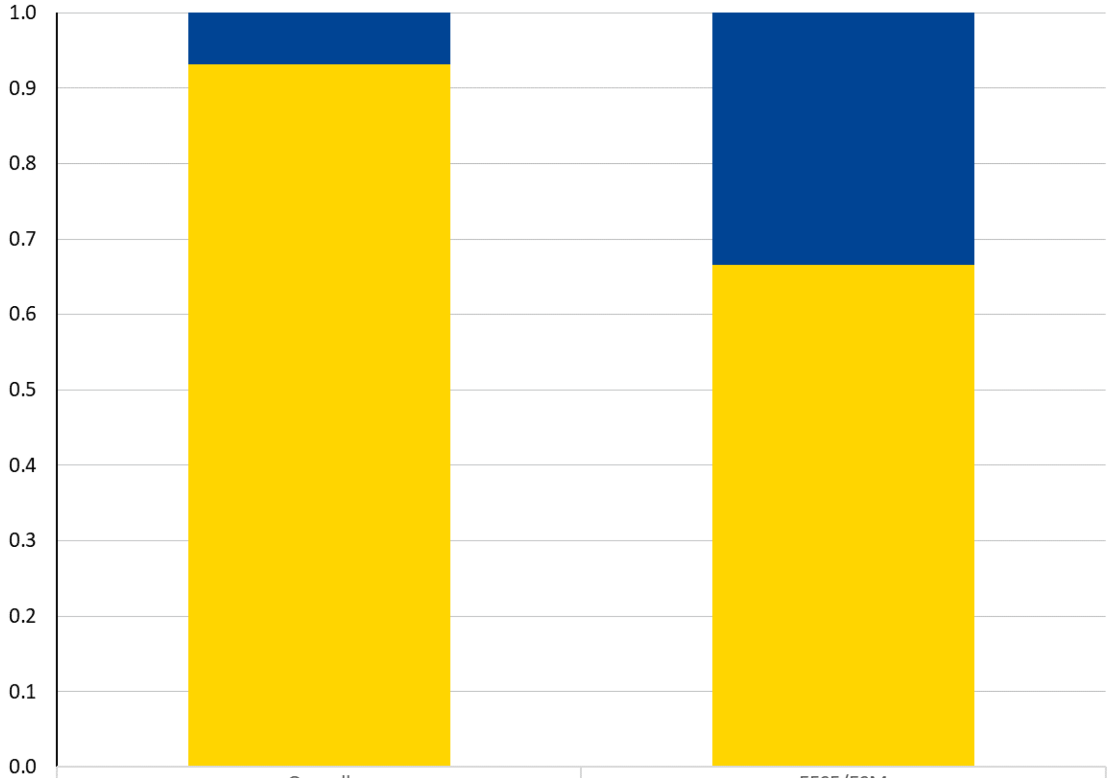
Source: Own calculations based on publicly available data from Twitter and online news websites

8.3.3 Financial Assistance Programme – findings relating to ESM

This section focuses on public perceptions about the EFSF/ESM involvement within the Greek financial assistance programmes. The EFSF/ESM featured more frequently in the public debate on the Greek financial assistance during the 2018 study period compared to the 2015 study as the perceived importance of the EFSF/ESM increased. So also did its capacity to shape public perceptions about the financial assistance provided to Greece.

Figure 8.7 displays this increase within the lower public interest in the Greek financial assistance programme developments; overall mentions dropped to 179,844 from 2,428,854.

Figure 8.7
Distribution of mentions between the two programmes
(comparison of overall and EFSF/ESM findings)

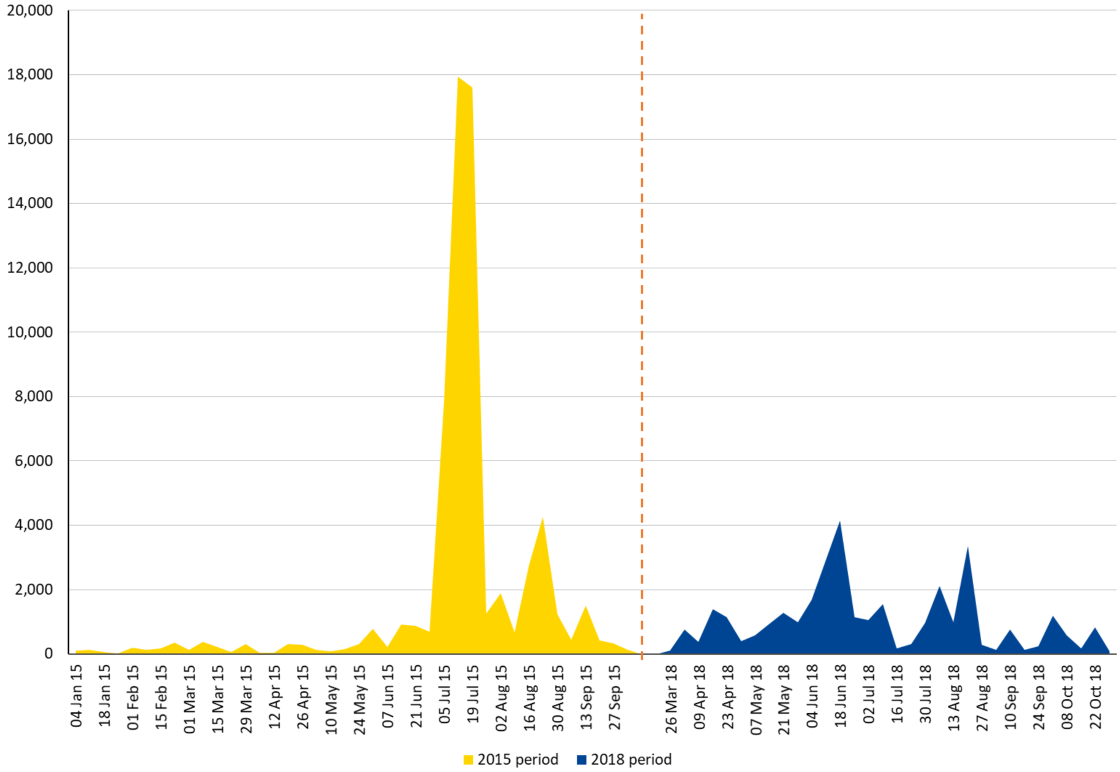


	Overall	EFSF/ESM
2018 period	179,844	32,794
2015 period	2,428,854	65,443

Source: Own calculations based on publicly available data from Twitter and online news websites

During the 2018 study period, the EFSF/ESM featured in the news each day because it was involved extensively in the programme implementation. Online activity consisted of sustained discussions about programme developments, rather than about highly-uncertain events. During this 2018 study period, median mentions reached 883 a week, more than double that produced during the EFSF programme at 304 mentions, despite the 2015 programme period having reported a higher volume of mentions.

Figure 8.8
Distribution of mentions over time
(EFSF/ESM subset)



Source: Own calculations based on publicly available data from Twitter and online news websites

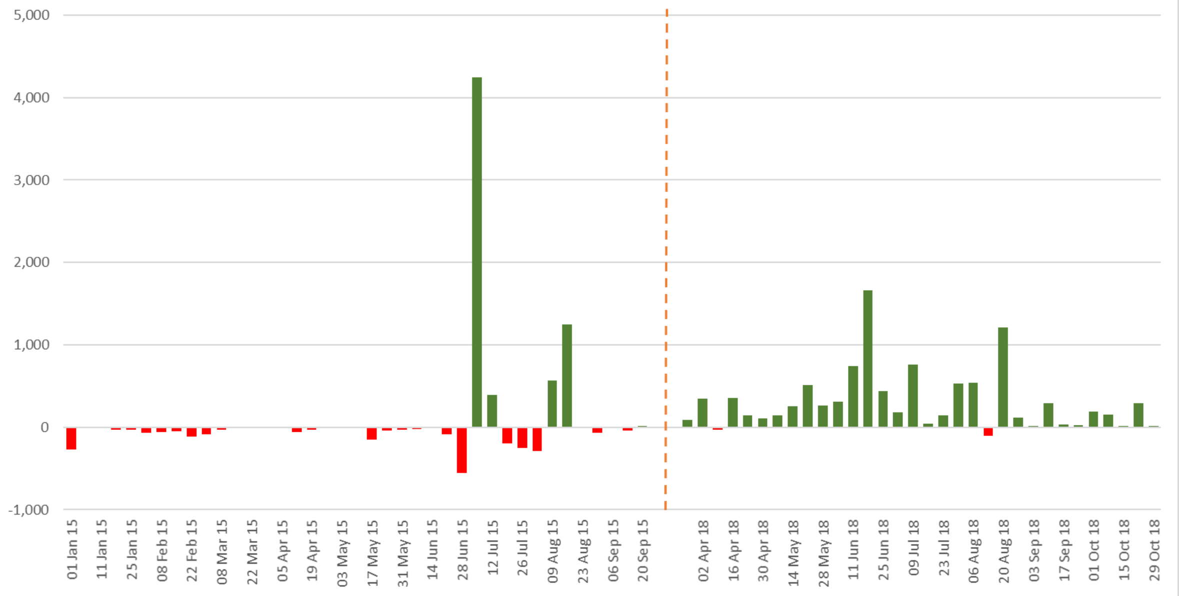
During the 2015 study period, net sentiment describing mentions discussing the ESM/EFSF involvement was weakly negative. News of the third financial assistance programme changed net sentiment to positive for most of the remaining period. Positive sentiment during this period reflected market relief about the third financial assistance programme agreement and a better outlook for Greek debt sustainability. Within debt sustainability, discussion topics that featured most were: low service costs; privatisation; bank recapitalisation; and interest relief. In contrast to the positive sentiment, the negative sentiment mentions did not focus on specific events. Instead, the public expressed distaste for the imposition of austerity policies by the Institutions.

During the 2018 study period, net sentiment within mentions that discussed the ESM/EFSF involvement was positive. This was fuelled by mentions that described the programme exit and securing access to markets, which were regarded as successes for the country. Negative sentiment reflected the general uncertainty about future economic sustainability; the general view regarded the programme exit as coming at an unacceptably high cost. Lacklustre economic growth, an onerous frontloading of austerity and persistent unemployment were the most prominent cost factors discussed.

Figure 8.9

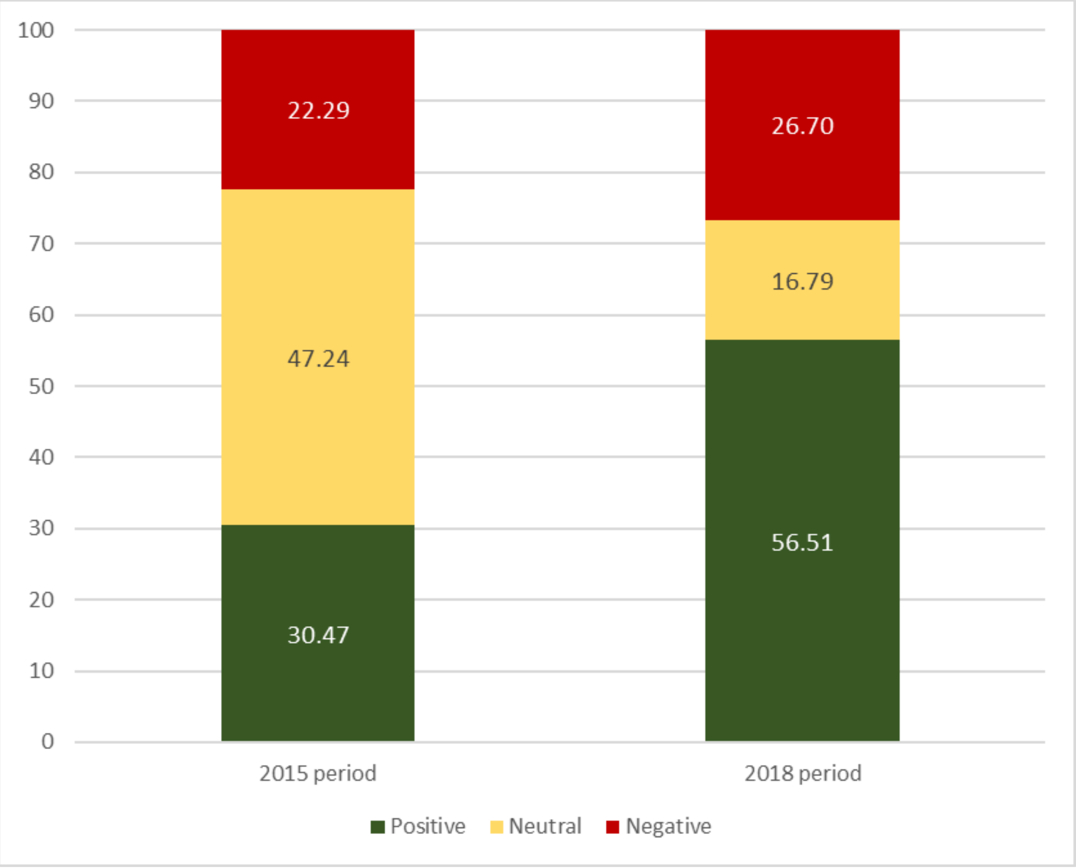
Variation in sentiment over time

(EFSF/ESM subset, net sentiment in number of mentions)



Note: Colouring represents positive (green) and negative (red) values. The net sentiment is calculated as positive-minus-negative mentions. This visual shows within each study period the variation in the intensity of positive and negative sentiment. But the analysis uses samples of different size for the two study periods, so volume comparisons between the 2015 and 2018 study periods could be misleading.

(EFSF/ESM subset, sentiment in % of total)



Source: Own calculations based on publicly available data from Twitter and online news websites

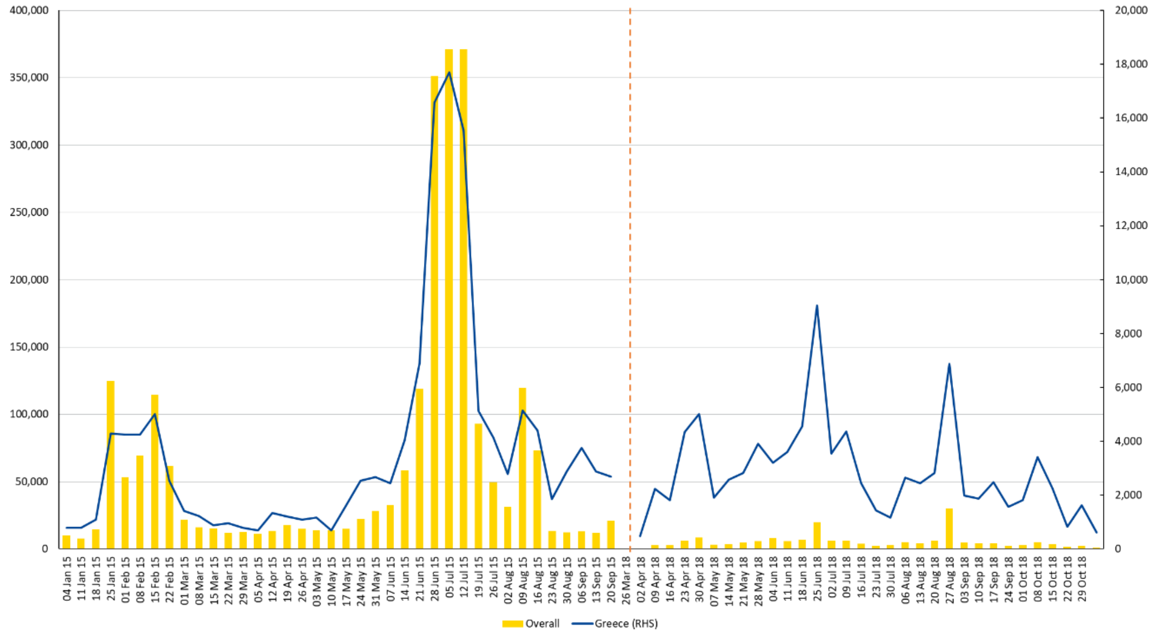
8.3.4 Financial Assistance Programme – Findings originating in Greece

The number of mentions of the Greek financial assistance programme dropped significantly after the August 15th, 2015 ESM programme agreement, which coincided with a fall in European stock market volatility. This section narrows the scope of the analysis down to Greek perceptions about the financial assistance programme. Between the 2015 and 2018 study periods Greek public interest proved to be little changed compared to the drop in international public interest (see Figure 8.10). The public in Greece regarded the economy's future as less uncertain during the 2018 study period compared to 2015, but the perceived economic growth prospects did not mark any strong improvement.

Figure 8.10

Distribution of mentions over time

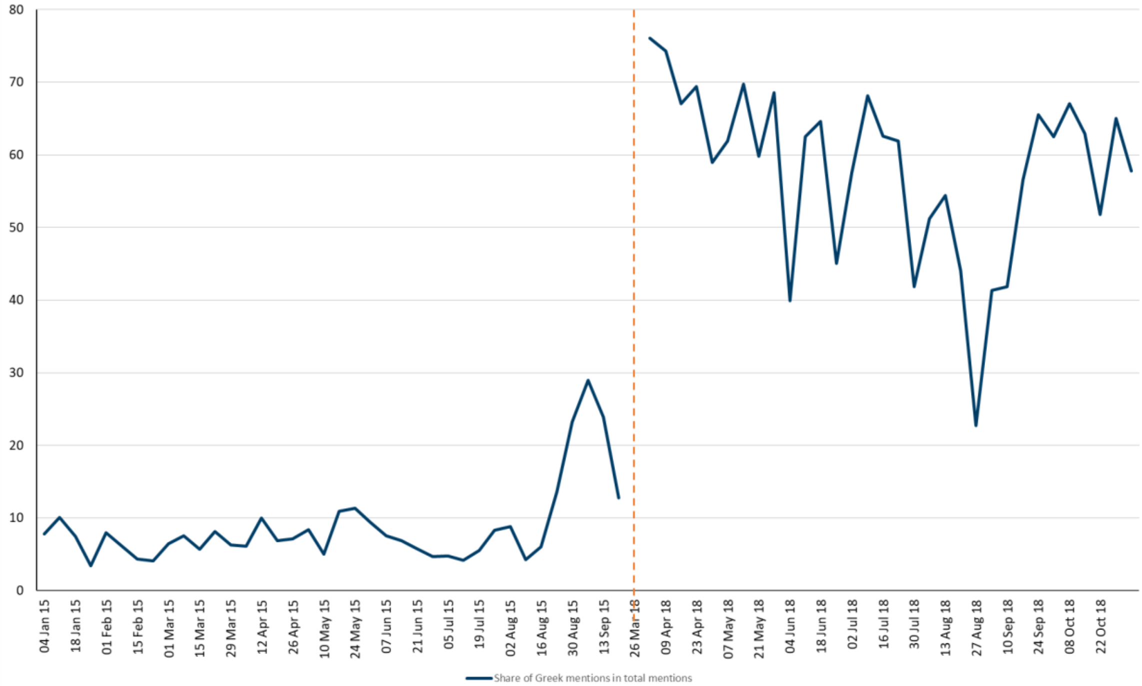
(in number of mentions)



Note: 'RHS' stands for right-hand scale.

Source: Own calculations based on publicly available data from Twitter and online news websites

(in % Greek mentions in overall mentions)



Source: Own calculations based on publicly available data from Twitter and online news websites

The programme successfully addressed fears of contagion, because international public interest remained very low throughout the 2018 study period, but Greeks continued to perceive the growth momentum as weak. This is visible from the persistently high Greek public interest in day-to-day financial assistance programme developments, a finding not driven by the filtering methodology change discussed in Section 8.2.4; looking at the responsiveness to developments associated with the financial assistance programmes by way of the standard deviation rather than the volume of activity ensures a valid comparison of the public interest between the two periods.[37] The authors of mentions identified as Greek were only 2.3 times more responsive to events during the 2015 study period than that in 2018. International authors engaged in the Greek financial assistance debate were 17 times more responsive to events during the 2015 period compared to that in the 2018. Programme developments had become national news that continued to define the day-to-day choices of Greeks, while becoming of little importance to the international public.

Table 8.2
Responsiveness to programme developments
(in standard deviations)

	2015 period	2018 period
Greece	4,152.86	1,778.11
Overall	95,878.89	5,616.47

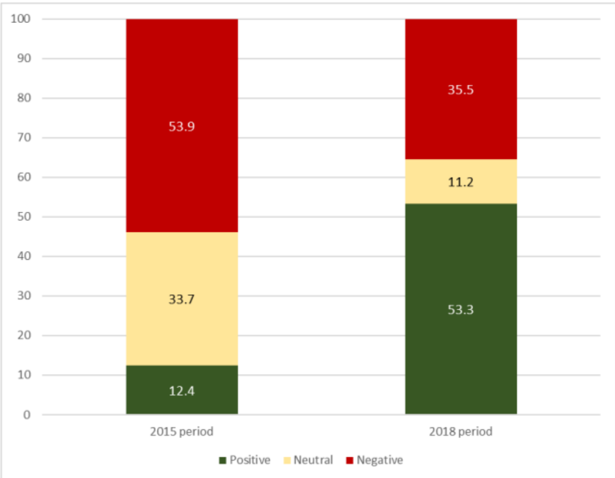
Source: Own calculations based on publicly available data from Twitter and online news websites

[37] As section 8.2.4 discusses, we believe we can safely assume the methodology change only has a volume effect on the sampling, with no effect on distributional properties.

The 2015 study period identified low public confidence among Greeks in the capacity of the implemented Greek financial assistance programme to generate growth. During 2015, positive sentiment accounted for 12% of all mentions originating from Greece relating to the conclusion of negotiations for the third bailout and welcoming the potential debt relief. During the same period negative sentiment accounted for 54% of the total results, with the key themes of the public debate including the introduction of capital controls, the adverse impact of austerity on economic growth and associated social costs, and the overall anti-bailout discourse that culminated in the Greek referendum.

In the contrasting 2018 study period, Greek public confidence in capabilities to implement the financial assistance programme and generate growth improved slightly. This coincided with a period when the Greek government did not engage in public confrontation with the Institutions, and vice versa, so public anger about austerity abated. During the 2018 study period, views on the programme exit drove the net sentiment, with positive sentiment reflecting a public perception that regarded the financial assistance programme exit as a success. In contrast, negative sentiments reflected the public perception that the exit was only a pyrrhic victory; negative mentions criticised the sustainability of Greek debt, questioned the effectiveness of the debt relief plan and underscored the adverse effects on Greece from years of persistent austerity.

Figure 8.11
Variation in sentiment
(results for Greece)



Source: Own calculations based on publicly available data from Twitter and online news websites

8.3.5 Network mapping

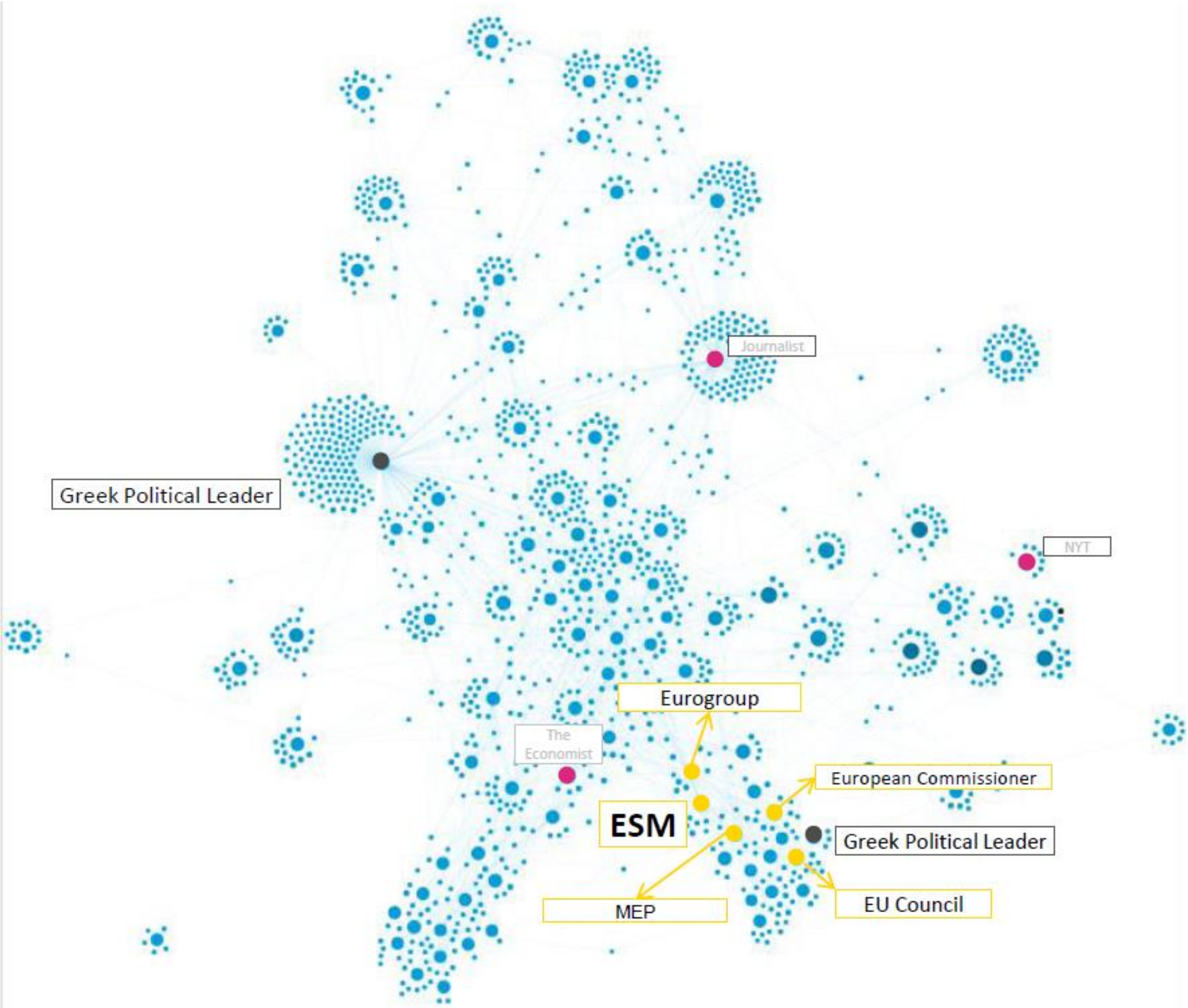
This section provides a snapshot description of the interaction network between authors, who generate mentions, and amplifiers, who share or quote the initial mention. Together they generated and shared mentions about the Greek financial assistance programme during the 2018 period of study, when the EFSF/ESM featured more frequently than in the 2015 period.

Publicly available metadata on internet-user discussions about the Greek financial assistance mrelating to the programme, with mapping of the Twitter information propagation mechanism showing the ESM was a central node within the 2018 influencer network.

Figure 8.12 shows the network mapping display for the Greek financial assistance programme. To preserve visual clarity it displays only the 2,000 most-followed amplifiers. Larger dots represent users creating original content relating to the Greek financial assistance programme and smaller dots represent users who share the original content. The lines show interactions (tweet or quote/share) between the two types of nodes. This gives an understanding of who are the users that initiate discussion on the topic and what is their potential reach in terms of audience.

The figure employs colour coding: *Pink* nodes identify news actors; *yellow* nodes identify European actors (individuals or institutions); *dark grey* nodes identify Greek actors (individuals or institutions); blue nodes identify actors with less influencing potential and/or significance given the focus of the report – the ESM.

Figure 8.12
Influencer network mapping
(full network)



Source: Own calculations based on publicly available data from Twitter and online news websites

The network of influencers discussing the Greek financial assistance displays a high degree of pluralism. There is a large number of original content creators competing to communicate programme developments to the public and shape how the public perceives these developments and the actors publicly involved in the programme. International institutions, political figures and news corporations/financial journals are the main type of original content creators.

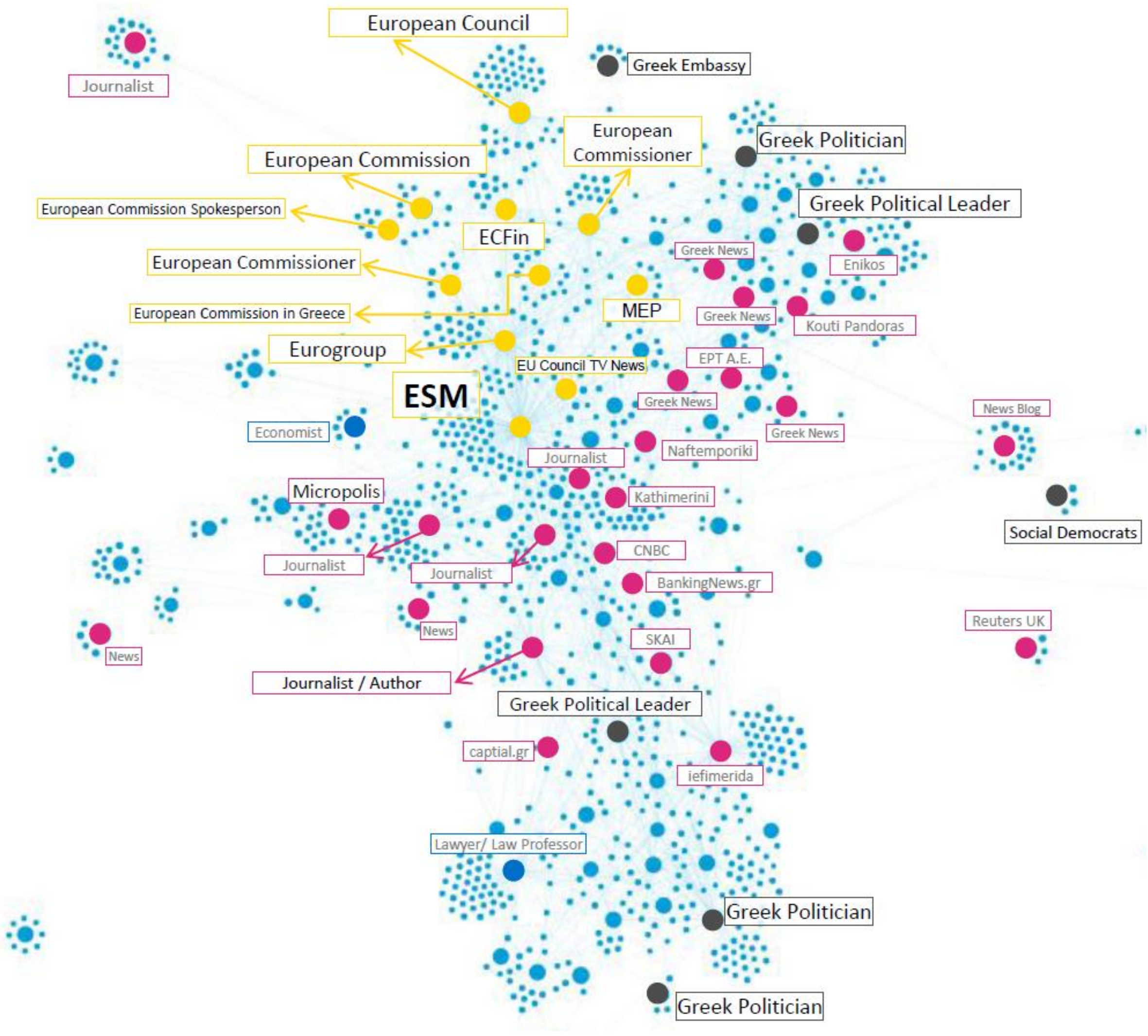
ESM was a central node within the 2018 influencer network. However, other nodes offered a greater capacity to shape public perceptions about the third financial assistance programme, notably the online presence of a Greek politician and a leading journalist. They stood out as key informers about the programme for numerous internet-users and became the prime shapers of public opinion.[38]

Influencer network analysis shows EU Institutions and the ESM increased their influence on shaping public discourse during the 2018 study period, compared to the 2015 study. In 2015, the only EU-related accounts present among the top 50 authors were the President of the European Council (@eucopresident) and the European Central Bank (@ecb). But in 2018 a larger array of EU Institutions and politicians was observed, with the ESM, the President of the Eurogroup, and the EU Council among the leading authors. And while the ESM had failed to feature among the top 50 authors in the 2015 study, it became the second-most engaging author for the 2018 period of study.

Figure 8.13 presents a section of the network mapping for the Greek financial assistance programme that Figure 8.12 presents. It zooms into the network of influencers close to the ESM. The figure employs colour coding: *Pink* nodes identify news actors; *yellow* nodes identify European actors (individuals or institutions), and *dark green* nodes represent Greek actors (individuals or institutions); blue nodes identify actors with less influencing potential and/or significance given the focus of the report – the ESM.

[38] These were not the only such influencers, but they stand out by giving reason for discussion. Engaging with these actors could have improved intervention sentiment, given their influencing power.

Figure 8.13
Influencer network mapping
(in close proximity to ESM)



Source: Own calculations based on publicly available data from Twitter and online news websites

Among the number of authors discussing the ESM, the ESM Twitter itself account was the most active author during the 2018 period, compared to being the third most active during the 2015 study. In 2018 the ESM Twitter account attracted the most engagement within the related network, demonstrating higher public awareness and establishing a stronger voice within associated discussions and mentions on Twitter about the ESM and the Greek assistance programme.

Figure 8.13 highlights the plethora of agents generating original content about the Greek financial assistance programme. Two distinctive groups stand out, European and International agencies, and News agencies. Greek politicians feature in smaller numbers, but with substantial reach.

8.4 Qualitative findings or room for further research

This section discusses a number of inferences, based on indicative evidence. It offers some cautions about using of these inferences and recommends further research to collect evidence to support the findings.

The following points about the EFSF and ESM Greek financial assistance programmes were raised at a workshop of team members involved in training the sentiment algorithm and data analysis:

Point 1.

The team found strong evidence to suggest the Greek crisis was a character-driven drama, with public perceptions focused on personalities, such as Tsipras, Varoufakis, Schäuble, Merkel, Draghi and Dijsselbloem. Sentiment about a given institutional entity – and by association to the financial assistance programme itself – were subject to change when a personality commonly associated with the institutional entity left the stage.

Given this link between public perceptions about a government or institution and the personality commonly associated with the institution, programme communication might be optimised by making it a function to be undertaken by the individual involved, thereby enhancing programme credibility in the eyes of the public.

Point 2.

The team found evidence to suggest debt relief did not exert any significant positive effect over economic expectations. The impact of the June 2018 debt relief agreement on public perceptions was underwhelming and failed to inspire much confidence about the Greek economy’s future prospects. The online community engaged in depth with the publicly shared opinions of popular economists who questioned the capacity of the debt relief to substantially improve Greek debt sustainability. The structure and/or the communication of the debt relief package offered to Greece was potentially suboptimal.

Point 3.

The team found strong evidence to suggest austerity became the main focus for public discussion about the programme, almost completely overshadowing other programme elements. This substantially compromised the programme’s credibility to deliver growth in the eyes of the public and fostered negative sentiments about the Institutions, which the public came to view as imposing requirements rather than offering a reform programme.

8.5 Conclusion

This report presents public perceptions about the ESM Greek financial assistance programme by discussing two periods:

- the completion of the European Financial Stability Facility (EFSF) financed assistance and transition to the European Stability Mechanism (ESM) supported assistance (January 2015 to September 2015), and
- the completion of the Greek ESM programme (April 2018 to October 2018).

This report finds developments in the Greek financial programme were a key contributor to European market uncertainty during the 2015 study period but then international public interest in the Greek financial assistance programme waned during the 2018 study period because the contagion risks were perceived to have been mitigated and no events prompted high uncertainty. By contrast, a decline in Greek public interest was proportionally small during the same period, suggesting the Greek public still viewed the economy's future with uncertainty.

This report shows public confidence in the capacity of any implemented Greek financial assistance programme to generate growth was lower during the 2015 study period, when austerity weighed heavily on public sentiment. During the 2018 study period, the Institutions were portrayed more favourably in public debate, but the programme exit was not viewed positively across the board. Mentions also noted the high socioeconomic costs Greece incurred.

This report investigated perceptions surrounding the EFSF/ESM within the Greek financial assistance programme debate and the role the two institutions had in shaping perceptions about the Greek financial assistance programme and themselves. The EFSF/ESM featured more frequently in the public debate on the Greek financial assistance during the 2018 study period than in 2015. Their perceived importance increased, as did their capacity to shape public perceptions around the financial assistance provided.

8.6 Bibliography

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8.7 Appendix

8.7.1 Caveats and Robustness

We address the first caveat discussed in section 8.2.4 by working with a representative sample. Knowing the distribution of the population of mentions over time, we can extract a representative sample of mentions for each month, which is proportionate to the true contribution of the month to the total population of mentions generated between January 2015 and September 2015.[39] Sentiment-calculation, country of origin and influencer-mapping are the only three types of estimates this caveat affects. As long as the choice of mentions to be extracted is appropriate, then the estimates of overall sentiment and country of origin during the period January-September 2015 will not be biased by month-specific events. However, missing the entire population of mentions would inhibit any mapping of the network of Twitter influencers on this topic.

The effect that the above sampling caveat has on the results depends on how we extract the sample of mentions from the entire population of mentions. A first-best approach to sampling involves randomising the extraction of mentions within each month. Randomised sampling ensures that the working sample is representative of the population, given the monthly sample size is sufficiently large. Therefore, it would allow for the calculation of valid sentiment and country of origin estimates. A second-best approach involves extracting the most engaging mentions. This impairs on our capacity to obtain a working sample of mentions that is representative of the entire population of mentions. We argue that the second-best approach would still allow valid out-of- sample inference if we accept the following Assumption 3.

Assumption 3: *More engaging mentions convey more information relating to public perceptions than less engaging ones.*

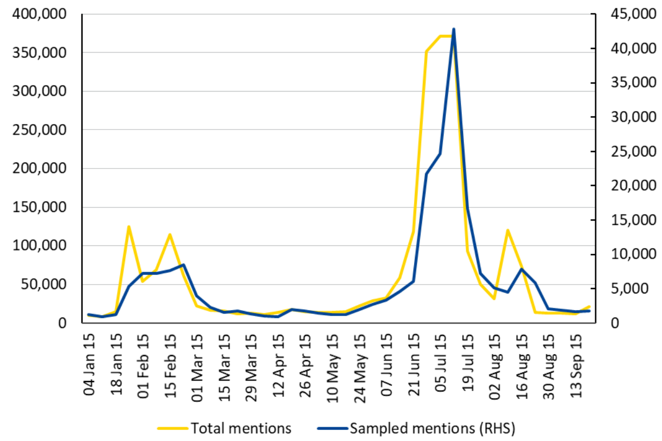
By accepting Assumption 3 we impose an implicit weighting on mentions on the basis of

[39] Our capacity to extract a perfectly representative sample is only inhibited by an upper extraction boundary introduced by the data provider for 2015, at 10,000 mentions a month.

engagement – discount factor of 1 or zero on the basis of whether a mention passes a certain engagement threshold defined by the distribution of mentions by engagement. We suggest the above holds without any loss of generality, accepting that information conveyed by mentions receiving more engagement will also appear more frequently within the population of mentions.

We further assume that the maximum monthly sample of 10 thousand mentions and a total 100 thousand mentions for the entire period is sufficiently large to allow the sample perception value to converge to the population perception value. Figure A.1 presents the distribution of mentions over time for the entire population and the sample, as well as our approach to sampling. We find a compromise between the volume of monthly data captured and the above restrictions by sampling in a way that ensures each month in the sample contributes the same to the sum of sample mentions as in the population.

Figure 8.14
Distribution of mentions over time: sample vs. population



Month	Population	Share	Sample size	Rounded sample
Jan 15	160,027.00	0.07	6,567.32	**6,500.00**
Feb 15	299,066.00	0.12	12,273.32	**12,000.00**
Mar 15	71,543.00	0.03	2,936.04	**3,000.00**
Apr 15	61,470.00	0.03	2,522.66	**2,500.00**
May 15	69,301.00	0.03	2,844.03	**3,000.00**
Jun 15	412,923.00	0.17	16,945.87	**17,000.00**
Jul 15	1,056,885.00	0.43	43,373.32	**43,500.00**
Aug 15	244,867.00	0.10	10,049.05	**10,000.00**
Sep 15	60,635.00	0.02	2,488.39	**2,500.00**
Sum	2,436,717.00	1	100,000.00	100,000.00

Source: Own calculations based on publicly available data from Twitter and online news websites

A difference in the geo-location algorithm used to estimate mentions from Greece between the two periods introduces a comparability issue. The sampled population of authors in the 2015 study period can be viewed as a subset of the 2018 sampled population, thus introducing a difference only in 'levels' as to what is categorised as a mention originating from Greece. The 2015 algorithm only identifies a mention as Greek on the basis of geographic information made available publicly by the author. In the event that no such information is available, the mention will not be attributed to any country. The 2018 algorithm builds on the same principle, but takes a step further to try and allocate the remaining mentions to countries. It looks at the language of the mention and attributes the mention to the country where this language is spoken most. This means that for 2018, all mentions written in Greek without a publicly available geographic stamp are assigned to Greece (rather than Cyprus). This break in methodology makes it impossible to infer differences in the volume of mentions observed between the two periods based on levels. We circumvent this by focusing instead on distributional properties. Section 8.3.4 discusses the variation in mentions between the two periods by looking at the change in the standard deviation from the first study period, for 2015, to the second for 2018, for the Greek results. We compare this with the change in standard deviation observed for the overall results. Assuming the methodology change only has a level effect, we can infer about the 'reactiveness' of the public to events. The methodology change does not affect sentiment estimates.

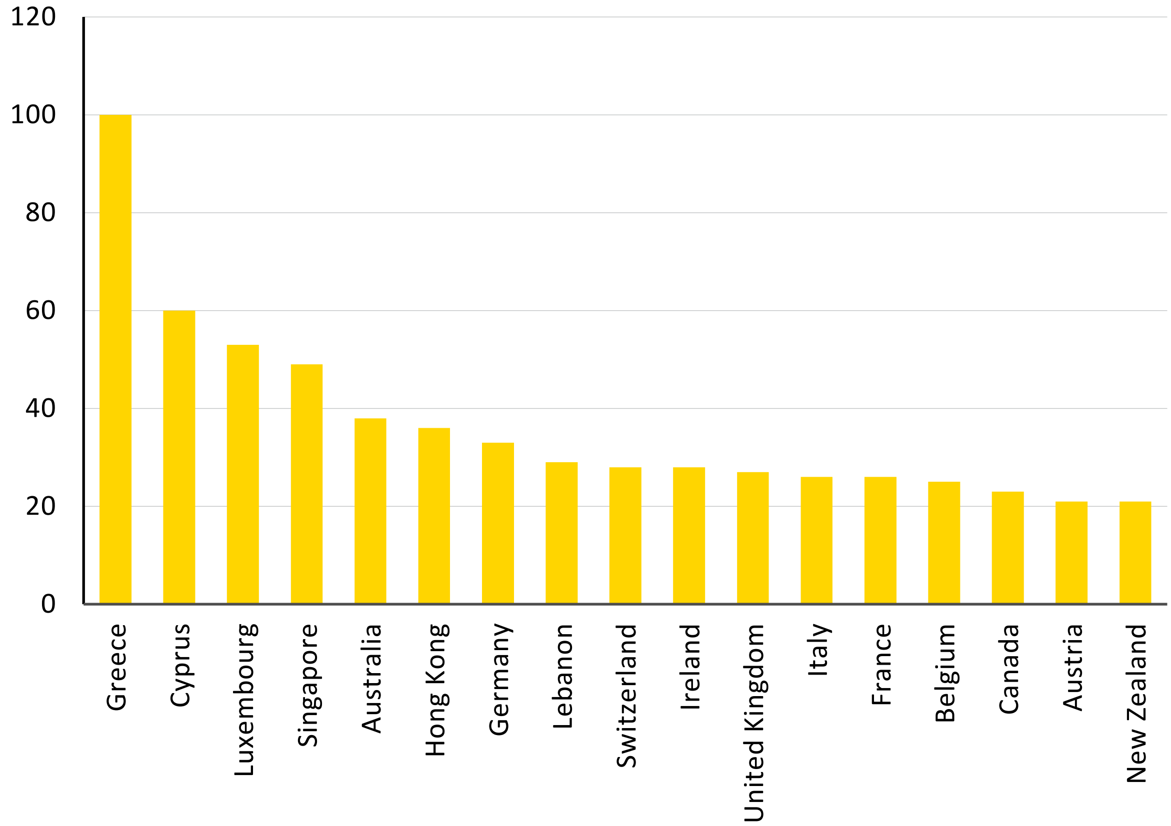
Time and scope limitations inhibit the production of a query that allows the observation of mentions in every possible language. For this purpose we decide to prioritise and use the lingua franca of the international markets – English – and the national language, Greek, of the financial assistance programme target country. By doing so, we forego the analytical strength to discuss results specific to any country other than Greece.[40]

A way to view how much global interest we are losing by this approach is to examine how much residents of different countries are interested in the Greek crisis. To obtain a sense on this, we perform a quick search in Google Trends for topic popularity. We observed that the Greek government-debt crisis generated the highest number of searches compared to other topics in two Greek-speaking countries – Greece and Cyprus. This was followed by a number of English speaking countries (Singapore, Australia, Ireland, Canada, New Zealand) and countries that could be considered leading economic or banking centres (Germany, Hong Kong, Luxembourg, Switzerland, Italy, France, Belgium) so it is safe to assume that English is broadly used in these countries. However, we note that more moderate views are likely to be observed in English than in a national language.[41]

[40] Not including a local language is equivalent to accepting that if we were to venture into producing estimates for this country, the mentions estimate would present a downward bias and the sentiment estimate would be biased towards more positive values. The direction of the bias is based on a higher likelihood of populist views featuring in the local language.

[41] According to Google, the *interest by region* metric shows a variation in topic popularity across countries during a specified time frame. The *interest by region* is a standard metric on a scale from 0 to 100, where 100 is the country with the highest popularity as a fraction of total searches within the country. A value of 50 can be interpreted as a country within which the topic is half as popular. The *interest by region* metric is not an absolute metric, so a higher value means a higher proportion of all queries, not a higher total query count.

Figure 8.15
Variation in interest expressed in the Greek government-debt crisis
(01/03/2015 - 01/03/2020)



Source: Google Trends

We cannot fully address the third caveat. Many authors do not provide information on their location, so it is impossible to identify a mention's true country of origin. Where information is missing, authors fall in one of two categories. Either some associated public information exists in the metadata of the author's web address to support for the identification of the true country of origin (for both study periods) or country of origin could be identified using the language of the publication (only for the second period, because of a change in methodology, discussed above). As we only have Greek and English mentions here, the country of origin estimates will present an upward bias for the United States and downward bias for the rest of the world.[42] For this reason we avoided engaging in a country-of-origin type of analysis.

Online and social media analyses often suffer measurement bias because of an identification strategy based on overly restrictive queries, which leads to a failure to capture the population of relevant mentions entirely. To avoid this, we performed a robustness check that investigated whether by starting from a naïvely-broad query and proceeding with gradual reduction of noise we would be led to identifying the same mentions as relevant. We tested the performance of the naïve query and the analysis query on a 30-day time interval.

We developed the naïve query by interacting keywords relating to Greece and the Institutions involved in the EFSF and the ESM financial assistance programme. From the mentions that the

[42] Cyprus may also present downward bias because it is the only other country where Greek is a widely used language.

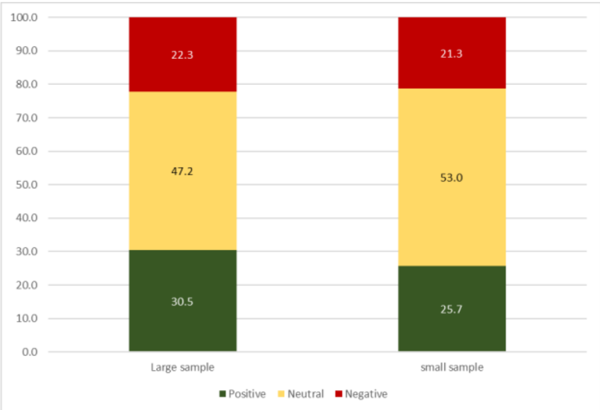
naïve query generated, we randomly selected a sample of 50 mentions. We manually checked whether these mentions were relevant or not. We kept the relevant mentions in a list and discarded the irrelevant. We repeated this process until we had collected 50 randomly selected relevant mentions. We contrasted the list of the 50 randomly selected relevant mentions with the mentions generated from the benchmark query. We iteratively updated the analysis query until the 50 randomly selected relevant mentions were identified by both queries. Then we repeated this process for each language.

To ensure comparability of the sentiment analysis for 2015 between the overall findings and the results relating to the EFSF/ESM, we had to develop EFSF/ESM-related mentions as a subset of overall mentions. For the 2015 study period we used a sample to perform the sentiment analysis rather than the full population of mentions. Given initial sampling constraints, this results in a sample total of 7,262 mentions for the period. To ensure the consistency of our estimator we performed a second extraction, this time explicitly on the EFSF/ESM mentions for 2015. This resulted in the EFSF/ESM mentions no longer being a subset of overall mentions, but obtained a larger sample for sentiment analysis at 47,167 mentions. We found little change between the small sample and the large sample estimates, which supported the consistency of the approach.

Figure 8.16

Consistency of sentiment estimates for EFSF/ESM during the 2015 period of analysis

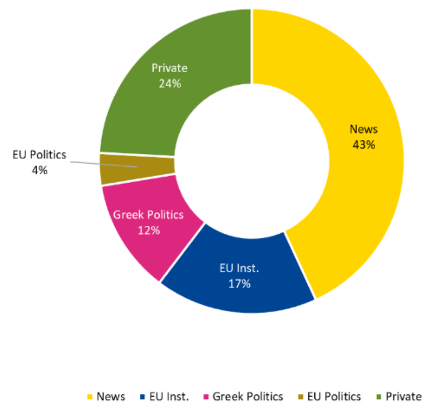
(in %)



Source: Own calculations based on publicly available data from Twitter and online news websites

8.7.2 Top ESM authors by type

Figure 8.17
Top ESM authors by type
(in %, 2018 Greek financial assistance query)



Note: This is based on a categorisation of 61 Twitter handles based on publicly available data.
Source: Own calculations based on publicly available data from Twitter and online news websites

8.7.3 Results of the VSTOXX and Greek financial assistance programme mentions

VSTOXX® is the European volatility benchmark. It is designed to reflect the investor sentiment and overall economic uncertainty by measuring the 30-day implied volatility of the EURO STOXX 50®.

We found a correlation exists between the lead of Greek financial assistance programme mentions and VSTOXX. The inverse of this also holds. Lag values of VSTOXX correlate with mentions of the Greek financial assistance programme. Without the capacity to work with a longer mentions time series with no gaps, we were not able to study the relationship between the two in more detail and infer the relationship structure between programme developments and market uncertainty. Below we present two pairwise correlation tables, one displaying the correlation coefficients between leads of mentions and the VSTOXX index, and one displaying correlation coefficients between lags of mentions and the VSTOXX index. We additionally present the result of a naïve Granger test[43] on the VSTOXX and the mentions series. In line with the correlation results, we found that the VSTOXX variable Granger causes the mentions of the Greek financial assistance programme variable. The aim of this exercise was not to showcase the significance of programme mentions as a predictor of uncertainty; we aimed to simply underscore the fact that that Greek financial programme developments were a contributor European market uncertainty.

[43] We do not account for the existence of a gap in the series.

Table 8.3
Correlation table: VSTOXX with leads of mentions

```
. pwcorr VSTOXX Mentions f.Mentions f2.Mentions f3.Mentions f4.Mentions f5.Mentions f6.Mentions f7.Mentions f8.Mentions , sig star(.05)
```

	VSTOXX	Mentions	F.Ment~s	F2.Men~s	F3.Men~s	F4.Men~s	F5.Men~s	F6.Men~s	F7.Men~s	F8.Men~s
VSTOXX	1.0000									
Mentions	0.3472*	1.0000								
	0.0032									
F.Mentions	0.4351*	0.7765*	1.0000							
	0.0002	0.0000								
F2.Mentions	0.4904*	0.4954*	0.7752*	1.0000						
	0.0000	0.0000	0.0000							
F3.Mentions	0.4624*	0.2254	0.4926*	0.7740*	1.0000					
	0.0001	0.0734	0.0000	0.0000						
F4.Mentions	0.4477*	0.1582	0.2318	0.5034*	0.7870*	1.0000				
	0.0003	0.2194	0.0699	0.0000	0.0000					
F5.Mentions	0.4388*	0.1170	0.1569	0.2310	0.5035*	0.7908*	1.0000			
	0.0005	0.3732	0.2313	0.0757	0.0000	0.0000				
F6.Mentions	0.4068*	0.0764	0.1163	0.1568	0.2308	0.5005*	0.7903*	1.0000		
	0.0015	0.5686	0.3846	0.2399	0.0813	0.0001	0.0000			
F7.Mentions	0.2987*	-0.0035	0.0799	0.1211	0.1607	0.2155	0.5004*	0.7906*	1.0000	
	0.0254	0.9795	0.5583	0.3739	0.2367	0.1106	0.0001	0.0000		
F8.Mentions	0.2337	-0.0685	-0.0054	0.0788	0.1198	0.1544	0.2126	0.4979*	0.7918*	1.0000
	0.0889	0.6227	0.9690	0.5711	0.3883	0.2649	0.1227	0.0001	0.0000	

Source: Own calculations based on publicly available data from Twitter and online news websites

Table 8.4.
Correlation table: VSTOXX with lags of mentions

```
. pwcorr VSTOXX Mentions l.Mentions l2.Mentions l3.Mentions, sig star(.05)
```

	VSTOXX	Mentions	L.Ment~s	L2.Men~s	L3.Men~s
VSTOXX	1.0000				
Mentions	0.3472*	1.0000			
	0.0032				
L.Mentions	0.2276	0.7765*	1.0000		
	0.0619	0.0000			
L2.Mentions	0.1522	0.4954*	0.7755*	1.0000	
	0.2224	0.0000	0.0000		
L3.Mentions	0.1301	0.2254	0.4929*	0.7743*	1.0000
	0.3055	0.0734	0.0000	0.0000	

Source: Own calculations based on publicly available data from Twitter and online news websites

Table 8.5.
Granger causality test: VSTOXX granger causes mentions

Granger causality Wald tests

Equation	Excluded	F	df	df_r	Prob > F
VSTOXX	Mentions	3.235	6	45	0.0100
VSTOXX	ALL	3.235	6	45	0.0100
Mentions	VSTOXX	1.2402	6	45	0.3042
Mentions	ALL	1.2402	6	45	0.3042

Source: Own calculations based on publicly available data from Twitter and online news websites

8.7.4 Programme objectives used for sentiment analysis

The report recognised the following as intervention objectives:

Based on European Commission documentation, the 2012-2015 programme focused on:

- structural reforms in the labour market;
- promoting competition, spurring productivity and raising employment;
- reducing production costs by liberalising several sectors and taking measures to improve the overall business environment;
- fiscal adjustments that would translate into primary surpluses.[44]

Based on IMF documentation, the 2012-2015 programme focused on:

- restoring competitiveness and growth;
- restoring fiscal sustainability;
- securing financial stability.

Based on ESM documentation, the third programme involved:

- a medium term primary surplus of 3.5% of GDP, with a fiscal path towards primary balances of -0.25% in 2015, 0.5% in 2016, 1.7% in 2017 and 3.5% in 2018;
- reforms to the pension system to ensure sustainability, efficiency and fairness;
- labour and product market reforms to open the economy to foreign investment and competition;
- modernising and depoliticising the public sector;
- bank recapitalizations and improvements to the insolvency framework and governance at the Hellenic Financial Stability Fund;
- tackling banking sector non-performing loans (or non-performing exposures);
- strengthening privatization.

Following the work of the ESM evaluation team, we summarise the intervention as follows:

- prioritisation of deficit reduction by cutting spending, increasing revenue and tax base broadening;
- privatisation and private sector involvement;

[44] Fiscal overperformance is not necessarily mentioned in a positive context because Greece chose to cut public spending on investment to achieve this, considered by many economists to have a negative impact, adversely affecting future growth and sustainability.

- labour and product market reforms to improve productivity and competitiveness, using various incentives;
- restoring confidence and the payment culture (tax morale, depositor confidence, debtor moral hazard/strategic default, arrears clearance);
- recapitalising the banking sector to support investment and increase the potential privatisation returns;
- minimising contagion (PSI and consolidation/ deleveraging);
- strengthening institutions and their independence (including public administration reform, addressing misreporting and increasing ownership);
- restoring debt sustainability, using bond and interest rate swaps;
- ensuring sufficient cash buffer as a primary exit strategy with an incentivised debt relief;
- backtracking on some reforms was assumed.

9. Greek crisis timeline

This section outlines the crisis timeline that this evaluation considered as the general outline of events.

Date	Event
15/09/2008	Lehman Brothers declared bankrupt.
14/01/2009	Standard & Poor's (S&P) downgrades Greece's sovereign debt. In the following days, Spain loses its AAA sovereign credit rating, and Portugal's credit rating is downgraded.
04/10/2009	George Papandreou leads the Socialist (Pasok) Party to a landslide victory in Greek elections. Weeks later, the new government announces that the fiscal deficit in 2009 is likely to be 12.8% of GDP, more than three times the previous forecast.
20/10/2009	Minister of Finance George Papaconstantinou announces that fiscal deficit for 2009 will reach 12.5% (instead of the estimated 6%).
08/12/2009	Fitch downgrades Greece from A- to BBB+.
16/12/2009	S&P downgrades Greece form A- to BBB+.
23/12/2009	Parliament adopts the 2010 budget setting a general government deficit target of 9.1% of GDP.
29/12/2009	Moody's downgrades Greece from A2 to A1.
13/01/2010	S&P downgrades nine euro area economies. France and Austria lose their AAA rating.
14/01/2010	Greek cabinet approves Stability and Growth Plan.
15/01/2010	Government submits the updated stability programme, projecting a reduction of the government deficit of 4 percentage points to 8.7% of GDP in 2010, and correction of the excessive deficit by 2012. The debt ratio was projected to peak at 121% of GDP in 2011.
01/02/2010	2-year bond spreads reach 347 basis points; 10-years bond spreads reach 270 basis points.
02/02/2010	Greece announces a set of measures in addition to those announced in the stability programme (freezing wages and raising excises with the aim of reducing the government deficit).
03/02/2010	The European Commission adopts (i) a proposal for a Council Decision, in view of the excessive deficit correction in Greece by 2012, (ii) a draft Council Recommendation with a view to ending the inconsistency with the broad guidelines of the economic policies, and (iii) a draft Council Opinion on the stability programme.
09/02/2010	Minister of Finance George Papaconstantinou announces package of measures including salary reductions and benefit cuts in public sector, tax measures, and new tax scales
11/02/2010	EU leaders, following their first emergency summit on Greece, announce that they "will take determined and coordinated action, if needed, to safeguard financial stability in the euro area." IMF offers to provide "expertise and support as necessary."
11/02/2010	IMF publishes statement on Greece.
11/02/2010	European Council invites the ECOFIN Council to adopt these documents, and calls on the Commission to monitor implementation of the Council decision and recommendation, in liaison with the ECB and drawing on the expertise of the IMF. The euro area member states declare their readiness to take determined and coordinated action, if needed, to safeguard the financial stability in the euro area as a whole.
14/02/2010	Greek Parliament approves new working law.
16/02/2010	Council adopts the above-mentioned documents, after discussion in the Eurogroup.
28/02/2010	German Chancellor Angela Merkel states that the EU Treaty does not provide for a Greek bailout.
03/03/2010	IMF publishes statement on Greece.
03/03/2010	Greek government announces austerity measures.
03/03/2010	Eurogroup President Jean-Claude Junker welcomes Greek consolidation measures.
03/03/2010	Shortly after a visit of Commissioner Olli Rehn to Athens, Greece announces new deficit-reducing measures of over 2% of GDP, including an increase in the VAT rates and other indirect taxes and a cut in the wage bill (through the reduction in allowances, and partial cancellation of the Easter, summer, and Christmas bonuses of civil servants). These measures are welcomed by the Commission, the ECB, and the IMF.
05/03/2010	German Chancellor Merkel meets Greek Prime Minister Papandreou in Berlin.

Date	Event
08/03/2010	Greece submits a report on progress with implementation of the stability programme and additional measures.
09/03/2010	US President Barack Obama meets Greek Prime Minister Papandreou.
09/03/2010	The Commission concludes that Greece is implementing the Council Decision of 16 February 2010 and the measures outlined in its stability programme, and that the additional fiscal measures announced by the Greek authorities appear sufficient to achieve the 2010 budgetary targets.
15/03/2010	Eurogroup agreement on mechanism for possible Greek bailout.
15/03/2010	The Eurogroup welcomes the report by Greece and the Commission Communication assessing the action taken. It embraces the Commission assessment that the additional measures appear sufficient to safeguard the 2010 budgetary targets, if fully implemented.
25/03/2010	Euro area leaders announce their readiness to contribute to coordinated bilateral loans to Greece "[a]s part of a package involving substantial IMF financing and a majority of European financing."
25/03/2010	Heads of State or Government of the euro area countries reaffirm that they fully support the efforts of the Greek government and welcome the additional measures announced on 3 March, which appear sufficient to safeguard the 2010 budgetary targets.
08/04/2010	2-year bond spreads reach 652 basis points; 10-year bond spreads reach 430 basis points.
09/04/2010	Fitch downgrades Greece from BBB+ to BBB-.
11/04/2010	Euro area member states agree on the terms of financial support to Greece. The IMF, in liaison with the Commission and the ECB, begins discussions with Greek authorities.
11/04/2010	IMF publishes a statement by IMF Managing Director on Greece.
11/04/2010	The Eurogroup reaffirms the readiness by euro area member states to take determined and coordinated action, if needed. It clarifies the technical modalities enabling a decision on coordinated action, highlighting that the objective is not to provide financing at average euro area interest rates, but instead to safeguard financial stability in the euro area as a whole.
12/04/2010	Eurogroup Agreement on financial support (€30 billion) for Greece (Herman Van Rompuy statement).
15/04/2010	IMF publishes a statement on Greece.
15/04/2010	Greece requests "discussions with the European Commission, the ECB and the IMF on a multi-year programme of economic policies (…) that could be supported with financial assistance (…), if the Greek authorities were to decide to request such assistance".
22/04/2010	Moody's downgrades Greece from A2 to A3.
22/04/2010	Eurostat Greek fiscal deficit for 2009 is 13.6%.
23/04/2010	IMF publishes a statement by IMF Managing Director Dominique Strauss-Kahn on Greece.
23/04/2010	Greece requests financial assistance from the euro area member states and the IMF.
25/04/2010	IMF publishes a statement by IMF Managing Director Strauss-Kahn on meeting with Greek Minister of Finance.
27/04/2010	S&P downgrades Greece from BBB+ to BB+.
27/04/2010	2-year bond spreads reach 1,552 basis points; 10-years bond spreads reach 755 basis points.
29/04/2010	US President Obama expresses worries about Greece becoming a country-size version of Lehman Brothers.
02/05/2010	IMF mission, in consultation with representatives from the Commission and the ECB, reaches agreement with Greek authorities on a three-year €30 billion Stand-By Agreement (SBA) as part of a cooperative package of financing with the EU. IMF Executive Board approves the SBA a week later on 9 May, under the Fund's fast-track Emergency Financing Mechanism.
02/05/2010	IMF reaches staff-level agreement with Greece on €30 billion SBA.
02/05/2010	Eurogroup approves €80 billion loan for Greece.
02/05/2010	Greece, the Commission, the ECB, and IMF announce an agreement on a three-year programme of economic and financial policies. The Eurogroup unanimously agrees to activate stability support to Greece via bilateral loans centrally pooled by the European Commission.
03/05/2010	Greek bonds will be accepted as collateral no matter their rating (ECB message).

Date	Event
04/05/2010	The Commission adopts a Recommendation for a Council Decision according to Articles 126(9) and 136 of the Treaty. The draft Decision includes the main conditions to be respected by Greece in the context of the financial assistance programme.
05/05/2010	IMF Managing Director Strauss-Kahn welcomes ECB's actions related to Greece.
05/05/2010	S&P downgrades Greece from BB+ to B+.
05/05/2010	German Chancellor Merkel warns about the future of euro, as it falls to $1.2935.
05/05/2010	Massive demonstrations against the severe austerity measures to be voted in parliament. Three people die in a fire at Marfin Bank in Athens.
06/05/2010	The Greek Parliament votes to accept a series of policy measures included in the programme of economic and financial policies, including an increase in VAT and excises, as well as further reductions in public sector wages and pensions.
06/05/2010	ECB adopts temporary measures relating to the eligibility of marketable debt instruments issued or guaranteed by the Greek government.
07/05/2010	ECB announces the Securities Market Programme (SMP).
07/05/2010	ECB announces its decision to suspend minimum credit rating thresholds for Greek government debt used as collateral in Eurosystem refinancing operations. The Heads of State or Government of the euro area countries announce their intention to create the European Financial Stability Facility (EFSF) and the European Financial Stabilisation Mechanism (EFSM), with a combined volume of up to €500 billion. At the same time, the ECB announces exceptional measures including secondary-market sovereign debt purchases within the framework of the SMP; initial purchases mainly focus on Greek government bonds.
07/05/2010	2-year bond spreads reach 1,739 basis points; 10-years bond spreads reach 1,287 basis points.
07/05/2010	The Council adopts a Decision according to Articles 126(9) and 136 of the Treaty including the main conditions to be respected by Greece in the context of the financial assistance programme.
09/05/2010	IMF Executive Board approves €30 billion SBA for Greece.
09/05/2010	IMF approves €30 billion loan for Greece and on May 12 disburses the first instalment.
09/05/2010	US President Obama expresses concerns over the Greek economic crisis and the European reaction to it.
09/05/2010	European Council agreement on a European Financial Stabilisation Mechanism, with a total volume of up to €500 billion.
18/05/2010	The euro area member states disburse the first instalment (€14.5 billion) of a pooled loan to Greece.
20/05/2010	Greek Prime Minister Papandreou meets with the Brazilian President Luiz Inácio Lula da Silva about the Greek crisis, during the European Union - Latin America Summit.
26/05/2010	European Commission publishes the economic adjustment programme for Greece.
27/05/2010	Russian Prime Minister Vladimir Putin states that the EU will resolve the Greek economic crisis.
07/06/2010	Eurogroup and ECOFIN Ministers establish EFSF as a limited liability company under Luxembourg law (Société Anonyme) and agree on the Articles of Association and the Framework Agreement.
14/06/2010	Moody's downgrades Greece from A3 to Ba1
17/06/2010	IMF publishes statement by the EC, ECB, and IMF on the interim review mission to Greece
17/06/2010	Troika concludes interim review mission to Greece.
20/07/2010	Public Debt Management Agency (PDMA) sells €1.95 billion 3-month Treasury bills with 4.05% interest rate.
23/07/2010	The results of the first pan-European stress tests of the banking system are published. Only seven banks fail the stress tests, with an aggregate capital shortfall of €3.5 billion.
05/08/2010	Troika concludes first review mission to Greece.
06/08/2010	IMF publishes Letter of Intent, MEFP, Technical Memorandum of Understanding (MoU), and MoU on Specific Economic Policy Conditionality.
08/08/2010	European Commission disburses additional €6.5 billion to Greece (second instalment).
19/08/2010	European Commission publishes the first review of First Greek economic adjustment programme.
07/09/2010	Prime Minister Papandreou reshuffles government.

Date	Event
10/09/2010	IMF publishes press release on IMF completing first review under SBA and approves €2.57 billion disbursement.
14/09/2010	PDMA sells €1.17 billion 6-month Treasury bills with 4.82% interest rate.
20/09/2010	Moody's publishes EFSF initial rating at Aaa Stable.
20/09/2010	S&P publishes EFSF initial rating at AAA Stable.
29/09/2010	Commission presents a package of six legislative proposals aimed at reforming economic governance and strengthening the framework for preventing excessive imbalances and excessive deficits.
18/10/2010	German Chancellor Merkel and French President Nicolas Sarkozy agree, in Deauville, France, to create a permanent crisis resolution mechanism that provides for the possibility of sovereign debt restructuring. (Merkel and Sarkozy support PSI for Greece)
29/10/2010	European Council agreement on permanent crisis mechanism (ESM).
15/11/2010	Sentiment deteriorated further in November when the estimated 2009 fiscal deficit was revised from 13.5 to 15.5% of GDP by Eurostat, and in December when there were general strikes and rioting in response to labour reforms.
16/11/2010	Eurogroup takes note of Eurostat validation of ELSTAT data for 2009, and of the strong commitment of the Greek government to take additional budgetary measures in order to conform to the ambitious deficit target of €17 billion.
23/11/2010	Troika concludes second review mission to Greece.
25/11/2010	Commission disburses €6.5 billion to Greece (third instalment).
27/11/2010	Eurogroup publishes statement on the contours of a permanent crisis mechanism.
07/12/2010	IMF Managing Director Strauss-Kahn visits Greece to discuss economic developments with Greek authorities, members of parliament, and the opposition.
08/12/2010	IMF publishes Letter of Intent, MEFP, and Technical MoU.
09/12/2010	Commission publishes First Greek economic adjustment programme second review.
17/12/2010	IMF completes the second review of Greece's economic performance under the SBA-supported programme and approves disbursement of €2.5 billion. On the same day, EU leaders agree to create a permanent debt-crisis mechanism - the ESM - in 2013.
23/12/2010	Greek Parliament approves the 2011 public budget.
13/01/2011	S&P downgrades nine euro area countries.
14/01/2011	Fitch downgrades Greece from BBB- to BB+.
19/01/2011	Fitch publishes EFSF initial rating at AAA Stable.
11/02/2011	Troika concludes third review mission to Greece.
12/02/2011	IMF publishes statement by the EC, ECB, and IMF on Greece's economic programme.
12/02/2011	European Commission disburses additional €10.9 billion to Greece (fourth instalment)
12/02/2011	European Commission publishes third review of economic adjustment programme for Greece
25/02/2011	Ireland holds general elections. The ruling Fianna Fail party is swept from power and Enda Kenny (Fine Gael) is sworn in as the new Prime Minister.
28/02/2011	IMF publishes Letter of Intent, MEFP, and Technical MoU.
07/03/2011	Moody's downgrades Greece from Ba1 to B1.
11/03/2011	Euro area leaders agree to lower the interest rate on the emergency loans to Greece to 5% and to increase the maturity of the loans to 7.5 years. Leaders agree to make the EFSF's €440 billion lending capacity fully effective, and to allow the EFSF and ESM to intervene in the primary market for sovereign debt "in the context of a programme with strict conditionality."
11/03/2011	Endorsement of the "Pact for the Euro" and other ESM provisions in the conclusions of the Heads of State or Government of the euro area countries.
14/03/2011	IMF completes the third review of Greece's performance under the SBA-supported programme and approves disbursement of €4.1 billion.
17/05/2011	European finance ministers float the idea of talks with bondholders to extend Greece's debt repayment schedule. ECB says it will not accept Greek bonds as collateral if maturities are extended.

Date	Event
	IMF confirms that it will be unable to provide additional financing to Greece without assurance that the next year's financing gap would be filled.
18/05/2011	IMF Managing Director Strauss-Kahn resigns.
18/05/2011	German Chancellor Merkel asks for reforms in retirement age and vacation periods in Greece and southern Europe.
20/05/2011	Fitch downgrades Greece from BB+ to B.
29/05/2011	Massive demonstrations in Athens and other large Greek cities.
01/06/2011	Contagion fears in the euro area sovereign bond markets.
01/06/2011	Moody's downgrades Greece from B1 to Caa1.
03/06/2011	Troika concludes fourth review mission to Greece.
06/06/2011	Portugal holds general elections.
07/06/2011	US President Obama urges Europe to prevent default by Greece and pledges US support.
13/06/2011	S&P downgrades Greece from B to CCC.
15/06/2011	Deliberations between the Prime Minister Papandreou and the leader of the opposition party ND (Antonis Samaras) about the formation of a new national unity government. The Prime Minister signals his willingness to resign.
17/06/2011	Agreement on second bailout for Greece with possible voluntary private sector involvement (PSI) in preparation for the 20 June Eurogroup meeting.
17/06/2011	Prime Minister Papandreou reshuffles government. Evangelos Venizelos becomes new Minister of Finance.
20/06/2011	Eurogroup statement on the pursuit of PSI in the form of informal and voluntary roll-overs of existing Greek debt.
20/06/2011	Eurogroup takes note of the debt sustainability analysis (DSA) prepared by the Commission and the IMF and agrees that the required additional funding will be financed through both official and private sources. It also welcomes the pursuit of voluntary PSI in the form of informal and voluntary roll-overs of existing Greek debt at maturity for a substantial reduction of the required year-by-year funding within the programme, while avoiding a selective default for Greece.
23/06/2011	Euro area leaders endorse the PSI plan for Greece.
23/06/2011	Commission publishes the fourth review of the economic adjustment programme for Greece and approves the disbursement of €8.7 billion to Greece (fifth instalment)
29/06/2011	Greek parliament backs a five-year austerity plan and approves implementation laws.
29/06/2011	IMF Executive Board appoints French Finance Minister Christine Lagarde IMF Managing Director.
29/06/2011	Parliament approves new austerity measures and the Mid-Term Strategic Fiscal Programme.
02/07/2011	Eurogroup statement acknowledges that consultations are underway in order to define the modalities for a voluntary PSI, while avoiding selective default in the case of Greece.
02/07/2011	Eurogroup welcomes adoption of key laws on the fiscal strategy and privatisation by Greek Parliament, and endorse Commission's Compliance Report and signature of the updated MoU.
04/07/2011	IMF publishes Letter of Intent, MEFP, and Technical MoU.
05/07/2011	Christine Lagarde starts as IMF Managing Director for a five-year term.
08/07/2011	IMF Executive Board completes the fourth review of Greece's performance under the SBA-supported programme and approves disbursement of €3.2 billion.
11/07/2011	IMF publishes a staff paper on "Lessons from the European Financial Stability Framework Exercise," highlighting a need to strengthen the effectiveness of existing institutions; adopt a consistent design across all elements of the financial stability framework; and fill in an important gap in the existing framework by ensuring effective crisis management and resolution.
11/07/2011	Eurogroup takes note of an IMF decision to disburse the latest tranche of financial assistance to Greece.
11/07/2011	Eurogroup ministers discuss main parameters of a new multi-annual adjustment and task Eurogroup Working Group (EWG) with proposing measures to reinforce the current policy response to the crisis in Greece.

Date	Event
13/07/2011	Fitch downgrades Greece from B to CCC.
15/07/2011	The results of the second round of pan-European stress tests are made public. Eight out of 906 European banks fail (five in Spain, two in Greece, and one in Austria) and another 16 banks are considered to be in the danger zone.
15/07/2011	Italian parliament approves austerity measures (€48 billion).
15/07/2011	Russian Prime Minister Putin and Greek Prime Minister Papandreou discuss the Greek economic crisis by telephone.
20/07/2011	Merkel and Sarkozy meet in Berlin to prepare a common stance on the second bailout for Greece
21/07/2011	Euro area leaders and EU institutions decide on a new package of measures to end the crisis and prevent contagion, including: a new programme for Greece**;** voluntary PSI, with a net contribution corresponding to a 21% haircut, to strengthen Greek public debt sustainability; a secondary market debt buy-back programme for Greece; and a lowering of the interest rate on assistance loans (to about 3.5%) and a lengthening of their maturities (from 15 to 30 years). The agreement also includes measures to expand the powers of the EFSF/ESM.
25/07/2011	Moody's downgrades Greece from Caa1 to Ca.
04/08/2011	ECB reactivates secondary market purchases and starts purchasing Italian and Spanish bonds.
08/08/2011	ECB signals its will intervene in the bond market and buy Italian and Spanish debt.
12/08/2011	Italian Prime Minister announces a new austerity package to shore up strained public finances.
12/08/2011	France, Italy, Spain, and Belgium impose short-selling bans.
16/08/2011	German Chancellor Angela Merkel and French President Nicolas Sarkozy state their will to move towards the creation of a true European economic government.
17/08/2011	Greece and Finland reach bilateral agreement over guarantees for the latter's participation in the second bailout package.
29/08/2011	IMF Managing Director Lagarde calls for an "urgent," potentially mandatory, recapitalisation of Europe's banks in a speech at the US Federal Reserve Bank of Kansas City's Jackson Hole Economic Policy Symposium.
01/09/2011	EU leaders announce plans to leverage the EFSF.
01/09/2011	Jürgen Stark resigns from ECB Board over sovereign bond purchases.
02/09/2011	Troika interrupts fifth review mission to Greece.
14/09/2011	Italian parliament approves austerity measures (€54 billion).
14/09/2011	Chinese Premier Wen Jiabao states that Beijing is willing to help Europe but "[c]ountries must first put their own houses in order".
14/09/2011	US President Obama states that Europeans need to take decisive action in dealing with the European debt crisis.
15/09/2011	Tension in the German government as Economy Minister Philipp Rösler publishes a controversial newsletter article referring to Greece's bankruptcy.
16/09/2011	Russian Prime Minister Putin expresses concerns about the debt crisis in the US and EU as well as on debt-growth led development.
20/09/2011	S&P downgrades Italy to A/A-1 from A+/A-1+.
21/09/2011	IMF Global Financial Stability Report estimates that losses due to exposures to sovereign bonds of "high-spread" euro area countries could potentially reach €200 billion for EU banks.
21/09/2011	Finance Minister Venizelos states that fiscal targets are not met and new measures are necessary.
23/09/2011	US President Obama warns about the spillover effects of Europe's financial crisis.
27/09/2011	US President Obama correlates the US unemployment and slow growth to the European debt crisis.
04/10/2011	Moody's downgrades Italy to A2.
04/10/2011	France and Belgium step in to rescue Dexia from collapse.
04/10/2011	The Council agrees on new European Economic Governance (the package of six legislative proposals on economic governance).
06/10/2011	Bank of England injects £75 billion into the UK economy.

Date	Event
09/10/2011	The German Chancellor Merkel and French President Nicolas Sarkozy meet in Berlin to discuss a solution to the Greek crisis, European bank recapitalisation, and euro area governance.
11/10/2011	Staff teams from the IMF, EC, and ECB conclude their fifth review mission to Greece and note that: "The success of the programme continues to depend on mobilizing adequate financing from private sector involvement (PSI) and the official sector."
11/10/2011	European Commission publishes the fifth review of the economic adjustment programme for Greece and approves the disbursement of €5.8 billion to Greece (sixth instalment).
13/10/2011	Russian Prime Minister Putin describes the European debt problem as more a political than an economic problem.
18/10/2011	Amendments to the EFSF Framework come into force.
19/10/2011	Merkel, Sarkozy, Lagard, ECB President Jean-Claude Trichet, and Van Rompuy hold emergency talks on the euro area crisis in Frankfurt.
20/10/2011	US President Obama holds a videoconference with Merkel, Sarkozy and UK Prime Minister David Cameron.
21/10/2011	Eurogroup acknowledges the deterioration of the macroeconomic situation in Greece, and reiterates its approval of the disbursement of the sixth instalment to Greece (pending the IMF's approval), and the need for a new support programme and the PSI.
21/10/2011	Eurogroup discusses results of the fifth review of the Economic Adjustment Programme for Greece, on the basis of the Compliance Report from the Commission and the joint DSA of the Troika.
25/10/2011	Greek parliament approves pension reforms, new remuneration scales for public sector and other measures related to the mid-term strategic fiscal programme.
26/10/2011	EU leaders hold yet another crisis summit. After a night of tense negotiations, leaders agree to a 50% haircut on Greek bonds held by private investors and to extend a new financial assistance package worth €130 billion to Greece. Leaders also agree to leverage the resources of the EFSF to boost its firepower to €1 trillion.
26/10/2011	Euro summit statement outlines the following measures: (i) the new support programme for Greece (strengthened monitoring arrangements, voluntary PSI with a 50% haircut, PSI to secure the decline of the Greek debt to GDP ratio with an objective of reaching 120% by 2020, additional financing of up to 100 billion euro until 2014, recapitalisation of Greek banks), (ii) a new governance structure for the euro area.
27/10/2011	EFSF BoD approves disbursement to Ireland under the first Financial Assistance Facility Agreement (FFA).
27/10/2011	Official statement on the results of the Euro Summit (26/10/2011).
28/10/2011	US President Obama publishes an articles in the Financial Times, entitled 'A firewall to stop Europe's crisis spreading'
31/10/2011	Prime Minister Papandreou announces that he will hold a referendum over the new loan agreement and Greece's participation in the euro area
31/10/2011	Sarkozy and Merkel react to Papandreou's referendum announcement.
01/11/2011	Mario Draghi succeeds Trichet as ECB president.
01/11/2011	Greek government announces a referendum to test the views of the Greek people. This was subsequently cancelled, but the government resigned later that month and was replaced by a technocratic government.
02/11/2011	IMF publishes statement by IMF Managing Director Lagarde on Greece.
03/11/2011	German Chancellor Merkel stresses that the stability of the euro is more important than Greece, and French President Sarkozy notes that the question is whether Greece wants to stay in the euro.
03/11/2011	Chinese President Jintao tells French President Sarkozy that Europe is responsible for resolving its debt crisis.
03/11/2011	ECB lowers interest rate to 1.25%.
03/11/2011	US President Obama sets euro crisis and Greece as top priority for G20 Summit.
04/11/2011	Italian government requests monitoring of its economic policy implementation by the IMF as part of the commitments made to its euro area partners in October. Italian Prime Minister loses his majority in Parliament and resigns four days later. Mario Monti is appointed to head a new government.

Date	Event
04/11/2011	G20 Cannes Summit, Greek euro exit became a serious possibility particularly after being discussed by euro leaders at the Cannes summit in November 2011.
04/11/2011	Prime Minister Papandreou wins confidence vote in parliament, but signals that he may step down.
06/11/2011	S&P warns of mass euro area downgrade over debt crisis.
09/11/2011	Prime Minister Papandreou steps down as Greece's prime minister
10/11/2011	PASOK, New Democracy, and LAOS form a new interim coalition government, led by Loukas Papademos, who takes over as prime minister.
12/11/2011	Italian Prime Minister Silvio Berlusconi resign.s
16/11/2011	Mario Monti becomes new Italian Prime Minister.
17/11/2011	EFSF BoD approves indemnification undertaking.
18/11/2011	Greek cabinet approves draft budget for 2012.
22/11/2011	US President Obama congratulates Loucas Papademos for his appointment as Prime Minister, and reiterates that the United States will stand by Greece.
23/11/2011	The German Debt Agency does not manage to sell about 35% of the €6 billion 10-year bonds it offered in an auction.
24/11/2011	German Chancellor Merkel, French President Sarkozy, and Italian Prime Minister Monti meet in Strasburg to discuss the debt crisis.
30/11/2011	IMF publishes Letter of Intent, MEFP and Technical MoU.
30/11/2011	Six central banks announce coordinated actions to enhance liquidity support to the global financial system.
01/12/2011	ECB sets first 36-month long-term refinancing operations (LTRO).
01/12/2011	ECB President Draghi calls for a "new fiscal compact".
05/12/2011	IMF Executive Board completes the fifth review of Greece's performance under the SBA-supported programme and approves disbursement of €2.2 billion.
05/12/2011	IMF Executive Board completes fifth review under SBA and approves €2.2 billion disbursement.
05/12/2011	IMF completes its fifth review and disburses €2.2 billion to Greece (sixth instalment).
05/12/2011	Italian Prime Minister Monti unveils austerity package (€30 billion).
06/12/2011	S&P revises EFSF outlook to Credit Watch Negative on AAA rating.
08/12/2011	ECB announces additional measures to support bank lending and liquidity, including by increasing collateral availability and by conducting two LTROs.
09/12/2011	Twenty-five EU leaders agree on a new "fiscal compact." Leaders also agree to deploy the EFSF's leverage options; bring forward the entry into force of the ESM to July 2012; reassess the overall ceiling of the EFSF/ESM; increase the IMF's resources by up to €200 billion; and reaffirm the "unique and exceptional" nature of the decisions concerning PSI in Greece.
11/12/2011	Greek government accuses the EU and IMF of interfering in its domestic affairs after staff teams from the IMF, EC, and ECB on the third review mission to Greece conclude that "major reforms still need to be designed and implemented."
22/12/2011	EFSF BoD approves Guideline on recapitalisation of financial institutions.
22/12/2011	EFSF BoD approves Guideline on precautionary programmes.
22/12/2011	EFSF BoD approves Guideline on primary market purchases.
22/12/2011	EFSF BoD approves Guideline on interventions in the secondary market.
22/12/2011	EFSF BoD approves Draft articles of incorporation of the ESBPF.
22/12/2011	EFSF BoD approves Draft articles of incorporation of the ESBIF.
22/12/2011	Italy adopts an emergency ("Save Italy") austerity budget. IMF staff team visits Italy to discuss the modalities for future monitoring missions.
03/01/2012	EFSF BoD approves Co-Financing Agreement.
03/01/2012	EFSF BoD approves PSI Financial Assistance Facility Agreement with Greece.
03/01/2012	EFSF BoD approves DB Subscription and Repurchase Agreement.

Date	Event
03/01/2012	EFSF BoD approves ECB Credit Enhancement Financial Assistance Facility Agreement.
03/01/2012	EFSF BoD approves BIS Subscription Agreement.
03/01/2012	EFSF BoD approves Bond Interest Financial Assistance Facility Agreement.
03/01/2012	EFSF BoD approves Bank Recapitalisation Financial Assistance Facility Agreement.
03/01/2012	EFSF BoD approves the increase of the Guaranteed Debt Issuance Programme to €164 billion.
09/01/2012	The German Chancellor Merkel and French President Nicolas Sarkozy keep up pressure on Greece and discuss the PSI, the fiscal compact, the ESM, and the financial transaction tax.
14/01/2012	Eurogroup takes note of the decision by Standard and Poor's on its rating action concerning a group of euro area member states, following the CreditWatch that was announced on 5 December
16/01/2012	S&P downgrades EFSF by 1-notch to AA+ and revises outlook to Developing.
16/01/2012	Eurogroup will examine the consequences of the decision announced by Standard and Poor's to downgrade the EFSF credit rating from AAA to AA+.
25/01/2012	German Chancellor Merkel casts doubts on Europe's chances to save Greece.
27/01/2012	Total unemployment in Spain exceeds 5 million.
28/01/2012	Leaked document refers to a proposal for an EU budget commissioner for Greece.
31/01/2012	The 'fiscal compact', renamed to the 'Treaty on stability, coordination and governance in the EMU', is finalised. The issues of growth and unemployment are set as EU priorities, along with fiscal consolidation.
01/02/2012	ECB sets second 3-year LTRO.
06/02/2012	There is no outcome, within the scheduled timetable, in the negotiations between the Troika and the Greek interim coalition government for the conditions of the second bailout. Pressure for further salary cuts and a €325 million fiscal gap for 2012 dominate headlines. Pressure on Greece from all European quarters mounts.
09/02/2012	EC, IMF, and ECB conclude mission to Greece.
09/02/2012	US President Obama meets Italian Prime Minister Monti.
10/02/2012	Greek cabinet approves EU/IMF bailout bill.
10/02/2012	Greek Ministers quit over austerity measures voting. The right-wing party LAOS, which is participating in the interim coalition government, withdraws its support from the government.
11/02/2012	Massive protests in Portugal over austerity measures.
13/02/2012	European Commission President Barroso gives speech on the European debt crisis.
13/02/2012	Parliament approves new austerity measures to secure the €130 billion bailout, amid massive demonstrations and violent riots.
14/02/2012	China and EU leaders meet to discuss European debt crisis.
15/02/2012	Eurogroup meeting to discuss/approve the second Greek bailout is postponed and replaced by a conference call. Pressure on Greece mounts.
15/02/2012	Greek President Karolos Papoulias reacts to German and European leaders' "insults" on Greece.
15/02/2012	IMF Governor Zhou Xiaochuan states that China will continue to invest in euro area debt.
17/02/2012	EFSF BoD approves Supplemental trust deed.
20/02/2012	EFSF BoD approves Written resolutions.
20/02/2012	IMF publishes statement by IMF Managing Director Lagarde on the meeting of the Eurogroup.
21/02/2012	After long negotiations, euro area leaders agree on the terms for a second financial assistance programme for Greece, involving elements of PSI aimed at reducing Greek public debt to around 120% of GDP by 2020. Greece launches a bond swap offer to private holders of its bonds on 24 February.
21/02/2012	US President Obama welcomes the Eurogroup's decision in a telephone conversation with German Chancellor Merkel.
21/02/2012	Eurogroup takes note of the agreement reached with the Greek government on a policy package that constitutes the basis for the successor programme.

Date	Event
23/02/2012	Japanese Finance Minister Jun Azumi states that Japan and China are committed to helping Europe solve its debt crisis via the IMF.
25/02/2012	The European debt crisis and the need for the EU to increase the size of its stabilisation fund dominate the Summit's agenda. Emerging powers request further reforms in the IMF.
27/02/2012	S&P revises EFSF outlook to Negative on AA+ rating.
27/02/2012	Eurogroup takes note of S&P decision to lower Greece rating to Selective Default as a result of Greece having introduced legislation retrofitting Collective Action Clauses to certain types of Greek government bonds.
01/03/2012	Greece executes Bond Interest Facility.
01/03/2012	EFSF executes Bond Interest Facility.
01/03/2012	Greece sends Bond Interest Request for Funds of €5.5 billion.
01/03/2012	Greece executes ECB Credit Enhancement Facility.
01/03/2012	EFSF executes ECB Credit Enhancement Facility.
01/03/2012	Greece sends ECB Credit Enhancement Request for Funds of €35 billion.
01/03/2012	Greece executes PSI LM Facility, part of the voluntary liability management transaction.
01/03/2012	Greece sends PSI Request for Funds of €30 billion.
02/03/2012	EU member states (except the U.K. and the Czech Republic) sign the Treaty on Stability, Convergence, and Governance in the Economic and Monetary Union (the "fiscal compact").
07/03/2012	EFSF disburses €35 billion securities under the ECB Credit Enhancement.
08/03/2012	PSI and Bond Interest (BI) securities settled in Issuing and Repurchase Transaction.
09/03/2012	Greek Finance Ministry announces an 85.8% participation rate in the PSI operation, cutting the debt by about €105 billion. Euro area finance ministers formally approve the second financial assistance package for Greece in the following days.
09/03/2012	IMF publishes Letter of Intent, MEFP and Technical MoU.
09/03/2012	IMF publishes statement by IMF Managing Director Lagarde on Greece
09/03/2012	BI_T1 Transfer of Securities of 4,639,053,102.83.
09/03/2012	PSI_T1 Transfer of Securities of 26,586,952,910.
09/03/2012	EFSF disburses €34.6 billion to Greece.
09/03/2012	Eurogroup welcomes the preparation of the second Greek adjustment programme.
12/03/2012	Accrual Start Date of the Loan BI_T1.
12/03/2012	Accrual Start Date of the Loan PSI_T1.
13/03/2012	Fitch upgrades Greece to B-/ STA.
14/03/2012	EFSF BoD approves Liquidity buffer note.
14/03/2012	EFSF BoD approves Pricing note.
14/03/2012	EFSF BoD approves FFA Greece (second programme).
14/03/2012	EFSF BoD approves Note for EWG on proposal for terms of instalment.
14/03/2012	EFSF BoD approves increasing the firepower to €241 billion subject to EWG approval.
14/03/2012	Eurogroup approves second adjustment programme for Greece.
15/03/2012	Greece and EFSF execute Master Financial Assistance Facility Agreement (MFFA).
15/03/2012	IMF Executive Board approves a four-year €28 billion arrangement under the Extended Fund Facility (EFF) for Greece.
15/03/2012	IMF Executive Board approves €28 billion EFF arrangement.
19/03/2012	EFSF disburses €5.9 billion under MFFA_I1_T1.
19/03/2012	EFSF disburses €5.9 billion to Greece.
21/03/2012	Philippos Sachinidis (IND) becomes Finance Minister.

Date	Event
30/03/2012	Euro area finance ministers agree to expand their financial firewall to €700 billion by combining the resources of the EFSF and ESM.
30/03/2012	Greece extends until 4 April the offer period for bonds governed by foreign law and eligible for the exchange.
30/03/2012	Eurogroup reassesses adequacy of the overall EFSF/ESM lending ceiling of €500 billion, capping ESM lending volume at €300 billion.
10/04/2012	EFSF disburses Securities for €3,024,089,660 under PSI_T2.
10/04/2012	EFSF disburses Securities for €209,518,890.60 under BI_T2.
10/04/2012	EFSF disburses €3.3 billion under MFFA_I1_T2.
10/04/2012	EFSF disburses €3.3 billion to Greece.
19/04/2012	Securities settled in Issuing and Repurchase Transaction under MFFA_I1_T3_BR.
19/04/2012	EFSF disburses €25 billion to Greece.
25/04/2012	EFSF disburses securities for €77,965,870.00 under PSI_T3.
25/04/2012	EFSF disburses securities for €14,652,277 under BI_T3.
02/05/2012	S&P upgrades Greece to CCC/STA.
06/05/2012	In Greek legislative elections, the two dominant parties - the centre-right New Democracy and the Socialists (Pasok) - fail to secure enough votes for a majority in Parliament. A second snap election is called.
10/05/2012	EFSF disburses €4.2 billion to Greece
15/05/2012	European Commission publishes Second Greek economic adjustment programme.
16/05/2012	Panagiotis Pikrammenos (ND) becomes Greek Prime Minister.
17/05/2012	Georgios Zanias (IND) become Greek Finance Minister.
17/05/2012	Fitch downgrades Greece by 2-notch downgrade to CCC.
12/06/2012	EFSF BoD approves Amendment to Greek MFFA.
12/06/2012	EFSF BoD approves Amendment to Greek Bond Interest Facility.
12/06/2012	EFSF BoD approves Amendment to Greek PSI LM Facility.
12/06/2012	EFSF BoD approves Pre-Funding Agreement for Greek Master FFA and issuance of bonds to fund disbursements.
12/06/2012	EFSF BoD approves DB Subscription and Repurchase Agreement.
17/06/2012	The New Democracy party ekes out a narrow victory in Greek elections and forms a coalition government.
17/06/2012	Eurogroup discusses provisional results of the Greek elections
20/06/2012	Antonis Samaras (ND) becomes Greek Prime Minister.
27/06/2012	EFSF annual general meeting approves security portfolio.
27/06/2012	IMF sends a team to Cyprus to prepare for discussions on an economic programme.
28/06/2012	EFSF disburses €1 billion to Greece.
29/06/2012	Euro area leaders endorse the concept of banking union and open the door to possible direct bank recapitalisations by the ESM once an effective single supervisory mechanism is established.
05/07/2012	Yannis Stournaras (IND) becomes Greek Finance Minister.
09/07/2012	ECB and EFSF sign technical agency agreement to allow market operations by the EFSF. A similar agreement will be concluded between the ECB and ESM.
25/07/2012	Redelivery of €35 billion in securities under ECB Credit Enhancement.
26/07/2012	ECB President Draghi announces the ECB's willingness to do “whatever it takes to preserve the euro”.
27/07/2012	EFSF BoD gives provisional approval for the first instalment under the Greek Master FFA for the HFSF and resolution cost for ATE Bank.
27/07/2012	EFSF BoD approves Request by the Hellenic Financial Stability Fund.

Date	Event
05/08/2012	Staff teams from the IMF, EC, and ECB visit Greece to discuss the implementation of the programme and agree on the need to “strengthen policy efforts to achieve its objectives”.
05/08/2012	IMF publishes statement by the EC, the ECB, and the IMF on Greece.
07/08/2012	S&P changes Greek outlook to NEG; CCC.
10/08/2012	ESM BoG approves Pricing guideline.
10/08/2012	ESM BoG takes note of Eurogroup statement of 30 March 2012.
10/08/2012	ESM BoG approves Maximum lending volume.
06/09/2012	ECB announces an outright monetary transactions (OMT) framework for intervention in sovereign bond markets of countries accepting EFSF and ESM support for their economic adjustment programmes and adhering to the associated structural and fiscal reform efforts.
12/09/2012	EFSF disburses €4,639,053,102.83 under BI_T1.
12/09/2012	EFSF disburses €209,518,890.60 under BI_T2.
12/09/2012	EFSF disburses €14,652,277 under BI_T3.
21/09/2012	IMF publishes press release on IMF statement on mission to Greece.
27/09/2012	Eurogroup President Juncker: ESM is now the cornerstone of the European firewall and an integral part of our comprehensive strategy to ensure financial stability in the euro area.
08/10/2012	Fitch publishes ESM initial rating at AAA Stable.
08/10/2012	ESM is formally inaugurated in Luxembourg.
08/10/2012	Moody’s publishes ESM First time rating at Aaa Negative.
09/10/2012	IMF’s World Economic Outlook shows that fiscal multipliers have been underestimated, resulting in the negative short-term effects of fiscal cutbacks being larger than expected.
11/10/2012	At the 2012 IMF-World Bank Annual Meetings, IMF Managing Director Lagarde urges countries to refrain from new austerity measures and argues that struggling European countries should be given more time to reduce their budget gaps. In her report to the IMFC the Managing Director calls for the ESM and the OMT to be deployed and for banking union to be advanced.
17/10/2012	EC, IMF, and ECB conclude mission to Greece.
17/10/2012	IMF publishes statement by the EC, ECB and IMF on Greece.
08/11/2012	S&P downgrades EFSF by 1-notch to AA Stable.
22/11/2012	ESM BoD approves ESM lending documentation.
22/11/2012	ESM BoD approves ESM debt issuance programme.
26/11/2012	Euro area finance ministers reach agreement with the IMF to complete the first EFF-supported programme review for Greece. The deal includes Greek debt buybacks, return of SMP profits to Greece, reduction of interest rates, significant extension of maturities, and the deferral of interest rate payments.
26/11/2012	IMF publishes statement on Greece by IMF Managing Director Lagarde.
27/11/2012	Greece and Troika reach full staff-level agreement on updated programme conditionality. Troika: Greece has implemented all agreed prior actions.
30/11/2012	Moody’s downgrades EFSF by 1-notch to Aa1 Negative.
30/11/2012	Moody’s downgrades ESM by 1-notch to Aa1 Negative.
03/12/2012	Greek government launches a debt buyback scheme seeking to retire about half of the €62 billion in debt owed to private creditors.
05/12/2012	S&P downgrades Greece to Selective Default.
11/12/2012	EFSF BoD approves maximum amount under Greek Master FFA and amendment to Greek pre-funding agreement.
13/12/2012	EFSF BoD approves amendments to Greek Master FFA, Greek Bond Interest Facility Agreement, Greek PSI LM Facility Agreement, issuance of notes to fund disbursements under the Greek Master FFA and Greek pre-funding agreement

Date	Event
13/12/2012	Eurogroup approves second disbursement under the second Economic Adjustment Programme, following finalisation of national procedures and after having reviewed the outcome of Greece's debt buy back operation.
17/12/2012	EFSF disburses €11.3 billion to Greece.
17/12/2012	EFSF disburses €7 billion to Greece.
19/12/2012	EFSF disburses €16 billion to Greece.
20/12/2012	IMF mission announces conclusions of the first-ever EU-wide financial system stability assessment. The mission recommends: further steps towards banking union; reinvigorating the single financial market in Europe; improving and expanding stress testing; establishing measures to separate bank and sovereign risk; and developing an effective crisis management framework to minimise costs to taxpayers.
21/12/2012	EFSF BoD approves transfer of registered office.
21/12/2012	IMF publishes Letter of Intent, MEFP, and Technical MoU.
14/01/2013	European Commission publishes second Greek economic adjustment programme compliance with milestones.
16/01/2013	IMF Executive Board completes the first and second reviews of Greece's performance under the EFF-supported programme and approves disbursement of €3.24 billion.
16/01/2013	IMF Executive Board completes first and second reviews under EFF for Greece and approves €3.24 billion disbursement.
21/01/2013	MoU milestones for January, agreed between Greece and the Troika, have been achieved.
28/01/2013	EFSF BoD approves disbursement of third and fourth tranche under third instalment to Greece, and issuance of notes to fund Greek disbursements.
28/01/2013	European Commission publishes second Greek economic adjustment programme first review.
31/01/2013	EFSF disburses €2 billion under MFFA_I3_T3.
31/01/2013	EFSF disburses €2 billion to Greece.
14/02/2013	IMF publishes a Staff Discussion Note, "Banking Union for the Euro Area," and three background technical notes which elaborate the case for, and the design of, a banking union for the euro area.
19/02/2013	European Commission publishes second Greek economic adjustment programme compliance with milestones.
22/02/2013	EFSF BoD approves EFSF proposal for the terms of the disbursement.
28/02/2013	EFSF disburses €2.8 billion to Greece.
28/02/2013	EFSF disburses €1.4 billion to Greece.
04/03/2013	MoU milestone for February, agreed between Greece and the Troika, has been achieved.
12/03/2013	EFSF disburses €13,293,476,450 under PSI_T1A.
12/03/2013	EFSF disburses €1,512,044,930 under PSI_T3A.
12/03/2013	EFSF disburses €38,982,930 under PSI_T3A.
14/03/2013	IMF publishes statement by the EC, ECB and IMF on Greece.
11/04/2013	EC, IMF and ECB conclude mission to Greece.
15/04/2013	IMF publishes statement by the EC, the ECB, and the IMF on Greece.
16/04/2013	IMF World Economic Outlook urges ECB to keep monetary policy very accommodative and to make "OMTs … available to countries with programs that are delivering on adjustment".
26/04/2013	European Commission publishes second Greek economic adjustment programme compliance with milestones.
29/04/2013	EFSF BoD approves disbursement to Greece of the sixth tranche of the third loan instalment under the Greek MFFA.
29/04/2013	EFSF disburses €2.8 billion to Greece.
03/05/2013	EFSF disburses €2.8 billion under MFFA_I3_T6.
06/05/2013	IMF publishes 2013 Article IV Consultation Concluding statement of the IMF mission.

Date	Event
13/05/2013	Eurogroup discusses second review mission under the second economic adjustment programme for Greece. MoU milestones for March have been achieved, EFSF on that basis disbursed €2.8 billion on 3 May.
14/05/2013	Fitch upgrades Greece to B-/ STA.
15/05/2013	EFSF BoD disbursement of first tranche of the fourth loan instalment to Greece.
16/05/2013	European Commission publishes second Greek economic adjustment programme second review.
17/05/2013	EFSF disburses €4.2 billion to Greece.
30/05/2013	EFSF disburses €7.2 billion to Greece.
31/05/2013	IMF Executive Board completes the third review of Greece's performance under the EFF-supported programme and approves disbursement of €1.74 billion. The Board also discusses the IMF's ex post evaluation of the 2010 SBA with Greece.
31/05/2013	IMF completes third review under EFF for Greece and concludes 2013 Article IV Consultation.
31/05/2013	Securities settled in Issuing and Repurchase Transaction under MFFA_I3_T4_BR.
31/05/2013	EFSF disburses €7.2 billion under MFFA_I3_T4_BR.
05/06/2013	IMF Executive Board concludes 2013 Article IV Consultation, completes third review of the EFF and discusses ex post evaluation of 2010 SBA.
05/06/2013	IMF Executive Board reviews Greece misreporting, remedial steps.
12/06/2013	European Commission publishes second Greek economic adjustment programme compliance with milestones.
14/06/2013	EFSF BoD approves disbursement for Greece of the second tranche of the fourth loan instalment under the Greek MFFA.
25/06/2013	EFSF disburses €3.3 billion to Greece.
01/07/2013	ESM treaty signed by EU Member States. ESM becomes the sole and permanent mechanism for responding to new requests for financial assistance by euro area member states; EFSF remains active in financing the ongoing programmes.
07/07/2013	EC, IMF and ECB conclude mission to Greece.
08/07/2013	IMF publishes statement by the EC, the ECB, and the IMF on Greece.
08/07/2013	Eurogroup discusses third review mission under the second economic adjustment programme for Greece.
08/07/2013	Eurogroup mandates EWG to approve the next EFSF instalment (€3 billion).
15/07/2013	Fitch downgrades EFSF by 1-notch to AA+ Stable.
17/07/2013	IMF publishes Letter of Intent, MEFP, and Technical MoU.
24/07/2013	EFSF BoD approves disbursement to Greece of the first tranche of the fifth loan instalment under the Greek MFFA.
24/07/2013	Eurogroup President Jeroen Dijsselbloem: Greece has satisfactorily implemented the prior actions required for the release of the next disbursement under the financial assistance programme, except for one action whose adoption by the Greek parliament needs to be completed by 25 July.
25/07/2013	IMF Executive Board concludes 2013 Article IV Consultation on euro area policies.
29/07/2013	European Commission publishes second Greek economic adjustment programme third review.
29/07/2013	IMF Executive Board completes the fourth review of Greece's performance under the EFF-supported programme and approves disbursement of €1.72 billion.
29/07/2013	IMF completes fourth review under EFF arrangement for Greece and approves €1.72 billion disbursement.
30/07/2013	EFSF disburses €2.5 billion to segregated account under MFFA_I5_T1.
31/07/2013	EFSF disburses €2.5 billion to Greece.
29/08/2013	IMF appoints new resident representative in Greece.
29/09/2013	IMF publishes statement by the EC, ECB, and IMF on Greece.
01/10/2013	IMF publishes statement by IMF Managing Director Lagarde on Greece.

Date	Event
14/11/2013	Eurogroup President Dijsselbloem: Greek authorities need to urgently deliver on four main areas: (1) the milestones agreed at the previous review, (2) the measures to close the fiscal gap in 2014 and 2015, (3) the structural reforms and (4) the improvement of the governance of the privatisation process.
21/11/2013	IMF publishes statement by the EC, ECB, and IMF on Greece.
29/11/2013	Moody's upgrades Greece to Caa3/ STA.
16/12/2013	European Commission publishes Second Greek economic adjustment programme compliance with milestones.
17/12/2013	EFSF BoD approves disbursement to Greece of the second tranche of the fifth loan instalment under the Greek MFFA.
17/12/2013	Eurogroup President Dijsselbloem takes note that Greece has achieved the four milestones agreed with the Troika, announces EFSF will disburse second sub-tranche of the fifth instalment (€0.5 billion).
18/12/2013	EU finance ministers agree on the design of the Single Resolution Mechanism.
18/12/2013	EFSF disburses €0.5 billion to Greece.
22/01/2014	Greece's highest administrative court reverses wage cuts that were imposed by the government in 2012 on police and armed forces to comply with the terms of the country's EU/IMF programme.
27/01/2014	Eurogroup: Greek review not yet concluded, further work needed.
17/02/2014	Eurogroup underlines commitment of the Greek authorities to deliver on reforms in a number of key areas.
18/02/2014	Eurogroup organises a special ministerial meeting on the Intergovernmental Agreement for the Single Resolution Fund.
11/03/2014	Eurogroup reviews operational framework of the future ESM Direct Recapitalisation Instrument (DRI), good progress made.
11/03/2014	Eurogroup calls on Greece to do its utmost to conclude the review rapidly.
12/03/2014	EFSF disburses €13,293,476,460 under PSI_T1B.
12/03/2014	EFSF disburses €1,512,044,830 under PSI_T2B.
12/03/2014	EFSF disburses €38,982,940 under PSI_T3B.
17/03/2014	EC, IMF and ECB conclude mission to Greece.
19/03/2014	IMF publishes statement by the EC, the ECB, and the IMF on Greece.
24/03/2014	ESM BoD approves establishment of Early Warning System.
01/04/2014	A first tranche of €6.3 billion is expected to be approved by the EWG and the EFSF's Board of Directors.
01/04/2014	Eurogroup makes a summing up statement on Greece.
09/04/2014	Greece returns to global capital markets for the first time since 2010, raising €3 billion in a five-year bond deal with a lower-than-expected yield of 4.95%.
24/04/2014	EFSF BoD approves disbursement to Greece of the first tranche of the sixth loan instalment under the Greek MFFA.
28/04/2014	EFSF disburses €6.3 billion to Greece.
05/05/2014	Eurogroup President Dijsselbloem says the Eurogroup finalised the guideline on the ESM DRI.
05/05/2014	Eurogroup underlines the need for completion of the prior actions for the disbursement of €6.3 billion by the EFSF.
05/05/2014	Greek authorities comply with the prior actions required for the first EFSF disbursement.
14/05/2014	IMF publishes Letter of Intent, MEFP, and Technical MoU.
23/05/2014	Fitch upgrades Greece to B/ STA.
26/05/2014	European Commission publishes second Greek economic adjustment programme fourth review.
30/05/2014	IMF Executive Board completes the fifth review of Greece's performance under the EFF-supported programme and approves disbursement of €3.41 billion. In light of the delays in programme

Date	Event
	implementation, the Executive Board also approves the authorities' request for re-phasing three disbursements evenly over the remaining reviews in 2014.
30/05/2014	IMF completes fifth review under EFF arrangement for Greece and approves €3.41 billion disbursement.
06/06/2014	Moody's revises EFSF outlook to Stable on Aa1 rating.
06/06/2014	Moody's revises ESM outlook to Stable on Aa1 rating.
10/06/2014	Gikas Hardouvelis (IND) becomes Greek Finance Minister.
10/06/2014	Euro area member states reach political understanding on the operational framework of the ESM DRI.
19/06/2014	Eurogroup President Dijsselbloem: Greek authorities aim to conclude the first set of milestones by the end of June.
03/07/2014	European Commission publishes second Greek economic adjustment programme compliance with milestones (July 2014).
07/07/2014	Eurogroup President Dijsselbloem: Greece achieved the first set of milestones related to the fourth review ('May set') which will unlock a disbursement of €1 billion by the EFSF.
09/07/2014	EFSF disburses €1 billion to Greece.
16/07/2014	IMF publishes statement by the EC, the ECB and the IMF on Greece.
01/08/2014	Moody's upgrades Greece by 2-notch to Caa1/ STA.
11/08/2014	European Commission publishes second Greek economic adjustment programme compliance with milestones.
12/08/2014	EFSF BoD approves Second Amendment to Greek MFFA.
12/08/2014	ESM BoG approves establishment of the DRI instrument.
13/08/2014	EFSF BoD approves disbursement to Greece of the third tranche of the sixth loan instalment under the Greek MFFA.
14/08/2014	EFSF disburses €1 billion to Greece.
04/09/2014	IMF publishes statement by the EC, the ECB, and the IMF on Greece.
09/09/2014	European Commission publishes Greek first economic adjustment programme fifth review.
12/09/2014	S&P upgrades Greece to B/ STA.
12/09/2014	Eurogroup informed of the state of play of the Greek adjustment programme ahead of the fifth review.
10/10/2014	S&P revises EFSF outlook to Negative on AA rating.
12/10/2014	IMF publishes press release on IMF statement on Greece.
13/10/2014	Troika informs Eurogroup of the state of play of the Greek adjustment programme following the first mission of the fifth review.
15/10/2014	Fitch revises ESM outlook to Rating Watch Negative on AAA rating.
31/10/2014	ECB takes over the role of banking supervisor for the euro area's 120 largest banks under the Single Supervisory Mechanism.
08/12/2014	Troika institutions inform Eurogroup that some progress has been made by the Greek authorities since the November Eurogroup meeting.
08/12/2014	Eurogroup welcomes recent positive macroeconomic developments in the Greek economy.
16/12/2014	Fitch downgrades EFSF by 1-notch to AA Stable.
16/12/2014	Fitch revises ESM outlook to Stable on AAA rating.
19/12/2014	Greece and EFSF execute second Amendment Agreement.
16/01/2015	Fitch changes Greek outlook to NEG; B.
25/01/2015	Syriza wins parliamentary election.
26/01/2015	Alexis Tsipras (SY) becomes Greek Prime Minister.
27/01/2015	Yanis Varoufakis (SY) becomes Greek Finance Minister.
14/02/2015	IMF publishes letter by IMF Managing Director Lagarde to the President of the Eurogroup on Greece.

Date	Event
16/02/2015	Eurogroup President Dijsselbloem: Greek authorities should make up their mind whether to ask for an extension in the current programme.
17/02/2015	Greece and EFSF execute third Amendment Agreement.
20/02/2015	Eurogroup receives request for extension of the Greek programme.
24/02/2015	Eurogroup discusses first list of reform measures presented by the Greek authorities.
25/02/2015	Notification of Return for unused HFSF Buffer under MFFA_I3.
27/02/2015	EFSF receives €10.9 billion in redelivery of bonds not used by HFSF.
05/04/2015	IMF publishes statement by IMF Managing Director Lagarde on Greece.
10/06/2015	EFSF BoD approves waiver of rights in relation to the Default Notices to the Hellenic Republic dated 3 and 17 July 2015.
18/06/2015	Eurogroup President Dijsselbloem: too little progress made in the talks between the institutions and Greece.
27/06/2015	Eurogroup President Dijsselbloem: expiry of the EFSF financial arrangement with Greece without a prospect of follow-up arrangements will require measures by the Greek authorities.
27/06/2015	Interministerial meeting discusses the expiration of the Greek EFSF arrangement after the break-up of the negotiations with the Greek authorities.
28/06/2015	IMF publishes statement by IMF MD on Greece.
30/06/2015	Expiry of Greek EFSF programme. After months of vetting its options, Greek authorities request a new assistance programme.
01/07/2015	Eurogroup President Dijsselbloem sends letter to Greek Prime Minister Tsipras.
02/07/2015	EFSF BoD approves declaration of default of the Hellenic Republic under the Bond Interest Facility, the PSI Facility Agreement and the MFFA including a reservation of the rights of the company under these agreements.
06/07/2015	Euclid Tsakalotos (SY) becomes Greek Finance Minister.
06/07/2015	IMF publishes statement by IMF Managing Director Lagarde on Greece.
07/07/2015	Eurogroup President Dijsselbloem: Greece sent a new request letter for ESM support.
13/07/2015	IMF publishes statement on Greece.
13/07/2015	Eurogroup discusses possibilities of bridge financing and the steps that have to be taken by Greece.
13/07/2015	Eurogroup: Greek parliament needs to legislate on a number of issues and work to recover trust.
16/07/2015	EFSF BoD approves IMF non-payment - 13 July - Reservation of Rights MFFA BIF.
16/07/2015	EFSF BoD approves IMF non-payment - 13 July - Reservation of Rights PSI.
17/07/2015	ESM BoG approves Decision in principle to grant stability support to Greece.
17/07/2015	ESM BoG approves Assessments Article 13.
17/07/2015	ESM BoG approves MD proposal.
17/07/2015	Eurogroup welcomes successful completion of the relevant national procedures related to the in principle decision to provide stability support to Greece.
20/07/2015	IMF publishes statement by the IMF on Greece.
27/07/2015	IMF publishes press release on IMF Executive Board Concludes 2015 Article IV Consultation on euro area policies.
12/08/2015	ESM BoD approves Request letter from the Hellenic Republic.
12/08/2015	ESM BoD approves Commission letter on alternatives to ESM financing - Letter to ESM – NBG.
13/08/2015	IMF publishes statement at the end of an IMF staff visit to Greece.
14/08/2015	IMF publishes statement by IMF Managing Director Lagarde on Greece.
19/08/2015	ESM BoG approves MoU.
19/08/2015	ESM BoD approves FFA and the first disbursement to Greece. ESM disburses €13 billion under FFA_T1_SA_D1.
27/08/2015	Vassiliki Thanou-Christophilou (IND) becomes Greek Prime Minister.

Date	Event
20/09/2015	Alexis Tsipras (SY) becomes Greek Prime Minister.
29/10/2015	ESM BoD approves Maximum Authorised Maturity for ESM borrowing operations.
01/12/2015	ESM BoD takes note of COM note on State Aid - Piraeus Bank Restructuring plan under state aid rules.
01/12/2015	ESM BoD takes note of Commission letter to ESM on alternatives to ESM financing.
01/12/2015	ESM disburses securities for €2.72 billion under FFA_T1_SB_D1_BR (€816 million 1.5-year, €816 million 2-year, and €1,008 million 2.5-year floating rate notes)
02/12/2015	Re-delivery of not needed notes after fair value determination under FFA_T1_SB_D1_BR (€13.9 million in securities)
08/12/2015	ESM disburses securities for €2,705,660,748.00 under FFA_T1_SB_D2_BR (€811 million 1.5-year, €811 million 2-year, and €1,082 million 2.5-year floating rate notes)
09/12/2015	Re-delivery of not needed notes after fair value determination under FFA_T1_SB_D2_BR (€9.33 million in securities)
18/12/2015	ESM BoD takes note of EWG common understanding on Greece 18 December 2015.
22/12/2015	ESM BoD approves Sub-tranche A.
23/12/2015	ESM disburses €1 billion under FFA_T1_SA_D3.
22/01/2016	Standard and Poor's upgrades Greece's credit rating to B−.
04/02/2016	ESM BoD approves Adaptations to ESM Lending Documentation.
04/02/2016	A major Greek general strike takes place amid long-lasting demonstrations by farmerss
05/02/2016	ESM BoD approves Facility Specific Terms.
06/02/2016	ESM BoD approves General Terms.
07/02/2016	ESM BoD approves Standard FFA.
08/02/2016	The Athens Stock Exchange general index falls below 500 units for second time since June 2012.
07/03/2016	Eurogroup discusses the state of play of the first review of the Greek ESM programme.
18/03/2016	ESM BoD approves revision of the Early Warning System.
02/04/2016	EFSF BoD approves the revision of the Early Warning System.
03/04/2016	IMF publishes IMF Managing Director Lagarde Letter to Greek Prime Minister Tsipras.
22/04/2016	Eurogroup discusses the state of play of the first review of the Greek ESM programme.
08/05/2016	The Greek parliament passes a new austerity package (the thirteenth) valued at €5.4 billion.
09/05/2016	Eurogroup welcomes the completion of a policy package.
22/05/2016	Additional tax measures are passed by 153 for and 145 against. One Syriza Member of Parliament resigns, following her vote against two of the articles
22/05/2016	Brexit affects the Greek stock market; the general index falls 13.42%.
25/05/2016	Eurogroup President Dijsselbloem remarks after Eurogroup meeting of 24 May: "We have now afull agreement" - on the package of the major reforms that Greece had committed to last summer - "a lot of legislative work has been done by the Greek government and the institutions will do a final check on that to look at the last legislative work and to see whether that's all in agreement. Part of that is the contingency mechanism that makes sure that Greece stays on the fiscal path. "
25/05/2016	Eurogroup: Greece will meet the primary surplus targets of the ESM programme.
25/05/2016	Eurogroup statement communicates agreement on a package of debt measures that will be progressively phased in.
10/06/2016	ESM BoD approves Note to BoD - Scope for initial ESM evaluation.
21/06/2016	ESM disburses €7.5 billion in cash to Greece.
09/09/2016	Eurogroup takes stock of Greek progress. Eurogroup President Dijsselbloem notes a number of milestones are still pending to fully complete the first review and release further disbursements.
23/09/2016	IMF publishes Staff Concluding statement of the 2016 Article IV mission.
26/10/2016	ESM disburses €2.8 billion in cash to Greece.

Date	Event
01/12/2016	Euro area finance ministers endorse short-term debt relief measures.
19/12/2016	Law on Greek Social Solidarity Income published in the Government Gazette.
12/01/2017	Mário Centeno starts mandate as Eurogroup President
07/02/2017	IMF publishes Greece: 2017 Article IV Consultation-Press Release; IMF Staff Report; and Statement by the Executive Director for Greece.
22/02/2017	ESM Managing Director Klaus Regling: Greece will “stand on its own feet” from 2018 and not need any further loans from the ESM.
22/02/2017	Greece repays €2 billion in loans, a contractual obligation following sale of assets of recapitalised NBG bank.
23/01/2017	ESM and EFSF BoDs approve rules for implementing short-term debt relief measures for Greece.
21/04/2017	Statement by IMF Managing Director Lagarde on Greece- meeting with Greece Finance Minister Tsakalotos on two legs of the Greece programme policies and debt relief.
02/05/2017	Statement by the Commission, ESM, ECB and IMF on negotiations with Greece- Policy package.
19/05/2017	Medium-term Fiscal Strategy Framework 2018–2021, introducing amendments of the provisions of the thirteenth austerity package, is passed by the Greek parliament.
22/05/2017	German Finance Minister Wolfgang Schäuble rules out a debt cut for Greece while it is still a member of the single currency bloc.
15/06/2017	IMF Managing Director Lagarde to propose Approval in Principle of New Stand-By Arrangement for Greece.
20/06/2017	ESM’s Regling: Confident Greece can have sustainable growth
10/07/2017	ESM disburses €7.7 billion in cash to Greece.
25/07/2017	Greece returns to bond market after three years.
08/09/2017	EU Economic Affairs Commissioner Pierre Moscovici says Greece will remain under supervision until it repays 75% of its loans.
25/09/2017	Council of the EU: Greece’s finances have stabilised; the excessive deficit procedure is closed.
30/10/2017	ESM disburses €0.8 billion in cash to Greece.
03/11/2017	ESM’s Regling: Need for Greek debt relief to be assessed in August 2018.
16/11/2017	European Court of Auditors pecial report No 17/2017: 11 recommendations to the Commission regarding its intervention in the Greek financial crisis.
22/01/2018	Eurogroup statement on Greece on agreed prior actions for the third review.
29/01/2018	Greek PDMA successfully concluded a €2.5 billion 5-year bond issue at a yield of 3.6%.
19/03/2018	Organisation for Economic Co-operation and Development (OECD)Economic policy reforms: going for Growth Country note Greece.
28/03/2018	ESM disburses €5.7 billion in cash for Greek debt service, domestic arrears clearance, and for establishing a cash buffer.
01/04/2018	Greek Finance Minister Tsakalotos admits that the country will remain under "”enhanced surveillance” once its bailout programme expires in August.
27/04/2018	Eurogroup President Centeno states: for the second consecutive year, Greece delivered a primary surplus over 4% of GDP and a budget surplus.
30/04/2018	OECD publishes 2018 Economic Surveys- Greece with a headline message “Greece is on track to recover from a deep depression.”
30/04/2018	OECD blog: Achieving an inclusive and sustainable recovery in Greece.
12/06/2018	ESM’s Regling, speech: “Greece and the euro area adjustment programmes”.
15/06/2018	ESM’s Regling: There will be no new memorandum after Greece’s exit from the programme; while surveillance will be stricter there will be no new conditions.
15/06/2018	ESM disburses€1 billion in cash to Greece for the clearance of arrears.
21/06/2018	Eurogroup approves medium-term debt relief measures for Greece.
22/06/2018	Completion of the fourth and final review and growth strategy, DSA, and primary surplus.

Date	Event
22/06/2018	Eurogroup President Centeno comments following the Eurogroup meeting on Greece exiting the financial assistance programme.
29/06/2018	Greece: IMF Staff Concluding Statement of the 2018 Article IV Mission.
30/06/2018	Macedonia, Greece sign an historic agreement resolving 27-year-long dispute over the official name of Macedonia.
26/07/2018	ECB President Draghi: “Right now Greek government bonds are not eligible for [quantitative easing] QE, so they need a waiver”.
31/07/2018	Greece : 2018 Article IV Consultation and Proposal for Post-Programme Monitoring-Press Release; IMF Staff Report; and Statement by the Executive Director for Greece.
06/08/2018	ESM disburses €15 billion in cash to Greece. Out of this, €9.5 billion was used for building up Greece’s cash buffer and €5.5 billion was used for debt service. After the disbursement, the cash buffer reached around €24 billion.
10/08/2018	Fitch upgrades Greece rating to BB- from B. Greece’s banking sector is getting better, Fitch noted, adding that the country’s relationship with its European creditors has “substantially improved”.
20/08/2018	Greece exits third bailout programme.
10/09/2018	ESM’s Regling warns Greece not to backslide on reforms.
10/09/2018	First post-programme mission to Greece ECB, ECB, IMF (ESM on EWS).
14/09/2018	Troika in Athens mission: Staff statement following the first post-programme mission to Greece- Greece is reintegrated into the European Semester of economic policy coordination.
10/10/2018	ESM’s Regling: Comparing Italy debt concerns to Greece is ‘not quite fair’.
22/11/2018	EFSF implements medium-term debt relief measures for Greece.
04/12/2018	ESM implements short-term debt relief measures for Greece.
31/12/2018	Euro celebrates its 20th birthday
21/01/2019	Second post programme missions Greece, EC, ESM, ECB (IMF on PPM).
21/01/2019	Eurostat: Government debt down to 86.1% of GDP in euro area, Greek government debt at 182.2% of GDP.
25/01/2019	Greece: IMF Staff Concluding Statement of the First Post-Programme Monitoring Mission.
29/01/2019	Greece issued five-year bond at 3.6%, raising €2.5 billion.
30/01/2019	ESM’s Regling: “Greece on the right track”.
12/03/2019	IMF Executive Board concludes first post-programme monitoring discussions with Greece.
12/03/2019	IMF country focus blog: Greece: Economy improves, key reforms still needed.
05/04/2019	Eurogroup statement on Greece of 5 April 2019: “We welcome the adoption of a budget for 2019 which is projected to ensure the achievement of the primary surplus target of 3,5% of GDP, and the completion of important structural reforms including key privatisation transactions”.
05/04/2019	Eurogroup statement: “We continue to monitor closely the ongoing legal proceedings against … the former President and senior staff of Elstat”.
24/04/2019	Eurostat: 2018 Government debt down to 85.1% of GDP in euro area, Greek government debt at 181.1% of GDP.
06/05/2019	Third post programme missions Greece, EC, ESM, ECB (IMF on 2019 Article IV Consultation cycle).
11/06/2019	Bank of Greece Governor Yannis Stournaras: Greece closer to fully lifting capital controls this year.
08/07/2019	Centre-right New Democracy party wins landslide at early elections, and leader Kyriakos Mitsotakis becomes prime minister and Christos Staikouras (ND) Finance Minister.
08/07/2019	Eurogroup President Centeno: Commission presented the third enhanced surveillance report, which assesses the ongoing implementation of reforms, report not linked to a decision on further debt relief measures.
09/07/2019	European Council: 2019 country-specific recommendations (CSR). For the first time and following Greece’s exit from its third economic adjustment programme, the 2019 CSRs are addressed to all 28 Member States.
10/07/2019	Summer 2019 Commission Economic Forecast for Greece (growth and inflation): recovery still “fragile”.

Date	Event
12/07/2019	OECD economic policy reforms: Going for Growth Country note Greece.
16/07/2019	Moody's changes the deposit rating outlook to positive on three Greek banks: Alpha Bank AE, Eurobank Ergasias S.A. (Eurobank) and National Bank of Greece S.A. (NBG). The rating action was driven by "expectation of further improvements in asset quality, funding and profitability in 2019-2020, benefitting from a more supportive operating environment."
02/08/2019	Fitch Ratings maintains Greek credit worthiness rating at BB- with a stable outlook. It quoted high debt level, NPLs, and weak growth potential as the main risks.
23/08/2019	Moody's leaves Greek creditworthiness at B1. Quotes weak justice system, state inefficiencies, problems in fighting corruption, and demographic trends as adverse to economic growth.
04/09/2019	IMF Managing Director Lagarde reiterates her and the IMF's position regarding the need to revise surplus targets for the Greek economy.
19/09/2019	Under state aid decisions, the European Commission approves Greek Primary Residence Protection Scheme to support households at risk of losing their home due to difficulties in mortgage repayments.

Note: 'ND' for New Democracy; 'SY' for Syriza; 'IND' for independent
Source: Hellenic Parliament