



Retrospective evaluation of State aid rules for RDI and the provisions applicable to RDI State aid of the GBER applicable in 2014 – 2020

Final Report

Prepared by



Competition

EUROPEAN COMMISSION

Directorate-General for Competition

E-mail: comp-publications@ec.europa.eu

European Commission

B-1049 Brussels

**Retrospective evaluation of
State aid rules for RDI and the
provisions applicable to RDI
State aid of the GBER applicable
in 2014–2020**

Final report

***Europe Direct is a service to help you find answers
to your questions about the European Union.***

Freephone number (*):

00 800 6 7 8 9 10 11

(*)The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

LEGAL NOTICE

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

More information on the European Union is available on the Internet (<http://www.europa.eu>).

Luxembourg: Publications Office of the European Union, 2020

Catalogue number: KD-01-20-288-EN-N

ISBN 978-92-76-18815-5

doi: 10.2763/41435

© European Union, 2020

Reproduction is authorised provided the source is acknowledged.

The reproduction of the artistic material contained therein is prohibited.

Authors:



- Engagement Partner: Olaf Buske (KPMG AG)
- Technical Manager: Amélie zu Eulenburg (KPMG AG)
- Project Manager: Franziska Altmann (KPMG AG)
- Quality Assurance: Klaus-Peter Beyer (KPMG AG)
- Internal Control: Moritz Püstow (KPMG Law)
- Patrick Baldes (KPMG Germany);
- Lukas Füchtjohann (KPMG Germany);
- Laurence Genillard (KPMG Germany);
- Carsten Jennert (KPMG Law);
- András Kaszap (KPMG Hungary);
- Tim Kreimer (KPMG Germany);
- Felix Natschinski (KPMG Germany);
- Marcell Németh (KPMG Hungary);
- Anita Szatmári-Mező (KPMG Hungary);
- Sarah Untheim (KPMG Germany)



- Dr. Jan-Philipp Kramer (Prognos AG);
- Janosch Nellen (Prognos AG);
- Janis Neufeld (Prognos AG);

In collaboration with:

- Paul Jeffrey (Paul Jeffrey Associates Ltd);
- Leszek Boguszewski (KPMG Poland);
- Natán Diaz Carazo (KPMG Spain);
- Sandra Guzik (KPMG Poland);
- Marek Gzowski (KPMG Poland);
- Martin Kavka (KPMG Czechia);
- Silvia Kristina Moreno Lombardo (KPMG Spain);
- Dr. Thomas Stehnken (Prognos AG);
- Kamil Szczesniak (KPMG Poland);
- Markus Zock (KPMG Belgium)

ABSTRACT

This evaluation represents a **targeted** retrospective evaluation of selected provisions applicable to State aid for Research Development and Innovation (RDI) covered by the Framework for State aid for research and development and innovation (RDI Framework) and the General Block Exemption Regulation (GBER) in force since July 2014. The report focuses on answers to specific evaluation questions with regard to specific State aid measures for RDI, namely investment aid to research infrastructure, aid for innovation clusters, innovation aid to SMEs, aid for experimental development projects and aid for process and organisational innovation.

The findings of this study will support the European Commission's targeted evaluation of the State aid rules for RDI in force for the period of 2014-2020, in the context of the "Fitness Check" of the State aid rules. Amongst others, the study aims to provide insights into whether the RDI rules under evaluation remain relevant in enabling companies operating in Europe to address market and technological developments while helping them to overcome contemporary market failures.

The analysis in this study is based on almost 170 semi-structured interviews conducted with stakeholders from the target groups of Member States' State aid authorities, State aid beneficiaries (including SMEs, large undertakings, innovation clusters), non-aided undertakings and industry and scientific associations in 18 Member States (MS).

As a key finding, the interviews conducted provide strong evidence that the RDI rules evaluated in this study are fit to promote RDI activities in the EU without unduly distorting competition, have worked effectively, efficiently and coherently and remain relevant in light of recent market and technological developments. Nonetheless, interviewees have also indicated that there are certain aspects which require further improvement.

This targeted study carried out along the four evaluation criteria of effectiveness, efficiency, coherence and relevance follows the Common Methodology for State aid evaluation and applies a mixed-method approach involving the collection and assessment of qualitative as well as quantitative information.

Key words: Research and Development and Innovation (RDI), State aid rules, General Block Exemption Regulation (GBER), RDI Framework, State Aid Modernisation (SAM), research infrastructure, experimental development, innovation, SMEs, innovation clusters, Cluster operators.

RÉSUMÉ

La présente évaluation constitue une évaluation rétrospective **ciblée** de certaines dispositions applicables aux aides d'État à la recherche, au développement et à l'innovation (RDI) couvertes par l'encadrement des aides d'État à la recherche, au développement et à l'innovation (encadrement RDI) et le règlement général d'exemption par catégorie (RGEC), en vigueur depuis juillet 2014. Le rapport répond à des questions d'évaluation (QE) concernant des mesures d'aides d'État à la recherche, au développement et à l'innovation spécifiques, à savoir les aides à l'investissement dans les infrastructures de recherche, les aides aux pôles d'innovation, les aides à l'innovation en faveur des PME, les aides aux projets de développement expérimental et les aides à l'innovation de procédé et d'organisation.

Les conclusions de cette étude viendront étayer l'évaluation ciblée de la Commission européenne sur les règles en matière d'aides d'État à la recherche, au développement et à l'innovation en vigueur pour la période 2014-2020, dans le cadre du « Fitness Check » des règles relatives aux aides d'État. L'étude vise notamment à déterminer si les règles en matière de RDI qui font l'objet de l'évaluation restent pertinentes pour permettre aux entreprises opérant en Europe de faire face aux évolutions du marché et des technologies tout en les aidant à surmonter les défaillances actuelles du marché.

L'analyse de cette étude repose sur près de 170 entretiens semi-structurés menés avec des parties prenantes des groupes cibles des autorités des États membres chargées des aides d'État, des bénéficiaires d'aides d'État (y compris les PME, les grandes entreprises et les pôles), des entreprises non aidées et des associations industrielles et scientifiques dans 18 États membres (EM).

Les entretiens effectués ont permis de constater que les règles en matière de RDI évaluées dans le cadre de cette étude sont aptes à promouvoir les activités de RDI dans l'UE sans fausser indûment la concurrence, qu'elles ont fonctionné de manière efficace, efficiente et cohérente et qu'elles restent pertinentes au regard des évolutions récentes du marché et de la technologie. Néanmoins, les personnes interrogées ont également indiqué que certains aspects doivent encore être améliorés.

Cette étude ciblée, réalisée sur la base de quatre critères d'évaluation (efficacité, efficacité, cohérence et pertinence), suit la méthodologie commune d'évaluation des aides d'État et applique une approche de méthode mixte de collecte et d'évaluation des informations qualitatives et quantitatives.

Mots-clés: recherche, développement et innovation (RDI), règles en matière d'aides d'État, règlement général d'exemption par catégorie (RGEC), encadrement RDI, modernisation de la politique en matière d'aides d'État, développement expérimental, infrastructure de recherche, innovation, PME, pôles d'innovation, opérateurs de pôles

ZUSAMMENFASSUNG

Die vorliegende Studie ist eine **zielgerichtete** retrospektive Evaluierung ausgewählter Vorschriften über staatliche Beihilfen zur Förderung von Forschung, Entwicklung und Innovation (FuEul) gemäß dem Unionsrahmen für staatliche Beihilfen zur Förderung von Forschung, Entwicklung und Innovation (FuEul-Rahmen) und der Allgemeinen Gruppenfreistellungsverordnung (AGVO), die im Juli 2014 in Kraft getreten ist. Der Bericht beschäftigt sich mit spezifischen Evaluierungsfragen zu Aspekten staatlicher FuEul-Beihilfen, dies sind: Investitionsbeihilfen für Forschungsinfrastruktur, Beihilfen für Innovationscluster, Innovationsbeihilfen für KMU, Beihilfen für Projekte im Bereich der experimentellen Entwicklung und Beihilfen für Prozess- und Organisationsinnovationen.

Die Ergebnisse dieser Studie werden in die zielgerichtete Evaluierung der im Zeitraum 2014 bis 2020 geltenden Vorschriften über staatliche FuEul-Beihilfen durch die Europäische Kommission einfließen, die im Rahmen der Eignungsprüfung („Fitness Check“) der Vorschriften über staatliche Beihilfen stattfindet. Die Studie soll unter anderem Erkenntnisse darüber bringen, ob die evaluierten FuEul-Vorschriften weiterhin dazu geeignet sind, es in Europa tätigen Unternehmen zu ermöglichen, mit Markt- und Technologie-Entwicklungen Schritt zu halten und mit eventuellem Marktversagen umzugehen.

Die Analyse basiert auf nahezu 170 teilstrukturierten Interviews mit Stakeholdern aus den Zielgruppen aus 18 Mitgliedstaaten (MS), darunter Behörden der MS, Beihilfeempfänger (darunter KMU, Großunternehmen, Innovationscluster), nicht geförderte Unternehmen und Personen, die in Branchen- und Wissenschaftsverbänden organisiert sind.

Als Hauptergebnis kann aufgrund der durchgeführten Interviews festgehalten werden, dass die in dieser Studie evaluierten FuEul-Vorschriften dazu geeignet sind, FuEul-Aktivitäten in der EU zu fördern, ohne den Wettbewerb ungebührlich zu verzerren, dass sie wirksam, effizient und kohärent umgesetzt werden und dass sie vor dem Hintergrund der Markt- und Technologie-Entwicklungen der letzten Zeit weiterhin relevant sind. Nichtsdestotrotz haben die Befragten auch darauf hingewiesen, dass es bestimmte Aspekte gibt, die einer weiteren Verbesserung bedürfen

Diese zielgerichtete Studie wurde anhand der vier Evaluationskriterien Wirksamkeit, Effizienz, Kohärenz und Relevanz durchgeführt, folgt der *Gemeinsamen Methodik für die Evaluierung staatlicher Beihilfen* und basiert auf einem Methodenmix zur Sammlung und Bewertung quantitativer wie qualitativer Daten.

Schlüsselbegriffe: Förderung von Forschung, Entwicklung und Innovation (FuEul), Vorschriften über staatliche Beihilfen, Allgemeine Gruppenfreistellungsverordnung (AGVO), FuEul-Rahmen, Modernisierung des EU-Beihilfenrechts („State aid modernisation“, SAM), experimentelle Entwicklung, Forschungsinfrastruktur, Innovation, KMUs, Innovationscluster, Clusterbetreiber

Table of Contents

1	Executive Summary	11
1.1	Purpose and approach of the study	11
1.2	Results and findings of the study	12
1	Synthèse.....	22
1.1	Objectif et approche de l'étude	22
1.2	Résultats et conclusions de l'étude.....	23
1	Zusammenfassung	35
1.1	Zweck der Studie und Herangehensweise	35
1.2	Studienergebnisse	36
2	Introduction	48
3	Evaluation methodology	49
3.1	Task 1 – Information Collection	49
3.1.1	Evaluation Matrix (Task 1.1)	49
3.1.2	Member States involved in the study.....	49
3.2	Data collection via desk research (Task 1.2).....	50
3.2.1	Principal data sources	50
3.2.2	Literature and relevant documents.....	51
3.3	Data collection via individual interviews (Task 1.3).....	52
3.3.1	Stakeholder groups involved in interviews.....	52
3.4	The Computer-Assisted-Telephone-Interview approach (CATI)	55
3.5	Other interviews (scoping interviews)	55
3.6	Task 2: Data analysis.....	56
3.6.1	Interview responses collected.....	56
3.6.2	Approach pursued for data aggregation and triangulation.....	57
3.6.3	Methodological and operational challenges	61
4	Evidence	62
4.1	Effectiveness	62
4.1.1	Evaluation Question 1	62
4.1.2	Evaluation Question 2	79
4.1.3	Evaluation Question 3	89
4.1.4	Evaluation Question 4	94
4.2	Efficiency	101
4.2.1	Evaluation Question 5	101
4.3	Relevance	107
4.3.1	Evaluation Question 6	107
4.3.2	Evaluation Question 7	111

4.4	Coherence.....	133
4.4.1	Evaluation Question 8	133
4.4.2	Evaluation Question 9	136
Annexes		
Annex 1	Evaluation Matrix	138
Annex 2	Country Sample Statistics on RDI investments and State aid	138
Annex 3	Literature and data sources	138
Annex 4	Interview Questionnaire	138

List of tables and figures

Table 1: Distribution of interviews across countries	54
Table 2: Structure of evidence logbook for recording and triangulating data.....	60
Table 3: Comparison of R&D expenditures vs RDI State aid in the EU-28.....	76
Figure 1: Principal data sources.....	50
Figure 2: Economic Sectors.....	56
Figure 3: Processing collected information.....	58
Figure 4: State aid expenditures under GBER Art. 26, 27 and 28.....	65
Figure 5: Evolution of Aid awarded under block exemption with the objective 'Research and development including innovation' under GBER 2008 vs. GBER 2014	66
Figure 6: Evolution of gross domestic expenditure on R&D by sector, 2007-2017.....	70
Figure 7: Evolution of State aid expenditures under Art. 27 and Art. 28.....	80
Figure 8: Evolution of the percentage of KET related patents in relation to overall patents registered in 2007 – 2013 vs. 2014 – 2017.....	128

Glossary

CATI	Computer-assisted telephone interview
BERD	Business Enterprise Expenditure on R&D
DG	Directorate-General
EIB	European Investment Bank
ECA	European Court of Auditors
EIS	European Innovation Scoreboard
EQ	Evaluation Question
GA	Granting Authority
GBER	General Block Exemption Regulation
GDPR	General Data Protection Regulation
GERD	Intramural R&D expenditure
JC	Judgment Criterion/a
JRC	Joint Research Center
KPI	Key Performance Indicator
LE	Large enterprise
MS	Member State
MSA	Member State Authority
NACE	Nomenclature statistique des activités économiques dans la Communauté européenne
NoA	Commission Notice on the notion of State aid
PCI	Project of Common Interest
RDI	Research, Development and Innovation
R&D	Research & Development
SAM	State Aid Modernisation Agenda
SME	Small and medium-sized enterprises
ToR	Terms of Reference
TRL	Technology Readiness Level

1 Executive Summary

1.1 Purpose and approach of the study

This summary relates to the final report of the targeted retrospective evaluation of selected provisions applicable to State aid for Research Development and Innovation (RDI) covered by the Framework for State aid for research and development and innovation (RDI Framework) and the General Block Exemption Regulation (GBER) in force since June 2014.

The report focuses on answers to specific evaluation questions with regard to certain State aid measures for RDI, namely investment aid to research infrastructure, aid for innovation clusters, innovation aid to SMEs, aid for experimental development projects and aid for process and organisational innovation.

The results of this study will support DG COMP's overall evaluation of the State aid rules launched on 7 January 2019 as a 'fitness check'¹ and are expected to help the European Commission to form an opinion on whether the RDI rules under evaluation remain relevant in enabling companies operating in Europe to address market and technological developments while helping them to overcome contemporary market failures.

The overall study methodology is in line with the *Common Methodology for State aid evaluation*² and follows a **mixed-method approach** entailing the collection and assessment of qualitative as well as quantitative information, the latter however being limited by the availability of specific data.

The evaluation work included three tasks as defined by the Contracting Authority, namely **Task 1.1:** "Development of an Evaluation Matrix", **Task 1.2:** "Collection of qualitative and quantitative information via a comprehensive desk review" involving statistics and literature, and **Task 1.3:** "Collection of qualitative information via individual interviews" among the countries and stakeholder groups defined in the Terms of Reference (ToR) and further refined in the course of the evaluation.

The analysis in this study is primarily based on **168 semi-structured interviews** with Member State authorities, State aid beneficiaries (including SMEs, large undertakings, innovation clusters)³, non-aided undertakings and industry and scientific associations in 18 Member States (MS).⁴

In addition, the contractor conducted a number of **scoping interviews** at the start of the project to support the preparation of the questionnaire and the further elaboration of the Evaluation Matrix. The scoping interviews involved representatives of different European Commission Services who were especially familiar with the rules in scope of the evaluation questions.

¹ The fitness check aims to provide a basis for decisions on the prolongation or possibly update of the rules.

² Commission Staff Working Document, SWD (2014) 179 final.

³ The interviews were conducted with 60 State aid authorities, 74 beneficiaries of which 17 were representatives of innovation clusters, 22 non-aided undertakings of which two were representatives of innovation clusters and 12 associations.

⁴ The fieldwork primarily focused on Austria, Belgium, Czechia, France, Germany, Hungary, Lithuania, Poland, Romania, Slovenia, Spain, and Sweden. Apart from a balanced geographic distribution and the involvement of 'old' and 'new' EU Member States, the sample was set to reflect varying degrees of using RDI State aid in the Member States. Ten additional interviews were performed in Denmark, Ireland, Luxembourg, Portugal, United Kingdom and The Netherlands.

1.2 Results and findings of the study

Below we present the central findings of the study, along the four evaluation criteria (effectiveness, efficiency, coherence and relevance) and 33 evaluation questions. While for certain questions very comprehensive answers could be provided, for others the evidence baseless clear.

As an **overarching finding**, the interviews conducted provide strong evidence that the RDI rules evaluated in this study are fit to promote RDI activities in the EU without unduly distorting competition, have worked effectively, efficiently and coherently and remain relevant in light of recent market and technological developments. Most interviewees observed clear improvements after the revision of rules. Nonetheless, interviewees have also highlighted certain aspects which could be improved; for instance there was a call for clearer guidance and further coherence in rules, aid intensities and definitions in the field of RDI funding.

The **main findings per each evaluation** question are summarised in the table below (for more details, please see Chapter 4 of the final report).

Summary of Findings	
Effectiveness	
EQ 1: To which extent have the State aid rules <u>on investment aid for RDI infrastructure</u>, <u>aid for innovation clusters</u> and <u>innovation aid for SMEs</u> affected the uptake of the relevant activities without unduly distorting competition? In particular, about each set of rules in the above three areas, how much did the State aid rules help to:	
1.a - Addressing market failures GBER: Art. 26, Art. 27, Art. 28 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff), point 49	<p>The relevance of market failures for the aid measures associated with research infrastructures, innovation clusters and innovation aid for SMEs, as referred to in in the GBER, was confirmed by the majority of respondents to the study.</p> <p>Specifically, in relation to activities associated with Art. 26 on investment aid for research infrastructure, ‘global competitive challenges’ were seen to be of highest importance by 57% of the respondents.</p> <p>67% of interviewees held that State aid in relation to Art. 27 on support of innovation cluster (organisations), is necessary in order to avoid ‘coordination and network failures’.</p> <p>In regard to Art. 28 on aid for innovation activities of SMEs, 68% of the respondents held that it was seen as a chance to overcome difficulties associated with an ‘uncertain rate of return’.</p> <p>The ‘uncertain rate of return’ was identified as the most common reason for beneficiaries to consider State aid necessary. In fact, the open statements reveal that the interviewees consider State aid necessary due to an ‘uncertain rate of return’ especially in initial phases of research. Some publications address the limited ‘access to finance’ for SMEs in the area of RDI.</p>
1.b - Increasing public investments GBER: Art. 26, Art. 27, Art. 28 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff)	<p>Total RDI State aid expenditures under the GBER as well as the RDI Framework with the objective ‘Research and development including innovation’ rose from EUR 8.9 billion in 2014 to EUR 11.27 billion in 2018 in the EU-28. At the same time, RDI State aid expenditures channelled through the GBER only with the objective ‘Research and development including innovation’ rose significantly from EUR 3.62 billion in 2014 to EUR 9.94 billion in 2018 as a result of the enlarged scope of the GBER. Nonetheless, there is no clear evidence that a causal relationship between the revised rules and the volume of</p>

Summary of Findings	
	<p>public investment exists.</p> <p>The interview results illustrated that in the area of research infrastructure (Art. 26) 79.1% of the respondents felt that the revised rules had an impact on RDI investments.</p> <p>In the area of innovation activities for SMEs (Art. 28), 71.3% of the respondents concluded that the rules led to a change in RDI investments.</p> <p>In the area of innovation clusters (Art. 27) the interview results indicated that 71% of the respondents noticed a change in RDI investments.</p> <p>Furthermore, two statements have highlighted ulterior possible factors influencing public and private investments. This prudent conclusion is supported by one literature source, which cautiously deduces from a survey undertaken with 435 innovative firms that firms might have easier access to public finance after the revision of the RDI State aid rules.</p>
<p>1.c - Increasing private investments</p> <p>GBER: Art. 26, Art. 27, Art. 28 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff)</p>	<p>A causal relationship between State aid and private investments can be observed more clearly than in the case of public investments. According to an econometric study which quantifies the effect of the GBER implementation on leveraging private R&D expenditures, each additional euro of GBER aid to RDI stimulates additional private R&D expenditures funded by the business sector of EUR 2.20 to EUR 2.40. This increase of private investments was confirmed by core interview results in which the majority of respondents (above 70%) stated that they noticed a change in public or private investments. Responses suggested that State aid has been a positive factor since it triggered further private investments, e.g. by creating a leverage effect through the obligation to co-invest. However, interviewees were uncertain whether this was attributable to the revised RDI State aid rules or the State aid itself.</p>
<p>1.d - Increasing RDI activities of industry/ SMEs</p> <p>GBER: Art. 26, Art. 27, Art. 28, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>More than 75% of the interviewees confirmed that State aid was essential to carry out RDI activities in most of the cases and aided companies and/or research institutes to receive adequate funding. This is also supported by data and literature.</p> <p>Even after project implementation, positive effects were noticed as the interviewees broadly confirmed that previously aided projects resulted in additional RDI activities. Data of the European Innovation Scoreboard point to an increase in the share of SMEs introducing product or process innovation from 29% (2014) to 33% (2018). The increase in the uptake of RDI activities of industry, incl. by SMEs can thus be confirmed albeit without quantifying the extent to which this development can be linked to the revised RDI State aid rules.</p>
<p>1.e - Market distortion/ Other negative effects resulting from State aid</p> <p>GBER: Art. 26, Art. 27, Art. 28 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff)</p>	<p>More than 80% of interviewees confirmed that State aid has had no negative effect on competition. If at all, negative effects appear to be outweighed by positive ones in the respondents' view. Only 14 out of 100 statements indicated that there could possibly be a negative effect caused by State aid. The study did not find any evidence suggesting that State aid provided under the relevant Articles of the GBER had any material negative impact on competition or crowded-out private investments.</p> <p>No findings have been identified in the literature on market</p>

Summary of Findings	
	distortions through State aid with regard to the specific topics assessed in this evaluation question. Despite there being valuable papers on potential negative effects in the aftermath of public RDI investments available, these are often 'outdated' and generally do not refer to the specific aid measures concerned.
EQ 2: To which extent has the possibility to combine, if necessary, aid to innovation clusters with innovation aid for SMEs under the State aid rules contributed to effectively address underlying market failures targeted by the two measures to stimulate innovation activity of the cluster's users, in particular SMEs (without unduly distorting competition). In particular, how much has the combined use of these two sets of rules facilitated:	
<p>2.1.a - Increase of public investments in clusters and SME activities</p> <p>GBER: Art. 27, Art. 28 RDI Framework: Point 12(e), point 12(d), point 15(s)</p>	<p>Aid expenditures for innovation clusters (Art. 27) as well as innovation aid for SMEs (Art. 28) saw steady growth since their inclusion into the GBER 2014. Additionally, the majority of interviewees (more than 55%) confirmed that the possibility to provide State aid to both, cluster operators and clusters users had stimulating effects on public investments and RDI-related activities.</p> <p>The option to combine funding under Art. 27 for the cluster operator with innovation aid granted for cluster users under Art. 28 was judged positively in the literature, too, to provide more room for cluster-related investments. In addition, according to one literature source Art. 28 consolidated and simplified the State aid rules previously in place applicable to innovation aid for SMEs.</p>
<p>2.1.b - Increase of private investments in clusters and activities</p> <p>GBER: Art. 27, Art. 28 RDI Framework: Point 12(e), point 12(d), point 15(s)</p>	<p>Around 70% of interviewees agreed that the State aid provided is likely to have had a positive effect on the evolution of private investments into the innovation clusters (69.8%) and RDI activities of SMEs in innovation clusters (71.8%). Among the stakeholder groups, MSAs were more skeptical about the positive effect of State aid on private investments compared to cluster members and business associations. No evidence on the effects of the rules in respect of these particular aid measures could be identified, neither in open statements nor in literature.</p>
<p>2.1.c - Increase of RDI activities of SMEs</p> <p>GBER: Art. 27, Art. 28 RDI Framework: Point 12(e), point 12(d), point 15(s)</p>	<p>The majority of respondents (83%) reckoned that the possibility to provide State aid to both cluster operators as well as their users that qualify as SMEs, has led to an increase of the latter's RDI activities. No specific information was obtained as to the nature of such activities.</p> <p>Overall, the open statements were supportive since 33% of them expressed positive statements pointing to increased RDI collaboration activities. It can thus be concluded that the possibility to combine aid to innovation clusters with innovation aid for SMEs had a positive effect on RDI activities, particularly because of the enhancement of collaboration between different parties.</p>
<p>2.1.d - Increased collaboration activities of various cluster members</p> <p>GBER: Art. 27, Art. 28 RDI Framework: Point 12(e), point 12(d), point 15(s)</p>	<p>A vast majority of 80% to almost 90% of respondents considered the State aid rules to be stimulating collaboration activities between various cluster members. However, six interviewees indicated that the increase of collaboration could not necessarily be related to the revision of the rules but rather to the very nature of clusters. No specific statement was identified in the literature to validate the finding.</p>

Summary of Findings	
<p>2.1.e/f - Avoiding negative effects distorting competition</p> <p>GBER: Art. 27, Art. 28 RDI Framework: Point 12(e), point 12(d), point 15(s)</p>	<p>The sub-question (2.1.e) addressing the potential effect of State aid on competition in the market of clusters and SMEs has been merged with the sub-question (2.1.f) on a potential 'crowding out' effect of private investors. The majority of respondents (above 88%) have denied both potential negative effects of State aid. Most of the 52 respective open statements were neutral or positive. Only four of them expressed some criticism saying that the State aid amounts were so low compared to private and public investments that it could not have any significant distorting effects on the market.</p> <p>Nine interviewees stressed that necessary information was missing in order to be able to judge whether negative effects occurred. No specific statement was identified in the literature.</p>
<p>2.2 - Clarity/ understanding of the combined use of Art. 27/28</p> <p>GBER: Art. 25, Art. 27, Art. 28, Art. 29 RDI Framework: Point 12(a), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(cc)</p>	<p>Although there was a rather weak evidence base to answer the question at hand, it can indirectly be concluded from the answers to various questions that there was no lack of clarity or misunderstanding among aid granting authorities and/or aid beneficiaries, that SMEs which are users of clusters aided under Art. 27 GBER can lawfully benefit from aid in line with Art. 25, 28 and 29 of the GBER. However, it appears that the majority of interview respondents found it easier to handle the provisions of Art. 27 in combination with Art. 29.</p> <p>Granting aid under Art. 27 GBER combined with 'de minimis' support as well as with Art. 25 and 28 GBER seem to pose obstacles for aid granting authorities as more than 50% of the MSAs pointed to difficulties. Open statements highlighted administrative burdens associated with the granting of aid under the aforementioned provisions. No evidence was collected in the literature to validate this finding.</p>
<p>EQ 3: To which extent have the State aid rules for RDI affected the collaboration in RDI activities and the knowledge transfer activities between various partners?</p>	
<p>3.1 - Collaboration between SMEs and large undertakings</p> <p>GBER: Art. 25, Art. 27, Art. 28, Art. 29, Art. 2(90) RDI Framework: Point 12(a), point 12(e), point 12(d), point 15(h), point 15(s), point 15(v), point 15(w), point 15(y), point 15(bb), point 15(cc), point 49</p>	<p>From the interview results, it can be concluded that an increase in collaboration activities between SMEs and large undertakings occurred since 2014. No conclusion on the extent of this increase can be drawn from the given analysis. The majority of respondents (more than 69%) recognised the State aid rules to actively pursue the objectives of enhanced collaboration and knowledge transfer among different actors.</p> <p>In respect of stakeholders, associations were the most positive ones when judging the correlation of the rules and these two aims, whilst non-aided undertakings as well as MSAs were rather cautious, especially about the cooperation between large enterprises and SMEs.</p> <p>The majority of the 102 open statements given in response to the associated open questions did not deliver further insights, as about 80% of the statements given were neutral. The remaining statements indicated an increase of collaboration. The latter is understood to be one of the principal aims of the State aid rules, and is facilitated by State aid as it is necessary to overcome the underlying market failure, as confirmed by interview results. No findings relevant to the EQ were identified in the literature.</p>

Summary of Findings	
<p>3.2 - Collaboration/ knowledge transfer - undertakings and research organisations</p> <p>GBER: Art. 25, Art. 27, Art. 28, Art. 29, Art. 2(90) RDI Framework: Point 12(a), point 12(e), point 12(d), point 15(h), point 15(s), point 15(v), point 15(w), point 15(y), point 15(bb), point 15(cc)</p>	<p>A positive correlation between State aid and the degree of collaboration and knowledge transfer between enterprises and research organisations is confirmed by the interview results as almost 80% and almost 70% agree, respectively. The agreement is stronger than in the case of collaboration among enterprises. It was also mentioned that other factors influenced the cooperation, such as trust and different mind-sets of undertakings and research institutes.</p>
<p>EQ 4: To which extent have the State aid rules for RDI-projects, in particular on <u>industrial research</u> and <u>experimental development</u>, allowed aid that doesn't unduly distort competition in the internal market while adequately addressing global competitive issues?</p>	
<p>4.1 - Industrial research addressing global competitive issues</p> <p>GBER: Art. 25(2)b RDI Framework: Point 12(a), point 15(q), point 15(cc)</p>	<p>It can be concluded that the State aid rules on industrial research adequately addressed global competitive issues, as 75% of the interviewees expressed their agreement with this statement. The high number of open statements, over 75 in total, indicated a strong interest of respondents in this topic. Furthermore, 35% of the open statements were positive while 41% pointed to weaknesses. To be more specific, nine open statements suggested the amendment of the eligibility criteria, in particular aid intensities, in order to fully address global competitive issues and to create a level playing field. There was no literature available to validate this result.</p>
<p>4.2 - Industrial research having negative effects</p> <p>GBER: Art. 25(2)b RDI Framework: Point 12(a), point 15(q), point 15(cc)</p>	<p>No interview participant referred specifically to support for industrial research and therefore no finding can be formulated as regards negative effect of support for industrial research activities.</p>
<p>4.3 - Experimental development addressing global competitive issues</p> <p>GBER: Art. 25(2)c RDI Framework: Point 12(a), point 15(j), point 15(cc)</p>	<p>It can be concluded from interviews (confirmed by 75.7% of respondents) and literature that the revised State aid rules on experimental development are well adapted to on-going market developments and sufficiently address global competitive issues. Based on open statements, 22 interviewees felt that there is room for improvement including with respect to aid intensities. Two respondents pointed to the strict definition of R&D project phases, which could be more flexible to better accommodate digitalisation. They suggested making the rules' terminology more flexible and enlarging their scope to include e.g. the development of artificial intelligence, creation of virtual rooms/ laboratories and research on humanistic topics.</p>
<p>4.4 - Experimental development having negative effects</p> <p>GBER: Art. 25(2)c RDI Framework: Point 12(a), point 15(j), point 15(cc)</p>	<p>More than 90% of the interviewees confirmed that no negative effects on competition have been experienced regarding State aid granted to 'experimental development' projects.</p>

Summary of Findings	
Efficiency	
EQ 5: Have the following current definitions, applicable under the State aid rules for RDI, been sufficiently clear to enable the implementation of the public support to the relevant activities in a manner, which addresses the relevant market failures without unduly distorting competition?	
5.1 - Definition of Experimental Development Projects GBER. Art. 25(2)c, Art. 2(86) RDI Framework: Point 12(a), point 15(j), point 15(cc), point 49	More than 70% of the interviewees judged the definition of “experimental development projects” to be well-designed to address market failures without unduly distorting competition. The majority of respondents did not notice any significant changes in market failures affecting experimental development activities compared to 2014. Some criticism comes up with the alleged linearity of the research phases. The distinction between ‘industrial research’ and ‘experimental development’ seemed to be unclear for some of the interviewees, as 18 out of 88 open statements highlighted the existence of difficulties with it. One literature source sides with this view, while another one points to the lack of clarity with respect to the concept of ‘wide dissemination’, which can lead to an increase of the aid intensity associated with experimental development.
5.2 - Definition of innovation clusters GBER. Art. 27, Art. 2(92) RDI Framework: Point 12(e), point 15(s), point 49	The current definition of ‘innovation clusters’ is considered sufficiently clear to enable the implementation of public support addressing relevant market failures without unduly distorting competition which was confirmed by 75.8% of interviewees. This is also confirmed by two statements identified in the literature pointing towards positive aspects of the newly introduced Art. 27 in the GBER. However, a differentiated look at the different stakeholder groups and at the open statements received reveals that 22 out of 34 MSAs criticise the definition at hand, some indicating that it is too broad and not specific enough.

Summary of Findings	
Relevance	
EQ 6: Has the scope of the experimental development definition (covered by Art. 2 (86) of the GBER and section 1.3 (j) of the RDI Framework respectively), as well as the rules applicable to experimental development projects (incl. eligible activities, eligible costs, aid intensities, aid beneficiaries), been well-adapted to on-going market developments and contemporary market failures faced by companies in Europe without unduly distorting competition?	
6.1 - Adaption to on-going market developments GBER. Art. 25(2)c, Art. 2(86) RDI Framework: Point 12(e), point 15(j), point 15(cc)	Both, the scope of the experimental development definition and the rules applicable to experimental development projects (incl. eligible activities, eligible costs, aid intensities, aid beneficiaries) are considered well-adapted to the on-going market developments by more than 75% of the interviewees. At the same time and as outlined before, two interviewees as well as two respondents to a DG REGIO Survey expressed their desire for higher aid intensities in order for undertakings operating in the EU to be able to compete globally and for a level-playing field to be created. Four open statements addressed the rapid technological developments which was considered a challenge for the current definition. No evidence was found in the literature.

Summary of Findings	
<p>6.2 - Adaption to market failures without unduly distorting competition</p> <p>GBER. Art. 25(2)c, Art. 2(86) RDI Framework: Point 12(e), point 15(j), point 15(cc), point 49</p>	<p>More than 72% of the interviewees confirmed that the scope of the experimental development definition as well as the associated rules and their adaptation was suitable to address underlying market failures without distorting competition. Access to finance, together with the market failures associated with network failures and asymmetric information were identified to be most relevant in case of experimental development. No useful finding was collected in the literature.</p>
<p>EQ 7: Has the scope of State aid rules on <u>investment aid for research infrastructures</u>, <u>investment and operating aid for innovation clusters</u> and <u>aid for process and organisational innovation</u>, including the applicable definitions, been well-designed/fit for purpose in view of the on-going market developments and market failures faced by companies in Europe without unduly distorting competition?</p>	
<p>7.1.a - Correspondence to contemporary market failures</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff), point 49</p>	<p>The interview results show that in case of all three aid measures concerned (see EQ7 above), a majority of respondents considered State aid necessary to engage in the respective RDI activities and denied significant changes in market failures in the last five years.</p> <p>Similar to the findings in EQ1.a, the market failures experienced by interviewees seem to be sufficiently addressed by the current rules. Two interviewees identified changes in market failures with respect to innovation clusters, due to an increase in network failures and information asymmetries.</p>
<p>7.1.b - Definition of eligible activities</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>The majority of interviewees (more than 69%) declared the criteria applicable to eligible activities to be well-designed in general and to adequately address the on-going market developments. Nonetheless, some difficulties in the identification and distinction of certain eligible activities were mentioned in open comments and validated by statements from two literature sources.</p> <p>Regarding Art. 26 on investment aid for research infrastructure, interviews and statements in the literature expressed ambiguities in the differentiation of economic and non-economic activities.</p> <p>Regarding Art. 27 on the operation of innovation clusters, the maximum funding period of ten years for operating aid was criticised by three interviewees. This was also addressed in literature.</p> <p>Regarding Art. 29 on aid for process and organisational innovation, two interviewees criticised on the eligibility with regard to the distinction made between the two activities.</p>
<p>7.1.c - Definition of eligible beneficiaries</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>The majority of interviewees (more than 69%) declared the eligibility criteria to be generally well formulated and adequately addressing the on-going market developments. Evidence on the quality of the design of the rules concerning the topic of eligible beneficiaries specifically was very limited since no statements were found in the literature and only few comments were made as part of the interviews to the specific aid measures concerned. Criticism pointed out by the few statements given with respect to each aid measure is outlined below:</p> <p>Two interviewees favoured the use of simplified cost options such as flat rates and lump sums.</p> <p>With regard to Art. 26, two interviewees indicated difficulties with the categorisation of research organisations as large enterprises.</p> <p>In relation to Art. 27, two interviewees criticised the fact that aid to innovation clusters targets the provision to support the cluster</p>

Summary of Findings	
	<p>operator exclusively.</p> <p>No criticism was mentioned with regard to the rules defining eligible beneficiaries in the case of Art. 29.</p>
<p>7.1.d - Definition of eligible costs</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff), point 15(jj)</p>	<p>More than 70% of respondents described the rules illustrating how to declare eligible costs as 'fit for purpose'. In some open statements, MSAs and beneficiaries commented that the simplified cost options should be used more often in the RDI State aid rules.</p> <p>Regarding Art. 26 on aid for research infrastructure, two MSAs requested more clarity on eligibility of costs in tangible and intangible assets. Furthermore, two other MSAs criticised the focus of Art. 26 on investment costs.</p> <p>No specific evidence was collected with regard to Art. 27.</p> <p>Regarding Art. 29 on aid for process and organisational innovation, uncertainties were mentioned by one interviewee with respect to personnel costs.</p> <p>There was no literature available on the topic of eligible costs.</p>
<p>7.1.e - Definition of aid intensities</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>The majority of interviewees (more than 69%) declared the eligibility criteria to be generally well-formulated and to adequately address the on-going market developments. Additionally, six open comments by interviewees called for higher aid intensities. There was no literature available to validate these findings and thus, this finding remains vague and cannot be outlined in more detail regarding Art. 26, 27 and 29 due to a lack of evidence.</p>
<p>EQ 7.2: Have the rules corresponded to contemporary</p> <p>a. innovation models and innovation challenges, including those relevant for SMEs?</p> <p>b. technology advancements, including in the area of key-enabling technologies (KETs)?</p> <p>c. global value chains?</p>	
<p>7.2.a - Innovation models and challenges, incl. those relevant for SMEs</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>The RDI State aid rules on the 'development or upgrade of research infrastructure' were found by 80% of the interviewees to accommodate contemporary innovation models and challenges as well as technological advancements. With respect to the State aid rules for the set-up or upgrade of innovation clusters and for process and organisational innovation, more than 76% of the interviewees took this view.</p> <p>Five interviewees suggested slight refinements in the rules in order to be in line with the rapid digital development in areas such as artificial intelligence or quantum computing. No evidence in the literature was available for this evaluation question.</p>
<p>7.2.b - Technology advancements, including KETs</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>The interview results showed that more than 80% of the respondents judged the 2014 RDI State aid rules to incentivise technology advancements or innovation in case of 'the development or upgrade of research infrastructure'. Almost 70% of the respondents also felt so in case of innovation clusters and in the case of process and organisational innovation. In the area of KETs an innovation gap has been identified on the basis of data provided by DG GROW since manufacturing and the creation of patents in this area decreases in Europe. No evidence was collected on whether and how this development relates to the revised RDI State aid rules. No evidence was found in the literature.</p>

Summary of Findings	
<p>7.2.c - Global value chains</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>More than 70% of interviewees confirmed that the State aid rules were well-adapted to promote projects in contemporary global value chains. Out of the only 20 interviewees who responded to open questions regarding this issue 4 hinted on unequal conditions in competition with e.g. Asian countries. No evidence was collected in the literature.</p>
EQ 7.3: Have the rules led to increased RDI activities of the aid beneficiaries and in the case of clusters – of the RDI activities of their users?	
<p>7.3 – Increase of RDI activities of aid beneficiaries including clusters</p> <p>GBER: Art. 26, Art. 27, Art. 29 RDI Framework: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>According to the interviews, it can be stated that the revised State aid rules led to an increase of RDI activities of beneficiaries including those of cluster users. In this case, 86% of respondents confirmed that the possibility to provide State aid to both, innovation cluster operators and users, led to an increase of RDI activities. The majority of open statements, 42 out of 66, confirmed that additional RDI activities were carried out. No evidence in the literature was found to validate this question.</p>

Summary of Findings	
Coherence	
EQ 8: Has the scope of State aid rules on innovation clusters and research infrastructures been coherent with the objectives of the EU Horizon programme and its rules?	
<p>8.1 Research infrastructures</p> <p>GBER: Art. 26 RDI Framework: Point 12(c), point 15(ff)</p>	<p>According to 74.2% of respondents, the scope of the State aid rules on research infrastructures was coherent with the objectives of the EU Horizon programme and its rules. The positive judgement stemmed from beneficiaries and clusters with more than 85% of them agreeing on coherence, whereas MSAs were more sceptical and found the eligibility rules governing H2020 more favourable. Further evidence revealed a mixed picture: while one report published by DG RTD provided a critical assessment regarding the facilitation of synergies between RDI support funding activities at EU through H2020 and other rules such as the EU RDI State aid rules in place, a recent survey conducted by DG REGIO did not confirm this finding.</p>
<p>8.2 Innovation clusters</p> <p>GBER: Art. 27 RDI Framework: Point 12(e), point 15(s)</p>	<p>Based on the interviews, it can be concluded that the scope of the State aid rules on innovation clusters as defined in the GBER and the RDI Framework were coherent with the objectives of the Horizon 2020 programme and its rules.</p> <p>With regard to the open statements, 28 statements out of 45 expressed criticism, though only 4 statements refer explicitly to innovation clusters. Seven interviewees suggested that the eligibility rules, particularly those defining eligible beneficiaries and funding intensities, were considered more favourable for beneficiaries under H2020 in comparison to those in the RDI State aid rules. There was no literature available to validate this aspect.</p>

Summary of Findings	
EQ 9: Have the eligibility rules on State aid for investment into research infrastructures been coherent with State aid provisions for other categories of infrastructure covered by the GBER?	
<p>9. Coherence with other categories of infrastructure covered by the GBER</p> <p>GBER: Art. 26 RDI Framework: Point 12(c), point 15(ff)</p>	<p>With regard to the coherence of State aid provisions for other categories of infrastructure with the GBER, a high number of respondents provided neutral replies such as 'Don't know/Not applicable', or inconclusive open statements, and no literature was available on the topic. Therefore, the evidence was too limited to draw robust findings to reply to this question. Only one third of the overall respondents answered this question. Of the answers, 80% confirmed the coherence of the State aid rules for research infrastructure with those governing other categories of infrastructure, while 20% denied it. The little evidence collected illustrated that the eligibility rules on State aid for investment into research infrastructure was rather coherent with State aid provisions for other categories of infrastructure in the GBER.</p>

Despite the profound evidence base of the study, in respect of the **approach and methodology** some challenges and limitations must be considered:

- **The targeted approach of very specific questions on State aid proved to be challenging for the interviewees** although most of them were the experts within their institution dealing with the RDI funding. Sometimes interviewees confused State aid rules with those governing EU funding such as H2020; in addition, they did not cover all areas of expertise and therefore chose not to answer some questions.
- **The readiness of individuals as well as their knowledge input into the interviews** on technical or legally complex issues such as the State aid legal framework was limited, especially if the addressee did not have a 'stake' as in the case of non-aided undertakings.
- **The desk review did produce limited evidence on the subject**, which is due to the short time period of only four-five years (due to the revision of the rules) and the level of detail applied within the evaluation questions. Hence, only a few data sources were available and valuable for this study.

As a general point, it is important to highlight that this study focuses on answers to specific evaluation questions with regard to specific State aid measures for RDI, namely investment aid to research infrastructure, aid for innovation clusters, innovation aid to SMEs, aid for experimental development projects and aid for process and organisational innovation. It was not designed to conclude on overall results in the sense of rating the effectiveness of the RDI State aid rules (one of the given evaluation criteria) or whether the rules overall led to negative effects distorting competition. These aspects could be covered in further investigations in the future.

1 Synthèse

1.1 Objectif et approche de l'étude

La présente synthèse se rapporte au rapport final de l'évaluation rétrospective ciblée de certaines dispositions applicables aux aides d'État à la recherche, au développement et à l'innovation (RDI) couvertes par l'encadrement des aides d'État à la recherche, au développement et à l'innovation (encadrement RDI) et le règlement général d'exemption par catégorie (RGEC), en vigueur depuis juin 2014.

Le rapport répond à des questions d'évaluation (QE) spécifiques concernant des certains mesures d'aides d'État à la recherche, au développement et à l'innovation spécifiques, à savoir les aides à l'investissement dans les infrastructures de recherche, les aides aux pôles d'innovation, les aides à l'innovation en faveur des PME, les aides aux projets de développement expérimental et les aides à l'innovation de procédé et d'organisation.

Les conclusions de cette étude viendront étayer l'évaluation globale des règles en matière d'aides d'État lancée par la DG COM le 7 janvier 2019 dans le cadre du « Fitness Check »⁵. Elles devraient également aider la Commission européenne à déterminer si les règles en matière de RDI faisant l'objet de l'évaluation restent pertinentes pour permettre aux entreprises opérant en Europe de faire face aux évolutions du marché et des technologies tout en les aidant à surmonter les défaillances actuelles du marché.

La méthodologie de l'étude globale est conforme à la *méthodologie commune d'évaluation des aides d'État*⁶ et suit une **approche de méthode mixte** impliquant la collecte et l'évaluation d'informations tant qualitatives que quantitatives, ces dernières étant toutefois limitées par la disponibilité de données spécifiques.

Le travail d'évaluation comprenait trois tâches définies par l'autorité contractante : **Tâche 1.1** : « Élaboration d'une matrice d'évaluation », **Tâche 1.2** : « Collecte d'informations qualitatives et quantitatives » au moyen d'une étude approfondie des documents, impliquant des statistiques et de la documentation, et **Tâche 1.3** : « Collecte d'informations qualitatives par le biais d'entretiens individuels » parmi les pays et les groupes de parties prenantes définis dans les TDR et affinés au cours de l'évaluation.

L'analyse de cette étude repose principalement sur **168 entretiens semi-structurés** menés avec les autorités des États membres, les bénéficiaires d'aides d'État (y compris les PME, les grandes entreprises et les pôles)⁷, les entreprises non aidées et les associations industrielles et scientifiques dans 18 États membres (EM).⁸

⁵ Le Fitness Check vise à fournir une base pour les décisions relatives à la prolongation ou à une éventuelle mise à jour des règles.

⁶ Document de travail des services de la Commission, DTS (2014) 179 final.

⁷ Les entretiens ont été menés avec 60 autorités chargées des aides d'État, 74 bénéficiaires dont 17 représentants de pôles d'innovation, 22 entreprises non aidées dont deux représentants de pôles d'innovation et 12 associations.

⁸ Le travail de terrain s'est principalement concentré sur l'Allemagne, l'Autriche, la Belgique, l'Espagne, la France, la Hongrie, la Lituanie, la Pologne, la République tchèque, la Roumanie, la Slovaquie et la Suède. Outre une répartition géographique équilibrée et la participation des « anciens » et des « nouveaux » États membres de l'UE, l'échantillon a été établi de manière à refléter les différents degrés d'utilisation des aides d'État à la recherche, au développement et à l'innovation dans les États membres de l'UE. Dix entretiens supplémentaires ont été réalisés dans six autres États membres : Danemark, Irlande, Luxembourg, Portugal, Royaume-Uni et Pays-Bas.

Par ailleurs, le sous-traitant a mené un certain nombre d'**entretiens de cadrage** au début du projet en vue de la préparation du questionnaire et de l'élaboration ultérieure de la matrice d'évaluation. Les entretiens de cadrage ont été menés auprès de représentants de différents services de la Commission européenne qui étaient particulièrement familiarisés avec les règles faisant l'objet des questions d'évaluation.

1.2 Résultats et conclusions de l'étude

Nous présentons ci-après les principales conclusions de l'étude, structurées selon les 4 critères d'évaluation (efficacité, efficience, cohérence et pertinence) et les 33 questions d'évaluation. Si, pour certaines questions, des réponses très complètes ont pu être fournies, pour d'autres, la base de preuve n'est pas aussi étendue.

La **conclusion générale** des entretiens est que les règles en matière de RDI évaluées dans le cadre de cette étude sont aptes à promouvoir les activités de RDI dans l'UE sans fausser excessivement la concurrence, qu'elles ont fonctionné de manière efficace, efficiente et cohérente et qu'elles restent pertinentes au regard des évolutions récentes du marché et de la technologie. La plupart des personnes interrogées ont constaté de nettes améliorations après la révision des règles. Ces personnes ont néanmoins souligné que certains aspects méritaient encore des améliorations, par exemple il y a eu un appel à des plus claires et une plus grande cohérence des règles, des intensités d'aide et des définitions dans le domaine du financement de la RDI.

Les **principales conclusions de chaque question d'évaluation** (QE) sont résumées dans le tableau ci-dessous (pour plus de détails, veuillez consulter le chapitre 4 du rapport final).

Synthèse des conclusions	
Efficacité	
QE1: Dans quelle mesure les règles sur les aides d'État relatives à l'aide à l'investissement pour l'infrastructure RDI, à l'aide en faveur des pôles d'innovation et à l'aide à l'innovation en faveur des PME ont-elles affecté l'adoption des activités correspondantes sans fausser excessivement la concurrence ? En particulier, en ce qui concerne chaque ensemble de règles des trois domaines cités ci-dessus, dans quelle mesure les règles sur les aides d'État ont-elles contribué à:	
1.a - Remédier aux défaillances du marché RGEC : article 26, article 27, article 28 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff), point 49	<p>La pertinence des défaillances du marché pour les mesures d'aides associées aux infrastructures de recherche, aux pôles d'innovation et aux aides à l'innovation en faveur des PME, telles que visées dans le RGEC, était confirmée par la majorité des personnes interrogées dans le cadre de l'étude.</p> <p>En particulier, en liaison avec les activités associées à l'article 26 sur l'aide à l'investissement pour les infrastructures de recherche, les « défis mondiaux relatifs à la concurrence » étaient considérés par 57 % des personnes interrogées comme étant de la plus haute importance.</p> <p>67 % des personnes interrogées ont estimé que les aides d'État fournies en relation avec l'article 27 en faveur des pôles d'innovation (organisations) est nécessaire pour éviter les « défaillances de coordination et de réseau ».</p> <p>En ce qui concerne l'article 28 relatif à l'aide octroyée pour les activités d'innovation des PME, 68% des personnes interrogées l'ont perçu comme offrant la possibilité de surmonter les difficultés associées à un « taux de rendement incertain ».</p>

Synthèse des conclusions	
	<p>Le « taux de rendement incertain » peut être considéré comme la raison la plus fréquente incitant les bénéficiaires à juger nécessaires les aides d'État. En fait, les déclarations révèlent que les personnes interrogées pensent que les aides d'État sont nécessaires en raison d'un « taux de rendement incertain » surtout au cours des phases initiales de la recherche. Certaines publications évoquent « l'accès limité au financement » pour les PME dans le domaine des RDI.</p>
<p>1.b - Accroître les investissements publics</p> <p>RGEC : article 26, article 27, article 28 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff)</p>	<p>Les dépenses d'aides d'État pour RDI par l'intermédiaire du RGEC dans le cadre de l'objectif « Recherche et développement, y compris l'innovation » ont considérablement augmenté, passant de 3,63 milliards d'euros en 2014 à 7,42 milliards d'euros en 2017 dans l'UE-28, en raison de l'élargissement du champ d'application du RGEC. Néanmoins, aucun lien de causalité n'existe entre les règles révisées et le volume d'investissements publics et privés.</p> <p>Les résultats des entretiens indiquent que dans le domaine de l'infrastructure de recherche (article 26), 79.1 % des personnes interrogées évaluent que les règles révisées avaient un impact sur les investissements en RDI.</p> <p>Dans le domaine des activités d'innovation pour PME (article 28), 71.3 % des personnes interrogées jugent que les règles révisées ont entraîné un changement dans les investissements en RDI</p> <p>Dans le domaine des pôles d'innovation (article 27), les résultats des entretiens indiquent que 71 % des personnes interrogées ont détecté un changement dans les investissements dans la RDI.</p> <p>En outre, deux déclarations ont mis en évidence d'éventuels facteurs ultérieurs influençant les investissements publics et privés. Cette conclusion prudente est soutenue par une source documentaire qui conclut avec précaution, sur la base d'une analyse économétrique réalisée auprès de 435 entreprises innovantes, en indiquant que l'accès au financement public pour les entreprises peut avoir été facilité après la révision des règles en matière d'aides d'État.</p>
<p>1.c - Accroître les investissements privés</p> <p>RGEC : article 26, article 27, article 28 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff)</p>	<p>Le lien de causalité entre les aides d'État et les investissements privés peut être établi plus clairement que dans le cas des investissements publics. D'après une étude économétrique qui quantifie l'effet de la mise en œuvre du RGEC sur l'optimisation des dépenses privées de R&D, chaque euro octroyé à la RDI dans le cadre du RGEC stimule des dépenses de R&D privées supplémentaires, financées par le secteur commercial, situées entre 2,2 € et 2,4 €. Cette augmentation des investissements privés était confirmée par les résultats principaux des entretiens, d'après lesquels la majorité des personnes interrogées (plus de 70 %) indiquent avoir constaté un changement dans les investissements publics ou privés. Les réponses suggèrent que les aides d'État ont été un facteur positif depuis qu'elles ont déclenché des investissements privés supplémentaires, par exemple en générant un effet de levier par l'obligation de co-investir. Cependant, les personnes interrogées ne savaient pas si cela était dû aux règles révisées sur les aides d'État à la RDI ou à l'aide d'État elle-même.</p>
<p>1.d - Accroître les activités de RDI du secteur industriel / des PME</p>	<p>Plus de 75 % des personnes interrogées ont confirmé que les aides d'État ont, dans la plupart des cas, été indispensables aux activités de RDI et ont permis aux sociétés et/ou instituts de recherche de bénéficier de financements appropriés. Les données disponibles et la litté-</p>

Synthèse des conclusions	
RGEC : article 26, article 27, article 28, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)	<p>ture confirment ces déclarations.</p> <p>Des effets positifs sont ressentis même après la mise en œuvre des projets : comme l'ont largement confirmé les personnes interrogées, les projets ayant bénéficié d'aide ont généré des activités de RDI supplémentaires. Les données du tableau de bord européen de l'innovation signalent une augmentation de 29 % (2014) à 33 % (2018) du nombre de PME introduisant des innovations de produit ou de processus. L'augmentation de l'adoption d'activités de RDI par le secteur industriel, y compris les PME, peut donc être confirmée, sans pour autant quantifier dans quelle mesure cette évolution est liée à la révision des règles en matière d'aides d'État à la RDI.</p>
1.e - Distorsion du marché / Autres effets négatifs de l'aide d'État RGEC : article 26, article 27, article 28 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(ff)	<p>Plus de 80 % des personnes interrogées confirment que les aides d'État n'ont eu aucun effet négatif sur la concurrence. D'après les personnes interrogées, les effets négatifs, dans la mesure où il y en a, semblent être compensés par les effets positifs. Seules 14 déclarations sur 100 ont signalé un éventuel effet négatif causé par des aides d'État. L'étude n'a trouvé aucun élément de preuve suggérant que les aides d'État accordées au titre des articles pertinents du RGEC ont eu un impact négatif important sur la concurrence ou ont évincé les investissements privés.</p> <p>La littérature n'évoque aucune distorsion du marché par les aides d'État en ce qui concerne les sujets spécifiques abordés par cette question d'évaluation. Malgré l'existence de documents précieux sur les effets négatifs potentiels, résultant des investissements publics en faveur de la RDI, ces articles sont souvent « obsolètes » et ne font généralement pas référence aux mesures d'aide spécifiques concernées.</p>
QE2: Dans quelle mesure la possibilité d'associer, si nécessaire, l'aide octroyée aux pôles d'innovation à l'aide d'innovation destinée aux PME au titre des règles sur les aides d'État a-t-elle contribué à remédier efficacement aux défaillances sous-jacentes du marché ciblées par ces deux mesures afin de stimuler l'activité d'innovation des utilisateurs du pôle, notamment les PME (sans fausser excessivement la concurrence) ? En particulier, dans quelle mesure la mise en œuvre conjuguée de ces deux ensembles de règles a-t-elle contribué à:	
2.1.a - Augmenter les investissements publics dans les pôles et les activités des PME RGEC : article 27, article 28 Encadrement RDI: Point 12(e), point 12(d), point 15(s)	<p>Les dépenses d'aides en faveur des pôles d'innovation (article 27) ainsi que des aides à l'innovation pour les PME n'ont cessé de s'accroître depuis leur intégration au RGEC en 2014. La majorité des personnes interrogées (plus de 55%) ont confirmé que la possibilité d'accorder des aides d'État à la fois aux opérateurs et aux utilisateurs de clusters avait des effets stimulants sur les investissements publics et les activités de RDI.</p> <p>La possibilité d'associer financement sous l'article 27, s'adressant à l'opérateur des pôles d'innovation, aux aides à l'innovation octroyées aux utilisateurs des pôles au titre de l'article 28 est aussi jugée favorablement par la littérature, dans la mesure où elle laisse une plus grande marge aux investissements connexes. En outre, selon une source bibliographique l'article 28 a consolidé et simplifié les règles en matière d'aides d'État précédemment en vigueur applicables aux aides à l'innovation en faveur des PME.</p>
2.1.b - Accroître les investissements privés dans les pôles d'innovation et les	<p>Environ 70 % des personnes interrogées ont convenu que les aides d'État fournies ont probablement eu un effet positif sur l'évolution des investissements privés dédiés aux pôles d'innovation (69,8 %) et sur l'évolution des activités de RDI des PME dans les pôles d'innovation</p>

Synthèse des conclusions	
<p>activités</p> <p>RGEC : article 27, article 28 Encadrement RDI: Point 12(e), point 12(d), point 15(s)</p>	<p>(71,8 %). Parmi les groupes de parties prenantes, les autorités des États membres (MSA) étaient plus sceptiques quant à l'effet positif des aides d'État sur les investissements privés que les membres des clusters et les associations d'entreprises. Aucune preuve de l'effet de ces règles par rapport à ces mesures d'aide spécifiques n'a pu être établie, ni dans les déclarations, ni dans la littérature.</p>
<p>2.1.c - Accroître les activités de RDI des PME</p> <p>RGEC : article 27, article 28 Encadrement RDI: Point 12(e), point 12(d), point 15(s)</p>	<p>La majorité des personnes interrogées (83%) ont jugé que la possibilité d'accorder des aides d'État à la fois aux opérateurs de pôles que se qualifient comme PME et à leurs utilisateurs a entraîné une augmentation des activités de RDI. Aucune information spécifique n'a été donnée quant à la nature de telles activités.</p> <p>Dans l'ensemble, les déclarations soutiennent cette hypothèse, 33 % sont favorables, soulignant l'augmentation des activités de coopération dans la RDI. Il est donc possible de conclure que la possibilité d'associer les aides en faveur des pôles d'innovation aux aides à l'innovation en faveur des PME a eu un effet positif sur les activités de RDI, notamment en raison de l'amélioration de la coopération entre les différents acteurs.</p>
<p>2.1.d - Accroître les activités de coopération des différents membres des pôles</p> <p>RGEC : article 27, article 28 Encadrement RDI: Point 12(e), point 12(d), point 15(s)</p>	<p>Une très grande majorité de personnes interrogées (entre 80 % et presque 90 %) ont considéré que les règles en matière d'aides d'État stimulent les activités de coopération entre les différents membres des pôles. Cependant, six personnes interrogées ont indiqué que l'augmentation de la coopération pourrait ne pas être due à la révision des règles, mais à la nature même des pôles. Dans la littérature, aucune déclaration spécifique n'a été trouvée qui confirme cette conclusion.</p>
<p>2.1.e/f - Éviter les effets négatifs faussant la concurrence</p> <p>RGEC : article 27, article 28 Encadrement RDI: Point 12(e), point 12(d), point 15(s)</p>	<p>La sous-question (2.1.e), qui aborde l'effet potentiel des aides d'État sur la concurrence sur le marché des pôles et des PME, a été fusionnée avec la sous-question (2.1.f), qui aborde l'éventuel effet d'« évincement » des investisseurs privés. La majorité des répondants (plus de 88 %) ont nié les deux effets négatifs potentiels des aides d'État. La plupart des 52 déclarations correspondantes étaient neutres ou positives. Seules quatre d'entre elles se sont montrées critiques, soulignant que les montants des aides d'État étaient si faibles par rapport aux investissements privés et publics, qu'ils ne pouvaient guère fausser le marché.</p> <p>Neuf personnes interrogées ont indiqué ne pas disposer de suffisamment d'informations pour juger si des effets négatifs étaient ou non survenus. Dans la littérature, aucune déclaration spécifique n'a été trouvée.</p>
<p>2.2 - Clarté/compréhension de l'utilisation combinée des articles 27/28</p>	<p>Malgré l'absence de preuves tangibles permettant de répondre à cette question, il est possible de conclure indirectement à partir des réponses aux différentes questions qu'il n'y a ni manques de clarté ni malentendus parmi les autorités octroyant les aides et les bénéficiaires d'aides quant au fait que les PME, qui sont des utilisateurs de pôles aidés en vertu de l'article 27 du RGEC, peuvent bénéficier en toute légalité d'aides au titre des articles 25, 28 et 29</p>

Synthèse des conclusions	
<p>RGEC : article 25, article 27, article 28, article 29 Encadrement RDI: Point 12(a), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(cc)</p>	<p>du RGEC. Il semblerait cependant que la plupart des personnes interrogées préfèrent envisager les dispositions de l'article 27 en conjonction avec l'article 29.</p> <p>L'octroi d'aides en vertu de l'article 27 RGEC en association « de minimis » support ainsi qu'avec les articles 25 et 28 RGEC semble poser des difficultés aux autorités octroyant des aides, plus de la moitié des autorités des États membres (MSA) signalant des problèmes à cet égard. Les déclarations ont souligné les formalités administratives accompagnant l'octroi d'aides dans le cadre des associations mentionnées ci-dessus. Aucune preuve documentaire n'est disponible pour valider ce résultat.</p>
<p>QE3: Dans quelle mesure les règles sur les aides d'État pour les RDI ont-elles affecté la coopération en matière d'activités de RDI et de partage de connaissances entre les différents partenaires?</p>	
<p>3.1 - Coopération entre PME et grandes entreprises</p> <p>RGEC : article 25, article 27, article 28 ; article 29 Encadrement RDI: Point 12(a), point 12(e), point 12(d), point 15(h), point 15(s), point 15(v), point 15(w), point 15(y), point 15(bb), point 15(cc), point 49</p>	<p>Les résultats des entretiens permettent de conclure que l'augmentation des activités de coopération entre PME et grandes entreprises a débuté en 2014. L'analyse effectuée ne permet pas de déduire l'ampleur de cette augmentation. La majorité des personnes interrogées (plus de 69 %) ont reconnu que les règles en matière d'aides d'État étaient destinées à promouvoir activement et à améliorer la coopération et le transfert de connaissances entre les différents acteurs.</p> <p>Pour ce qui est des parties prenantes, l'évaluation la plus positive de la corrélation entre les règles et ces deux objectifs provient des associations, tandis que les entreprises non aidées et les autorités des États membres (MSA) se sont montrées plutôt prudentes quant à la coopération entre grandes entreprises et PME.</p> <p>La majorité des 102 déclarations fournies en réponse aux questions ouvertes correspondantes n'ont pas fourni d'indications complémentaires, étant donné que 80 % d'entre elles étaient plutôt neutres. Les déclarations restantes ont évoqué une augmentation de la coopération. Cette augmentation apparaît comme étant l'un des principaux objectifs des règles en matière d'aides d'État et est facilitée par les aides d'État car elles sont nécessaires pour surmonter les défaillances sous-jacentes du marché, comme le confirment les résultats des entretiens. Aucune source documentaire pertinente pour le QE n'a été recueillie.</p>
<p>3.2 - Coopération / partage de connaissances - entreprises et organisations de recherche</p> <p>RGEC : article 25, article 27, article 28, article 29 Encadrement RDI: Point 12(a), point 12(e), point 12(d), point 15(h), point 15(s), point 15(v), point 15(w), point 15(y), point 15(bb), point 15(cc)</p>	<p>Une corrélation positive entre les aides d'État et le degré de collaboration et de transfert de connaissances entre les entreprises et les organismes de recherche est confirmée par les résultats des entretiens, puisque respectivement près de 80 % et près de 70 % des personnes interrogées sont d'accord. L'accord est plus fort que dans le cas de la collaboration entre entreprises. Il est également mentionné que d'autres facteurs influencent la coopération, tels que la confiance et les différences de mentalité au sein des entreprises et des instituts de recherche.</p>

Synthèse des conclusions	
QE4: Dans quelle mesure les règles sur les aides d'État pour les projets RDI, notamment concernant la <u>recherche industrielle</u> et le <u>développement expérimental</u>, ont-elles apporté une aide qui ne fausse pas excessivement la concurrence sur le marché interne, tout en remédiant de manière adéquate aux problèmes mondiaux relatifs à la concurrence?	
4.1 - Recherche industrielle sur les problèmes mondiaux relatifs à la concurrence RGE : article 25, paragraphe 2, point b Encadrement RDI: Point 12(a), point 15(q), point 15(cc)	Il est possible de conclure que les règles sur les aides d'État à la recherche industrielle remédient de manière adéquate aux problèmes mondiaux relatifs à la concurrence 75 % des personnes interrogées ont exprimé leur accord avec cette déclaration. Le nombre élevé de déclarations (supérieur à 75 au total) indique un fort intérêt des personnes interrogées sur ce sujet. En outre, 35% des déclarations sont positives, tandis que 41% ont souligné des faiblesses. Pour être plus précis neuf déclarations ouvertes a proposé d'adapter la modification les critères d'éligibilité, notamment les intensités d'aide, afin de répondre pleinement aux questions de concurrence mondiale et de créer une situation équitable. Aucune source documentaire n'est disponible pour valider ce résultat.
4.2 - Recherche industrielle ayant des effets négatifs RGE : article 25, paragraphe 2, point b Encadrement RDI: Point 12(a), point 15(q), point 15(cc)	Aucun participant à l'entretien ne s'est référé spécifiquement au soutien à la recherche industrielle. Par conséquent, aucune conclusion ne peut être formulée quant à l'effet négatif du soutien aux activités de recherche industrielle.
4.3 - Développement expérimental sur les problèmes mondiaux relatifs à la concurrence RGE : article 25, paragraphe 2, point c Encadrement RDI: Point 12(a), point 15(j), point 15(cc)	Il ressort des entretiens (75.7 % des personnes interrogées le confirment) et de la littérature que la révision des règles en matière d'aides d'État au développement expérimental est adaptée aux évolutions actuelles du marché et qu'elle remédie suffisamment aux problèmes mondiaux relatifs à la concurrence. Dans leurs déclarations, 22 personnes interrogées ont pensé que des améliorations sont possibles, notamment en ce qui concerne les intensités d'aide. Deux personnes interrogées soulignent le caractère strict de la définition des phases de projet de R&D, qui pourrait être plus souple pour mieux s'adapter à la numérisation. Elles suggèrent de rendre la terminologie plus flexible et d'élargir la délimitation des règles, par exemple avec le développement de l'intelligence artificielle, la création de salles/laboratoires virtuels et des thèmes de recherche humaine.
4.4 - Développement expérimental ayant des effets négatifs RGE : article 25, paragraphe 2, point c Encadrement RDI: Point 12(a), point 15(j), point 15(cc)	Plus de 90 % des personnes interrogées confirment que les aides d'État accordées aux projets de « développement expérimental » n'ont pas eu d'effets négatifs sur la concurrence

Synthèse des conclusions	
Efficience	
QE5: Les définitions actuelles suivantes, applicables en vertu des règles sur les aides d'État pour les RDI, ont-elles été suffisamment claires pour permettre la mise en œuvre de l'aide publique en faveur des activités concernées, de manière telle à remédier aux défaillances du marché sans fausser excessivement la concurrence?	
5.1 - Définition des projets de développement expérimental RGE : article 25, paragraphe 2, point c Encadrement RDI: Point 12(a), point 15(j), point 15(cc), point 49	Plus de 70 % des personnes interrogées estiment que la définition de « projets de développement expérimental » est appropriée pour remédier aux défaillances du marché sans fausser la concurrence de manière excessive. La majorité des personnes interrogées n'a remarqué aucun changement significatif des défaillances du marché en ce qui concerne le développement expérimental comparé à 2014. Certains critiques concernent la prétendue linéarité des phases de recherche. La distinction entre « recherche industrielle » et « développement expérimental » ne semble pas claire pour certaines personnes interrogées, 18 déclarations sur 88 évoquant l'existence des difficultés à effectuer cette distinction. Une source documentaire est de cet avis, tandis qu'une autre pointe du doigt l'absence de clarté en ce qui concerne le concept de la « large diffusion », qui peut entraîner une augmentation de l'intensité de l'aide associée au développement expérimental.
5.2 - Définition des pôles d'innovation RGE : article 27 Encadrement RDI: Point 12(e), point 15(s), point 49	La définition actuelle des pôles d'innovation est considérée comme suffisamment claire pour permettre la mise en œuvre d'un soutien public visant à remédier aux défaillances du marché concerné sans fausser excessivement la concurrence, ce qui est confirmé par 75.8 % des personnes interrogées. Cela est également confirmé par deux déclarations trouvées dans la littérature qui soulignent les aspects positifs de l'article 27 nouvellement introduit dans le RGE. Toutefois, un examen différencié des différents groupes de parties prenantes et des déclarations reçues révèle que 22 des 34 autorités des États membres (MSA) critiquent la définition actuelle, certains indiquant qu'elle est trop large et pas assez spécifique.

Synthèse des conclusions	
Relevance	
QE6: La délimitation de la définition du <u>développement expérimental</u> (couverte par l'article 2, paragraphe 86 du RGE et par la section 1.3 (j) de l'Encadrement des aides d'État à la recherche, au développement et à l'innovation) ainsi que les règles applicables aux projets de <u>développement expérimental</u> (y compris les activités admissibles, les coûts admissibles, les intensités d'aide, les bénéficiaires d'aide) sont-elles adaptées aux évolutions actuelles du marché et aux défaillances modernes du marché auxquelles les entreprises sont confrontées en Europe, sans fausser excessivement la concurrence?	
6.1 - Adaptation aux évolutions actuelles du marché RGE : article 25, paragraphe 2, point c Encadrement RDI: Point 12(e), point 15(j), point 15(cc)	Selon 75 % des personnes interrogées, la délimitation de la définition du développement expérimental et les règles applicables aux projets de développement expérimental (y compris les activités admissibles, les coûts admissibles, les intensités d'aide, les bénéficiaires d'aide) sont adaptées aux évolutions actuelles du marché. Dans le même temps et comme indiqué précédemment, deux personnes interrogées ainsi que deux personnes ayant répondu à une enquête de la DG REGIO ont exprimé leur désir des intensités d'aide plus élevées, afin que les entreprises opérant dans l'UE puissent être plus compétitives au niveau mondial et que des conditions équitables soient créées. Quatre déclarations portent sur les développements technologiques

Synthèse des conclusions	
	rapides qui sont considérés comme un défi pour la définition actuelle. Aucun constat pertinent n'a été trouvé dans la documentation.
<p>6.2 - Adaptation aux défaillances du marché sans fausser excessivement la concurrence</p> <p>RGEC : article 25, paragraphe 2, point c Encadrement RDI: Point 12(e), point 15(j), point 15(cc), point 49</p>	<p>Plus de 72 % des personnes interrogées ont confirmé que la délimitation de la définition du développement expérimental ainsi que les règles associées et leur adaptation sont appropriées pour remédier aux défaillances sous-jacentes du marché sans fausser la concurrence. L'accès au financement ainsi que les défaillances du marché associées aux défaillances de réseau et à l'asymétrie de l'information ont été identifiés comme étant les plus pertinents dans le cas du développement expérimental. Aucun constat pertinent n'a été relevé dans la littérature.</p>
<p>QE7: La délimitation des règles sur les aides d'État relatives à l'aide à l'investissement pour les infrastructures de recherche, à l'aide à l'investissement et au fonctionnement en faveur des pôles d'innovation et l'aide en faveur de l'innovation de procédé et d'organisation, y compris les définitions applicables, est-elle appropriée/adaptée à l'usage prévu, compte tenu des évolutions actuelles du marché et des défaillances modernes du marché auxquelles les entreprises sont confrontées en Europe, sans fausser excessivement la concurrence?</p>	
<p>7.1.a - Correspondance avec les défaillances modernes du marché</p> <p>RGEC : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff), point 49</p>	<p>Les résultats des entretiens indiquent que pour ce qui est des trois mesures d'aide concernées (voir la QE7 ci-dessus), la majorité des personnes interrogées considèrent que les aides d'État sont nécessaires pour entreprendre des activités de RDI correspondantes et contestent la survenue de changements significatifs concernant les défaillances du marché au cours des cinq dernières années.</p> <p>À l'instar des conclusions de la QE1.a, les défaillances du marché auxquelles les personnes interrogées ont été confrontées semblent être suffisamment prises en compte par les règles actuelles. Deux personnes interrogées ont identifié des changements dans les défaillances du marché en ce qui concerne les pôles d'innovation en raison d'une augmentation des défaillances de réseau et des asymétries d'information.</p>
<p>7.1.b - Définition des activités admissibles</p> <p>RGEC : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>La majorité des personnes interrogées (plus de 69 %) ont considéré que les critères applicables aux activités éligibles sont appropriés d'une manière générale et qu'ils prennent en compte de manière adéquate les évolutions actuelles du marché. Néanmoins, quelques difficultés d'identification et de distinction de certaines activités admissibles ont toutefois été citées dans les commentaires et ont été validées par des déclarations issues de deux sources documentaires.</p> <p>En ce qui concerne l'article 26 sur l'aide à l'investissement pour les infrastructures de recherche, les entretiens et les déclarations trouvées dans la littérature révèlent des ambiguïtés dans la manière dont les activités économiques et non économiques sont différenciées.</p> <p>En ce qui concerne l'article 27 sur le fonctionnement des pôles d'innovation, la période de financement maximale de dix ans pour les aides au fonctionnement est critiquée par trois personnes interrogées. Ce problème est également souligné dans la littérature.</p> <p>En ce qui concerne l'article 29 sur l'aide en faveur de l'innovation de procédé et d'organisation, deux personnes interrogées critiquent l'admissibilité concernant la distinction faite entre ces deux activités.</p>

Synthèse des conclusions	
<p>7.1.c - Définition des bénéficiaires admissibles</p> <p>RGEC : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>La majorité des personnes interrogées (plus de 69 %) ont jugé que les critères d'admissibilité sont appropriés d'une manière générale et qu'ils prennent en compte de manière adéquate les évolutions actuelles du marché. Les preuves de la qualité de la conception des règles en ce qui concerne les bénéficiaires admissibles sont très limitées. En effet, aucune déclaration n'a été trouvée dans la littérature et seuls quelques commentaires ont été émis dans le cadre des entretiens à propos des mesures d'aide spécifiques concernées. Les critiques formulées dans les quelques déclarations recueillies sont précisées pour chaque mesure d'aide :</p> <p>Deux personnes interrogées ont favorisé l'usage des options simplifiées en matière de coûts, telles que des taux et paiements forfaitaires.</p> <p>Plus précisément, en ce qui concerne l'article 26, deux personnes interrogées ont signalé des difficultés avec la catégorisation des organismes de recherche en tant que grandes entreprises. En ce qui concerne l'article 27, deux personnes interrogées pointent du doigt le fait que l'aide en faveur des pôles d'innovation est octroyée exclusivement à l'opérateur du pôle d'innovation.</p> <p>Aucune critique n'a été mentionnée concernant les règles définissant les bénéficiaires éligibles dans le cas de l'art. 29.</p>
<p>7.1.d - Définition des coûts admissibles</p> <p>RGEC : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff), point 15(jj)</p>	<p>Plus de 70 % des personnes interrogées ont estimé que les règles définissant la manière de déclarer les coûts admissibles sont « adaptées à l'usage prévu ». Dans quelques déclarations, des autorités des États membres (MSA) et bénéficiaires montrent que les options simplifiées en matière de coûts ne sont pas utilisées plus souvent dans le cadre des règles sur les aides d'État pour RDI.</p> <p>En ce qui concerne l'article 26 sur l'aide pour les infrastructures de recherche, deux autorités des États membres (MSA) demandent à ce que l'admissibilité des coûts pour les actifs corporels et incorporels soit clarifiée. En outre, deux autres MSA critiquent l'accent mis par l'article 26 sur les coûts d'investissement.</p> <p>Aucune preuve spécifique n'a été recueillie en ce qui concerne l'article 27.</p> <p>En ce qui concerne l'article 29 sur l'aide en faveur de l'innovation de procédé et d'organisation, une personne interrogée mentionne des incertitudes quant aux frais de personnel.</p> <p>Il n'y avait pas de littérature disponible sur le sujet des coûts éligibles.</p>
<p>7.1.e - Définition des intensités d'aide</p> <p>RGEC : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>La majorité des personnes interrogées (plus de 69 %) ont déclaré que les critères d'éligibilité étaient généralement bien formulés et qu'ils tenaient compte de manière adéquate des évolutions en cours sur le marché. En ce qui concerne tout particulièrement les intensités d'aide, De plus, six commentaires émis par des personnes interrogées demandent des intensités d'aide plus élevées. Il n'y a pas de source documentaire disponible pour valider cette conclusion, et donc il reste vague et ne peut être détaillée plus avant en ce qui concerne les articles 26, 27 et 29, faute d'éléments.</p>

Synthèse des conclusions	
QE7.2: Les règles ont-elles été en adéquation avec <ul style="list-style-type: none"> a. les modèles d'innovation et défis d'innovation actuels, y compris ceux qui concernent les PME ? b. les progrès technologiques actuels, y compris dans le domaine des technologies clés génériques (TCG) ? c. les chaînes de valeur mondiales actuelles? 	
7.2.a - Modèles et défis d'innovation, y compris ceux qui concernent les PME RGEc : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)	<p>Ici, 80 % des personnes interrogées ont trouvé que les règles en matière d'aides d'État à la RDI pour « le développement ou la modernisation des infrastructures de recherche » tiennent compte des modèles et des défis contemporains en matière d'innovation ainsi que des progrès technologiques. En ce qui concerne l'aide d'État pour la création ou la modernisation des pôles d'innovation et l'innovation de procédé et d'organisation, plus de 76% des personnes interrogées sont de cet avis.</p> <p>Cinq personnes interrogées ont suggéré d'affiner les règles afin de rester en phase avec l'évolution numérique rapide dans des domaines tels que l'intelligence artificielle ou l'informatique quantique. Aucun élément concernant cette question d'évaluation n'était disponible dans la littérature.</p>
7.2.b - Progrès technologiques, y compris TCG RGEc : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)	<p>Les résultats des entretiens ont montré que plus de 80 % des personnes interrogées ont jugé que les règles en matière d'aides d'État à la RDI de 2014 encouragent les avancées technologiques ou l'innovation pour ce qui concerne « le développement ou la modernisation des infrastructures de recherche », et près de 70 % des personnes interrogées ont pensé de même pour ce qui concerne les pôles d'innovation et l'innovation de procédé et d'organisation.</p> <p>Dans le domaine des technologies clés génériques sur la base des données fournies par la DG GROW a identifié un déficit d'innovation, car l'industrie manufacturière et la création de brevets dans ce secteur diminuent en Europe. Aucun élément de preuve n'a été recueilli pour savoir si et comment cette évolution est liée à la révision des règles en matière d'aides d'État à la RDI. Aucun constat pertinent n'a été trouvé dans la documentation.</p>
7.2.c - Chaînes de valeur mondiales RGEc : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)	<p>Plus de 70 % des personnes interrogées ont confirmé que les règles en matière d'aides d'État sont adaptées pour promouvoir des projets dans les chaînes de valeur mondiales actuelles. Sur les 20 personnes interrogées qui ont répondu aux questions ouvertes sur ce sujet, 4 ont fait allusion à l'inégalité des conditions de concurrence notamment avec les pays asiatiques. Aucune source documentaire n'a été recueillie.</p>

Synthèse des conclusions	
QE7.3: Les règles ont-elles entraîné une augmentation des activités de RDI des bénéficiaires d'aide et, pour ce qui est des pôles, des activités de RDI de leurs utilisateurs?	
<p>7.3 – Augmentation des activités de RDI des bénéficiaires d'aide, y compris des pôles</p> <p>RGEC : article 26, article 27, article 29 Encadrement RDI: Point 12(c), point 12(e), point 12(d), point 15(s), point 15(y), point 15(bb), point 15(ff)</p>	<p>Selon les entretiens, on peut affirmer que la révision des règles en matière d'aides d'État a entraîné une augmentation des activités de RDI des bénéficiaires, y compris celles des utilisateurs de pôle. Dans ce cas, 86 % des personnes interrogées ont confirmé que la possibilité d'accorder des aides d'État à la fois aux opérateurs de pôles d'innovation et aux utilisateurs a entraîné une augmentation des activités de RDI. La majorité des déclarations (42 sur 66) confirment que des activités de RDI supplémentaires ont été menées. Aucun élément confirmant ces résultats n'a été trouvé dans la littérature.</p>

Synthèse des conclusions	
Cohérence	
QE8: La délimitation des règles sur les aides d'État pour les pôles d'innovation et les infrastructures de recherche a-t-elle été cohérente avec les objectifs et les règles du programme européen Horizon?	
<p>8.1 Infrastructures de recherche</p> <p>RGEC : article 26 Encadrement RDI: Point 12(c), point 15(ff)</p>	<p>Selon 74.2 % des personnes interrogées, la délimitation des règles en matière d'aides d'État pour les infrastructures de recherche est cohérente avec les objectifs et les règles du programme européen Horizon. Le jugement positif provient des bénéficiaires et des pôles, avec plus de 85 % d'entre eux sont d'accord sur la cohérence, alors que les autorités des États membres sont plus sceptiques et trouvent les règles d'éligibilité régissant le programme H2020 plus favorables. D'autres sources révèlent un tableau mitigé : alors qu'une étude publiée par la DG RTD fournit une évaluation critique concernant la facilitation des synergies entre les activités de financement en faveur de la RDI dans l'UE par le biais du programme H2020 et les règles en matière d'aides d'État à la RDI de l'UE, une récente enquête menée par la DG REGIO ne confirme pas cette conclusion.</p>
<p>8.2 Pôles d'innovation</p> <p>RGEC : article 27 Encadrement RDI: Point 12(e), point 15(s)</p>	<p>Sur la base des entretiens qui ont été menés, il y a lieu de conclure que la délimitation des règles en matière d'aides d'État pour les pôles d'innovation telles que définies par le RGEC et l'encadrement RDI est cohérente avec les objectifs du programme Horizon 2020 et ses règles.</p> <p>Parmi les déclarations faites, 28 sur 45 déclarations font état de critiques, bien que seules 4 d'entre elles fassent explicitement référence aux pôles d'innovation. Sept personnes interrogées ont suggéré que les règles d'éligibilité, en particulier ceux qui définissent les bénéficiaires admissibles et les intensités d'aide, sont jugées plus favorables pour les bénéficiaires du programme H2020 par rapport à celles des règles en matière d'aides d'État à la RDI. Aucune source documentaire validant cet aspect n'est disponible.</p>

Synthèse des conclusions	
QE9: Les règles d'admissibilité à l'aide d'État pour l'investissement dans les infrastructures de recherche ont-elles été cohérentes avec les dispositions en matière d'aides d'État pour d'autres catégories d'infrastructure couvertes par le RGEC?	
<p>9. Cohérence avec d'autres catégories d'infrastructures couvertes par le RGEC</p> <p>RGEC : article 26 Encadrement RDI: Point 12(c), point 15(ff)</p>	<p>En ce qui concerne la cohérence des dispositions en matière d'aides d'État pour d'autres catégories d'infrastructures avec le RGEC, un grand nombre de personnes interrogées ont fourni des réponses neutres telles que « Je ne sais pas/ne s'applique pas », des déclarations non concluantes ont par ailleurs été fournies et aucune documentation n'est disponible sur le sujet. Par conséquent, les éléments probants dont nous disposons actuellement sont trop limités pour tirer des conclusions fiables sur cette question. Seul un tiers de l'ensemble des personnes interrogées a répondu à cette question. Parmi les réponses, 80 % ont confirmé la cohérence des règles relatives aux aides d'État en faveur des infrastructures de recherche avec celles régissant les autres catégories d'infrastructures, tandis que 20 % l'ont niée. Le peu d'éléments recueillis montre que les règles d'admissibilité à l'aide d'État pour l'investissement dans les infrastructures de recherche sont plutôt cohérentes avec les dispositions en matière d'aides d'État pour d'autres catégories d'infrastructure couvertes par le RGEC.</p>

En dépit de l'importante base factuelle de l'étude, il convient de tenir compte d'un certain nombre de défis et de limites en ce qui concerne **l'approche et la méthodologie** :

- **L'approche choisie, ciblée sur des questions très spécifiques concernant les aides d'État, s'est révélée difficile pour les personnes interrogées**, qui sont pourtant les « spécialistes » de leurs institutions respectives en matière de financement RDI. Les personnes interrogées ont parfois confondu les règles relatives aux aides d'État et celles qui régissent les financements de l'UE, comme le programme H2020. En outre, elles ne couvraient pas tous les domaines d'expertise et ont donc choisi de ne pas répondre à certaines questions.
- **Les personnes interrogées ont montré une disposition à répondre et des connaissances limitées** sur des questions techniques ou juridiques complexes tels que le cadre juridique des aides d'État, surtout dans les cas où elles n'étaient pas touchées par les enjeux en question (comme par exemple les initiatives non aidées dans ce cas).
- **L'étude des documents n'a produit que peu d'éléments probants sur le sujet**, ce qui est dû à la courte période de quatre à cinq ans seulement (depuis la révision des règles) et au niveau de détail des questions d'évaluation. Par conséquent, seules quelques sources de données étaient disponibles et utiles pour cette étude.

D'une manière générale, il est important de souligner que cette étude se concentre sur les réponses à des questions d'évaluation spécifiques concernant des mesures d'aides d'État spécifiques en faveur de la RDI, à savoir les aides à l'investissement dans les infrastructures de recherche, les aides aux pôles d'innovation, les aides à l'innovation en faveur des PME, les aides aux projets de développement expérimental et les aides à l'innovation de procédé et d'organisation. Elle n'avait pas pour objectif d'obtenir des résultats généraux, c'est-à-dire d'évaluer l'efficacité des règles relatives aux aides d'État en matière de RDI (l'un des critères d'évaluation donnés) ou de déterminer si les règles dans leur ensemble ont eu des effets négatifs faussant la concurrence. Ces aspects pourraient faire l'objet d'autres enquêtes à l'avenir.

1 Zusammenfassung

1.1 Zweck der Studie und Herangehensweise

Folgende Zusammenfassung beinhaltet die Ergebnisse des Abschlussberichtes zur zielgerichteten retrospektiven Evaluierung ausgewählter Vorschriften bezüglich der staatlichen Beihilfen zur Förderung von Forschung, Entwicklung und Innovation (FuEul) gemäß dem Unionsrahmen für staatliche Beihilfen zur Förderung von Forschung, Entwicklung und Innovation (FuEul-Rahmen) und der Allgemeinen Gruppenfreistellungsverordnung (AGVO), die seit Juli 2014 in Kraft ist.

Der Bericht beschäftigt sich mit bestimmten Evaluierungsfragen zu Aspekten staatlicher FuEul-Beihilfen, dies sind: Investitionsbeihilfen für Forschungsinfrastruktur, Beihilfen für Innovationscluster, Innovationsbeihilfen für KMU, Beihilfen für Projekte im Bereich der experimentellen Entwicklung und Beihilfen für Prozess- und Organisationsinnovationen.

Die Ergebnisse dieser Studie fließen in die von der Generaldirektion Wettbewerb (DG COMP) am 7. Januar 2019 eingeleitete umfassende Evaluierung der Beihilfavorschriften im Rahmen einer Eignungsprüfung („Fitness Check“) ein.⁹ Die Erkenntnisse sollen die Europäische Kommission dabei unterstützen, eine Einschätzung darüber zu treffen, ob die evaluierten FuEul-Vorschriften weiterhin dazu geeignet sind, es in Europa tätigen Unternehmen zu ermöglichen, mit Markt- und Technologieentwicklungen Schritt zu halten und mit eventuellen Marktversagen umzugehen.

Die allgemeine Methodik der Studie entspricht der *Gemeinsamen Methodik zur Evaluierung von staatlichen Beihilfen*¹⁰. Bei der Umsetzung wurde ein **Methodenmix** verfolgt, d.h. es wurden qualitative sowie quantitative Informationen gesammelt und bewertet, wobei spezifische quantitative Daten nur in eingeschränktem Maß zur Verfügung standen.

Der Auftraggeber hat für die Evaluierung drei Aufgabenbereiche vorgegeben: **Aufgabe 1.1:** „Ausarbeitung einer Evaluierungsmatrix“, **Aufgabe 1.2:** „Sammlung von qualitativen und quantitativen Informationen“ im Rahmen einer „umfassenden Sekundärforschung“ unter Berücksichtigung von Statistiken und entsprechender Literatur, und **Aufgabe 1.3:** „Sammlung von qualitativen Informationen durch Interviews“ mit Vertretern verschiedener Mitgliedstaaten (MS) und Interessengruppen, die in der Leistungsbeschreibung (ToR) genannt und im Verlauf der Evaluierung noch genauer bestimmt wurden.

Die Studienergebnisse basieren in erster Linie auf der Auswertung von **168 teilstrukturierten Interviews** mit Personen aus 18 MS, darunter Vertreter von Behörden der MS, Beihilfeempfängern (wie KMU, Großunternehmen, Innovationsclustern)¹¹ sowie nicht geförderter Unternehmen, und Personen, die in Branchen- und Wissenschaftsverbänden organisiert sind.¹²

⁹ Die Eignungsprüfung soll eine Entscheidungsgrundlage zur Verlängerung oder möglicherweise Überarbeitung der Vorschriften schaffen.

¹⁰ Arbeitsdokument der Kommissionsdienststellen, SWD (2014) 179 / finale Version.

¹¹ Die Interviews wurden mit Vertretern von 60 Beihilfebehörden, von 74 Unternehmen, die Beihilfen empfangen haben – 17 davon Innovationscluster –, 22 nicht geförderten Unternehmen – 2 davon Innovationscluster – und Vertretern von 12 Branchen- und Wissenschaftsverbänden geführt.

¹² Die Feldarbeit fand hauptsächlich in Belgien, Deutschland, Frankreich, Litauen, Österreich, Polen, Rumänien, Schweden, Slowenien, Spanien, Tschechien und Ungarn statt. Bei der Auswahl der Interviewten wurde nicht nur auf eine ausgewogene geografische Verteilung geachtet und darauf, dass sowohl die „alten“ als auch die „neuen“ EU-Mitgliedstaaten vertreten sind, sondern auch sichergestellt, dass die zwischen den

Zudem führte der Auftragnehmer zu Beginn des Projekts zwecks Ausarbeitung des Fragebogens und Optimierung der Evaluierungsmatrix eine Reihe von **Sondierungsinterviews** durch. In diesen Interviews wurden Vertreter verschiedener Dienste der Europäischen Kommission befragt, die in besonderem Maß mit den betroffenen Vorschriften vertraut sind.

1.2 Studienergebnisse

Im Folgenden werden die wichtigsten Ergebnisse der Studie präsentiert, gegliedert nach den vier Evaluierungskriterien (Wirksamkeit, Effizienz, Kohärenz und Relevanz) und den 33 Evaluierungsfragen. Während auf einige bestimmte Fragen sehr umfassende Antworten gegeben werden könnten, ist die Datengrundlage bei anderen Fragen weniger ausführlich.

Als **zusammenfassendes Ergebnis** kann aufgrund der durchgeführten Interviews festgehalten werden, dass die in dieser Studie evaluierten FuEuI-Vorschriften dazu geeignet sind, FuEuI-Aktivitäten in der EU zu fördern, ohne den Wettbewerb übermäßig zu verzerren. Weiterhin können sie wirksam, effizient und kohärent umgesetzt werden, so dass sie vor dem Hintergrund der gegenwärtigen Markt- und Technologieentwicklungen weiterhin relevant sind. Die meisten Gesprächspartner bestätigten eine klare Verbesserung der überarbeiteten Vorschriften wahrgenommen zu haben. Nichtsdestotrotz haben die Befragten auch darauf hingewiesen, dass es bestimmte Aspekte gibt, die verbessert werden könnten; z.B. durch klarere Vorgaben und mehr Kohärenz in Bezug auf die Vorschriften, die Beihilfeintensitäten und die Begriffsbestimmungen im Bereich der FuEuI-Finanzierung.

Die **wichtigsten Ergebnisse zu den einzelnen Evaluierungsfragen** (EF) werden in der folgenden Tabelle zusammengefasst. (Weitere Einzelheiten finden Sie in Kapitel 4 des Abschlussberichts.)

Zusammenfassung der Ergebnisse	
Wirksamkeit	
EF 1: In welchem Umfang haben die staatlichen Beihilfen – <u>die Investitionsbeihilfen für FuEuI-Infrastrukturen</u>, <u>die Beihilfen für Innovationscluster</u> und <u>die Innovationsbeihilfen für KMU</u> – eine erhöhte Aufnahme der entsprechenden Aktivitäten bewirkt, ohne den Wettbewerb übermäßig zu verzerren? Als wie hilfreich werden die staatlichen Beihilfen in den genannten drei Bereichen insbesondere in Bezug auf die folgenden Punkte wahrgenommen?	
1.a - Umgang mit Marktversagen AGVO: Art. 26, Art. 27, Art. 28 FuEuI Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(ff), Punkt 49	<p>Ein Großteil der Befragten bestätigte die Relevanz von Marktversagen in Bezug auf die Inanspruchnahme von Beihilfen für Forschungsinfrastrukturen und Innovationscluster sowie Innovationsbeihilfen für KMU gemäß der AGVO.</p> <p>Insbesondere im Zusammenhang mit Aktivitäten mit Bezug zu Art. 26 zu Investitionsbeihilfen für Forschungsinfrastrukturen maßen 57 % der Befragten „globalen Wettbewerbs Herausforderungen“ höchste Bedeutung bei.</p> <p>67 % halten staatliche Beihilfen gemäß Art. 27 – Beihilfen für Innovationscluster(/-organisationen) – für notwendig, um ein „Koordinations- und Netzwerkversagen“ zu verhindern.</p> <p>Innovationsbeihilfen für KMU (siehe Art. 28) wurden von 68 % der</p>

EU-Mitgliedstaaten variierende Höhe der Inanspruchnahme staatlicher Beihilfen widerspiegelt wird. In den folgenden sechs MS wurden zehn weitere Interviews geführt: Dänemark, Irland, Luxemburg, Niederlande, Portugal und Vereinigtes Königreich.

Zusammenfassung der Ergebnisse	
	<p>Befragten als Chance wahrgenommen, Schwierigkeiten in Verbindung mit einer „unsicheren Rendite“ zu bewältigen.</p> <p>Beihilfeempfänger identifizierten die „unsichere Rendite“ als wichtigsten Grund für die Beihilfebereitstellung. Tatsächlich geht aus den offenen Aussagen hervor, dass die Befragten staatliche Beihilfen aufgrund einer "unsicheren Rendite" vor allem in den Anfangsphasen der Forschung für notwendig erachten. Einige Veröffentlichungen befassen sich mit dem begrenzten "Zugang zu Finanzmitteln" für KMU im Bereich FuEul.</p>
<p>1.b - Zunahme öffentlicher Investitionen</p> <p>AGVO: Art. 26, Art. 27, Art. 28 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(ff)</p>	<p>Die Ausgaben für staatliche FuEul-Beihilfen im Rahmen der AGFV mit dem Ziel „Forschung und Entwicklung einschließlich Innovation“ stiegen in der EU-28 infolge des erweiterten Anwendungsbereichs der AGVO deutlich von 3,63 Milliarden EUR im Jahr 2014 auf 7,42 Milliarden EUR im Jahr 2017. Dennoch gibt es keine eindeutigen Hinweise darauf, dass ein kausaler Zusammenhang zwischen den überarbeiteten Regeln und dem Volumen der öffentlichen Investitionen besteht.</p> <p>In Bezug auf Forschungsinfrastrukturen (Art. 26) waren 79.1 % der Befragten der Ansicht, dass die überarbeiteten Vorschriften Veränderungen der FuEul-Investitionen herbeiführten.</p> <p>Hinsichtlich der Innovationsbeihilfen für KMU (Art. 28) waren 73 % auch dieser Ansicht.</p> <p>Im Bereich der Beihilfen für Innovationscluster (Art. 27) nahmen 71% nach der Überarbeitung Veränderungen bei den FuEul-Investitionen wahr.</p> <p>Darüber hinaus haben zwei Aussagen weitere mögliche Faktoren hervorgehoben, die öffentliche und private Investitionen beeinflussen. Diese eher vorsichtige Schlussfolgerung wird durch eine Literaturquelle gestützt, die aus einer mit 435 innovativen Unternehmen durchgeführten Umfrage vorläufig ableitet, dass es Unternehmen nach der Überarbeitung der staatlichen FuEul-Beihilfen möglicherweise leichter fällt, Zugang zu staatlicher Finanzierung zu erhalten.</p>
<p>1.c - Zunahme privater Investitionen</p> <p>AGVO: Art. 26, Art. 27, Art. 28 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(ff)</p>	<p>In Bezug auf private Investitionen ist ein kausaler Zusammenhang zu staatlichen Beihilfen klarer zu erkennen als im Fall öffentlicher Investitionen. Laut einer ökonometrischen Studie, die den Effekt der AGVO-Umsetzung auf die Hebelwirkung der privaten F&E-Ausgaben quantifiziert, stimuliert jeder zusätzliche Euro, der auf Grundlage der AGVO-Beihilfe in FuEul-Aktivitäten fließt, weitere von der Privatwirtschaft getragene F&E-Ausgaben in Höhe von 2,20 bis 2,40 Euro nach sich. Dass private Investitionen zugenommen haben, wird auch dadurch bestätigt, dass die Mehrheit der Befragten (mehr als 70 %) berichtete, Veränderungen in Bezug auf öffentliche oder private Investitionen wahrgenommen zu haben. Die Antworten deuten darauf hin, dass sich staatliche Beihilfen positiv ausgewirkt haben, indem sie weitere private Investitionen bzw. einen Hebeleffekt ausgelöst haben, der Wirtschaftsakteure zu Ko-Investitionen veranlasste. Die Befragten waren sich jedoch unsicher, ob dies auf die überarbeiteten FuEul-Vorschriften für staatliche Beihilfen oder auf die staatlichen Beihilfen selbst zurückzuführen ist.</p>

Zusammenfassung der Ergebnisse	
<p>1.d - Steigerung der FuEul-Tätigkeiten der Industrie/ KMU</p> <p>AGVO : Art. 26, Art. 27, Art. 28, Art. 29 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt int 15(ff)</p>	<p>Mehr als 75 % der Befragten bestätigten, dass die staatlichen Beihilfen, die sie bezogen haben, in den meisten Fällen wesentlich für die Durchführung der F&E-Aktivitäten ihrer Unternehmen und/oder Forschungsinstitute waren und ihnen eine angemessene Finanzierung ermöglicht haben. Dies wird auch durch Daten und die Literatur bestätigt.</p> <p>Selbst nach Projektabschlüssen wurden positive Auswirkungen bemerkt, da die Befragten weitgehend bestätigten, dass zuvor geförderte Projekte zu weiteren FuEul-Aktivitäten führten. Daten des Europäischen Innovationsanzeigers (EIS) zeigen, dass der Anteil der KMU, die Produkt- oder Prozessinnovationen einführten, von 29 % (2014) auf 33 % (2018) gestiegen ist. Die Zunahme der FuEul-Aktivitäten der Industrie, darunter KMU, kann also bestätigt werden, wobei jedoch nicht beziffert werden kann, inwieweit diese Entwicklung auf die Überarbeitung der staatlichen FuEul-Beihilfen zurückzuführen ist.</p>
<p>1.e - Marktverzerrung und weitere negative Auswirkungen staatlicher Beihilfen</p> <p>AGVO: Art. 26, Art. 27, Art. 28 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(ff)</p>	<p>Mehr als 80 % der Befragten bestätigten, dass sich die staatlichen Beihilfen nicht negativ auf den Wettbewerb ausgewirkt haben. Wenn negative Folgen wahrgenommen wurden, wogen die positiven die negativen Auswirkungen nach Ansicht der Befragten auf. Nur 14 von 100 Befragten waren der Ansicht, dass sich staatliche Beihilfen möglicherweise negativ ausgewirkt haben. Die Studie fand keine Anhaltspunkte dafür, dass die im Rahmen der einschlägigen Artikel der AGVO gewährten staatlichen Beihilfen wesentliche negative Auswirkungen auf den Wettbewerb hatten oder eine Verdrängung von privaten Investitionen nach sich zogen.</p> <p>In der Literatur wurden keine Erkenntnisse über Marktverzerrungen durch staatliche Beihilfen in Bezug auf die in dieser Evaluierungsfrage untersuchten spezifischen Themen ermittelt. Obwohl es zwar nützliche Quellen, die auf potenziell negative Effekte im Nachgang von öffentlichen FuEul-Investitionen hinweisen, diese sind jedoch oft „veraltet“ und beziehen sich im Allgemeinen nicht auf die Arten von spezifischen Beihilfen, um die es hier geht.</p>
<p>EQ 2: Welchen Beitrag hat die durch die Beihilfenvorschriften gegebene Möglichkeit, Beihilfen für Innovationscluster mit <u>Innovationsbeihilfen für KMU</u> zu kombinieren, dazu geleistet, Marktversagen mit diesen zwei Arten von Beihilfen effektiv zu begegnen, um Innovationsaktivitäten bei Cluster-Nutzern, insbesondere KMU, zu fördern (ohne den Wettbewerb übermäßig zu verzerren)? Wie hat sich insbesondere die kombinierte Anwendung der Vorschriften in diesen Bereichen positiv auf Folgendes ausgewirkt?</p>	
<p>2.1.a - Zunahme öffentlicher Investitionen in Cluster und KMU-Aktivitäten</p> <p>AGVO: Art. 27, Art. 28 FuEul Rahmen: Punkt 12(e), Punkt 12(d), Punkt 15(s)</p>	<p>Die Ausgaben für Beihilfen für Innovationscluster (Art. 27) sowie Innovationshilfe für KMU (Art. 28) sind stetig angestiegen, seit sie 2014 in die AGVO aufgenommen wurden. Darüber hinaus bestätigte die Mehrheit der Befragten (mehr als 55%), dass sowohl für Cluster-Betreiber als auch für Cluster-Nutzer die Möglichkeit staatlicher Beihilfen zu gewähren, stimulierende Auswirkungen auf öffentliche Investitionen und FuEul-bezogene Aktivitäten hat.</p> <p>Die Möglichkeit, Beihilfen für Clusterbetreiber gemäß Art. 27 mit den auf Grundlage von Art. 28 gewährten Innovationsbeihilfen für Cluster-Nutzer zu kombinieren, wird auch in der Literatur positiv bewertet, da so Raum für damit verbundene Investitionen geschaffen wird. Laut einer Literaturquelle Art. 28 werden die bisher für Innovationsbeihilfen an KMU geltenden Regeln für staatliche Beihilfen konsolidiert und vereinfacht.</p>

Zusammenfassung der Ergebnisse	
<p>2.1.b - Zunahme privater Investitionen in Cluster und Aktivitäten</p> <p>AGVO: Art. 27, Art. 28 FuEuL Rahmen: Punkt 12(e), Punkt 12(d), Punkt 15(s)</p>	<p>Rund 70 % der Befragten sind der Ansicht, dass sich die staatlichen Beihilfen positiv auf die Entwicklung privater Investitionen in die Innovationscluster (69,8 %) und auf die FuEuL-Aktivitäten von KMU in den Innovationsclustern (71,8 %) ausgewirkt haben dürften. Unter den Interessengruppen beurteilen die Behörden der MS den positiven Effekt vorsichtiger als die Clustermitglieder und die Unternehmensverbände. Weder in den Antworten zu offenen Fragen noch in der Literatur gibt es Belege für die Auswirkungen der Regelungen im Zusammenhang mit diesen speziellen Beihilfemaßnahmen.</p>
<p>2.1.c - Zunahme der FuEuL-Aktivitäten von KMU</p> <p>AGVO: Art. 27, Art. 28 FuEuL Rahmen: Punkt 12(e), Punkt 12(d), Punkt 15(s)</p>	<p>Die Mehrheit der Befragten (83%) war der Meinung, dass die Möglichkeit, sowohl Clusterbetreibern als auch ihren Nutzern, die als KMU gelten, staatliche Beihilfen zu gewähren, zu einer Zunahme ihrer FuEuL-Aktivitäten geführt hat. Es wurden keine genauen Angaben gemacht, um welche Aktivitäten es sich dabei handelt.</p> <p>Insgesamt unterstützen die Antworten auf offene Fragen diese Einschätzung: 33 % der Befragten machten positive Aussagen, die auf eine Zunahme der FuEuL-Kooperationsaktivitäten hindeuten. Daraus lässt sich schließen, dass die Möglichkeit, Beihilfen für Innovationscluster mit Innovationsbeihilfen für KMU zu kombinieren, sich positiv auf die FuEuL-Aktivitäten ausgewirkt hat, insbesondere aufgrund der verbesserten Zusammenarbeit zwischen unterschiedlichen Akteuren.</p>
<p>2.1.d - Verstärkte Zusammenarbeit zwischen verschiedenen Clustermitgliedern</p> <p>AGVO: Art. 27, Art. 28 FuEuL Rahmen: Punkt 12(e), Punkt 12(d), Punkt 15(s)</p>	<p>Eine eindeutige Mehrheit zwischen 80 % und knapp 90 % der Befragten war der Ansicht, dass die Beihilfevorschriften die Zusammenarbeit zwischen verschiedenen Clustermitgliedern fördern. Allerdings geht aus sechs Antworten auf offene Fragen hervor, dass die Intensivierung der Zusammenarbeit nicht unbedingt im Zusammenhang mit der Überarbeitung der Regeln steht, sondern eher durch den Charakter der Cluster bedingt ist. In der Literatur konnten dazu keine Aussagen gefunden werden.</p>
<p>2.1.e/f - Vermeidung von Wettbewerbsverzerrungen</p> <p>AGVO: Art. 27, Art. 28 FuEuL Rahmen: Punkt 12(e), Punkt 12(d), Punkt 15(s)</p>	<p>Die Teilfrage (2.1.e) über die möglichen Auswirkungen staatlicher Beihilfen auf den Wettbewerb im Markt für Cluster und KMU wurde mit der Teilfrage (2.1.f) zu einem potenziellen Verdrängungseffekt („Crowding-out“-Effekt) bei privaten Investoren kombiniert. Diese beiden potenziellen negativen Effekte staatlicher Beihilfen wurden von den meisten Befragten verneint (mehr als 88 %). Der Großteil der 52 Antworten auf offene Fragen war neutral oder positiv. In lediglich vier Aussagen wurde Kritik geäußert. Dabei wurde angemerkt, dass die staatlichen Beihilfen im Vergleich zu privaten und öffentlichen Investitionen so niedrig seien, dass keinerlei wesentlichen Marktverzerrungen möglich sei.</p> <p>Neun Befragte betonten, dass keine ausreichenden Informationen vorhanden seien, um zu beurteilen, ob negative Effekte aufgetreten sind. In der Literatur war keine spezifische Aussage zu finden.</p>
<p>2.2 - Klarheit/Verständnis der kombinierten Nutzung von Art. 27/28</p>	<p>Zwar ist die Erkenntnisgrundlage zur Beantwortung dieser Frage relativ schwach, doch es kann indirekt aus den Antworten auf viele der anderen Fragen geschlossen werden, dass bei den Beihilfe gewährenden Behörden und/oder den Beihilfeempfängern keine Unklarheit darüber herrscht, dass KMU, die nach Art. 27 AGVO unterstützte Cluster nutzen, rechtmäßig Beihilfen nach Art. 25, 28 und</p>

Zusammenfassung der Ergebnisse	
AGVO: Art. 25, Art. 27, Art. 28, Art. 29 FuEuL Rahmen: Punkt 12(a), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(cc)	<p>29 GBER erhalten können. Allerdings scheinen die meisten Befragten es einfacher zu finden, die Anforderungen von Art. 27 in Kombination mit Art. 29 umzusetzen.</p> <p>Die Gewährung von Beihilfe nach Art. 27 in Kombination mit „de minimis“ Beihilfen sowie mit Art. 25 und 28 scheint die Beihilfe gewährenden Behörden vor Herausforderungen zu stellen. So wiesen über 50 % der befragten Behörden der MS in diesem Zusammenhang auf Schwierigkeiten hin. Die Antworten auf offene Fragen machten die bürokratischen Hürden bei der Gewährung von Beihilfen gemäß den oben genannten Beihilfen deutlich. Es liegt kein Beleg aus der Literatur vor, um dieses Ergebnis zu stützen.</p>
EF 3: Wie haben sich die Beihilfavorschriften für FuEuL auf die Zusammenarbeit der verschiedenen Partner bei FuEuL-Aktivitäten und den Wissenstransfer ausgewirkt?	
3.1 - Zusammenarbeit zwischen KMU und großen Unternehmen AGVO: Art. 25, Art. 27, Art. 28, Art. 29, 2 (90) FuEuL-Rahmen: Punkt 12(a), Punkt 12(e), Punkt 12(d), Punkt 15(h), Punkt 15(s), Punkt 15(v), Punkt 15(w), Punkt 15(y), Punkt 15(bb), Punkt 15(cc), Punkt 49	<p>Aus den Interviews geht hervor, dass die Zusammenarbeit zwischen KMU und großen Unternehmen seit 2014 zugenommen hat. Aus der vorliegenden Analyse lassen sich jedoch keine Schlussfolgerungen über das Ausmaß der Zunahme ableiten. Die Mehrheit der Befragten (mehr als 69 %) erkannte an, dass die Beihilfavorschriften aktiv das Ziel der Förderung von Zusammenarbeit und Wissensaustausch zwischen verschiedenen Akteuren verfolgen.</p> <p>Unter den Interessengruppen beurteilen die Verbände die Beziehung zwischen den Regeln und diesen beiden Zielen am positivsten, während nicht geförderten Unternehmen sowie die befragten Behörden der MS sich vorsichtiger äußerten, insbesondere in Bezug auf die Zusammenarbeit zwischen großen Unternehmen und KMU.</p> <p>Der Großteil der 102 offenen Aussagen zu den betreffenden offenen Fragen lieferte keine vertiefenden Erkenntnisse, da ca. 80 % der Aussagen neutral ausfielen. Die übrigen Aussagen deuteten auf eine Zunahme der Zusammenarbeit hin. Letzteres wird als eines der Hauptziele der Beihilfavorschriften verstanden und durch staatliche Beihilfe erleichtert, da sie notwendig sind, um das zugrunde liegende Marktversagen zu bewältigen. Im Rahmen der Literaturprüfung wurden keine für die EQ relevanten Erkenntnisse identifiziert.</p>
3.2 - Zusammenarbeit/ Wissenstransfer – Unternehmen und Forschungseinrichtungen AGVO: Art. 25, Art. 27, Art. 28, Art. 29, 2(90) FuEuL Rahmen: Punkt 12(a), Punkt 12(e), Punkt 12(d), Punkt 15(h), Punkt 15(s), Punkt 15(v), Punkt 15(w), Punkt 15(y), Punkt 15(bb), Punkt 15(cc)	<p>Beinahe 80 % der Befragten unterstreichen eine positive Korrelation zwischen staatlichen Beihilfen und Zusammenarbeit, während knapp 70 % diese positive Verbindung in Bezug auf den Wissenstransfer zwischen Unternehmen und Forschungseinrichtungen bestätigen. Es werden positive Beispiele genannt, die dafürsprechen, dass eine solche Zusammenarbeit und ein solcher Wissenstransfer allen Parteien zugutekommen könnten. Zudem wird erwähnt, dass die Zusammenarbeit auch von anderen Faktoren beeinflusst wird, wie Vertrauen und unterschiedliche Einstellungen bei Unternehmen und Forschungseinrichtungen.</p>

Zusammenfassung der Ergebnisse	
EF 4: Inwieweit haben die Beihilfenvorschriften für FuEul-Projekte, insbesondere in den Bereichen <u>industrielle Forschung</u> und <u>experimentelle Entwicklung</u>, Beihilfen ermöglicht, die den Wettbewerb im Binnenmarkt nicht unzulässig verzerren und gleichzeitig globalen Wettbewerbsaspekten angemessen Rechnung tragen?	
4.1 - Industrielle Forschung zur Überwindung globaler Wettbewerbs-herausforderungen AGVO: Art. 25(2)b FuEul Rahmen: Punkt 12(a), Punkt 15(q), Punkt 15(cc)	Aus der Studie lässt sich schließen, dass die Beihilfenvorschriften für die industrielle Forschung globalen Wettbewerbsproblemen hinreichend Rechnung tragen: 75 % der Befragten stimmen dieser Aussage zu. Eine hohe Anzahl von Antworten auf offene Fragen – mehr als 75 – zeugen von einem ausgeprägten Interesse der Befragten an diesem Thema. Darüber hinaus waren 35 % der Antworten auf offene Fragen positiv, während 41% auf Schwächen hinweisen. Um genauer zu sein, verwiesen neun Aussagen darauf, die Förderfähigkeitskriterien anzupassen, vor allem die Beihilfeintensitäten, um globalen Wettbewerbsherausforderungen vollständig Rechnung zu tragen und gleiche Wettbewerbsbedingungen zu schaffen. Es ist keine Literatur vorhanden, um dieses Ergebnis zu validieren.
4.2 - Negative Auswirkungen der industriellen Forschung AGVO: Art. 25(2)b FuEul Rahmen: Punkt 12(a), Punkt 15(q), Punkt 15(cc)	Kein Befragungsteilnehmer bezog sich speziell auf die Unterstützung der industriellen Forschung. Daher kann kein Fazit hinsichtlich der negativen Auswirkungen der Unterstützung industrieller Forschungstätigkeiten formuliert werden.
4.3 - Experimentelle Entwicklung zur Überwindung globaler Wettbewerbs-herausforderungen AGVO: Art. 25(2)c FuEul Rahmen: Punkt 12(a), Punkt 15(j), Punkt 15(cc)	Aus den Interviews und der Literatur geht hervor (von 75.7 % der Befragten bestätigt), dass die überarbeiteten Beihilfenvorschriften für die experimentelle Entwicklung gut auf die laufenden Marktentwicklungen zugeschnitten sind und globalen Wettbewerbsproblemen angemessen Rechnung tragen. Die Antworten auf offene Fragen ergaben, dass 22 der Befragten der Meinung waren, dass es Verbesserungsmöglichkeiten gibt, unter anderem im Hinblick auf die Beihilfeintensitäten. Zwei Teilnehmer weisen auf die strenge Definition von F&E-Projektphasen hin, die flexibler gestaltet werden könnten, um der Digitalisierung Rechnung zu tragen. Sie schlugen vor, die Terminologie der Regeln flexibler zu gestalten und ihren Geltungsbereich zu erweitern, um z. B. die Entwicklung künstlicher Intelligenz, die Schaffung virtueller Räume/Labors und die Forschung zu humanistischen Themen einzubeziehen.
4.4 - Negative Auswirkungen der experimentellen Entwicklung AGVO: Art. 25(2)c FuEul Rahmen: Punkt 12(a), Punkt 15(j), Punkt 15(cc)	Mehr als 90 % der Befragten bestätigten, keine negativen Auswirkungen staatlicher Beihilfen für Projekte der experimentellen Entwicklung festgestellt zu haben.

Zusammenfassung der Ergebnisse	
Effizienz	
EF 5: Sind die nachfolgenden Definitionen, die gemäß den Beihilfavorschriften für FuEuL gelten, ausreichend klar, um die Umsetzung der öffentlichen Förderung der relevanten Aktivitäten auf eine Art und Weise zu ermöglichen, die Fällen von Marktversagen gerecht werden, ohne den Wettbewerb übermäßig zu verzerren?	
5.1 - Definition experimenteller Entwicklungsprojekte AGVO: Art. 25(2)c, 1.3(j) FuEuL-Rahmen: Punkt 12(a), Punkt 15(j), Punkt 15(cc), Punkt 49	Mehr als 70 % der Befragten waren der Meinung, dass die Definition von „experimentellen Entwicklungsprojekten“ gut durchdacht sei, um Marktversagen zu beheben, ohne den Wettbewerb übermäßig zu verzerren. Die Mehrheit der Befragten erkannte im Vergleich zu 2014 keine signifikante Veränderung des Marktversagens bei den experimentellen Entwicklungsaktivitäten. Einige äußerten sich kritisch zu der angeblichen Linearität der Forschungsphasen. Die Unterscheidung zwischen "industrieller Forschung" und "experimenteller Entwicklung" schien für einige der Befragten unklar zu sein, da 18 von 88 offenen Aussagen die Schwierigkeiten damit deutlich machten. Eine Literaturquelle schloss sich dieser Ansicht an, während eine andere auf die mangelnde Klarheit in Bezug auf das Konzept der "weiten Verbreitung" hinwies, die zu einer Erhöhung der mit der experimentellen Entwicklung verbundenen Beihilfeintensität führen kann.
5.2 - Definition der Innovationscluster AGVO: Art. 27, 1.3(s) FuEuL-Rahmen: Punkt 12(a), Punkt 15(j), Punkt 15(cc), Punkt 49	Die aktuelle Definition der „Innovationscluster“ gilt als ausreichend klar, um die Umsetzung der öffentlichen Förderung zur Überwindung der betreffenden Fälle von Marktversagen zu ermöglichen, ohne den Wettbewerb übermäßig zu verzerren. Dies wird von 75.8 % der Befragten bestätigt. Auch in der Literatur sind zwei bestätigende Aussagen zu finden, die auf die positiven Aspekte des neu eingeführten Artikels 27 AGVO hinweisen. Allerdings zeigt eine differenziertere Betrachtung der befragten Interessengruppen und der Antworten auf offene Fragen, dass 22 von 34 der befragten Behörden der MS die Definition kritisieren, wobei einige darauf hinweisen, dass sie zu breit gefasst und nicht spezifisch genug sei.

Zusammenfassung der Ergebnisse	
Relevanz	
EF 6: Wurden der Umfang der Definition der <u>experimentellen Entwicklung</u> (Artikel 2 (86) der AGVO und Abschnitt 1.3 (j) des FuEuL-Rahmens) und die Förderfähigkeitskriterien für experimentelle <u>Entwicklungsprojekte</u> (einschl. zulässiger Aktivitäten, zulässiger Kosten, Beihilfeintensitäten und Beihilfeempfängern) gut an laufende Marktentwicklungen und aktuelle Fälle von Marktversagen, denen sich Unternehmen in Europa gegenübersehen, angepasst, ohne den Wettbewerb übermäßig zu verzerren?	
6.1 - Anpassung an aktuelle Marktentwicklungen AGVO: Art. 25(2)c, 1.3(j) FuEuL Rahmen: Punkt 12(e), Punkt 15(j), Punkt 15(cc)	Sowohl der Geltungsbereich der Definition der experimentellen Entwicklung als auch die Förderfähigkeitskriterien für experimentelle Entwicklungsprojekte (einschl. zulässiger Aktivitäten, zulässiger Kosten, Beihilfeintensitäten und Beihilfeempfängern) bewerten mehr als 75 % der Befragten als gut anlaufende Marktentwicklungen angepasst. Gleichzeitig äußerten zwei Befragte sowie zwei Teilnehmer an einem Survey von DG REGIO den Wunsch nach höheren Beihilfeintensitäten, damit in der EU tätige Unternehmen im globalen Wettbewerb bestehen können und gleiche Ausgangsbedingungen geschaffen werden. Vier der Antworten auf offene Fragen beschäftigen sich mit den raschen technologischen Entwicklungen, die als Herausforderung für die aktuelle Definition wahrgenommen werden. Es liegt kein Beleg aus der Literatur hierfür vor.

Zusammenfassung der Ergebnisse	
<p>6.2 - Anpassung an Marktversagen, ohne übermäßige Wettbewerbsverzerrung</p> <p>AGVO: Art. 25(2)c, 1.3(j) FuEuL Rahmen: Punkt 12(e), Punkt 15(j), Punkt 15(cc)</p>	<p>Mehr als 72 % der Befragten bestätigten, dass der Umfang der Definition der experimentellen Entwicklung sowie die damit verbundenen Förderfähigkeitskriterien und ihre Anpassung angemessen sind, um dem zugrunde liegenden Marktversagen entgegenzuwirken, ohne den Wettbewerb zu verzerren. Der Zugang zu Finanzierungsmitteln sowie die Fälle von Marktversagen im Zusammenhang mit Netzwerkversagen und asymmetrischen Informationen wurden in Bezug auf die experimentelle Entwicklung als die relevantesten Faktoren identifiziert. In der Literatur waren keine aufschlussreichen Aussagen dazu zu finden.</p>
<p>EF 7: Wurde der Anwendungsbereich der Vorschriften über staatliche Beihilfen im Bereich <u>Investitionsbeihilfen für Forschungsinfrastruktur, Investitions- und Betriebsbeihilfen für Innovationscluster</u> und <u>Beihilfen für die Prozess- und Betriebsinnovation</u>, einschließlich der geltenden Definitionen, mit Blick auf die laufenden Marktentwicklungen und das Marktversagen, mit dem Unternehmen in Europa konfrontiert sind, adäquat und zweckdienlich konzipiert, ohne zu übermäßigen Wettbewerbsverzerrungen zu führen?</p>	
<p>7.1.a - Bezug zu aktuellen Fällen von Marktversagen</p> <p>AGVO: Art. 26, Art. 27, Art. 29 FuEuL Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff), Punkt 49</p>	<p>Die Interviewergebnisse zeigen, dass in den drei genannten Fällen von Beihilfen (siehe EF7 oben) eine Mehrheit der Befragten staatliche Beihilfen als nötig erachtete, um die betreffenden FuEuL-Aktivitäten durchführen zu können, und keine wesentlichen Änderungen innerhalb der letzten fünf Jahren im Bereich Marktversagen feststellen konnten.</p> <p>Wie auch in den Ergebnissen in EF1.a festgestellt, scheint das von den Befragten erlebte Marktversagen durch die derzeitigen Vorschriften ausreichend adressiert zu werden. Zwei Befragte identifizierten Veränderungen des Marktversagens in Bezug auf Innovationscluster aufgrund einer Zunahme von Netzwerkversagen und Informationsasymmetrien.</p>
<p>7.1.b - Definition von beihilfefähigen Tätigkeiten</p> <p>AGVO: Art. 25(2)c FuEuL Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff)</p>	<p>Die Mehrheit der Befragten (mehr als 69 %) erklärten, dass die Beihilfefähigkeitskriterien im Allgemeinen gut konzipiert sind und die laufenden Marktentwicklungen angemessen adressieren. Es wurden jedoch in Form von Antworten auf offene Fragen einige Schwierigkeiten bei der Identifizierung und Unterscheidung bestimmter beihilfefähiger Tätigkeiten genannt und durch Aussagen aus zwei Literaturquellen bestätigt.</p> <p>Mit Blick auf Art. 26 zu Investitionsbeihilfen für Forschungsinfrastrukturen zeigen die Interviews und Aussagen in der Literatur, dass bezüglich der Unterscheidung zwischen wirtschaftlichen und nichtwirtschaftlichen Tätigkeiten Unklarheiten bestehen.</p> <p>Bezüglich Art. 27 über den Betrieb von Innovationsclustern wurde die maximale Förderdauer von zehn Jahren für Betriebsbeihilfen von drei Befragten kritisiert. Dies wurde auch in der Literatur thematisiert. Mit Blick auf Art. 29 zu Beihilfen für Prozess- und Organisationsinnovationen üben zwei Befragte bezüglich der Unterscheidung zwischen den beiden Tätigkeiten Kritik an der Beihilfefähigkeit.</p>
<p>7.1.c - Definition beihilfefähiger Begünstigter</p> <p>AGVO: Art. 26, Art. 27, Art. 29 FuEuL Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb),</p>	<p>Die Mehrheit der Befragten (mehr als 69 %) erklärten, dass die Förderfähigkeitskriterien im Allgemeinen gut formuliert sind und die laufenden Marktentwicklungen angemessen adressieren. Erkenntnis zur Gestaltungsqualität der Vorschriften zu dem Thema der beihilfefähigen Begünstigten liegen nur sehr begrenzt vor, da in der Literatur keine Aussagen hierzu zu finden waren und im Rahmen der Interviews nur wenige Anmerkungen zu den betreffenden Beihilfen getroffen wurden. Die Kritik, die sich aus den wenigen Aussagen zu</p>

Zusammenfassung der Ergebnisse	
Punkt 15(ff)	<p>den einzelnen Hilfsmaßnahmen ergibt, wird im Folgenden dargelegt:</p> <p>Zwei Befragte bevorzugten den Einsatz vereinfachter Kostenoptionen wie Pauschalsätzen und Pauschalbeträgen.</p> <p>In Bezug auf Art. 26 gaben zwei Befragte Schwierigkeiten bei der Einstufung von Forschungsorganisationen als große Unternehmen hin.</p> <p>In Bezug auf Art. 27 sahen kritisierten zwei Befragte, dass Beihilfen für Innovationscluster ausschließlich auf die Unterstützung des Clusterbetreibers abzielen.</p> <p>Mit Bezug die beihilfefähigen Begünstigten im Fall von Art. 29 wurde keine Kritik geäußert.</p>
<p>7.1.d - Definition von beihilfefähigen Kosten</p> <p>AGVO: Art. 26, Art. 27, Art. 29 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff), Punkt 15(ii)</p>	<p>Mehr als 70% der Befragten beschrieben die Vorschriften zur Geltendmachung beihilfefähiger Kosten als zwecktauglich. In einigen Antworten auf offene Fragen kommentierten die befragten Behörden und Begünstigte Kritik und fordern eine erhöhte Verwendung von vereinfachten Kostenoptionen.</p> <p>Mit Blick auf Art. 26 zu Investitionsbeihilfen für Forschungsinfrastrukturen forderten zwei befragte Behörden mehr Klarheit bezüglich der Beihilfefähigkeit der Kosten materieller und immaterieller Vermögenswerte. Darüber hinaus kritisierten zwei weitere befragte Behörden den Fokus von Artikel 26 auf Investitionskosten.</p> <p>Es wurden keine spezifischen Beweise in Bezug auf Art. 27 generiert.</p> <p>Mit Blick auf Art. 29 zu Beihilfen für Prozess- und Organisationsinnovationen weist ein Befragter auf Unsicherheiten bezüglich der Personalkosten hin.</p> <p>Zum Thema der erstattungsfähigen Kosten war keine Literatur verfügbar.</p>
<p>7.1.e - Definition von Beihilfeintensitäten</p> <p>AGVO: Art. 26, Art. 27, Art. 29 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff)</p>	<p>Die Mehrheit der Befragten (mehr als 69 %) erklärten, dass die Förderfähigkeitskriterien im Allgemeinen gut konzipiert sind, umlaufenden Marktentwicklungen angemessen zu adressieren. Mit Blick auf Beihilfeintensitäten im Besonderen werden in sechs offenen Fragen höhere Beihilfeintensitäten gefordert. Es besteht keine Literatur, mit der sich diese Erkenntnis bestätigen ließe. Daher bleibt dieser Punkt vage und kann mit Blick auf Art. 26, 27 und 29 wegen mangelnder Erkenntnis nicht detaillierter ausgeführt werden.</p>
<p>EF 7.2: Entsprachen die Vorschriften den aktuellen</p> <ul style="list-style-type: none"> a. Innovationsmodellen und -herausforderungen, einschließlich jener, die für KMU relevant sind? b. technologischen Fortschritten, einschließlich jener im Bereich von Schlüsseltechnologien (KETs)? c. globalen Wertschöpfungsketten? 	
<p>7.2.a - Innovationsmodelle und -herausforderungen, einschließlich jener, die für KMU relevant sind</p> <p>AGVO: Art. 26, Art. 27, Art. 29 FuEul Rahmen: Punkt</p>	<p>Die Vorschriften über staatliche FuEul-Beihilfen im Bereich „Entwicklung oder Ausbau von Forschungsinfrastruktur“ werden laut 80 % der Befragten den aktuellen Innovationsmodellen und -herausforderungen sowie den technologischen Fortschritten gerecht. In Bezug auf die Regeln für staatliche Beihilfen für den Auf- oder Ausbau von Innovationsclustern sowie für Prozess- und Organisationsinnovation vertraten mehr als 76% der Befragten diese Ansicht. Fünf Befragte schlugen geringfügige Verfeinerungen der Vorschriften vor, um mit dem schnellen digitalen Fortschritt in Bereichen, wie künstliche Intelligenz oder Quantencomputer Schritt</p>

Zusammenfassung der Ergebnisse	
12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff)	zu halten. In der Literatur waren für diese Evaluierungsfrage keine Belege zu finden.
7.2.b - Technologischer Fortschritte, einschließlich KETs AGVO: Art. 26, Art. 27, Art. 29 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff)	Laut den Interviewergebnissen sind mehr als 80 % der Befragten der Auffassung, dass die Vorschriften über staatliche FuEul-Beihilfen von 2014 im Bereich „Entwicklung oder Ausbau von Forschungsinfrastruktur“ technologische Fortschritte und Innovation fördern. Fast 70 % der Befragten vertreten diese Auffassung auch mit Blick auf Innovationscluster und Prozess- und Organisationsinnovationen. Im Bereich KETs wurde auf der Grundlage der von der GD GROW bereitgestellten Daten eine Innovationslücke identifiziert, da die Produktionstätigkeit und die Anmeldung von Patenten hier in Europa zurückgehen. Es lagen keine Erkenntnisse vor, ob und wie diese Entwicklung mit den überarbeiteten Vorschriften über staatliche FuEul-Beihilfen zusammenhängt.
7.2.c – Globale Wertschöpfungsketten AGVO: Art. 26, Art. 27, Art. 29 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff)	Mehr als 70 % der Befragten bestätigten, dass die Vorschriften über staatliche Beihilfen gut geeignet sind, um Projekte im Bereich der modernen globalen Wertschöpfungsketten zu fördern. Von den 20 Befragten, die auf offene Fragen zu diesem Thema geantwortet haben, verwiesen vier auf ungleiche Wettbewerbsbedingungen, z. B. im Vergleich zu asiatischen Ländern. Es liegt kein Beleg aus der Literatur vor.
EF 7.3: Haben die Vorschriften zu einer Steigerung der FuEul-Tätigkeiten der Beihilfeempfänger sowie – im Fall der Cluster– der FuEul-Tätigkeiten der Nutzer der Cluster geführt?	
7.3 – Steigerung der FuEul-Tätigkeiten der Beihilfeempfänger, einschließlich Cluster AGVO: Art. 26, Art. 27, Art. 29 FuEul Rahmen: Punkt 12(c), Punkt 12(e), Punkt 12(d), Punkt 15(s), Punkt 15(y), Punkt 15(bb), Punkt 15(ff)	Aus den Interviews lässt sich ableiten, dass die überarbeiteten Vorschriften über staatliche Beihilfe zu einer Steigerung der FuEul-Tätigkeiten der Beihilfeempfänger geführt haben, einschließlich jener der Nutzer von Clustern. In diesem Fall bestätigten 86 % der Befragten, dass die Möglichkeit staatlicher Beihilfen für Betreiber und Nutzer von Innovationsclustern zu einer Steigerung der FuEul-Tätigkeiten geführt hat. In der Mehrzahl der offenen Aussagen (42 von 66) wurde bestätigt, dass zusätzliche FuEul-Tätigkeiten durchgeführt wurden. Es liegt kein Beleg aus der Literatur vor, um diese Frage zu validieren.

Zusammenfassung der Ergebnisse	
Kohärenz	
EF 8: Stimmt der Anwendungsbereich der Vorschriften über staatliche Beihilfen für Innovationscluster und Forschungsinfrastrukturen mit den Zielen des EU Horizon Programms und dessen Vorschriften überein?	
8.1 Forschungsinfrastrukturen AGVO: Art. 26 FuEul Rahmen: Punkt,	Laut 74.2 % der Befragten stimmt der Anwendungsbereich der Vorschriften über staatliche Beihilfen für Forschungsinfrastrukturen mit den Zielen des Horizon-Programms der EU und dessen Vorschriften überein. Die positive Einschätzung stammte von Begünstigte und Clustern, von denen sich mehr als 85% über die Kohärenz einig waren,

Zusammenfassung der Ergebnisse	
12(e), Punkt 15(s)	während die befragten Behörden skeptischer sind und die Vorschriften zur Beihilfefähigkeit aus „Horizon 2020“ günstiger finden. Weitere Belege ergeben ein gemischtes Bild, während eine von der GD RTD veröffentlichte Studie eine kritische Bewertung der Erleichterung von Synergien zwischen FuEul-Fördertätigkeiten auf EU-Ebene im Rahmen von Horizon 2020 und anderen Vorschriften, wie die geltenden EU-Vorschriften über staatliche FuEul-Beihilfen enthält, wird diese Einschätzung in einer kürzlich durch die GD REGIO durchgeführten Studie nicht bestätigt.
8.2 Innovationscluster AGVO: Art. 27 FuEul Rahmen: Punkt 12(e), Punkt 15(s)	Auf Grundlage der Interviews kann der Schluss gezogen werden, dass der Anwendungsbereich der Vorschriften über staatliche Beihilfen für Innovationscluster, gemäß Definition in der AGVO und im FuEul-Rahmen, mit den Zielen des Programms Horizon 2020 und dessen Vorschriften übereinstimmt. Die Antworten auf offene Fragen ergaben, dass 28 von 45 Aussagen Kritik enthalten, wobei sich nur vier dieser Aussagen explizit auf Innovationscluster beziehen. Sieben Befragten zufolge sind die Vorschriften zur Beihilfefähigkeit, insbesondere solche, welche die beihilfefähigen Begünstigten und Beihilfeintensitäten betreffen, für die Begünstigten im Rahmen von Horizon 2020 günstiger als in den Vorschriften über staatliche FuEul-Beihilfen. Es ist keine Literatur vorhanden, um diesen Aspekt zu validieren.
EF 9: Stimmten die Vorschriften zur Beihilfefähigkeit für Investitionen in Forschungsinfrastrukturen mit den Vorschriften über staatliche Beihilfen für andere Infrastrukturkategorien im Rahmen der AGVO überein?	
9. Kohärenz mit anderen Infrastrukturkategorien der AGVO AGVO: Art. 26 FuEul Rahmen: Punkt 12(c), Punkt 15(ff)	Mit Blick auf die Übereinstimmung von Vorschriften über staatliche Beihilfen für andere Infrastrukturkategorien mit der AGVO gab eine hohe Zahl von Befragten neutrale Antworten wie „Nicht anwendbar“ an. Die dazu abgegebenen Aussagen sind nicht eindeutig, zudem ist zu diesem Thema keine Literatur vorhanden. Die vorhandenen Belege sind daher zu begrenzt, um belastbare Erkenntnisse zu dieser Frage zu gewinnen. Nur ein Drittel der Befragten hat diese Frage beantwortet. Von den Antworten bestätigten 80% die Kohärenz der Regeln für staatliche Beihilfen für Forschungsinfrastrukturen mit denen für andere Infrastrukturkategorien, während 20 % verneinten. Die wenigen vorhandenen Belege zeigen, dass die Förderfähigkeitskriterien für Investitionen in Forschungsinfrastrukturen relativ weit mit den Vorschriften über staatliche Beihilfen für andere Infrastrukturkategorien im Rahmen der AGVO übereinstimmen.

Trotz der umfassenden Evidenzbasis der Studie sind mit Blick auf **Ansatz und Methodologie** einige Herausforderungen und Einschränkungen zu beachten:

- **Der zielgerichtete Ansatz der sehr spezifischen Fragen zu staatlichen Beihilfen stellte die Befragten vor Herausforderungen**, obwohl die meisten von ihnen innerhalb ihrer Organisation die „Experten“ im Bereich FuEul-Finanzierung sind. Manche der Befragten verwechselten staatliche Beihilfen mit Beihilfen im Rahmen der EU-Finanzierung, wie beispielsweise Horizon 2020; zudem deckten sie nicht alle Fachgebiete der Befragung ab und entschieden sich daher dafür, einige Fragen nicht zu beantworten.
- **Die Kooperationsbereitschaft individueller Befragter und die im Rahmen der Interviews gelieferte Expertise** zu technisch oder rechtlich komplexen Themenbereichen wie z. B. den Rechtsrahmen für staatliche Beihilfen, war

beschränkt. Dies gilt insbesondere für Befragte, die von der Thematik nicht betroffen sind – in diesem Fall zum Beispiel Unternehmen, die keine Beihilfen erhalten.

- **Die Prüfung vorhandener Daten und Literatur ergab zu diesem Thema nur begrenzte Erkenntnisse**, was sich durch den kurzen Zeitrahmen von lediglich vier bis fünf Jahren (seit Überarbeitung der Vorschriften) und den hohen Detaillierungsgrad der Bewertungsfragen erklärt. Folglich waren für diese Studie lediglich einige wenige Datenquellen verfügbar und geeignet.

Als allgemeine Anmerkungen ist es wichtig hervorzuheben, dass sich diese Studie auf die Beantwortung spezifischer Evaluierungsfragen im Hinblick auf spezifische staatliche Beihilfemaßnahmen für FuEul konzentriert, nämlich Investitionsbeihilfen für Forschungsinfrastruktur, Beihilfen für Innovationscluster, Innovationsbeihilfen für KMU, Beihilfen für Projekte im Bereich der experimentellen Entwicklung und Beihilfen für Prozess- und Organisationsinnovation. Sie war nicht darauf ausgerichtet, auf Gesamtergebnisse im Sinne einer Bewertung der Wirksamkeit der Regeln für staatliche Beihilfen für FuEul (eines der vorgegebenen Bewertungskriterien) oder der Frage zu gelangen, ob die Regeln insgesamt zu negativen wettbewerbsverzerrenden Auswirkungen führten. Diese Aspekte könnten in Zukunft in weiteren Untersuchungen behandelt werden.

2 Introduction

On 7 January 2019, the European Commission announced its intention to prolong seven sets of State aid rules for a period of two years and, in line with its *Better Regulation Guidelines*¹³, launched a comprehensive policy evaluation in the area of State aid. This evaluation, which takes the form of a ‘fitness check’, contributes to providing the basis for the decision to be taken by the Commission on whether to prolong the existing State aid rules further or to possibly update them.

The current rules for the provision of State aid in the area of Research, Development and Innovation (RDI) were put in place in 2014 and encompass:

1. dedicated Art. (25-29) in the General Block Exemption Regulation (GBER)¹⁴ and;
2. the Framework for State aid for research, development and innovation (RDI-Framework)¹⁵.

In this context, the Commission's Directorate-General for Competition (DG COMP) has launched this retrospective evaluation study of State aid rules for RDI applicable in 2014-2020 to support the Commission with an independent, evidence-based assessment of the application of the above-mentioned State aid rules. The results of this study will complement DG COMP's internal assessment (on the basis, inter alia, of the contributions submitted in the context of the general public consultation on the ‘fitness check’¹⁶ of the State aid rules) in order to inform the European Commission on the suitability of the currently applicable set of rules.

According to the technical specifications and close consultations with the Contracting Authority since the end of July 2019¹⁷, specific questions with regard to the above mentioned State aid rules for RDI have been assessed in a sample of Member States involving different stakeholder groups, i.e. public authorities involved in the provision of State aid, private institutions, namely recipients of State aid, non-aided undertakings as well as research and business associations, in order to respond to the given evaluation questions. The scope of the study is limited to the period after the revision of the rules from 2014 to 2020.

The objectives and scope of the study are defined by the tender specifications (page 5): “[...] to assess whether the current State aid rules in the area of RDI [...] are fit for purpose taking into account the general State Aid Modernisation objectives, the specific objectives of the legal framework, the current and future challenges (also considering the EU research and innovation policy)”.

¹³ Please see the Better Regulation Guidelines as well as an accompanying toolbox presented at: https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox_en.

¹⁴ Commission Regulation (EU) 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Art. 107 and 108 of the Treaty, OJ L 187 26.6.2014.

¹⁵ Communication from the Commission — Framework for State aid for research and development and innovation, OJ C 198, 27.6.2014.

¹⁶ The fitness check of State aid rules of the 2012 SAM package comprises the General Block Exemption Regulation, De minimis Regulation, Guidelines on regional State aid, Guidelines on risk finance aid, Communication on State aid for important projects of common European interest, Guidelines on State aid for environmental protection and energy, Guidelines on State aid for rescuing and restructuring, Guidelines on airports and aviation aid, Framework for RDI aid, the Guidelines on State aid for railway undertakings and of the Communication on State aid for short term export credit insurance.

¹⁷ The kick-off meeting took place at the premises of DG COMP on 26 July 2019.

3 Evaluation methodology

The overall study methodology is in line with the *Common Methodology for State aid evaluation*¹⁸ and follows a mixed-method approach. Starting from theory, an intervention logic for the 2014 revised RDI State aid rules had been developed and agreed with the contracting authority. Furthermore, the given instruments (evaluation questions and methods prescribed in the technical specifications) were further refined and translated into analytical tools, notably the Evaluation Matrix and the evidence logbook.

3.1 Task 1 – Information Collection

3.1.1 Evaluation Matrix (Task 1.1)

The Evaluation Matrix presented in Annex 1 is a key methodological tool of this study facilitating the systematic and prudent recording and analysis of all collected data. It consists of the evaluation criteria (effectiveness, efficiency, relevance and coherence) and the **9 evaluation questions with 33 sub-questions** as well as 7 judgment criteria (see Annex 1 for details).

The definition of qualitative and quantitative indicators as well as related data sources proved to be challenging due to the specificity of some of the questions to be answered in this study. Literature and data on State aid is generally available but not with the special focus of the scope of this study. For instance, the combined use of Art. 27 and 28 of the GBER has not been explored in other studies. In this situation, the interviews proved to be a good qualitative source of evidence but the triangulation exercise with data, interview results and literature was often not possible due to the lack of one of the information sources. Nevertheless, the study team managed to answer most of the evaluation questions on the primary basis of interview results. It was agreed with the contracting authority that the results of the 168 core interviews would count as qualitative evidence¹⁹.

Notwithstanding the efforts made to define suitable quantitative key performance indicators (KPI), the contractor and the Contracting Authority concluded that general statistics bore limited use to assess the effects of the aid measures in scope of the evaluation. As a result, descriptive statistics have been applied for different evaluation sub-questions, see chapter 4 for details.

3.1.2 Member States involved in the study

As stipulated in the technical specifications, the study had originally focused on a diverse set of 12 Member States (Austria, Belgium, Czechia, France, Germany, Hungary, Lithuania, Poland, Romania, Slovenia, Spain and Sweden) initially, which was later on supplemented by interviews with stakeholders in 6 more countries (Denmark, Ireland, Luxembourg, The Netherlands, Portugal and the UK).

In view of its geographic distribution, the sample includes four Member States representing the Northern part of the EU (Denmark, Ireland, Lithuania, Sweden and the UK) as well as three Member States from the South (Portugal, Romania and Spain). In total, 12 countries represent the old EU members (EU-12) and 6 the new ones (representing mainly the eastern part of the EU).

¹⁸ Commission Staff Working Document, SWD (2014) 179 final.

¹⁹ Despite the request stipulated in the technical specifications page 6, that the study's "results shall be (...) representative of the entire EU".

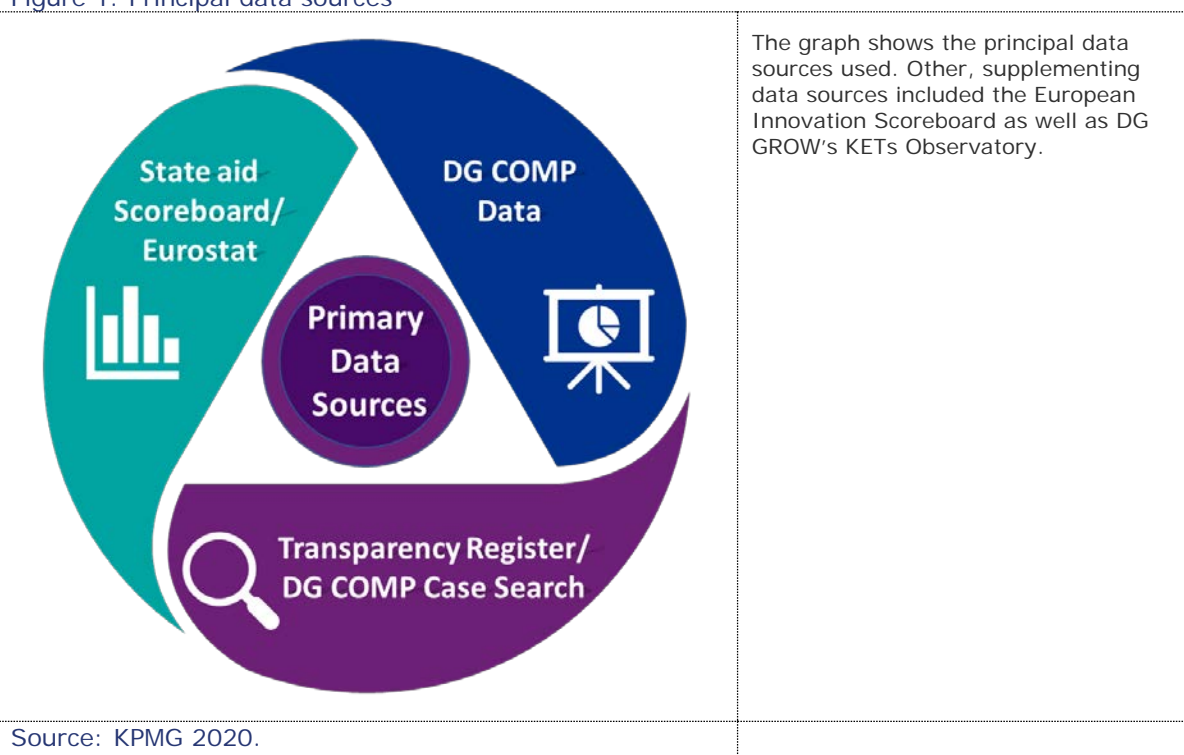
Finally, the technical specifications requested to include Member States with different degrees of usage of the RDI State aid in the sample. To this end, the countries were grouped to three categories: 'limited', 'medium', or 'abundant' users of RDI State aid based on relevant statistical data (please see Annex 2 for details). Countries from each group were included in the sample of Member States in scope of the study.

3.2 Data collection via desk research (Task 1.2)

3.2.1 Principal data sources

Annex 3 provides full detail of all the legal texts, literature and data sources used to collect evidence and to triangulate and validate findings. The desk research covered documents on the previous as well as the 2014 revised RDI State aid rules²⁰ including the State Aid Scoreboard.

Figure 1: Principal data sources



Information on the RDI related State aid granted after June 2016 provided by Member States²¹ is centrally registered in the **Transparency Register**²². The Transparency Register was established by Art. 9 para 1 lit. c) of the GBER and covers State aid awards in excess of EUR 500,000. We used this database to identify beneficiaries of State aid as potential interview candidates as well as to gather information on the amount and objective of the aid and its legal basis.

²⁰ The General Block Exemption Regulation (GBER) <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32008R0800> as well as the RDI Framework [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52014XC0627\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52014XC0627(01)).

²¹ The countries Spain, Romania and Poland however (all included in the given sample) use other ways to disclose information on State aid measures. See: for instance (Romania) <https://regas.consiliulconcurentei.ro/transparenta/index.html> and (Spain) <https://www.infosubvenciones.es/bdnstrans/GE/es/concesiones/ayuda>.

²² European Commission, DG COMP State aid Transparency Registry. Retrieved from <https://webgate.ec.europa.eu/competition/transparency/public/search/home?lang=en>.

In addition to the Transparency Register, the **DG COMP Case Search Tool**²³ was used to identify innovation clusters as well as beneficiaries receiving aid lower than the above-mentioned threshold. The tool contains State aid cases from 1 January 2000, and allows to filter them by legal basis (GBER or RDI Framework), industry sectors²⁴, and other relevant criteria.

The **State Aid Scoreboard**²⁵ displays most useful data on aid expenditure (in absolute EUR amounts and in percentage of GDP) displayed by *main objective*, in our case 'RDI', by *aid measures*²⁶ e.g. R&D projects, aid for innovation activities etc. and by 'aid instrument', such as direct grant, tax deferral, and others. A more detailed dataset²⁷ was provided by DG COMP on aid amounts disbursed by Member States under the 'old' GBER 2008 and RDI Framework as well as under the revised GBER 2014 and RDI Framework 2014. Compared to publicly available data in the State Aid Scoreboard, on which the dataset provided by DG COMP is partially based, the latter provides further insight as it displays aid expenditure by each GBER objective. This dataset thus allows to compare aid expenditures per aid measures under the former and the current rules.

Additional **data sources**, such as the **European Innovation Scoreboard**²⁸ proved especially helpful in providing data on specific topics such as collaboration activities of SMEs. Information on multi-annual trends across KETs and countries were intended to be taken from the **DG GROW KET Observatory**²⁹. As the publicly available figures would only be updated in March 2020 to cover the period from 2015 onwards, DG GROW provided data up to 2017.

More general data on public and private RDI-related investments e.g. on Intramural R&D expenditure (GERD) as well as Business Enterprise Expenditure on R&D (BERD) was found at **Eurostat**³⁰. Several other sources were used for background information and for triangulation purposes, such as the **DG REGIO Open Data Portal**. The latter contains allocations of RDI funding under shared management, which fall under State aid rules and control.

3.2.2 Literature and relevant documents

The literature review included studies, academic papers, articles in professional journals, information sources, such as evaluations done at EU level or in Member States, studies and relevant parts of public consultation exercises carried out by the EC, and other publications related on the matter. More specifically, literature was grouped in four categories:

- i) **EC legislation**: notably the regulations issues on the GBER, the RDI Framework, the State Aid Modernisation (SAM), consequent legal amendments and other binding provisions related to the scope of the study;

²³ European Commission. DG COMP State aid Case Search. Retrieved from <https://ec.europa.eu/competition/elojade/iseef/>

²⁴ Based on the NACE Rev. 2 Classification of Eurostat: Retrieved from <https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>.

²⁵ European Commission. State Aid Scoreboard 2018. Retrieved from https://ec.europa.eu/competition/state_aid/scoreboard/index_en.html.

²⁶ Defined in the RDI Framework, section 1.2, (a)-(e).

²⁷ The dataset was provided by DG COMP on 20/12/2019.

²⁸ European Commission. European Innovation Scoreboard 2019 Subset Comparison Module. Retrieved from <https://interactivetool.eu/EIS/index.html>.

²⁹ <https://ec.europa.eu/growth/tools-databases/kets-tools/kets-observatory/analytics>.

³⁰ Eurostat, Data on GERD. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php/R_%26_D_expenditure#Gross_domestic_expenditure_on_R_.26_D.

- ii) **EC documents:** e.g. publications by DG COMP including reports from the State Aid Scoreboard, press releases, guiding notes, as well as relevant reports from other EU institutions, e.g. the EIB Report on access to finance, the RTD Scoreboard on industrial R&D, reports developed by the European Court of Auditors (ECA), and others;
- iii) **Secondary literature** such as articles on the matter of (RDI) State aid in the College of Europe Policy Briefs, related OECD publications (notably the Frascati Manual) and publications from R&D related associations, such as EARTO;
- iv) **Country-specific publications** in local language e.g. reports issued by Member State Authorities involved in the sample countries, scientific or academic papers, etc.

The tasks related to the literature research were divided among the different team members involved with a view to ensure adequate language coverage. KPMG Germany was leading the exercise in terms of scope and access to required information. Practical management tools for performing a 'structured document analysis' were tailored to the study e.g. checklists containing key-words for research, rules for citation, quality-review procedures for checking consistency of statements and were provided via the study SharePoint. These measures had already been applied in similar evaluation studies and proved again to be helpful for pursuing a uniform approach.

Particular attention was given to publications since 2014 and referring to the newly introduced GBER aid measures in the scope of the evaluation, such as the funding of research infrastructure, innovation clusters and process and organisational innovation. Not much information was discovered on these topics, primarily due to the very recent time period covering the scope of the evaluation (i.e., July 2014 onwards). Most of the secondary literature found relates to analysis of the former rules³¹. Identified as a risk from the start of the evaluation, this lack of secondary literature proved to be a limitation of the study. At the same time, the evidence collected, and the triangulation and validation efforts undertaken by the study team provide an important evidence base and will thereby support the Commission's fitness check and any future evaluations.

3.3 Data collection via individual interviews (Task 1.3)

3.3.1 Stakeholder groups involved in interviews

The stakeholder groups involved in the core interviews were identified in line with the technical specifications. Over the study's lifetime, the groups were adjusted in agreement with the Contracting Authority, notably by including more countries and identifying innovation cluster operators and members as a separate stakeholder sub-group in order to ensure that the respective questions regarding clusters were adequately addressed by relevant stakeholders. In agreement with the Contracting Authority, it was decided during the performance of the interviews to increase the number of countries from 12 to 18, in order to ensure a valid number of interviews being performed. The reason for this increase was that it proved to be difficult to find enough interview partners in some of the 12 sample countries.

³¹ E.g. Meta-Regression Analysis such as Dimos, C., & Pugh, G. (2016). *The effectiveness of R&D subsidies: A meta-regression analysis of the evaluation literature*. *Research Policy*, 45(4), 797 - 815. <https://doi.org/10.1016/j.respol.2016.01.002> or Negassi, S., & Sattin, J. F. (2019). *Evaluation of Public R&D Policy: A Meta-Regression Analysis*. *Technology and Investment*, 10(1), 1-29. analyse literature before 2014 and can thus not be included.

Member State Authorities in the country sample included regional authorities, aid granting or managing authorities (e.g. implementing bodies of Structural Funds programmes) as well as competition and State aid control authorities.

Beneficiaries of State aid were the largest target group defined by the technical specifications (10 per original country sample), eligible interview targets were identified through DG COMP's Transparency Award Module (TAM)³² considering a number of criteria such as type and size of beneficiary company, award year, and objective of State aid, as well as the aid amount (bigger versus smaller amounts) and other criteria (such as cases of one-time aid award as well as repetitive ones).

Innovation clusters were refined as a stakeholder sub-group in light of evaluation question No. 2 especially. The idea was to interview 1 cluster operator and 1 cluster user, ideally belonging to the same cluster, in each of the selected (12) Member States. The interviewees were mostly allocated within the *Beneficiaries'* stakeholder group as seen in the table below. In cases where cluster members have actually not benefited from State aid, these were included in the group of *Non-aided undertakings* instead. The table below displays the interviews conducted with cluster operators and cluster members³³.

Non-aided undertakings are defined as '*enterprises which have carried out the evaluated activity per evaluated rule without any State support*', according to the tender specifications.³⁴ This group is obviously not recorded in public registers and required a rather cumbersome approach to be identified via internet research and personal recommendations in each country. Even more challenging proved to convince them to participate in the interview.

European and national associations with a focus on RDI and a good spread across: associations of academies of science and/or institutes carrying out RDI activities were approached. The evaluation team managed to interview two associations on the European level and ten associations in seven Member States.

In summary, the initial assumption that Beneficiaries and Member State Authorities would be easier to reach and to motivate was confirmed. For the associations and the group of non-aided undertakings, this proved to be much more challenging. Even though many attempts have been made in order to reach the contact person who is involved in RDI processes, a total rejection and non-response rate was still high - above 30%, which made the initial goal harder to reach.

In the following table the distribution of interviews across the 18 countries is indicated.

³² European Commission, DG COMP State aid Transparency Registry. Retrieved from <https://webgate.ec.europa.eu/competition/transparency/public?lang=en>.

³³ The interview numbers associated with cluster operators and members are in parentheses as they are within the stakeholder groups of beneficiaries or non-aided undertakings respectively

³⁴ Technical Specifications, section 4.2, page 11.

Table 1: Distribution of interviews across countries

Member State	Beneficiaries			Non-aided under-takings			Member State Authorities	EU/Nat. associations	Total
	Actual	Cluster Operator	Cluster member	Actual	Cluster Operator	Cluster Member	Actual	Actual	Actual
Austria	7	(2)	-	-	-	-	4	-	11
Belgium	6	(1)	-	2	-	-	4	2	14
Czechia	5	(1)	(1)	3	-	-	4	1	13
France	6	(1)	-	-	-	-	8	1	15
Germany	9	(2)	(1)	4	(1)	(1)	5	2	20
Hungary	4	-	-	4	-	-	3	1	12
Lithuania	4	(1)	-	3	-	-	3	1	11
Poland	11	-	(1)	-	-	-	5	-	16
Romania	5	(1)	(1)	2	-	-	4	1	12
Slovenia	4		(1)	3	(1)	-	3	1	11
Spain	9	(2)	(1)	1	-	-	7	-	17
Sweden	3	-	-	-	-	-	2	1	6
Denmark	-	-	-	-	-	-	1	-	1
Ireland	-	-	-	-	-	-	3	-	3
Luxembourg	-	-	-	-	-	-	2	-	2
Netherlands	-	-	-	1	-	-	1	-	2
Portugal	-	-	-	-	-	-	1	-	1
United Kingdom	1	-	-	-	-	-	-	-	1
Total	74	(11)	(6)	23	(2)	(1)	60	11	168

3.4 The Computer-Assisted-Telephone-Interview approach (CATI)

A semi-structured approach³⁵ was followed for the conduction of core interviews using standardised questions with multiple-choice answers on one side, and open questions where interviewees can elaborate their answers and add further details and views on the other. The questionnaire was set-up with a view to ensure that the main evaluation criteria and evaluation (sub-) questions would be accurately reflected. Another consideration was to particularly focus on areas or topics where little or less evidence was expected to be available in statistics or literature, such as the existing / emerging market failures or the coherence of State aid rules with the rules applicable to RDI activities that are supported by centrally managed Union funds (e.g. Horizon2020/ Horizon Europe).

After its approval at the end of October, the questionnaire was split, tailored to each stakeholder group, and converted into a format suitable for the chosen CATI approach. This approach allowed the interviewers to use an individual (yet anonymised) weblink to access the questionnaire for each interviewee. At the arranged date and time, the interviewer called the interviewee and entered his or her responses directly into the online tool. Before submitting the results, the interviewees received a pdf copy of their entries for review and correction if necessary. All related data was stored in a secured database on servers located in Germany and has been aggregated and exported via excel file for analysis.

Interview guidelines had been developed for the core questionnaire in order to ensure that both, interviewer and interviewee fully understand its logic and contents. In addition, several internal training sessions were carried out by the Cologne-based core team for this study involving all interviewers located in the sample countries³⁶. The online trainings were provided at the end of September and in early October. The training included instructions into the 2014 revised legal framework for RDI State aid, the available data sources and literature, the application of the CATI online tool and some more general techniques for efficiently sequencing interviews.

3.5 Other interviews (scoping interviews)

The 'core' interviews have been preceded by seven face-to-face scoping interviews involving eight interviewees at relevant Commission services during the month of September 2019. The interviewees were identified in consultation with the DG COMP team, either being experts in State aid rules or in the area of RDI and representing different Commission services.

The purpose of the scoping interviews was for the contractor's team to become familiar with the current mechanisms in place at DG COMP to consult on the State aid rules with the MSAs, to learn about the views on State aid rules by representatives of various Commission services and to discuss topics of particular interest for the evaluation. Another helpful effect was to learn about additional information sources that could be tapped during the course of the desk review.

During the assessment phase, the contents of the scoping interviews proved to be a very valuable source of information as a starting point of the study. As it was a limited

³⁵ See Adhabi, E., & Anozie, C. B. (2017). Literature review for the type of interview in qualitative research. *International Journal of Education*, 9(3), 86-97., p. 89f: "[...] unlike the structured, semi-structured interviews have no rigid adherence. Their implementation is dependent on how the interviewee responds to the question or topics laid across by the researcher.", see also King, N., Horrocks, C., & Brooks, J. (2018). *Interviews in qualitative research*. SAGE Publications Limited.

³⁶ These were staff members of KPMG, Prognos and Paul Jeffrey Associates Ltd. and had been included either in the proposal for this study or the Inception Report with their respective CVs and the declarations requested.

and non-representative group of interview partners, the scoping interviews did not serve as an evidence base for triangulation but rather as a supportive element for the preparation of the evidence collection.

3.6 Task 2: Data analysis

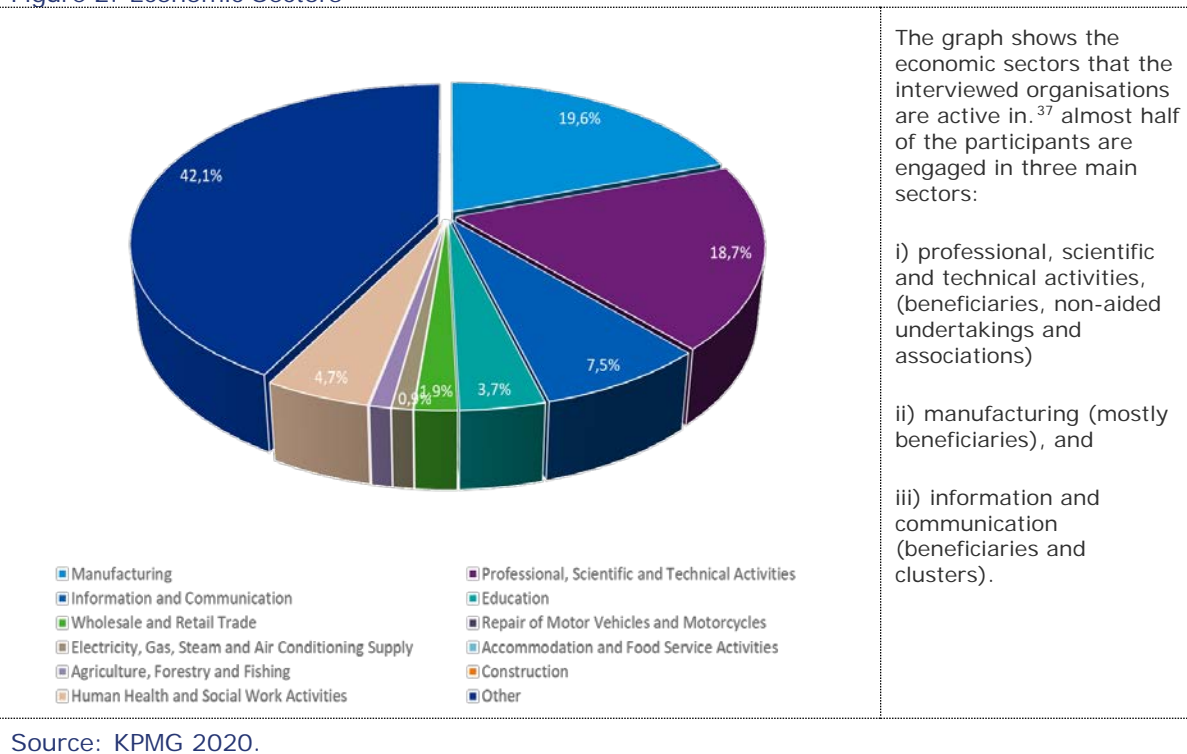
3.6.1 Interview responses collected

A total of **168 interviews** were conducted over the period of Nov. 2019 – Jan. 2020 which equals to an overall response rate of 83%. The stakeholder distribution is the following: 44% Beneficiaries (75 of which 12 were cluster operators and 6 were cluster members), 36% MSA (60), 13% Non-aided undertakings (22 of which one was a cluster operator and 1 a cluster member) and 7% Associations (12).

Of the **60 representatives of MSAs** only a few specified their role during the interviews. A total of 36 representatives of MSAs stated that they represented an 'Aid Granting or Managing Authority', 12 identified themselves as representing 'Local, Municipal or Regional Authority' and 6 ticked the option 'Competition and State aid Control Authority'. Another seven ticked the option 'other' and elaborated on their function identifying themselves as e.g. 'Innovation Agencies' or as 'National State aid Coordinator'.

Beneficiaries, non-aided undertakings, and associations alike were asked to state the **economic sector** they are active in; the graph below shows details.

Figure 2: Economic Sectors



The high number of 'other' can be explained by the fact that many respondents found the categories too broad and thus could not identify themselves with one category.

³⁷ The sectors are in line with Eurostat's NACE Rev. 2.

<https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>

The majority of respondents (90%) indicated to have gained **experience and knowledge of the 2014 RDI State aid rules** with almost equal shares providing either ‘extensive’ or ‘limited’ knowledge. Only 3% responded to have no experience or no knowledge at all.

Most of the projects that have been conducted with State aid provided since 2014 were under Art. 25 (predominantly industrial research and predominantly experimental development) and Art. 28. Surprisingly, the same trend can be seen with regard to projects conducted without State aid – most of them covering the same activities eligible for State aid under Art. 25 and Art. 28.

Turning to the **number per country**, again reference is made to the technical specifications of the study. These stipulate a minimum response rate of 60% per country, whilst a response rate below 70% was prompting a request for explanation on the reasons why.³⁸ After closing the interview period on 5. February 2020 11 out of 12 countries meet the minimum requirement and show a response rate of at least 70%.

The reasons why one country faced particular difficulties, are described below:

Sweden – Overall, the response rate from Sweden has been below expectations with only 6 completed interviews despite contact with 37 organisations and some 50 individuals in those organisations. One positive result was that we obtained extensive responses from two of the aid granting authorities and also from a large enterprise (after two months and several contacts) which has multiple entries in the State aid Transparency Register. A broad range of beneficiaries identified with the help of the State aid Transparency Register was contacted. We also explored - with the aid granting authorities the possibility of getting access to non-aided undertakings, specifically organisations who had made applications but had not received State aid for various reasons. However, we did not get any contacts due to confidentiality and General Data Protection Regulation (GDPR)³⁹ rules.

We have discussed the response rate with the two aid granting authorities, and also with the representative of the large enterprise who have an SME supply chain. They generally thought that for many organisations - and especially SMEs - knowledge of State aid was low and that there would be a difficulty in finding an interviewee.

3.6.2 Approach pursued for data aggregation and triangulation

The data analysis and conclusion on evidence (see chapter 4) was done on the body of **168 interviews** available by the final cut-off date of interviews on 5 February 2020.

The original technical specifications foresaw that: *“at least 60% of the interviewed stakeholders (...) must have replied to each of the interview's question.”*³⁸ First of all, it needs to be underlined that given the nature of the questions which required very specific knowledge, it was difficult to identify stakeholders to answer all the questions. Secondly, the interviewees often had only limited knowledge and were not able to answer all questions. Therefore, it was agreed with the Contracting Authority to accept if interview partners chose to limit their answers to the interview questions they were knowledgeable on. This caused a relatively high rate of ‘not applicable’ answers. At the same time, this decision ensures a high quality of answers provided. Thirdly, some

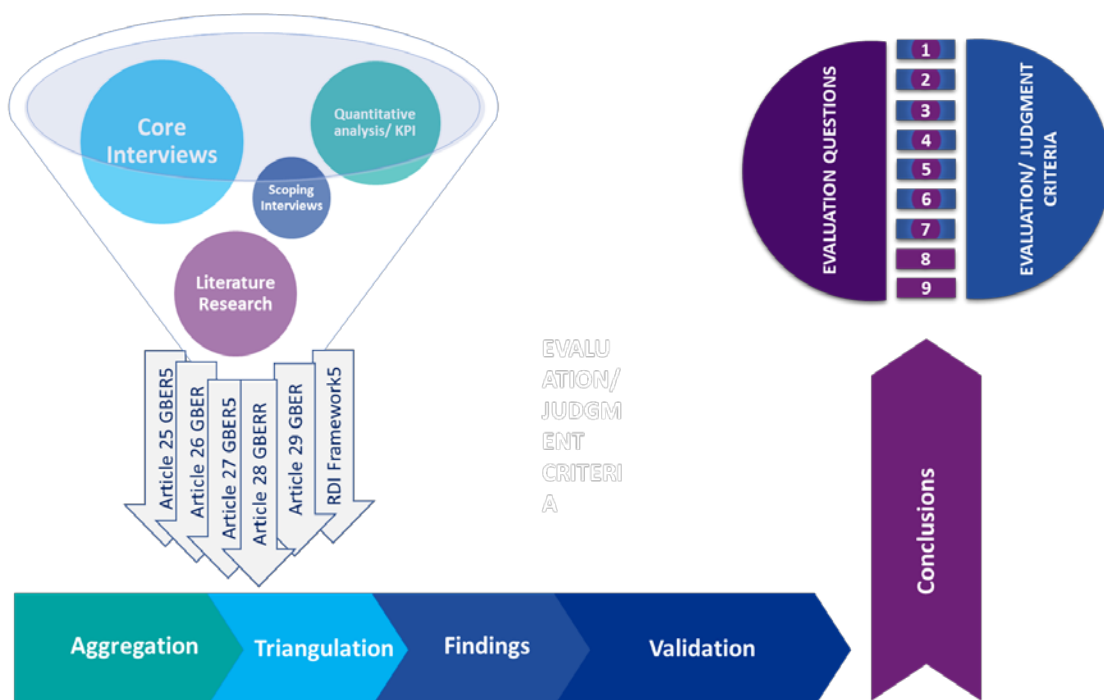
³⁸ Technical specifications, section 4.2, page 12.

³⁹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1–88.

interview partners have declined from the interviews when they saw the specific questions in the questionnaire sent via email upfront. Four interviewees declined during a scheduled interview after they started to give answers to the questionnaire.

In line with the available data sources, study tasks, evaluation sub-questions and the individual aid measure (GBER article) concerned, a comprehensive data funnel was set-up. With the help of the Evaluation Matrix - turned into the practical tool of an evidence logbook - the different steps in terms of data aggregation, triangulation and validation could all be performed in a structured manner and within one file. See the following figure 3 for illustration of the process.

Figure 3: Processing collected information



Source: KPMG 2020.

The **evidence logbook** in form of a comprehensive excel workbook was stored at the study's share point and fed by all team members (in parallel). This file was populated with relevant statements found in literature and interviews and by other relevant information identified, including the KPIs.

As a qualitative element within the semi-structured interview approach, 33 out of 50 questions include an **open statement** option for interviewees to specify the provided quantitative answer and to qualify it. Interviewees made active use of this option, so that a total of 1986 qualified open statements were collected during the interviews.

A structured approach for the analysis of open statements was applied. As a first step, we created general categories by marking all supportive statements in blue and all statements pointing to criticism in respect to the specific evaluation question in red. All neutral statements, thus statements neither pointing to critique nor to positive aspects of the rules, as well as statements not applicable to the relevant interview question were marked in grey. In the report, we quantify the blue, the red, and the grey statements as percentage of open answers of the specific questions. Secondly, we created sub-categories by identifying recurring topics for each evaluation question

and have filtered those recurring statements. Thirdly, the issues (both supportive and critical remarks) recurring in more than 5% of the open statements are described in the specific findings section in Chapter 4 of the report. Often an example representing those recurring statements is included as a so-called 'power quote' in the report. Only in some cases, single open statements are quoted to reveal information that helps to answer the evaluation question. These single open statements constitute an individual judgment by the evaluator and are thus subjective. It is specified in the text if the answer is a single quote from one or a few respondents only.

In general, the logbook proved to be a useful tool to view the emerging overall picture and to identify specific as well as cross-cutting patterns.

More specifically, each piece of information is compared with other data collected on the same topic with a view to either corroborate (validate) its message or to detect a contradiction. After a due consideration of all information (including those from different sources) preliminary findings / responses are formulated for each evaluation question. See details of this approach illustrated on the following page.

Table 2: Structure of evidence logbook for recording and triangulating data

[illegible]

Source: KPMG 2020.

3.6.3 Methodological and operational challenges

In respect of the approach and methodology for the study laid down in the technical specifications and followed by the contractor, there were three main challenges experienced.

The specific and targeted nature of the scope of the study proved to be challenging for the interviewees. Although most of the interviewees were experts within their institution dealing with the RDI funding they sometimes confused State aid for EU funding such as H2020. We also found that many interviewees representing MSAs applied, hence had direct knowledge on only a subset of the aid measures in the scope of the evaluation. Where this was the case, the interviewee was invited to focus on the areas of the questionnaire he/she felt experienced in. For this reason, the subpopulation varies across the different interview questions.

The readiness of individuals to participate in consultative activities e.g. interviews on technical subjects such as the State aid legal framework were limited, especially, if the addressee did not have a large ‘stake’ in the matter concerned. Non-aided undertakings were especially difficult to motivate to take (at least) an hour of their working time for the interview. Other institutions, such as MSAs showed a high interest to participate, however, the interviewees approached sometimes hesitated to take part in the interview due to the knowledge level required to answer the questions. In many organisations, the search for the colleague in the best position to provide answers took weeks. The time period in which the interviews had to be performed (essentially November to January with the Christmas break in between) was not helpful in this respect either.

In some cases, one out of ten people contacted agreed to take part in the study. This ratio of people approached to people participating demonstrates that the interest of eligible interview participants could not be taken for granted. **The desk review did produce limited evidence** – being one of the two principal tasks for collecting quantitative as well as qualitative evidence, considerable resources have been spent by the study team to explore the available sources. The quantitative information is more or less limited to a dataset provided by DG COMP and can hardly be triangulated with information (e.g. on the subject of R&D expenditures) from other data sources such as the ones provided by Eurostat or OECD. Moreover, the Transparency Register was only set-up in 2016 and does not allow for the creation of time series when trying to compare the currently applicable rules (2014 – 2020) with those applicable in 2007 – 2013). Similarly, a comprehensive literature review did not reveal many publications that were truly relevant and useful for this study. This is due to the short time period of only four to five years since the last the revision of the rules, as well as the level of detail addressed by the evaluation questions. A topic such as market failures in RDI is obviously well covered in the literature. However, when it comes to the question, as to whether the GBER Art. x, y or z would effectively address the given market failures over time, there is hardly any statement.

4 Evidence

4.1 Effectiveness

Effectiveness refers to the degree to which the objectives of a given measure are achieved. In order to reflect the broad range of objectives, this evaluation criterion was linked to four (out of nine) evaluation questions as well as three (out of seven) judgment criteria. According to the technical specifications, the aim of the 2014 revised rules *“is to translate the principles of the State Aid Modernisation strategy into tangible policies.”* Simply speaking, *“the general objective of RDI aid is the promotion of RDI in the Union”*⁴⁰, thus, the revised State aid rules should facilitate the provision of ‘good aid’, which is well-designed, targeted at identified market failures and pursuing objectives of common interest. Such aid should be proportionate and as less distortive as possible i.e. does not create undue distortion of competition. Aid leading to such effects instead would be classified as ‘bad aid’, likely to discourage privately funded research, development and innovation activities and to prevent or delay necessary adjustments in view of market developments. Moreover, the rules should facilitate the increase of public and private investments and activities in RDI in order to support Member States to spend three per cent of their national GDP into RDI activities.

4.1.1 Evaluation Question 1

EQ1: To which extent have the State aid rules on investment aid for RDI infrastructure, aid for innovation clusters and innovation aid for SMEs affected the uptake of the relevant activities without unduly distorting competition? In particular, about each set of rules in the above three areas, how much did the State aid rules help to:

- a. Address an underlying market failure (and which market failures?)
- b. Increase public investments
- c. Increase private investments
- d. Increase the uptake of RDI activities of industry, including of SMEs
- e. Avoid undue distortions of competition and trade in the internal market

4.1.1.1 EQ 1.a – Addressing Market Failures

Quantitative evidence: N/A; **Qualitative evidence:** interviews responses, literature

Findings: The interview results confirm the relevance of market failures for the aid measures concerned, referred to in the RDI Framework, namely: investment aid for RDI infrastructure, aid for innovation clusters and innovation aid for SMEs. At the same time, many interview respondents confused ‘competitive challenges’ with actual market failures. The RDI-induced need for capital requires good access to finance, which is a particular challenge for innovative SMEs. Accordingly, the ‘uncertain rate of return’ was confirmed as an important market failure for the aid measures concerned. Only few open statements referred to market failures specifically. However, it was stressed by interviewees elaborating in the open statements that State aid is necessary especially in initial, more risky phases of the research. Many publications addressed the limited ‘access to finance’ for SMEs in the area of RDI. Additional findings were:

- Art. 26 ‘Investment and aid for research infrastructure’: With regard to Art. 26, ‘Global competitive challenges’ were seen to be of highest importance by 57% of the respondents.
- Art. 27 ‘Aid for innovation clusters’: In case of Art. 27, 67% of the respondents identified ‘coordination and network failures’ as the main reason to consider State aid necessary.

⁴⁰ RDI Framework C (2014) 3282, Section 4.1., page 19.

- Art. 28 ‘Innovation aid for SMEs’: With regard to Art. 28, 68% of the respondents consider aid for innovation activities of SMEs as a chance to overcome difficulties associated with an ‘uncertain rate of return’.

Conclusion: The relevance of market failures for the aid measures associated with research infrastructures, innovation clusters and innovation aid for SMEs as referred to in the RDI Framework can be confirmed. The ‘uncertain rate of return’ can be identified as the most common reason for beneficiaries to consider State aid necessary. The open statements revealed that the interviewees thought so especially in the initial phase of research.

Core interviews – For enquiring about the current market failures⁴¹ and the degree to which those were seen relevant to the specific aid measures concerned here (GBER Art. 26, 27, and 28), **Q33** asked for the main reasons for applying for State aid, including the existence of a market failure. The responses are presented in the table below.

Q33 ⁴²	What were the main market reasons why you considered State aid necessary to engage in the following RDI measures....?	Uncertain rate of return	Imperfect and asymmetric information	Coordination and network failures	A specific market failure, occurring in my sector/line of business	Global competition	Other
33.1 n=52	R&D projects	69.0%	27.0%	19.0%	37.0%	50.0%	12.0%
NB: multiple responses were possible to this question							
33.2 n=14	Investment in research infrastructure	43.0%	21.0%	36.0%	21.0%	57.0%	7.0%
NB: multiple responses were possible to this question							
33.3 n=9	Setting up/upgrade of innovation cluster	33.0%	33.0%	67.0%	33.0%	44.0%	33.0%
NB: multiple responses were possible to this question							
33.4 n=10	Operation of innovation cluster	60.0%	30.0%	50.0%	40.0%	50.0%	10.0%
NB: multiple responses were possible to this question							
33.5 n=31	Innovation activities of SMEs	68.0%	39.0%	23.0%	45.0%	45.0%	3.0%
NB: multiple responses were possible to this question							
33.6 n=13	Process and organisational innovation	62.0%	38.0%	31.0%	31.0%	31.0%	8.0%
NB: multiple responses were possible to this question							

‘Uncertain rate of return’ was the main determining factor to apply for State aid in view of measures related to operating innovation clusters and conducting innovation activities in SMEs. Meanwhile, ‘coordination and network failures’ appear much more relevant for the set-up/ upgrade of innovation clusters. The notion ‘global competition’ referred to competition challenges that are to be met in the respective market segments, something that sees agreement in all categories.

Open statements – In response to **Q33.1**⁴³, a total of six open statements were given, with five of them emphasising the need for State aid, stressing the complexity

⁴¹ Ibid. According to section 4.2, the given market failures are positive externalities/ knowledge spill-overs, imperfect and asymmetric information, coordination and network failures.

⁴² The interview responses do not add up to 100% as multiple responses were possible to this question.

⁴³ Q33.1: What were the main reasons **why you considered State Aid necessary** to engage in the following RDI measures: (R&D projects (*Multiple responses possible*)).

of research projects and the need for financing especially in the initial phase of research. Only one of them stressed that State aid was not important.

The majority of the 66 responses in response to **Q37**⁴⁴ were rather supportive (42 responses- 64% of the open statements), 7 responses (11%) pointed to weakness of the aid, and 17 (25%) were neutral. The financing received was considered necessary and useful to *cover the riskier phase of the (project) financially*; or to conduct it *in a better scope and pace* as outlined by one interviewee, representing a beneficiary. Another respondent, representing beneficiaries involved in the development of a KET⁴⁵ (product in the field of biofuels) explained the particular need for finance that an innovative company faces in the development of new technologies. *Considering that the existing technology is matured and 'cost-optimised' puts the developer under pressure not only to invent something that is technically functioning, but immediately cost-efficient as well.* This would be almost impossible to achieve in practice without support.

Literature – Several publications pertain to the limited 'access to finance' for SMEs in the area of RDI – stating for instance that *Innovative firms are on average 0.5 points more constrained than their non-innovative counterparts*.⁴⁶ The recently conducted 'Survey on the access to finance of enterprises' showed that innovative companies were more likely to face deteriorating interest rates (for bank loans) than their non-innovative peers.⁴⁷

4.1.1.2 EQ 1.b – Increasing Public RDI Investments

Quantitative evidence: State Aid Scoreboard; **Qualitative evidence:** interview responses

Findings: In terms of public RDI investments, total RDI State aid expenditures under the GBER as well as the RDI Framework with the objective 'Research and development including innovation' rose from EUR 8.9 billion in 2014 to EUR 11.27 billion in 2018 in the EU-28.⁴⁸ When considering the evolution of State aid expenditures channelled through the GBER only, with the objective 'Research and development including innovation', the increase was impressive: in 2014 the total amount of RDI State aid expenditures channelled through the GBER amounted to EUR 3.62 billion – in 2018 this amount almost tripled and reached EUR 9.94 billion in the EU-28. This is a direct result of the enlarged scope of the GBER rule for RDI and could be interpreted as effectively serving the SAM agenda. The 74 open statements given in this regard did not deliver any additional insight as the majority of respondents (84%) could not describe observed changes in public investments or could not establish a causal relationship between the revised State aid rules and public investments. Two statements pointed to many other possible (macroeconomic) factors influencing public and private investments. At the same time, core interview results broadly confirm an investment increase as a result of the revised State aid

⁴⁴ Q37: Has your company carried out additional RDI activities as a result of previously aided RDI activities?

⁴⁵ Key enabling technology.

⁴⁶ From: EC, European Policy Brief – Access to Finance and Innovation, April 2017, (page 2).

⁴⁷ E.g. EC DG GROW, Survey on the access to finance of enterprises (SAFE), 2019, page 131.

⁴⁸ The figures were obtained from data provided by DG COMP. The calculation follows the methodology in the State aid Scoreboard (https://ec.europa.eu/competition/state_aid/scoreboard/index_en.html) with the objective 'Research and development including innovation'. It includes amounts spent under the following measures: **GBER 2008**: Aid for consultancy in favour of SMEs (Art. 26), Aid for SME participation in fairs (Art. 27), Fundamental research (Art. 31.2.a), Industrial research (Art. 31.2.b), Experimental development (Art. 31.2.c), Aid for technical feasibility studies (Art. 32), Aid for industrial property rights costs for SMEs (Art. 33), Aid for research and development in the agricultural and fisheries sectors (Art. 34), Aid to young innovative enterprises (Art. 35), Aid for innovation advisory services and for innovation support services (Art. 36), Specific training (Art. 38(1)), General training (Art. 38(2)); **GBER 2014**: Fundamental research (Art. 25(2)(a)), Industrial research (Art. 25(2)(b)), Experimental development (Art. 25(2)(c)), Feasibility studies (Art. 25(2)(d)), Aid for the establishment of research infrastructures (Art. 26), Aid for innovation clusters (Art. 27), Innovation aid for SMEs (Art. 28), Aid for process and organisational innovation (Art. 29), Aid for research and development in the fishery and aquaculture sector (Art. 30); **RDI Framework**.

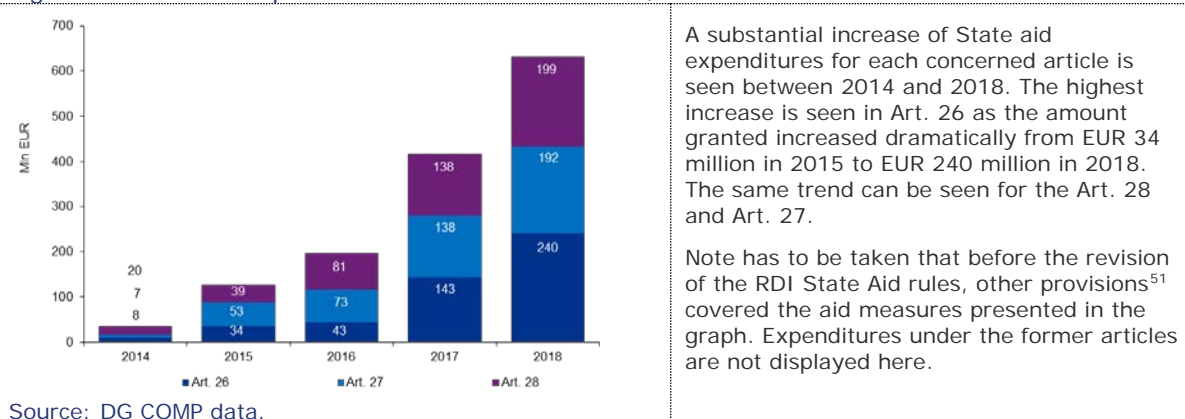
rules. This prudent conclusion was validated by one literature source. The I3U study cautiously concludes from a survey undertaken with 435 innovative firms that they might have easier access to public finance nowadays. It holds for the three aid measures concerned with a few minor differences among the Art. 26-28 observed, such as:

- Art. 26 ‘Investment aid for research infrastructures’: Aid for research infrastructures saw the highest growth rates compared to Art. 27 and 28. This is confirmed by highest agreement rates by 79.1% of interview respondents (Q38.1⁴⁹). The respondents agreed to the question of whether the introduction of this provision contributed to increasing public or private investments into research infrastructure.
- Art. 27 ‘Aid for innovation clusters’: 73% of the respondents noticed an increase in public or private investments related to the newly introduced Art. 27.
- Art. 28 ‘Innovation aid for SMEs’: 71.3% of the respondents observed an increase in public or private investments in the case of aid for innovation activities of SMEs.

Conclusion: Although RDI State aid expenditures rose significantly, there is no clear evidence that a causal relationship between revised State aid rules and the volume of public investment exists. As outlined by two interviewees, many other (macroeconomic) factors apart from the revised State aid rules could possibly have an influence on public and private investments.

Quantitative evidence on the evolution of State aid expenditures⁵⁰ is provided by the State Aid Scoreboard 2018 in general and in more detail, namely according to each GBER article in data provided by DG COMP. The graph below displays block-exempted aid expenditures under Art. 26, 27 and 28 of the GBER during the time period 2014-2018.

Figure 4: State aid expenditures under GBER Art. 26, 27 and 28



Source: DG COMP data.

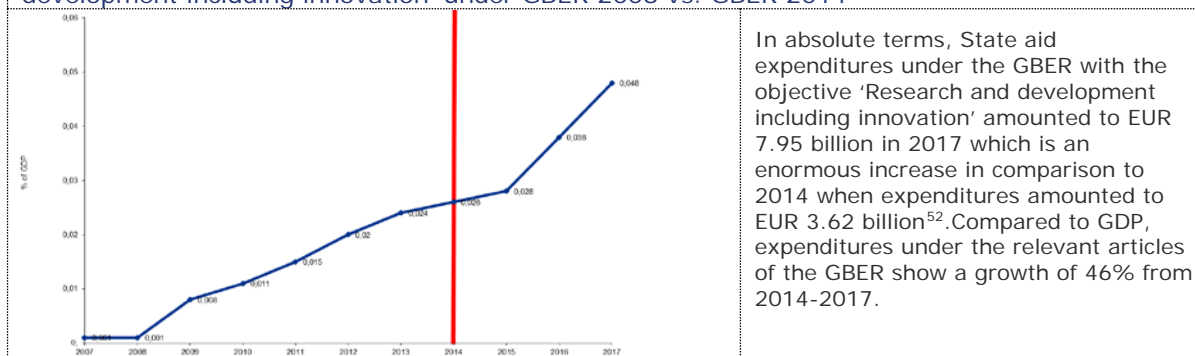
⁴⁹ Q38.1: Have you noticed a change in **public or private RDI investments** in the following areas, as a result of the Aid granted under the 2014 State aid rules for RDI research infrastructure?

⁵⁰ If not stated otherwise, State aid expenditures are in the following taken as the principal component in *public RDI investments* (term stated in the technical specifications without definition). Other components pertain e.g. to Government sector and higher education sector (as referred to among others by Eurostat). Similarly, we will interpret ‘R&D investments’ and ‘business enterprise sector expenditure on R&D’ as *private RDI investments*.

⁵¹ More specifically, GBER 2014, Art. 26 ‘Aid for research and development projects’ was previously covered by GBER 2008, Art. 31 ‘Aid for research and development projects’ and Art. 32 ‘Aid for technical feasibility studies’. Innovation clusters could receive State aid under the former RDI Framework. GBER 2014, Art. 27 ‘Aid for innovation clusters’ was newly introduced. GBER 2014, Art. 28 ‘Innovation aid for SMEs’ was previously covered by GBER 2008, Art. 33 ‘Aid for industrial property rights costs for SMEs’, Art. 36 ‘Aid for innovation advisory services and for innovation support services’ as well as Art. 37 ‘Aid for the loan of highly qualified personnel’ (see also Pesaresi, N., Siaterli, C., Van de Castele, K., & Flynn, L., Leuven: Claeys &

Expenditure under the three Art. 26, 27 and 28 showed a substantial increase between 2014 and 2018. The highest increase was seen in Art. 26 with a sharp increase from EUR 43 million in 2016 to EUR 143 million in 2017. The other two articles show a sharp increase as well but to a lesser extent.

Figure 5: Evolution of Aid awarded under block exemption with the objective 'Research and development including innovation' under GBER 2008 vs. GBER 2014



Source: State Aid Scoreboard 2018.

It can thus, be concluded that the revised GBER rules proved not only to be 'applicable' in practice but emerged as the major gateway for RDI State aid with increasing amounts spent. This can – at least in parts - be attributed to the revisions made in 2014 as those substantially enlarged the *horizontal* and *vertical* scope of the 2008 GBER⁵³. In respect of the aid measures, brought under the 2014 GBER, e.g. for support of innovation clusters individual notification thresholds had been increased to EUR 7.5 million. Aid for innovation clusters has furthermore been made more flexible. For the measure covering 'aid for research infrastructures' (Art. 26) the notification threshold under the GBER was set at EUR 20 million.⁵⁴ In addition, the article includes a new category of aid as well as an increased scope for aid for pilot projects and prototypes.⁵⁵

Core interviews – Q38⁵⁶ (see table below) asked respondents whether they had noticed a change in public or private RDI investments as a result of the aid granted under the revised rules. The interview results show that in the area of research infrastructure (Art. 26), 79.1% assumed that the rules led to a change, 59.3% held that they did to some extent and 19.8% even viewed the change in public or private RDI investments as comprehensive. In the area of innovation activities for SMEs (Art.

Casteels. (2016). EU Competition Law, Volume IV, PART 3 – Compatibility rules, Chapter 17 – Research, development and innovation, Carlos Tenreiro and Gueorgui Ianakiev, page 563).

⁵² The figures stem from updated Scoreboard data provided by DG COMP and differ slightly from the ones displayed in the publicly available State aid Scoreboard 2018 (https://ec.europa.eu/competition/state_aid/scoreboard/index_en.html): They amount to EUR 3.63 billion instead of the above-displayed 3.62 billion in 2014 and to EUR 7.42 billion instead of EUR 7.95 billion in 2018.

⁵³ See the following publication for a comprehensive overview of the changes introduced in detail: Pesaresi, N., Siaterli, C., Van de Castele, K., & Flynn, L., Leuven: Claeys & Casteels. (2016). EU Competition Law, Volume IV, PART 3 – Compatibility rules, Chapter 17 – Research, development and innovation, Carlos Tenreiro and Gueorgui Ianakiev. By 'horizontal increase in the scope' of the GBER, the modification of relevant definitions and compatibility conditions, as well as enlargement of number of RDI measures covered by the Regulation allowing to cover a wider array of activities is meant. By 'vertical increase of the scope' a general increase of the notification threshold is meant., see p. 566

⁵⁴ Ibid, page 569

⁵⁵ EC: Competition policy brief – Supporting R&D and innovation in Europe: _ new State aid rules https://ec.europa.eu/competition/publications/cpb/2014/005_en.pdf

⁵⁶ Q38: Have you noticed a change in public or private RDI investments in the following areas as a result of the aid granted under the 2014 State aid rules for RDI....?

28), 73% of the interviewees concluded that the rules led to a change, 56.3% held that the change was only to some extent and 16.7% even believed that the rules led to a comprehensive change in public or private RDI investments. Furthermore, the interview results indicate that in the area of innovation clusters (Art. 27), 71.3% noticed a change in RDI investments, 56.1% to some extent and 15.2% even to a great extent.

Q38	Have you noticed a change in public or private RDI investments in the following areas as a result of the aid granted under the 2014 State aid rules for RDI....?	To a great extent	Some-what	Very little	Not at all
38.1 n=86	Research infrastructure (Art. 26)	19.8%	59.3%	15.1%	5.8%
<i>NB: In total, 141 interviewees responded with 55 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>					
38.2 n=96	Innovation activities for SMEs (Art. 28)	16.7%	56.3%	17.7%	9.3%
<i>NB: In total, 141 interviewees responded with 45 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>					
38.3 n=66	Innovation cluster (Art. 27)	15.2%	56.1%	19.7%	9.0%
<i>NB: In total, 141 interviewees responded with 75 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>					

Breaking down the results by stakeholder groups showed that agreement is highest among associations⁵⁷ and beneficiaries, although the number of respondents for the first stakeholder group was too low.

Q38.1	To a great extent	Somewhat	Very little	Not at all
Research infrastructure (Art. 26)				
Associations (n=3)	33.3%	66.7%	0.0%	0.0%
Beneficiaries (n=33)	27.3%	48.5%	15.2%	9.0%
Cluster (n=9)	0.0%	88.9%	11.1%	0.0%
MSAs (n=41)	17.1%	61.0%	17.1%	4.8%

In case of aid for innovation activities of SMEs, agreement was highest among clusters.

Q38.2	To a great extent	Somewhat	Very little	Not at all
Innovation activities for SMEs (Art. 28)				
Associations (n=4)	0.0%	50.0%	25.0%	25.0%
Beneficiaries (n=35)	14.3%	57.1%	17.1%	11.5%
Cluster (n=13)	23.1%	61.5%	15.4%	0.0%
MSAs (n=44)	18.2%	54.5%	18.2%	9.1%

In case of aid for innovation clusters, agreement is highest among clusters.

⁵⁷ Note should be taken here as well as in all other sections, that the number of associations participating in the interviews has been very small. See section 3.3.1 for details.

Q38.3	To a great extent	Somewhat	Very little	Not at all
Innovation cluster (Art. 27)				
Associations (n=4)	0.0%	75.0%	0.0%	25.0%
Beneficiaries (n=20)	20.0%	45.0%	20.0%	15.0%
Cluster (n=11)	18.2%	72.7%	9.1%	0.0%
MSAs (n=31)	12.9%	54.8%	25.8%	6.5%

Open statements – Statements recorded for **Q38.4**⁵⁸ provided limited insights given that most respondents were either not familiar with the development of public investments (let alone in the specific areas) or indicated that the connection between public RDI investments and State aid rules was weak (74 responses out of 88 responses, thus 84%). Statements therefore were typically neutral: *in some cases, there is a change in public but no private RDI and vice versa*. Only 5 respondents (6%) pointed to a positive development of public investments whereas 9 respondents (10%) expressed that there was no or merely little increase of public investments. The remaining 2 of the 44 MSAs elaborating, noted that not enough time had passed since 2014 to conclude on the effects of State aid rules, especially on innovation clusters.

As mentioned earlier, the majority of respondents is neutral in this topic (in total 74 respondents). As outlined by two interviewees, investment decisions (private or public) were influenced by many different factors such as macroeconomic circumstances (i.e. relatively strong growth in recent years in most Member States). Therefore, establishing a causal relationship between State aid rules and public and private investment is challenging if at all possible, e.g. *one cannot tell whether this increase was affected mainly by the overall strong economic performance or by the change in State aid rules*. More explicit information was gained in terms of private investments as outlined in the next section.

Literature review – One particularly relevant source of literature is the I3U study⁵⁹ which includes deliverable D3.3 'Integration in the Eco-System' which in turn is part of Work-Package 3 (WP3) – Innovation and Access to Finance of the I3U project 'Investigating the Impact of the Innovation Union'. The study refers to four policy instruments aiming at easier access to financing for innovative firms and projects. One of them refers to the evaluated topic particularly, namely the review of the State aid framework for RDI. The study reveals that if implemented correctly, all four policy instruments would lead to enhanced innovation, productivity, competitiveness, and increased R&D investments. As a result, economic growth and sustainability could be achieved. Nevertheless, the study suggests that countries provided with easier access to obtain public support, are still in need of a supportive institutional environment for innovative activities. Finally, the study also concludes that implementing a monitoring of matching operations so that results can be quantified, and new indicators of performance can be built, would allow for a more precise assessment.

The results of the direct impact assessment of the implementation of the GBER are of particular interest for the present evaluation. The authors focus on the effects on private R&D investments. However, they also make one conclusion concerning the

⁵⁸ Q38: Have you noticed a change in **public or private RDI investments** in the following areas, as a result of the Aid granted under the 2014 State aid rules for RDI...? Q38.4: Please specify and provide examples.

⁵⁹ I3U Investigating the Impact of the Innovation Union: Cincera, M., Santos, A. (2018) D3.3 Integration in the Eco-System WP 3 – Innovation and Access to Finance.

evolution of public investments from a panel inquiring 435 “innovative firms’ perception about the importance to make existing public measures easier to obtain”. The results show that from 2013 to 2016 for European innovative firms the importance of making existing public measures easier to obtain, for example, through the reduction of administrative burden, has been decreasing. The authors concluded from this finding: “This trend could mean that public support for innovative firms, after [the Review of the State aid Framework for R&D&I], is easier to obtain”.

4.1.1.3 EQ 1.c – Increasing Private RDI Investments

Quantitative evidence: Eurostat; **Qualitative evidence:** Interview responses

Findings: The available information pointed to an increase in RDI investments generated by the private sector since 2014. Notably, the Eurostat intramural R&D expenditures statistics suggested an overall increase in the EU-28 from EUR 158 billion in 2014 to EUR 186 billion in 2017 (an increase of 15%). This was echoed by the responses received for Q10⁶⁰ and the majority of responses (more than 70%) to Q38⁶¹ in the core interviews, as open statements collected in Q38.4⁶² were rather neutral (84% of the responses) on this topic. The clearest finding was retrieved from a study which is pointing to EUR 2.20 to EUR 2.40 of additional private R&D expenditure invested by the business sector per euro spent by State aid to RDI through GBER.

- Art. 26 ‘Investment aid for research infrastructures’: 77.2% of the respondents noticed an increase in public or private investments related to the newly introduced Art. 26.
- Art. 27 ‘Aid for innovation clusters’: 73% of the respondents noticed an increase in public or private investments related to the newly introduced Art. 27.
- Art. 28 ‘Innovation aid for SMEs’: 71.3% of the respondents observed an increase in public or private investments in the case of aid for innovation activities of SMEs.

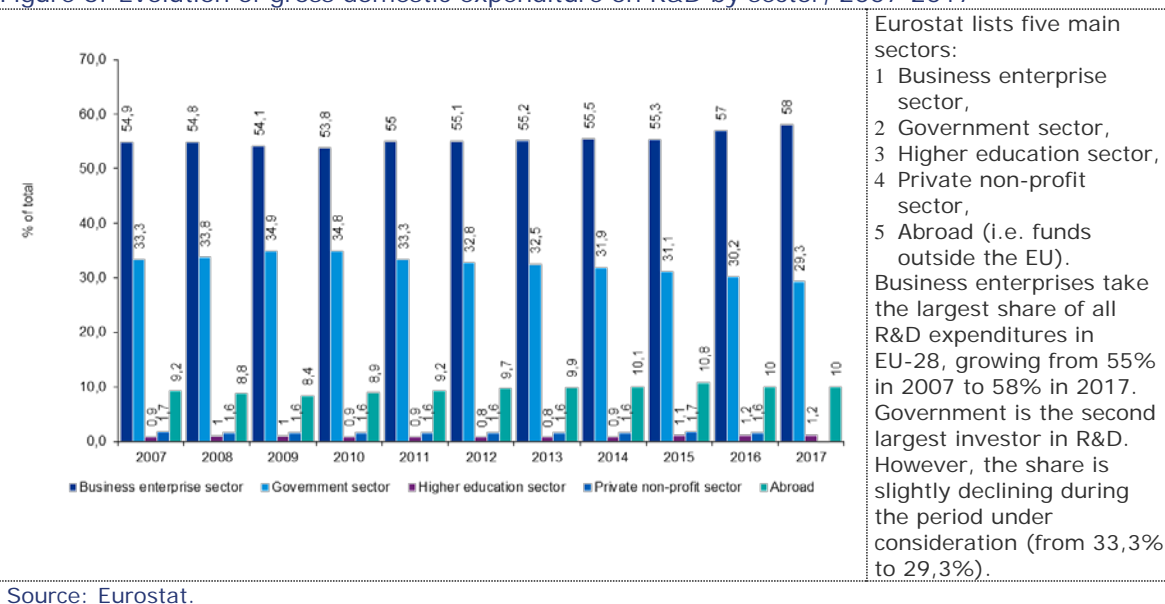
Conclusion: A causal relationship between State aid and private investments can be concluded more clearly than in the case of public investments. According to the I3U study each additional euro of the GBER to RDI stimulates additional private R&D expenditures funded by the business sector of EUR 2.20 to EUR 2.40. This increase of private investments was confirmed by core interview results in which a majority of respondents (above 70%) stated that they noticed a change in public or private investments.

Quantitative evidence was retrieved by the intramural R&D expenditures (GERD) from the Eurostat database. The graph below shows the evolution of gross domestic expenditures by different sectors in the EU-28 over the last ten years.

⁶⁰ Q10: What type of RDI projects have you been conducting **with** State aid provided since 2014?

⁶¹ Q38: Have you noticed a change in public or private RDI investments in the following areas as a result of the aid granted under the 2014 State aid rules for RDI....?

⁶² Q38.4: Please specify and provide examples.

Figure 6: Evolution of gross domestic expenditure on R&D by sector, 2007–2017⁶³

The continuously positive trend seen in R&D investment activities undertaken by the business sector since 2014 suggests that the revised State aid rules at least have not discouraged private RDI investments. In addition, it was due to the private RDI investments majorly that the EU-28 average spending on RDI (measured in % of GDP) saw a decent growth⁶⁴ overall. This in turn partly contributes to achieving the target of investing 3% of GDP in R&D by 2020 (reiterated in the EU 2020 strategy for smart, sustainable and inclusive growth).

Core interviews – In addition to the results for **Q38** presented in section 4.1.1.2, within the more immediate scope of ‘private RDI investments’, **Q10** was inquiring about projects that respondents undertook with State aid. The table below shows the responses received including the three aid measures of particular interest.

Q10 ⁶⁵ <i>n</i> =68	What type of RDI project have you been conducting <u>with</u> State aid (provided since 2014)	%
	R&D projects	78%
	Construction and/or upgrade of research infrastructure	22%
	Set-up/ operation of innovation clusters	19%
	Process and organisational innovation	19%
	Innovation activities for SMEs	47%
	Other	9%
<i>NB: multiple responses were possible to this question</i>		

In regard to the three aid measures concerned, the interview replies allow to conclude that the respondents have benefited from State aid for ‘innovation activities of SMEs’

⁶³ The composition is described in more detail in the Frascati Manual, OECD (referring to the same data as Eurostat): “GERD is total intramural expenditure on R&D performed in the national territory during a specific reference period. GERD is the main aggregate statistic used to describe a country’s R&D activities and covers all expenditures for R&D performed in the economy. Thus, GERD includes domestically performed R&D that is financed from abroad (i.e. from the “Rest of the world”) but excludes funding for R&D performed abroad.” Retrieved from: <https://www.oecd-ilibrary.org/docserver/9789264239012-6-en.pdf?expires=1580493404&id=id&accname=guest&checksum=4329D22D0E25148B8A5533A8CFB794F3>

⁶⁴ According to Eurostat Intramural R&D expenditure (GERD) by sectors of performance the average stands at 2.11% in 2018 versus 2.0% in 2014.

⁶⁵ The results do not add up to 100% as multiple answers were possible in response to this question.

in the first place, followed by ‘construction/ upgrade of research infrastructures’ and lastly the ‘set-up/ operation of innovation clusters’.

The prime message emerging from **open statements** recorded for **Q38.4**⁶⁶ with respect to private investments was a bit clearer than that for the public investments. Nonetheless, similarly to the public investments, the majority of the respondents were either not familiar with the development of private investments (let alone in the specific areas) or indicated that the connection between public RDI investments and State aid rules was weak (74 responses out of 88 responses, 84%). Although responses suggested that State aid has played a positive role by triggering further private investments, e.g. by creating a leverage effect through the obligation to co-invest, there was no clear evidence, that it was because of the rules or the State aid itself. It was further elaborated that private funding kicks-in once the project ends and State aid is reduced. Five critical comments made by interviewees described State aid support as being of a too small amount to have an impact. This could be a matter of rules’ application rather than their scope e.g. in terms of maximum aid intensities allowed.

Another respondent took the view that the rules would hardly be able to have a substantial impact anyway, by stating that: *When State aid rules change, it is just checked to which extent the existing schemes need to be adapted in order to comply. It is (almost) never the case that due to the updated rules new support schemes are set up* (providing new benefits). In addition, it needs to be stressed that not all regions made use of the maximum public co-financing rates. In one interview, it was mentioned that the aid intensities for experimental development were too low but that this was not due to the GBER. In fact, the region applied lower aid intensities since they had strict budgetary constraints and thus preferred to fund more projects than having fewer projects receiving aid with higher aid intensities.

Literature – The I3U study described in section 4.1.1.2 aims at quantifying the effect of the aid disbursed under GBER on leveraging private R&D expenditures from the business enterprise sector. The study is based on an equation that includes a variable measuring R&D expenditures performed by the business sector and funded by government, R&D expenditures performed by government, R&D expenditures in the higher education sector, a proxy for R&D tax incentive as well as an indicator measuring the effect of the amount of State aid disbursed under the GBER for RDI. The data used for the study have been provided by DG COMP as well as are obtained from Eurostat database. The study finds that *“each additional euro of GBER to RDI generates on average an additional private R&D expenditure funded by business sector between EUR 2.20 and EUR 2.40.”*

⁶⁶ Q38.4: Have you noticed a change in **public or private RDI investments** in the following areas, as a result of the Aid granted under the 2014 State aid rules for RDI...? Please specify and provide examples.

4.1.1.4 EQ 1.d – Increasing RDI Activities of Industry/ SMEs

Quantitative evidence: European Innovation Scoreboard; **Qualitative evidence:** Interview responses, literature

Findings: Higher RDI investment amounts result in increased RDI activities which is underpinned by data from the European Innovation Scoreboard. The core interview question (Q32⁶⁷) enquired whether State aid was necessary to carry out different aid activities. Although it varies between the different GBER articles (Art. 26-28), in all cases more than 75% of the respondents agreed with the statement that State aid was necessary to carry out RDI activities. Additionally, 64% of the open statements pointed that additional RDI activities were undertaken by the respondents during the time period considered. About half of them even stated that this was the result of previously aided projects. A finding from the literature also confirmed an uptake of RDI activities as a result of State aid, however without establishing a clear link to the revised RDI State aid rules.

Conclusion: State aid was essential to carry out RDI activities in most of the cases and helped companies and/or research institutes to receive adequate funding. Even after project implementation, positive effects are noticed: Previously aided projects resulted in additional RDI activities. The increase of an uptake of RDI activities of industry, incl. of SMEs can thus be confirmed albeit without quantifying the extent to which this development can be linked to the revised RDI State aid rules.

Quantitative evidence – The European Innovation Scoreboard tracks the behaviour of SMEs in terms of product- or process innovation⁶⁸. The available data pointed to an increase of the share of SMEs introducing product-or process innovation from 29% (2014) to 33% (2018). This development was however not necessarily linked to the revised State aid rules.

Core interviews – Q32⁶⁹ asked respondents whether they consider that State aid was necessary to carry out the RDI activities (see table below) The results show that 93.3% of the respondents considered State aid necessary in the case of development or upgrade of research infrastructure (Art. 26), 33.3% agreed and 60% even strongly agreed. Considering the necessity of State aid for setting up an innovation cluster (Art. 27), 100% of respondents agreed upon this question, 90% even expressed their strong agreement. Equally, 100% of the respondents also assumed that State aid was essential for the operation of an innovation cluster (Art. 27), 90% even strongly agreed upon that. At the same time, the interview results show that 80% of the respondents found State aid necessary in the case of innovation activities of SMEs (Art. 28), 30% agreed and 50% even strongly agreed. As regards process and organisational innovation (Art. 29), the interview results indicate that 77% of the respondents agreed that State aid was necessary for them to engage in this activity,

⁶⁷ Q32: Do you consider that State Aid was necessary **for you to carry out** any of the following RDI activities...?

⁶⁸ Indicator 'SMEs introducing product or process innovations (percentage of SMEs)' from the European Innovation Scoreboard 2019. No. of SMEs who introduced at least one new organisational innovation or marketing innovation. An organisational innovation is a new organisational method in an enterprise's business practices (including knowledge management), workplace organisation or external relations that has not been previously used by the enterprise. A marketing innovation is the implementation of a new marketing concept or strategy that differs significantly from an enterprise's existing marketing methods and which has not been used before (Eurostat) divided by the total no. of SMEs (Eurostat); **Interpretation:** Technological innovation, as measured by the introduction of new products (goods or services) and processes, is a key ingredient to innovation in manufacturing activities. Higher shares of technological innovators should reflect a higher level of innovation activities.

⁶⁹ Q32: Do you consider that State Aid was necessary for you to carry out any of the following RDI activities: 32.1 R&D projects, 32.2 development/upgrade of research infrastructure

38.5% even expressed their strong agreement. Only 23% disagreed that State aid was necessary to carry out process and organisation innovation activities.

Q32	Do you consider that State aid was necessary for you to carry out any of the following RDI activities:	Strongly agree	Agree	Disagree	Strongly disagree
32.2 n=15	Research infrastructure (Art. 26)	60.0%	33.3%	6.7%	0.0%
NB: In total, 15 interviewees responded with 0 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
32.3 n=10	Setting up innovation cluster (Art. 27)	90.0%	10.0%	0.0%	0.0%
NB: In total, 13 interviewees responded with 3 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
32.4 n=10	Operation of innovation cluster (Art. 27)	90.0%	10.0%	0.0%	0.0%
NB: In total, 13 interviewees responded with 3 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
32.5 n=30	Innovation activities of SME (Art. 28)	50.0%	30.0%	13.3%	6.7%
NB: In total, 32 interviewees responded with 2 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
32.6 n=13	Process and organisational innovation (Art. 29)	38.5%	38.5%	23.0%	0%
NB: In total, 13 interviewees responded with 0 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					

Disaggregating the results by stakeholder groups benefitting from aid, hence for beneficiaries and clusters show that most respondents identified State aid most necessary to set up an innovation cluster as seen in the table below.

Q32.1	Strongly agree	Agree	Disagree	Strongly disagree
R&D projects (Art. 25)				
Beneficiaries (n=45)	55.6%	31.1%	8.9%	4.4%
Cluster (n=7)	71.4%	28.6%	0.0%	0.0%

In the case of Art. 26 aid for research infrastructure, agreement was highest among clusters (100%), while 10% of beneficiaries disagreed.

Q32.2	Strongly agree	Agree	Disagree	Strongly disagree
Research infrastructure (Art. 26)				
Beneficiaries (n=10)	60.0%	30.0%	10.0%	0%
Cluster (n=5)	60.0%	40.0%	0.0%	0.0%

In case of Art. 27 aid for setting up an innovation cluster, both beneficiaries and clusters expressed their agreement, while 100% of cluster respondents even strongly agreed.

Q32.3	Strongly agree	Agree	Disagree	Strongly disagree
Setting up innovation cluster				
Beneficiaries (n=4)	75%	25%	0%	0%
Cluster (n=6)	100%	0%	0%	0%

Considering Art. 27 aid for operation of innovation cluster, again both beneficiaries and clusters expressed their agreement, while 100% of cluster respondents even strongly agreed.

Q32.4	Strongly agree	Agree	Disagree	Strongly disagree
Operation of innovation cluster (Art. 27)				
Beneficiaries (n=4)	75%	25%	0%	0%
Cluster (n=6)	100%	0%	0%	0%

Regarding Art. 28 aid for the innovation activities of SMEs, beneficiaries judged more cautiously by agreeing to a lesser extent.

Q32.5	Strongly agree	Agree	Disagree	Strongly disagree
Innovation activities of SME (Art. 28)				
Beneficiaries (n=25)	44.0%	32.0%	16.0%	8.0%
Cluster (n=5)	80.0%	20.0%	0.0%	0.0%

Open statements were collected by Q37⁷⁰ although not focused on the specific aid measures concerned. In total, 66 open statements were given with 42 confirming that additional RDI activities were carried out and 7 stating that this was not the case. Meanwhile, 17 were not applicable since that they did not answer the specific question asked. Of the 42 interviewees confirming additional RDI activities, 20 elaborated further and typically stated that they *"carried out additional RDI activities as a result of previously aided"*. Another interesting point was raised by the following comment: *"Applying for State aid helps to think your project (ideas) through"*. This suggests that projects receiving State aid were more thoroughly prepared and possibly better performing than others. This should be kept in mind as many open comments followed in the sections below criticising the cumbersome process and administrative burden that one needs to overcome in order to receive State aid.

Literature – Additional information sources have been identified during the desk research, such as the 2019 EU Industrial R&D Investment Scoreboard⁷¹. A 4.7%-increase of 'industrial R&D investments' undertaken by companies in the EU between 2018 and 2019 is indicated by the EU industrial scoreboard, albeit no link can be established to the State aid rules under evaluation. In comparison to other regions in the world, it can be seen that the RDI investment growth in the EU is rather at the lower end of the scale.⁷²

⁷⁰ Q37: Has your company carried out additional RDI activities as a result of previously aided RDI activities?

⁷¹ Published by DG RTD in cooperation with the JRC. See https://iri.jrc.ec.europa.eu/sites/default/files/2019-12/SB2019_Final_18Dec2019.pdf

⁷² E.g. US 10.3%, China 26.7% respectively. Ibid, page 6.

4.1.1.5 EQ 1.e – Market Distortion/ Other Negative Effects Resulting from State aid

Quantitative evidence: statistics (diff. sources); **Qualitative evidence:** Interview responses

Findings: Market distortion or other negative effects were rarely mentioned. As the share of block exempted RDI aid expenditures is extremely low compared to private RDI investments, a potential market distortion or other negative effect of the evaluated State aid would seem unlikely. The results of core interviews supported an overwhelming majority (often exceeding 90%) of respondents who did not observe negative effects of the granted State aid with only minor differences occurring among specific aid measures. As the evidence from the open statements showed, respondents either did not see any negative effect or found that they were outweighed by positive ones (49%). The other half of the statements referred to negative effects associated with the selection of beneficiaries of State aid which does not directly relate to the rules themselves or did not point out actual negative effects. No findings were retrieved from the literature.

Conclusion: The study did not find any evidence suggesting that State aid provided under the relevant articles of the GBER had any material negative impact on competition or crowded-out private investments. Negative effects appear to be outweighed by positive ones in view of respondents.

Quantitative evidence – The team did not identify a suitable quantitative indicator for this question, but exemplary descriptive statistics suggest that State aid for RDI is ‘a drop in the ocean’ when compared to the overall amounts spent by public and private institutions on R&D. The table below shows some exemplary figures for the EU-28 in 2017. Intramural R&D expenditures (GERD) by sectors of performance and source of funds are displayed. The first line shows the variable for all sectors as source of funds to all sectors as sectors of performance and thus displays overall R&D expenditures. The magnitude of all other variables in comparison to overall R&D expenditure are given on the right.

Table 3: Comparison of R&D expenditures vs RDI State aid in the EU-28

	EUR million	%
Intramural R&D expenditures (GERD) ⁷³	320,029.9	
Intramural R&D expenditures (GERD) by the business enterprise sector	186,244.11	58.2%
Intramural R&D expenditures (GERD) by the government sector	93,818.79	29.32
State aid to research and development including innovation ⁷⁴	8,814.9	2.75%
GBER recorded State aid (total)	7,946.44	2.48%
GBER recorded State aid by Art. 26	142.70	0.045%
GBER recorded State aid by Art. 27	137.60	0.043%
GBER recorded State aid by Art. 28	137.85	0.043%

Source: Eurostat, State Aid Scoreboard 2018, DG COMP 2019 Dataset.

This is not to say that no negative effects would occur⁷⁵ in individual cases. But the fact that just about one percent of R&D expenditure at Member State level (and far less in respect of individual aid measures / sectors) are State aid expenditures renders impactful negative effects unlikely at macro-level.

Core interviews – Q36 asks the interviewees whether they had experienced negative effects as a result of the State aid granted for different aid categories (see table below) For all given measures the answer of at least 85% of respondents was 'no'. Given however that about 10% of interviewees indicated to have experienced negative effects (for measures funded under Art. 26, 27, and 28) the open statements have been screened for concrete examples.

⁷³ The variable 'Intramural R&D expenditure (GERD) by sectors of performance and source of funds' for EU-28 in Eurostat was used. As source of funds 'All sectors' was used and as sector of performance 'All sectors' was used. In the two lines below, 'Business sector' and 'Government sector' were used as source of funds, respectively.

⁷⁴ The variable 'Aid by main objectives in current prices' (Absolute amounts) with the objective 'Research and Development including innovation' for EU-28 in the State Aid Scoreboard 2018 was used.

⁷⁵ They could for example occur at micro-level e.g. within a region, such support to one of a few competing undertakings could discourage others from investing in this particular segment.

Q36	In your experience, did State aid for RDI activities granted under the 2014 State aid rules lead to negative effects on competition, in particular in the case of State aid granted for...	Yes	No
36.3 n=44	investment for research infrastructure (Art. 26)	11.1%	88.9%
NB: In total, 99 interviewees responded with 55 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
36.4 n=44	set up/upgrade and operation of innovation clusters (Art. 27)	14.7%	85.3%
NB: In total, 132 interviewees responded with 88 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
36.5 n=44	process and organisational innovation (Art. 29)	8.9%	91.1%
NB: In total, 117 interviewees responded with 73 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
36.6 n=45	innovation activities of SMEs (Art. 28)	11.7%	88.3%
NB: In total, 96 interviewees responded with 51 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			

Disaggregating the results above by stakeholder groups shows that, as expected, the group of non-aided undertakings is most likely to ascertain negative effects on competition.

Q36.3 Investment for Research Infrastructure	Yes	No
Associations (n=6)	0.0%	100%
Beneficiaries (n=38)	15.8%	84.2%
Cluster (n=13)	7.7%	92.3%
MSAs (n=41)	7.3%	92.7%
Non-Aided (n=10)	20.0%	80.0%

With 40% the above-mentioned scepticism by non-aided undertaking is highest in the case of aid for the set-up/ upgrade and operation of innovation clusters.

Q36.4 set up/upgrade and operation of innovation clusters	Yes	No
Associations (n=6)	0.0%	100%
Beneficiaries (n=24)	16.7%	83.3%
Cluster (n=11)	9.1%	90.9%
MSAs (n=29)	13.8%	86.2%
Non-Aided (n=5)	40.0%	60.0%

Consensus across almost all stakeholder groups becomes apparent with regard to the aid measure for process and organisational innovation. At the same time, it is interesting that 22% of the respondents answered in **Q32**⁷⁶ in section 4.1.1.4 that State aid was not necessary to carry out process and organisational innovation. One would expect to see more negative effects in case of aid granted that was not actually judged to be necessary by a considerable number of respondents.

⁷⁶ Q32: Do you consider that State Aid was necessary **for you to carry out** any of the following RDI activities...?

Q36.5 process and organisational innovation	Yes	No
Associations (<i>n</i> =5)	0.0%	100%
Beneficiaries (<i>n</i> =32)	9.4%	90.6%
Cluster (<i>n</i> =10)	0.0%	100%
MSAs (<i>n</i> =32)	9.4%	90.6%
Non-Aided (<i>n</i> =11)	18.2%	81.8%

In case of the aid measure concerning innovation activities of SMEs consent is exceptionally high among associations and clusters.

Q36.6 innovation activities of SMEs	Yes	No
Associations (<i>n</i> =6)	0.0%	100%
Beneficiaries (<i>n</i> =37)	10.8%	89.2%
Cluster (<i>n</i> =14)	7.1%	92.9%
MSAs (<i>n</i> =42)	14.3%	85.7%
Non-Aided (<i>n</i> =12)	16.7%	83.3%

Open statements –Q36.7 asked whether the State aid granted under different GBER articles had any negative effects on competition. In total, 102 open statements were given in response. Almost half, namely 50 (49%) of the interviewees giving statements pointed out that they did not experience any distortion of competition due to State aid or think that any negative effect is outweighed by a positive effect. In this case, 14 statements (14%) referred to possible negative effects and 38 (37%) were neutral or not applicable in the sense that they did not refer to negative effects. Overall, the comments mostly pertained to more general aspects and did not specifically address the issue of aid for research infrastructure, innovation clusters, process and organisational innovation or for innovation activities of SMEs themselves. Here, 18 out of all 102 statements given, reflected on the way how the beneficiaries of State aid are selected. A typical statement given in this regard was *"We have noticed that many times the 'not so good' RDI projects receive the aid because they are good with bureaucracy while on the other hand the 'excellent' RDI projects do not receive the State aid because they do not know how to efficiently deal with all the bureaucracy needed"*. Thus, examples given on negative effects, proved to be rather complaints of 'the wrong' companies being awarded the State aid by the respective member States e.g. *the ones who know how to deal with bureaucracy rather than the ones offering excellent RDI projects*. This, however, does not directly relate to the State aid rules but rather to Member States' internal rules and procedures. The same topic pertains with respect to industrial research and experimental development and is addressed in sections 4.1.4.2 and 4.1.4.4.

In summary, the open statements underlined the positive results provided to the sub-sections of **Q36**⁷⁷ before and indicate that the majority of interviewees does not see State aid to have considerable market distorting or other negative effects.

Literature – No findings could be collected in the literature on market distortions through State aid on the specific topics of interest in EQ1.e. Whereas there are valuable papers on potential negative effects in the aftermath of public RDI

⁷⁷ Q36: In your experience, did State Aid for RDI activities granted under the 2014 State Aid rules lead to **negative effects on competition**, in particular in the case of State Aid granted for...?

investments available⁷⁸ - these unfortunately, are often 'outdated' and generally do not refer to specific aid measures concerned.

4.1.2 Evaluation Question 2

EQ 2: To which extent has the possibility to combine, if necessary, aid to innovation clusters with innovation aid for SMEs under the State aid rules contributed to effectively address underlying market failures targeted by the two measures to stimulate innovation activity of the cluster's users, in particular SMEs (without unduly distorting competition). In particular, how much has the combined use of these two sets of rules facilitated:

- 2.1.a Increase of public investments in clusters and RDI activities of SMEs
- 2.1.b Increase of private investments in clusters and RDI activities of SMEs
- 2.1.c Increase of the RDI activities of the SMEs
- 2.1.d Increase of RDI collaboration activities between various users of a cluster
- 2.1.e Avoid distortions of competition in the internal market in the market of clusters' activities and in the markets where the SMEs are active
- 2.1.f Avoid crowding out of private investors in the market of clusters
- 2.2. Is there evidence of lack of clarity or misunderstanding among aid granting authorities and/or aid beneficiaries, that SMEs which are users of clusters aided under Art. 27 GBER can lawfully benefit from aid in line with Art. 25, 28 and 29 of the GBER?

4.1.2.1 EQ 2.1.a Increase of public investments in clusters and SME activities

Quantitative evidence: State Aid Scoreboard; **Qualitative evidence:** Interview responses, literature

Findings: The State Aid Scoreboard statistics show steadily growing amounts of State aid expenditures channelled through the GBER articles concerned (Art. 27 and Art. 28). The relevant interview question Q26⁷⁹ asked whether the possibility for a Member State to provide State aid to both, cluster operators and cluster users has been successful in supporting investments into those clusters as well as in supporting RDI activities of SMEs. In response, the majority of respondents saw a positive relation between the combination of the two GBER articles concerned and the evolution of State aided investments into innovation clusters. This was particularly true for the stakeholder groups of cluster members and business associations, whereas MSAs showed to be much more sceptical. The correlation is confirmed in the literature, as one finding suggested that the possibility to combine Art. 27 and Art. 28 provided room for related investments. No open statements were collected.

Conclusion: An increase of public investments in clusters and RDI activities of SMEs is broadly confirmed by the majority of respondents and by one finding in the literature. At the same time, note has to be taken that 43.5% of the respondents did not see an increase in public investments in clusters.

Quantitative evidence – The evolution of State aid expenditures since 2014 is presented below. Art. 27 on 'aid for innovation clusters'⁸⁰ for instance was newly introduced to the GBER, while Art. 28 'innovation aid for SMEs' merged three former categories into a new one.⁸¹

⁷⁸ Such as for instance, Hud P., Köhler C., Licht G. & Peters B. (2012) Ökonomische Bewertung von staatlichen Investitionen in Forschung und Innovation. Zentrum für Europäische Wirtschaftsforschung GmbH, Studien zum deutschen Innovationssystem 15/2012 describing different degrees of 'crowding-out-effects' or the (2007) Monitoring study regarding the State aid Framework for Research, Development and Innovation, by DG RTD (Logotech et al) describing the underlying risks of distortion of competition e.g. risks depending on the amount of aid a Member State wants to grant, but also on the question how far the research project is away from the market.

⁷⁹ Q26: Do you think that the possibility for a Member State to provide State Aid to both, cluster operators and cluster users has been successful in supporting **investments into those clusters**? In particular: ...?

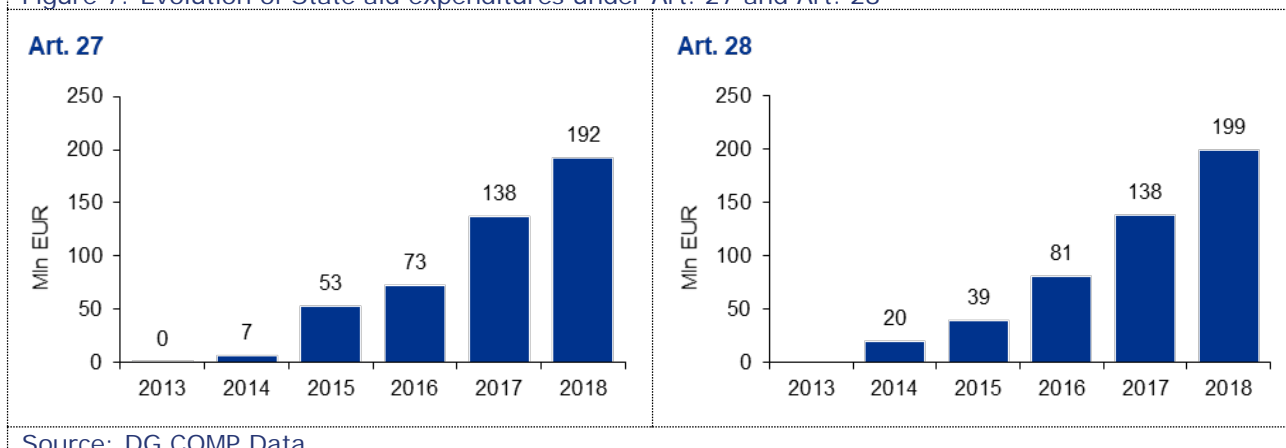
⁸⁰ The element already existed in the RDI Framework before 2014 but was included in the GBER with the revision of the State aid Rules in place since 2014.

⁸¹ See GBER (2008), Art. 33 'industrial property rights costs for SMEs', Art. 37 'aid for the loan of highly qualified personnel' and Art. 36 'aid for innovation advisory services'.

The growth rates shown by both aid measures, Art. 27 and Art. 28 reflected the typical steep curve of newly introduced elements in the GBER, which are increasingly known and accepted. This holds particularly for Art. 27 where the growth seen in annual expenditures amounts was high especially between 2014 and 2015.

The aid expenditure patterns of the newly created Art. 28⁸² show a similar trend with constantly rising expenditures between 2014 and 2018.

Figure 7: Evolution of State aid expenditures under Art. 27 and Art. 28



Core interviews – Q26 asked respondents whether they thought that the possibility for a Member State to provide State aid to cluster operators and cluster users has been successful in supporting investments into those clusters (see table below). The interview results show that 56.5% of respondents agreed that it helped to increase public investments in innovation clusters, while 43.5% disagreed. The results also indicate that 65.1% concurred that it helped to increase public investment in RDI activities of SMEs who were members/users of the cluster, while 34.9% disagreed upon that question.

Q26	Do you think that the possibility for a Member State to provide State aid to both, cluster operators and cluster users has been successful in supporting investments into those clusters? In particular:	Yes	No
26.1 n=46	Did it help to increase <i>public</i> investments in innovation clusters?	56.5%	43.5%
NB: In total, 89 interviewees responded with 43 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
26.3 n=43	Did it help to increase <i>public</i> investment in RDI activities of SMEs who are members/users of the cluster?	65.1%	34.9%
NB: In total, 88 interviewees responded with 45 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			

The study team took a closer look into the responses received per stakeholder group. The below table reveals that the agreement rates to **Q26.1** and **Q26.3** (see table above) were mainly driven by the responses provided by cluster members (83% and 91%) followed by business associations (50% each). The MSAs proved to be the most sceptical in this respect. The two tables below show that only 46.4% of the MSAs

⁸² The individual aid measures covered under Art. 28, in particular "for obtaining, validating and defending patents and other intangible assets, for the secondment of highly qualified personnel, and for acquiring innovation advisory and support services" (see Pesaresi, N., Siaterli, C., Van de Castele, K., & Flynn, L., Leuven: Claeys & Casteels. (2016). EU Competition Law, Volume IV, PART 3 – Compatibility rules, Chapter 17 – Research, development and innovation, Carlos Tenreiro and Gueorgui Ianakiev, page 563) already existed under the GBER 2008. Under the GBER 2014 all measures were integrated into one article with some changes to the applicable compatibility conditions such as aid intensities etc.

agreed that the RDI State aid rules led to an increase in public investments in innovation clusters, whereas the associations and cluster members showed much higher shares of agreement (respectively 60.0% and 76.9%).

Q26.1 increase <i>public</i> investments in innovation clusters	Yes	No
Associations (<i>n</i> =5)	60.0%	40.0%
Cluster (<i>n</i> =13)	76.9%	23.1%
MSAs (<i>n</i> =28)	46.4%	53.6%

A similar situation exists for the increase of public investments in RDI activities of SMEs being member of a cluster. Here, only around 55.6 % of the MSA representatives saw a positive impact of the State aid rules as compared to 75.0 % and 83.3 % by the association representatives and the cluster members, respectively.

Q26.3 increase <i>public</i> investment in RDI activities of SMEs being member of a cluster	Yes	No
Associations (<i>n</i> =4)	75.0%	25.0%
Cluster (<i>n</i> =12)	83.3%	16.7%
MSAs (<i>n</i> =27)	55.6%	44.4%

Open statements – No open statements were collected for this question.

Literature – The possibility to combine Art. 27 for the cluster operator with innovation aid granted for cluster users under Art. 28, is understood to provide more opportunity for related investments. In addition, the EU competition law compendium praised the new Art. 28 for consolidating and simplifying the rules previously in place for granting innovation aid for SMEs.⁸³

4.1.2.2 EQ 2.1.b Increase of private investments in clusters and activities

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The interview results showed that the respondents did majorly agree that the State aid provided is likely to have had a positive effect on the evolution of private investments into the innovation clusters (69.8%) and RDI activities of SMEs participating in innovation clusters (71.8%). Again, the MSAs were somewhat more sceptical in comparison to the other respondent, mainly cluster members and business associations. No evidence on the effects of the rules in respect of these particular aid measures could be identified in neither open statements nor literature. No evidence in the literature was collected.

Conclusion: Based on the evidence from the interviews, it can be indicated that the combined use of the rules had a rather positive effect on private investments in innovation clusters and SMEs. It is noticeable that the agreement in case of private investments was higher than in the case of public investments in the previous section.

Quantitative evidence – N/A

Core interviews – **Q26**⁸⁴ asked respondents whether they thought that the possibility for a member State to provide State aid to cluster operators and cluster

⁸³ Pesaresi, N., Siaterli, C., Van de Castele, K., & Flynn, L., Leuven: Claeys & Casteels. (2016). EU Competition Law, Volume IV, PART 3 – Compatibility rules, Chapter 17 – Research, development and innovation, Carlos Tenreiro and Gueorgui Ianakiev, page 564

⁸⁴ Q26: Do you think that the possibility for a Member State to provide State Aid to both, cluster operators and cluster users has been successful in supporting **investments into those clusters**? In particular:...?

users has been successful in supporting investments into those clusters. In comparison to the sub-questions **Q26.1**⁸⁵ and **Q26.3**⁸⁶ that have been discussed above, responses to a question whether it helped to increase private investments in innovation clusters show a higher agreement rate (69.8%) in comparison to 56.5% on the public investments. A majority of 71.8% of the respondents answered positively on whether it helped to increase private investment in RDI activities of SMEs who are users of clusters, while 28.2% answered negatively. Thus, it can be concluded that State aid was indeed successful in supporting private investments into innovation clusters including both, the clusters as such, and the RDI activities of its users.

Q26	Do you think that the possibility for a Member State to provide State aid to both, cluster operators and cluster users has been successful in supporting investments into those clusters? In particular:	Yes	No
26.2 n=43	Did it help to increase <i>private</i> investments in innovation clusters?	69.8%	30.2%
NB: In total, 88 interviewees responded with 45 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
26.4 n=39	Did it help to increase <i>private</i> investment in RDI activities of SMEs who are users of a cluster?	71.8%	28.2%
NB: In total, 87 interviewees responded with 48 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			

Again, the responses were disaggregated by stakeholder group: similarly, to the question before, it seems that cluster and business associations were the most positive respondents, whilst MSAs were less so.

Q26.2 <i>private</i> investments in innovation clusters	Yes	No
Associations (n=5)	80.0%	20.0%
Cluster (n=11)	81.8%	18.2%
MSAs (n=27)	63.0%	37.0%

In case of private investment in RDI activities of SMEs who were users of a cluster, agreement was highest among associations (100%), while MSAs evaluated more cautiously by agreeing to a lesser extent.

Q26.4 <i>private</i> investment in RDI activities of SMEs being member of a cluster	Yes	No
Associations (n=4)	100.0%	0.0%
Cluster (n=11)	81.8%	18.2%
MSAs (n=24)	62.5%	37.5%

Open statements – No open statements were collected for this question.

Literature – No specific statement was identified in the literature.

⁸⁵ Q26.1: Do you think that the possibility for a Member State to provide State Aid to both, cluster operators and cluster users has been successful in supporting **investments into those clusters**? In particular: Did it help to increase *public* investments in innovation clusters?

⁸⁶ Q26.3: Do you think that the possibility for a Member State to provide State Aid to both, cluster operators and cluster users has been successful in supporting **investments into those clusters**? In particular: Did it help to increase *public* investment in RDI activities of SMEs who are members/users of the cluster?

4.1.2.3 EQ 2.1.c Increase of RDI activities of SMEs

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The majority of respondents (82.6%) reckoned that the possibility to provide State aid to both, cluster operators as well as its users, has led to an increase of RDI activities of the users which are SMEs. More specifically, 41.3% confirmed this effect by replying ‘to a great extent’. No specific information was obtained in relation to the nature of such activities. One critical statement collected in the open comments sections of core interviews pointed to the cumbersome formalities regarding the proof of being a SME, which was especially difficult in the specific country where most of the SMEs were “non-autonomous” companies. Overall, the open statements were supportive, as 33% expressed positive statements regarding RDI collaboration activities in general. No evidence in the literature was collected.

Conclusion: Overall, the possibility to combine aid to innovation clusters with innovation aid for SMEs appeared to have a positive effect on RDI activities, particularly because of the enhancement of collaboration between different parties.

Quantitative evidence – N/A

Core interviews – Q29 focused on the possibility of providing State aid to cluster operators as well as the cluster users and if this specifically has led to an increase of RDI activities of SMEs, which are members of the cluster (see table below) The interview results show that 82.6% believed that there has been an increase of RDI activities, 41.3% believed so to some extent and 41.3% even to a great extent.

Q29 <i>n=46</i>	Do you think that the possibility to provide State aid to both, cluster operators as well as its members/users has led to an increase of RDI activities of the members/users which are SMEs?	%
	To a great extent	41.3%
	Somewhat	41.3%
	Very little	10.9%
	Not at all	6.5%
NB: In total, 87 interviewees responded with 41 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’		

Disaggregation of the interview results shows that agreement whether State aid has led to an increase of RDI activities of the members/users which are SMEs is quite high among all represented stakeholder groups.

Q29	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=5</i>)	40.0%	40.0%	20.0%	0.0%
Cluster (<i>n=16</i>)	37.5%	56.3%	0.0%	6.3%
MSAs (<i>n=25</i>)	44.0%	32.0%	16.0%	8.0%

Open statements – For **Q29.1**⁸⁷ comparably few statements were received. In total, 19 interviewees provided additional explanations. Most of the statements, namely 11 (58%) were supportive, 7 (37%) were rather neutral or not applicable to the specific question and only 1 (5%) statement pointed to weaknesses/was critical.

The supportive statements simply agreed on a general level, stating for instance “Yes, for sure it has led to an increase of RDI activities of the members/users which are SMEs” or “The mutual support from both sides enhanced the positive impacts.” Another

⁸⁷ Q29.1: Do you think that the possibility to provide State aid to both, cluster operators as well as its members/users has led to an increase of RDI activities of the members/users which are SMEs? Please elaborate.

interviewee stated, for instance, that the State aid allowed for *greater benefits for both the cluster operator and the users by increasing R&D engagement*.

On the other hand, one interviewee (MSA) expressed a specific critique regarding the practical difficulty they encountered in their country regarding the support of SMEs that were users of a cluster. This difficulty was, according to the interviewee, mostly related to the administrative burden for the companies that must prove that they were effectively a SME. This administrative burden was partly related to the specific situation of the SMEs in their country (and not due to the State aid rules) as their SMEs were often *non-autonomous companies*. This made the process to confirm their status as an actual SME (see Annex 1 of the GBER) very cumbersome and time consuming as the SMEs needed to elaborate consolidated accounts, which they did not directly have at hand since the current (national) regulations do not request this. This led to a situation, where the innovation clusters did not encourage SMEs anymore to apply for State aid, especially since these were mostly engaged in rather small activities of the cluster (e.g. trainings, access to living labs or participation in conferences). Hence, the support for this rather small activity was not in balance with the *too large effort* required with regard to the administrative process.

Literature – No specific statement was identified in the literature.

4.1.2.4 EQ 2.1.d Increased collaboration activities of various cluster members

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: A majority of 80% to almost 90% of respondents ascertained the effects of State aid to be stimulating collaboration activities, particularly so in the case of collaboration between SMEs and research/ knowledge dissemination organisations. The agreement was slightly lower with regard to collaboration among SMEs –77.6% agreed whilst 22.5% disagreed. The statements collected in core interviews did not reveal the underlying reasons but pointed to many factors influencing collaboration activities. Besides, one somewhat more recurring perception (6 out of 52 statements) was that innovation clusters were being ‘collaborative’ by their very nature (with or without State aid support). In addition, even though the quantitative results sketched a fairly positive picture, a few statements (3 out of 52) illustrated that diverging interests regarding knowledge diffusion by companies and universities/RTOs can still be a barrier to cooperation between these 2 groups. No evidence in the literature was collected.

Conclusion: Overall, a vast majority of respondents saw the State aid rules as beneficial to collaboration activities between various cluster members. However, the open statements indicated that the increase in collaboration cannot necessarily be related to the revision of the rules but rather to the very nature of clusters.

Core interviews – Q28⁸⁸ asked the respondents about the effectiveness of SME support in terms of increased collaboration activities among various users of clusters. The interview results show that 88.4% considered the increase of RDI collaboration activities between SMEs and large enterprises, 50% to some extent and 38.4% even considered an increase to a great extent. It was noticeable that 5.8% of the respondents did not think that the possibility to provide State aid led to a boost of RDI collaboration activities between SMEs and large enterprises. Considering collaboration activities among SMEs, 77.6% observed an increase in this category, out of which 38.8% to some extent and 38.8% even to a great extent. It was observable that 8.1% of respondents expressed their distrust on the influence of State aid on the raise of collaboration activities among SMEs. At the same time, 88.4% shared the perspective that the RDI collaboration

⁸⁸ Q28: Do you think that the possibility to provide State Aid to both, **cluster operators** as well as users has led to an increase of RDI collaboration activities ...?

activities between SMEs and research organisations/knowledge dissemination organisations expanded, out of which 46.1% judged such an expansion to some extent and 42.3% even to a great extent. We also see that 5.8% of respondents did not share the opinion of the raise of RDI collaboration activities at all.

Q28	Do you think that the possibility to provide State aid to both, cluster operators as well as users has led to an increase of RDI collaboration activities ...	To a great extent	Somewhat	Very little	Not at all
28.1 <i>n=52</i>	between SMEs and large enterprises (LEs)?	38.4%	50.0%	5.8%	5.8%
<i>NB: In total, 88 interviewees responded with 36 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>					
28.2 <i>n=49</i>	among SMEs?	38.8%	38.8%	14.3%	8.1%
<i>NB: In total, 88 interviewees responded with 39 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>					
28.3 <i>n=52</i>	between SMEs and research organisations/ knowledge dissemination organisations?	42.3%	46.1%	5.8%	5.8%
<i>NB: In total, 88 interviewees responded with 36 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>					

Disaggregation of the interview results by stakeholder groups show that agreement to whether State aid has led to an increase of RDI collaboration activities between SMEs and large enterprises is highest among clusters and MSAs.

Q28.1 between SMEs and large enterprises (LEs)?	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=5</i>)	20.0%	60.0%	20.0%	0.0%
Cluster (<i>n=16</i>)	43.8%	50.0%	0.0%	6.2%
MSAs (<i>n=31</i>)	38.7%	48.3%	6.5%	6.5%

A half of the cluster representatives thought that the possibility to provide the State aid to both cluster operators and users increased the collaboration activities among SMEs to a great extent.

Q28.2 among SMEs?	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=5</i>)	20.0%	40.0%	40.0%	0%
Cluster (<i>n=16</i>)	50.0%	31.2%	6.3%	12.5%
MSAs (<i>n=28</i>)	35.7%	42.9%	14.3%	7.1%

Considering the increase of RDI collaboration activities between SMEs and research organisations/knowledge dissemination organisations, all groups expressed high agreement.

Q28.3 between SMEs and research organisations/ knowledge dissemination organisations?	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=5</i>)	20.0%	60.0%	20.0%	0.0%
Cluster (<i>n=16</i>)	56.2%	31.2%	6.3%	6.3%
MSAs (<i>n=31</i>)	38.7%	51.6%	3.2%	6.5%

It appears that the 'collaboration between SMEs and research organisations' (**Q28.3**) was receiving the highest rates of agreement with 91% in agreement (half of them agreeing on the notion 'to a great extent') and only 9% disagreeing. Secondly, the 'collaboration between SMEs and LEs' (**Q28.1**) sees 88% agreement whereas 12% of the respondents disagree. With 80% agreement and 20% disagreement, the

‘collaboration among SMEs’ (Q28.2) showed the lowest rates, which is to be further assessed by the open statements.

Open statements – In total, 52 open statements were collected in response to Q28.4⁸⁹. Again, most of the statements, namely 32 (61%) can be marked as neutral and did not provide any useful insights. Nevertheless, 17 statements (33%) were more supportive and only 3 comments (6%) were critical or pointed to weaknesses in the rules. It was interesting that some interviewees (6 out of 52) stressed *the very nature of cluster as collaborative (...) institutions*. This suggests that increased collaboration in the aftermath of a project would almost be a given and not dependent on the State aid granted (or not). Another recurring topic (three statements) was related to the specific cooperation situation between companies and universities/RTOs, which can have different interests regarding knowledge diffusion. The three interviewees stressed that these diverging interests (i.e. firms that want to keep as much knowledge possible for themselves vs. universities/RTOs are more open for dissemination) still *cause disputes* and can have *[the] unwanted side-effect of projects that do not take place, or take place only after long discussions*. However, another single statement described a kind of best-practice where positive effects were observed from the provision of ‘innovation vouchers’ (in line with Art. 28) allowing SMEs to collaborate with universities⁹⁰.

There were also some other critical voices, e.g. a respondent (MSA) who did not see *a large impact of the rules on the way that the clusters were funded*. A note of caution was also heard on the methodological as well as practical possibility to attribute positive results to the State aid (directly). It was stated instead by a representative of an MSA that especially cooperation activities would depend on many factors, mostly related to business operations and human resources.

Literature – No specific statement was identified in the literature.

4.1.2.5 EQ 2.1.e/f Avoiding negative effects distorting competition

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The two sub-questions have been merged and a question was added on the potential ‘crowding out’ effect of State aid on private investors to allow for a more comprehensive information collection process on market distorting effects of State aid granted for the concerned measures. Consequently, the core interview Q27 (see table below) enquired whether the State aid provided could have led to negative effects in the view of interviewees. This was overwhelmingly denied at a level of 90%. The open statements provided did neither report on any concrete experience with negative effects occurring in practice. No evidence was collected in the literature.

Conclusion: Overall, the scope of the State aid rules is not seen to distort competition or to lead to a crowding out private investors in the market of clusters. This can partly be explained by the fact that the level of funding is in most cases too low to be distortive.

Core interviews – Q27 asked interview participants whether the granting of State aid under the Art. 27 and 28 could have triggered negative effects i.e., discouraged

⁸⁹ Q28.4: Do you think that the possibility to provide State Aid to both, **cluster operators** as well as users has led to an increase of RDI collaboration activities ...? Please elaborate.

⁹⁰ The innovation / knowledge voucher is for SMEs, which would like to acquire knowledge from universities or RTOs. The voucher functions as a sort of coupon - with a certain maximum value - with which an SME entrepreneur can have a specific question answered by a knowledge institution. The entrepreneur e.g. formulates a knowledge demand for the renewal of products, production processes or services. The SME then approaches a knowledge institution that can provide the answer to this question. With the voucher, the entrepreneur can pay then up to 50% of the account of the knowledge institution.

private investments into innovation clusters (**Q27.1**) or otherwise affected the business activities in the sector in a negative way (**Q27.2**). The results can be seen in the table below. The interview results show that 91.3% of respondents did not share this opinion and/or their activities: 58.7% disagreed and 32.6% even strongly disagreed. In addition, 90.5% disagreed that State aid discouraged competitors from investments into clusters or affected negatively their business activity, 66.7% of them disagreed and 23.8% even strongly disagreed. It was observable that 9.5% expressed their agreement upon the negative effects on competition. No respondent has ticked the most negative response option (in this instance 'strongly agree').

Q27	In your view, could the granting of State aid to both, operators and members/users of an innovation cluster...	Strongly agree	Agree	Disagree	Strongly disagree
27.1 n=46	have discouraged private investments (such as funding from banks, private investors, venture capital etc.) into innovation clusters and/or their activities?	0%	8.7%	58.7%	32.6%
NB: In total, 88 interviewees responded with 42 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
27.2 n=42	have discouraged competitors from investments into clusters or affected negatively their business activity?	0%	9.5%	66.7%	23.8%
NB: In total, 88 interviewees responded with 46 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					

Disaggregation of interview results by stakeholder groups shows that disagreement that the granting of State aid has discouraged private investments into innovation clusters and/or their activities was highest among clusters and MSAs. Views of the associations on this issue have been mixed.

Q27.1 have discouraged private investments	Strongly agree	Agree	Disagree	Strongly disagree
Associations (n=6)	0%	33.3%	33.3%	33.4%
Cluster (n=12)	0%	8.3%	58.3%	33.4%
MSAs (n=28)	0%	3.6%	64.3%	32.1%

In response to whether State aid discouraged competitors from investments into clusters, disagreement of MSAs was highest again.

Q27.2 have discouraged competitors from investments	Strongly agree	Agree	Disagree	Strongly disagree
Associations (n=6)	0%	33.3%	50.0%	16.7%
Cluster (n=11)	0%	18.2%	63.6%	18.2%
MSAs (n=25)	0%	0.0%	72.0%	28.0%

Open statements – In response to **Q27.4**⁹¹ in which the interviewees were asked to elaborate on the interview questions outlined in the tables above, 52 open statements were given in total. Of the statements 28 (54%) were rather neutral or not applicable as they did not answer the interview question directly. 20 interviewees (38%) stated that they did not notice negative effects. Representatively for others, one respondent was cited, stating that *we haven't noticed any negative effects as a consequence of State aid, if any, there were positive effects regarding the amount of private*

⁹¹ Q27.4: In your view, could the granting of State Aid to both, operators and members/users of an innovation cluster Please elaborate on your replies and/or on other effects you might have observed

investment that arose as a consequence of State aid. Furthermore, it was noticed that 9 out of the 52 open statements given in total stressed that necessary information was missing in order to be able to judge whether negative effects occurred. Only four statements pointed to negative effects. For instance, one beneficiary who indicated that in some cases, SMEs could be less interested to cooperate than to receive the funds and utilise them on their own (this was called the 'lorry effect') but no concrete example was provided.

Literature – No specific statement was identified in literature.

4.1.2.6 EQ 2.2 Clarity/ understanding of the combined use of Art. 27/28

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The scope of the aid measures concerned by this EQ was augmented as it concerned the possible combination of the GBER Art. 27 with Art. 25, 28 or 29. It appeared that the majority of interview respondents found it easier to understand and handle the provisions of Art. 29 in combination with Art. 27. Granting aid under other regulation (such as 'de minimis') as well as under Art. 25 and 28 seem to pose obstacles since more than 50% of the MSAs identify difficulties. The responses suggested that in particular the combination of different aid measures was regarded as cumbersome. No evidence was collected in the literature.

Conclusion: Not necessarily a lack of clarity but rather difficulties in practical application seemed to arise with respect to granting aid under Art. 27 of the GBER in combination with Art. 25, 28 and other regulation (such as 'de minimis'). In case of a combination of Art. 27 with Art. 29 hardly any difficulties were identified.

Core interviews – Whether interviewees understand that SMEs which are users of clusters aided under Art. 27 GBER can lawfully benefit from aid in line with Art. 25, 28 and 29 of the GBER was not asked explicitly but approached by an implicit question in the core interviews. For instance, **Q47**⁹² related to the clarity of the State aid rules including the above articles in its sub-questions; and was described in section 4.4.1.2 below. **Q13**⁹³ was another question in this respect and analysed in the context of **EQ5** (section 4.2.1.2). Responses collected for **Q25**⁹⁴ could have served as a proxy in this regard, however with merely five responses received, they cannot be taken as evidence.

Instead, **Q24** was found to be most relevant for the evaluation (sub-) question concerned, as it enquired about the perception of interview respondents (see table below) On the 'difficulty' with which State aid was granted to users of an innovation cluster. It must be underlined that this question was only responded by MSAs. In response to whether the MSAs found it difficult or burdensome to grant State aid to users of an innovation cluster, a majority of 65.5% answered 'Yes'.

Q24	Do you find it difficult or burdensome to grant State aid to users of an innovation cluster (in order to offer them reduced access prices)?	Yes	No
<i>n</i> =29		65.5%	34.5%
<i>NB: In total, 61 interviewees responded with 32 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>			

When asked to specify which provision of the GBER they found difficult to apply, a majority of 76% ticked the option 'other' (e.g. 'de minimis') regulations which

⁹² Q47: To what extent do you consider the State Aid rules for innovation clusters to be coherent with the Horizon 2020 programme and its rules?

⁹³ Q13: Do you consider the current definition of the term "innovation clusters" in the 2014 State aid rules for RDI as sufficiently clear?

⁹⁴ Q25: Have you as a **user of an innovation cluster** benefitted from Aid under RDI-related GBER provisions, such as...?

appeared to be seen as the most difficult one.⁹⁵ Art. 29 features the article causing least difficulties in its application.

Q24.1 ⁹⁶ n= 39	Please specify in relation to the following provisions of the GBER (Multiple choices were possible)	Art. 25 GBER	Art. 28 GBER	Art. 29 GBER	Other (e.g. De-minimis Aid)
		59%	53%	41%	76%

Open statements were obtained from Q24.2⁹⁷ in which interviewees elaborated on the ‘difficulty’ of granting State aid to users of an innovation cluster. Overall, 15 respondents elaborated on their previous reply in the open statements in Q24.2. Two (13%) of these statements were rather supportive, 7 (47%) pointed to difficulties in granting aid and 6 (40%) were neutral in the sense that they did not provide a clear answer or useful information regarding the specific question under consideration.

Supporting the ‘statistics’ above-mentioned, the majority of open statements (7 out of 15) expressed critical views, either on the clarity of the provisions itself (e.g. the ‘de minimis regulation’) or on the related *administrative burden involved* that would sometimes lead to a *project being cancelled*. One example was provided that described the complexity of the application process, e.g. when MSAs at different levels would be involved.

Further administrative burdens were identified through the necessity for documentation and definition of complex objectives e.g. for joint research activities. In contrast, Art. 28 has been described as easier to apply by two respondents in terms of documentation.

It was interesting to note on the basis of interviews that particularly MSAs concluded that the desire of the Commission to offer more options apparently resulted in more complicated procedures. This was expressed in statements such as the following “... *this granting requires a triangular agreement between operator, user and member state authority (which) makes this process very burdensome.*” Here, it was certainly the (good) intention of rule makers to allow MSAs to combine different aid measures to benefit SMEs, but it seemed not to be appreciated by beneficiaries when it came to the cost of additional administrative burden.

Literature – No specific statement was identified in the literature.

4.1.3 Evaluation Question 3

EQ 3: To which extent have the State aid rules for RDI affected the collaboration in RDI activities and the knowledge transfer activities between various partners?

3.1 To which extent has the collaboration between SMEs and large undertakings been affected?

3.2 To which extent has the collaboration and the knowledge transfer between undertakings and research organisation been affected?

4.1.3.1 Collaboration between SMEs and large undertakings

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The majority of respondents (above 69%) recognised the State aid rules to actively pursue the objectives of enhanced collaboration and knowledge transfer among different actors.

⁹⁵ Commission Regulation (EC). No 1407/2013, 18 December 2013 on the application of Art. 107 and 108 of the Treaty on the Functioning of the European Union to de minimis aid

⁹⁶ Please note that several responses were possible. The results thus do not add up to 100%.

⁹⁷ Q24.2: Please specify in relation to the following provisions of the GBER. (Multiple choices possible). Please elaborate

In respect of replies provided during the interview process, associations were the most positive ones when examining the correlation of the rules and these two aims (in each category above 60%), whilst the non-aided undertakings were rather sceptical, especially about the cooperation between large enterprises and SMEs. The majority of the open statements given in response to the associated open questions did not deliver further insights as the majority of statements given (more than 79% in both cases) were not applicable or neutral. The remaining statements pointed to an increase of collaboration and knowledge transfer activities thereby underlining the results from core interview responses. No findings were identified in the literature.

Conclusion: From the interview results it can be concluded that the State aid rules of RDI contributed to an increase in collaboration activities between SMEs and large undertakings occurred. No conclusion on the extent of this increase can be drawn from the given analysis.

Core interviews – Two interview questions covered the topic of collaboration and knowledge transfer directly, **Q30** and **Q31** as displayed in the table below. The interview results show that 69.3% considered the rules to have affected the increase in collaboration activities between SMEs and large enterprises, 38.7% to some extent and 30.6% even to a great extent. It is noticeable that 11.8% of the respondents did not assume that the rules led to a rise in collaboration activities at all. In case of knowledge transfer activities, 62.9% noticed an increase between SMEs and large enterprises, 40.7% to some extent and 22.2% even to a great extent.

		To a great extent	Some-what	Very little	Not at all
Q30	To what extent have the 2014 State aid rules for RDI allowed for an increase in collaboration...				
30.1 <i>n</i> =111	between SMEs and large enterprises (LEs)?	30.6%	38.7%	18.9%	11.8%
<i>NB: In total, 145 interviewees responded with 34 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/don't know'</i>					
Q31	To what extent have the 2014 State aid rules for RDI allowed for an increase of knowledge transfer activities...				
31.1 <i>n</i> =108	between SMEs and large enterprises (LEs)?	22.2%	40.7%	26.9%	10.2%
<i>NB: In total, 145 interviewees responded with 37 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/don't know'</i>					

Disaggregation of the interview results by stakeholder groups shows that agreement among all stakeholder groups is very high, especially among beneficiaries, associations and MSAs. Non-aided undertakings in contrast are less approving.

Q30.1 increase in collaboration between SMEs and large enterprises (LEs)?	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =6)	33.3%	50.0%	16.7%	0.0%
Beneficiaries (<i>n</i> =43)	34.9%	34.9%	16.2%	14.0%
MSAs (<i>n</i> =47)	36.2%	34.0%	21.3%	8.5%
Non-Aid (<i>n</i> =15)	0.0%	60.0%	20.0%	20.0%

Considering the increase in knowledge transfer activities between SMEs and LEs, again MSAs are less affirmative.

Q31.1 increase in knowledge transfer activities between SMEs and large enterprises (LEs)?	To a great extent	Somewhat	Very little	Not at all
Associations (n=7)	14.3%	71.4%	14.3%	0.0%
Beneficiaries (n=44)	27.3%	31.8%	27.3%	13.6%
MSAs (n=43)	25.6%	41.9%	27.9%	4.6%
Non-Aid (n=14)	0.0%	50.0%	28.6%	21.4%

Open statements – In response to **Q30.3**⁹⁸ on whether an increase in collaboration was noticed, 102 open statements were received in total. Most of the statements (79%) were neutral in the sense that they did not identify a clear increase or decrease of collaboration activities or were not applicable to the specific interview question. To be concrete, 20 positive statements (20%) were received, e.g. *a strong positive effect can be observed, including increasing corporate investment in RDI*. Another comment among these states *that the cooperation among enterprises would be easier, as opposed to collaborating with research organisations, as they for example share the interest to make profit*. One respondent reckons that cooperation among SMEs would be mostly required, whilst the probability for cooperation between SMEs and LEs would be higher, *given that the latter have more resources available for (affording) such cross-cutting tasks*.

The notion that cooperation would merely be happening because the rules request so, was recorded as well. One respondent explicitly stated: *"We cooperate a lot with SMEs because this is necessary to get funding and LEs because they bring the money"*. Although the State aid rules (GBER Art. 25) are universally understood to aim for increased collaboration it is unclear in how far the effect can be attributed to the rules. As one rather neutral respondent stated: *"It did have an effect (...) however, the net effect seems small because collaboration depends on other factors."*

In response to **Q31.3**⁹⁹, 89 open statements were received, 10 (11%) of which indicated an actual increase of knowledge transfer activities. The other 79 open statements (89%) did not answer the specific interview question or were neutral since they did not identify an increase or decrease of knowledge transfer activities.¹⁰⁰ One good example highlighted that *"it allows a sharing of data between SME/LE and enterprises /research organisations that wouldn't happen otherwise."* Examples were given for longer lasting cooperation. One interviewee pointed out that the same association of companies would *sometimes compete (in public tenders/ project applications) for a second or third time*. That would indicate that the collaboration developed to the benefit of all parties.

The 'knowledge transfer' is understood to be one of the principal aims of the State aid rules and confirmed to be necessary in order to overcome the underlying market failure. Notwithstanding, it must be noted that as soon as tangible results are produced by the collaboration, a new challenge occurs in relation to *the issue of*

⁹⁸ Q30.3: To what extent have the 2014 State aid rules for RDI allowed for an increase in **collaboration**...? Please elaborate.

⁹⁹ Q31.3: To what extent have the 2014 State aid rules for RDI allowed for an increase of **knowledge transfer activities**...? Please elaborate.

¹⁰⁰ Negative comments rather covered topics not relating to the State aid rules, such as differing interests of small and large enterprises. Therefore, these remarks were not included in the analysis.

intellectual property and how to deal with it in a fair manner. This difficulty, however, cannot be attributed to the revised State aid rules.

Literature – No specific statement was identified in the literature.

4.1.3.2 Collaboration/ knowledge transfer - undertakings and research organisations

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The agreement on a positive correlation between State aid and the degree of collaboration and knowledge transfer between enterprises and research organisations is stronger (77.8% agree) than for the collaboration among enterprises (69.3% agree). On the other hand, the different mind-sets of these two parties are emphasised which would make the collaboration more difficult, yet possibly even more fruitful. Positive examples are mentioned as to the benefit that such collaboration and transfer of knowledge could provide for all related parties.

Conclusion: The positive correlation between State aid and the degree of collaboration and knowledge transfer between enterprises and research organisations is stronger than that of collaboration among enterprises. The collaboration bonus under the relevant State aid rules could have an effect on the enhanced cooperation. On the other hand, similarly to cooperation between undertakings, other factors such as trust and different mind-sets of undertakings and research institutes also influence their cooperation.

Core interviews – The same questions as in the section above- **Q30/31** – are posed, this time referring to collaboration and knowledge transfer happening between enterprises and research organisations (see table below). The responses received show that a positive effect is believed to be exerted by the State aid rules. This effect is judged to be stronger than among enterprises. As can be observed from the table below (**Q30**), 77.7% of respondents estimated the rules to have allowed for an increase of collaboration between large enterprises/SMEs and research organisations, 41.3% agreed to some extent and 36.4% to a great extent. Turning to a possible knowledge transfer between the two groups (**Q31**): In total, 74.4% noticed an increase in the case of knowledge transfer of enterprises/ undertakings and research organisations, 41.9% agreed to some extent and 32.5 to a great extent.

		To a great extent	Some-what	Very little	Not at all
Q30	To what extent have the 2014 State aid rules for RDI allowed for an increase in collaboration...				
30.2 n=121	between large enterprises/SMEs and research organisations?	36.4%	41.3%	11.6%	10.7%
NB: In total, 145 interviewees responded with 24 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/don't know'					
Q31	To what extent have the 2014 State aid rules for RDI allowed for an increase of knowledge transfer activities...				
31.2 n=117	between enterprises/ undertakings and research organisations?	32.5%	41.9%	15.4%	10.2%
NB: In total, 145 interviewees responded with 28 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/don't know'					

In the case of collaboration between large enterprises/SMEs and research organisations, the stakeholder groups of associations, beneficiaries and MSAs clusters mostly strongly agreed or agreed to some extent that the rules influenced collaboration.

Q30.2 increase in collaboration between large enterprises/SMEs and research organisations?	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =8)	37.5%	37.5%	12.5%	12.5%
Beneficiaries (<i>n</i> =51)	35.3%	45.1%	5.9%	13.7%
MSAs (<i>n</i> =47)	44.7%	38.3%	12.8%	4.2%
Non-Aid (<i>n</i> =15)	13.3%	40.0%	26.7%	20.0%

Considering the increase in knowledge transfer activities between enterprises/undertakings and research organisations, MSAs expressed the highest agreement among all stakeholders.

Q31.2 increase in knowledge transfer activities between enterprises/undertakings and research organisations?	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =8)	12.5%	62.5%	12.5%	12.5%
Beneficiaries (<i>n</i> =49)	22.4%	51.0%	14.3%	12.3%
MSAs (<i>n</i> =45)	51.1%	31.1%	13.3%	4.5%
Non-Aid (<i>n</i> =15)	20.0%	33.3%	26.7%	20.0%

Open statements – The numbers of open statements given in response to **Q30.3** and **Q31.3** are outlined in section 4.1.3.1.

Whilst the collaboration among enterprises is allegedly easier because of a similar mind-set, there are two statements found on the challenges faced when business and research organisations are cooperating. As one respondent put it: *"The issue is more fundamental than lack of financial resources - SMEs and research institutions need to be introduced to the culture of collaboration, trust needs to be established."*

On the other hand, it is acknowledged that different types of actors could also be beneficial by complementing each other. It is for instance stated that research organisations *are rather open for the dissemination of knowledge while firms want to keep (it)*. One practical example is provided, describing that – although - *working with a scientific organisation would be more difficult, the collaborative projects had helped (both partners) to better understand each other*. The 'open access strategy' was named as a step into the right direction: *(it would be good) to expand the open access strategy to include e.g. universities to publish their results from research projects*.

Literature – No specific statement was identified in the literature.

4.1.4 Evaluation Question 4

EQ 4: To which extent have the State aid rules for RDI-projects, in particular on industrial research and experimental development, allowed aid that doesn't unduly distort competition in the internal market while adequately addressing global competitive issues?

- To which extent have State aid rules on industrial research adequately addressed global competitive issues?
- To which extent have State aid rules on industrial research had negative effects e.g. distorting market competition?
- To which extent have State aid rules on experimental development adequately addressed global competitive issues?
- To which extent have State aid rules on experimental development had negative effects e.g. distorting market competition?

4.1.4.1 State aid for industrial research addressing global competitive issues

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The numerous entries in the open comments fields (75 in total) indicated a strong interest of respondents on the topic of global competitive challenges and how the State aid rules for RDI would hinder or help businesses to sustain on the market (not only on the internal market but also in other parts in the worlds e.g. Asia and US). Whilst again a majority of 75% of the respondents to the relevant Q34¹⁰¹ in core interviews expressed their positive opinion on the rules (N.B. with regard to both definitions and research activities: 'industrial research' as well as 'experimental development') some more critical voices in the open statement section (9 in total) suggested to adjust eligibility criteria, in particular aid intensities in order to increase the impact of rules, which at the same time could create a better level playing field vis-à-vis third country competitors. No evidence was collected in the literature.

Conclusion: It can be said that the State aid rules on industrial research adequately address global competitive issues. However, in order to create a level playing field, few interviewees wished to adjust the eligibility criteria, particularly aid intensities.

Core interview – Q34 asks respondents whether the rules helped to address the global competitive issues in the fields of industrial research and experimental development. As can be seen below, the interview results show that 75% expressed their agreement regarding this question, 56.7% agreed and 18.3% even strongly agreed. It is noticeable that 17.5% of the respondents disagreed that the 2014 RDI State aid rules for R&D projects (Art. 25) including the relevant definitions applied for 'industrial research' and 'experimental development' helped to address global competitive issues, 7.5% of the respondents even strongly disagreed.

Q34 n=120	In your view, have the 2014 RDI State aid rules for R&D projects helped to address global competitive issues in the fields of industrial research and experimental development?	%
	Strongly agree	18.3%
	Agree	56.7%
	Disagree	17.5%
	Strongly disagree	7.5%
NB: In total, 164 interviewees responded with 44 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'		

¹⁰¹ Q34: In your view, have the 2014 RDI State Aid rules for R&D projects helped to address **global competitive issues in the fields of industrial research and experimental development?**

Disaggregation of the interview results by stakeholder groups shows that agreement was highest among beneficiaries. Replies provided by non-aided undertakings to the interview question were on the other hand the least affirmative.

Q34	To a great extent	Somewhat	Very little	Not at all
Associations (n=7)	14.3%	71.4%	0.0%	14.3%
Beneficiaries (n=46)	32.6%	47.8%	15.2%	4.4%
Cluster (n=14)	7.1%	71.4%	21.5%	0.0%
MSAs (n=42)	9.5%	61.9%	21.4%	7.2%
Non-Aid (n=11)	9.1%	45.5%	18.2%	27.2%

Open statements – Overall, 75 respondents elaborated on their previous reply in the open statements in **Q34.1**¹⁰². To be specific, 26 of these statements (35%) were rather supportive, 31 (41%) pointed to weaknesses and 18 (24%) were neutral in the sense that they did not provide a clear answer or useful information regarding the specific question under consideration. The discrepancy between the rather high share of critical remarks pointing to weaknesses as compared to the more positive feedback on the closed **Q34**, is related to the fact that some of the interviewees (14 in total), who chose to agree on **Q34**, used their open statement to indicate where they see potential for further improvement

Regarding the supportive statements, nine stressed the additionality of the public support for RDI projects and the positive impact this has on the competitiveness of the (final) beneficiaries. Typical statements in this regard have been for instance: *“Yes, we believe the 2014 State aid rule have helped to address the global competitive issues. There would definitely be less RDI investments without the mentioned rules”* or *“State aid for our specific innovation cluster has been essential to build up the infrastructure to give SMEs the chance to be competitive in a complex field such as autonomous driving”*. Another four supportive statements show a general appreciation of having a set of unified rules on RDI State aid across the EU. For instance, one respondent specifically referred to the RDI Framework and commented that: *[the RDI framework] would provide a full and comprehensive set of measures to address global competitive issues.*

From the comments pointing out weaknesses, nine address the rules on the existing aid intensities and/or the eligibility criteria, which potentially can have a negative influence in the current global competitive environment. Most of them mentioned that this is because the funding should be closer to the market, which, for some of these interviewees, could also help to create a level playing field vis-à-vis third country competitors, as the following statement shows: *“In general, the EU rules are good for a [level] playing field. But the strict rules forbid to act fast and are an absolute disadvantage in comparison to the US and China. Specifically, regarding market translation of products there are weaknesses. Here, there is the specific problem of exceeding experimental development. The funding here does not go far enough and sometimes does not allow to bring the product close enough to become introduced to the market.”* This statement is corroborated by another comment of a large enterprise representative, who stated that *“the EU [...] in no way compares to [South Korea]. [There,] it is still much easier to receive funding and to get funded at higher TRLs. Not only is the funding higher, the success rate for applications is higher as well.”* The

¹⁰² Q34.1: In your view, have the 2014 RDI State Aid rules for R&D projects helped to address **global competitive issues in the fields of industrial research and experimental development?** Please elaborate on your reply.

other four statements either demand higher aid intensities (2), focus on the definition of “enterprises in difficulties” (1) or criticise more generally the funding conditions (1).

Overall, it becomes visible that the supportive and more critical statements are in balance. Whilst some feel more strongly to be disadvantaged in comparison to peer business in other parts of the world, others state that State aid would increase the competitiveness, hence, indeed helping its beneficiaries to compete globally.

Furthermore, individual opinions differ on the potential and actual impact that State aid rules could have in this respect. As one respondent put it: *it is not the rules (or their changes) that directly support it and help to address these issues.*

Literature – No specific statement was identified in the literature.

4.1.4.2 State aid for industrial research having negative effects

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The findings do mostly repeat the ones presented in section 4.1.1.5 as the interview participants rarely referred to the given aid measure (Art. 25). The responses received to Q36¹⁰³ expressed a solid majority of 88% that this would not be the case. Some negative effects were identified with respect to the selection of beneficiaries of State aid applied by the relevant Member States only, albeit not referring to industrial research specifically. Five interviewees found that sometimes due to bureaucratic burdens the wrong beneficiaries are picked. No evidence in the literature was collected.

Conclusion: Hardly any negative effects, e.g. effects distorting market competition of the 2014 RDI State aid rules on industrial research could be identified. The only criticism in this respect came up with regard to the selection of beneficiaries of State aid sometimes choosing the wrong beneficiaries due to bureaucratic burdens.

Core interviews – As already discussed in the section on EQ1.e, **Q36** was the main question posed to enquire about the occurrence of negative effects of the revised State aid rules, albeit with regard to all aid measures. The results can be seen in the table below. The responses provided in **Q36.1** related to ‘industrial development’ indicate that 87.9% did not believe that State aid for RDI activities led to the negative effects on competition, while only 12.1% did assume so.

Q36	In your experience, did State aid for RDI activities granted under the 2014 State aid rules lead to negative effects on competition, in particular in the case of State aid granted for...	Yes	No
36.1 n=116	industrial research	12.1%	87.9%
NB: In total, 165 interviewees responded with 49 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’			

Differences among stakeholder groups in their responses are shown below.

Q36.1 Industrial Research	Yes	No	The disaggregation of responses by stakeholder groups shows that 25% of the representatives of clusters did notice negative effects on competition.
Associations (n=6)	16.7%	83.3%	
Beneficiaries (n=42)	7.1%	92.9%	
Cluster (n=13)	23.1%	76.9%	
MSAs (n=43)	11.6%	88.4%	
Non-aid (n=12)	16.7%	83.3%	

¹⁰³ Q36: In your experience, did State aid for RDI activities granted under the 2014 State aid rules lead to negative effects on competition, in particular in the case of State aid granted for...?

Open statements – The entries made by interviewees in the open text field for Q36.7¹⁰⁴ were screened with attention to statements made on negative effects of State aid granted to ‘industrial research’ projects. Overall, the comments mostly pertained to more general aspects and did not specifically address the issue of industrial research itself (see also Chapter 4.1.1.5 on EQ 1.e). However, the analysis provides some insights for those interviewees that were affirmative about negative effects on competition in the case of State aid granted for industrial research or experimental development. The following analysis thus also holds for section 4.1.4.4. Most of them mentioned issues relating to the way how the beneficiaries are selected. For instance, two of these interviewees mentioned that the bureaucracy still leads to the choice of less-efficient or less-needed projects. One respondent (MSA) stated: *“We have noticed that many times the ‘not so good’ RDI projects receive the aid because they are good with bureaucracy while on the other hand the ‘excellent’ RDI projects do not receive the State aid because they do not know how to efficiently deal with all the bureaucracy needed. Therefore, the 2014 State aid RDI rules could sometimes be looking just for a project that looks good from the bureaucratic side, which is quite inefficient.”* The other interviewee (MSA) goes in the same direction and mentions: *“A negative side-effect might also well be that it are usually the smart ones (probably those that would even innovate without State aid to survive in the market), who understand the rules and know how to apply for aid and access the extra public money on top of their activities.”*

Literature – No specific statement was identified in the literature.

4.1.4.3 State aid for experimental development addressing global competitive issues

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The definition used for ‘experimental development’ was found to be well-adapted to on-going market developments and market failures by 75.7% of the respondents whereas 24.2% of respondents disagreed with this notion (Q35¹⁰⁵). The related open comments sections were filled with 19 statements expressing general satisfaction with the rules concerning ‘experimental development’, nonetheless, some 22 critical remarks pointed to room for improvement. In more detail, improvement in terms of the (rigid) delineation of R&D project phases with particular regard to market approximation, i.e. aid in stages closer to commercialisation, the possibility to accommodate terms and aid intensities, as well as elements of digitalisation, etc. The definition of ‘experimental development’ was seen successfully implemented in the literature.

Conclusion: It can be concluded that the State aid rules on experimental development addressed global competitive issues in a satisfactory manner. Some room for improvement is given with respect to the associated aid intensities with market approximation and the topic of digitalisation.

Core interviews – Q35 asks respondents if the rules have been well-adapted to help address on-going market developments and contemporary market failures (see table below). The interview results show that 75.7% judged the rules to be well-adapted, out of which 63.1% agreed and 12.6% even strongly agreed upon this question. It is noticeable

¹⁰⁴ Q36.7: In your experience, did State Aid for RDI activities granted under the 2014 State Aid rules lead to **negative effects on competition**, in particular in the case of State Aid granted for...? Please elaborate on your replies and provide examples.

¹⁰⁵ Q35: Have the 2014 RDI State aid rules for **experimental development** been well-adapted to help you addressing on-going market developments and contemporary market failures?

that 24.2% of the interviewees expressed their disagreement regarding the rules for experimental developments (5.8% of which strongly disagreed).

Q35 n=103	Have the 2014 RDI State aid rules for experimental development been well-adapted to help you address on-going market developments and contemporary market failures?	%
	Strongly agree	12.6%
	Agree	63.1%
	Disagree	18.4%
	Strongly disagree	5.8%
NB: In total, 161 interviewees responded with 58 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'		

When disaggregating the results by stakeholder groups it becomes apparent that too few associations were interviewed in order to draw conclusions from their response. At the same time, agreement was highest among clusters and lowest among non-aided undertakings.

Q35	Strongly agree	Agree	Disagree	Strongly disagree
Associations (n=4)	0.0%	100.0%	0.0%	0.0%
Beneficiaries (n=38)	15.8%	55.2%	21.0%	8.0%
Cluster (n=14)	14.3%	71.4%	14.3%	0.0%
MSAs (n=39)	12.8%	61.5%	20.5%	5.2%
Non-Aid (n=8)	0.0%	75.0%	12.5%	12.5%

Open statements - In response to **Q35.1**¹⁰⁶ 62 open statements were given in total of which 22 (35%) point to some criticism, 19 (31%) underlined that the rules for experimental development were well-adapted and 21 (34%) were neutral or not applicable in the sense that they did not answer the specific interview question.

The current delineation of development stages including the defined aid intensities is mentioned by eight interviewees¹⁰⁷. One exemplary statement by a representative of a MSA in this regard notes that a provision would be missing to *support projects, which address on-going market developments but are in-between the stages of experimental development and an effective commercialisation*.

In relation to this, two other comments given by representatives of the same MSA read: *In practice, we see more and more market failures in relation with evolutionary economics (...) and more agile developments where companies develop a minimum viable product before engaging (into) larger R&D expenses*. It is further stated that the term 'applied research' (as used in the RDI Framework point 89¹⁰⁸) would be more suitable. In addition, one interviewee proposes to apply only one aid intensity (e.g. at the level of 50%) instead of the given concept to apply three different levels, depending on the proximity to market.

Moreover, two comments in response to **Q35.1** (see above) are made on the subject of digitalisation. It was noted by one respondent that *the definition of experimental development would be rather "conservative" e.g. with regard to IT/ software*

¹⁰⁶ Q35.1: Have the 2014 RDI State aid rules for **experimental development** been well-adapted to help you addressing on-going market developments and contemporary market failures? Please specify and provide examples.

¹⁰⁷ According to GBER Art. 25 (2), these are a) fundamental research (aid intensity 100%), b) industrial research (aid intensity 50%), and c) experimental development (aid intensity 25%)

¹⁰⁸ There the term "applied research" is encompasses both industrial research and experimental development.

development, etc. This is echoed by two other statements given in response to **Q34.1**¹⁰⁹ that suggest enlarging the rules' terminology and scope by e.g. development of artificial intelligence, the creation of virtual rooms/ laboratories, human research topics, etc. In summary, one comment expresses the opinion that the scope of *innovation* (i.e. the I in the RDI rules) overall should be strengthened in the rules.

Another comment identified two gaps or areas which would not be sufficiently addressed by the given rules: *i) support for investment in upscaling/piloting infrastructure (TRL6/7), and ii) support for toxicity tests that form an integral part of the innovation trajectory.*

Literature – The above comments were triangulated with the available literature. The EU Law compendium explains that the definition of industrial research and experimental development have in particular been adjusted in the 2014 revised RDI State aid rules in order *“to remove the barriers from entrepreneurs to ‘bring ideas to market’”*¹¹⁰.

4.1.4.4 State aid for experimental development having negative effects

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: Negative effects are not caused by the State aid to experimental development, as concluded by 92.2% of the interviewees. This is an even higher percentage than the one referring to State aid for industrial development not having negative effects (87.9%). No further evidence could be retrieved by open comments (Q36.7¹¹¹) to the ones discussed in sections on EQ 1.e and EQ4.4 respectively. Some negative effects were identified with respect to the selection of beneficiaries of State aid applied by the relevant Member State only, albeit not referring to experimental development specifically. Five interviewees found that sometimes due to bureaucratic burdens the wrong beneficiaries are selected. The interview results are reinforced by one finding in the literature concerning activities associated experimental development which states that the latter are unlikely to distort the market.

Conclusion: Negative effects are not caused by the State aid to experimental development. The only criticism in this respect came up with regard to the selection of beneficiaries of State aid applied by the relevant Member States sometimes choosing the wrong beneficiaries due to bureaucratic burdens.

Core interviews– Again, **Q36** is the main source of evidence, as **Q36.2** is enquiring about the potential negative effects of State aid granted to ‘experimental development’ projects (see table below) The picture is slightly more positive here (compared to the ‘industrial research’). The interview results show that 92.2% did not experience negative effects on competition and only 7.8% did.

¹⁰⁹ Q34.1: Overall, 75 respondents elaborated on their previous reply in the open statements in Q34.1. 26 of these statements were rather supportive, 31 pointed to weaknesses and 18 were neutral in the sense that they did not provide a clear answer or useful information regarding the specific question under consideration.

¹¹⁰ Pesaresi, N., Siaterli, C., Van de Castele, K., & Flynn, L., Leuven: Claeys & Casteels. (2016). EU Competition Law, Volume IV, PART 3 – Compatibility rules, Chapter 17 – Research, development and innovation, Carlos Tenreiro and Gueorgui Ianakiev, page 565.

¹¹¹ Q36.7: In your experience, did State Aid for RDI activities granted under the 2014 State Aid rules lead to **negative effects on competition**, in particular in the case of State Aid granted for...? Please elaborate on your replies and provide examples.

Q36	In your experience, did State aid for RDI activities granted under the 2014 State aid rules lead to negative effects on competition, in particular in the case of State aid granted for...	Yes	No
36.2 <i>n=116</i>	experimental development	7.8%	92.2%
<i>NB: In total, 164 interviewees responded with 48 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>			

Differences among stakeholder groups in their responses are shown below.

Q36.2 Experimental development	Yes	No	Beneficiaries and MSAs did observe almost no negative effects while some more representatives of clusters and non-aided undertakings do so (14% and 10% respectively).
Associations (<i>n=5</i>)	0.0%	100.0%	
Beneficiaries (<i>n=39</i>)	5.1%	94.9%	
Cluster (<i>n=15</i>)	13.3%	86.7%	
MSAs (<i>n=44</i>)	6.8%	93.2%	
Non-Aided (<i>n=13</i>)	15.4%	84.6%	

No further evidence is to be presented here other than for the sections on **EQ1.e** as well as **EQ4.2** above.

Open statements – The entries made by interviewees in the open text field for **Q36.7**¹¹² were screened with attention to statements made on negative effects of State aid granted to 'experimental development' projects. As outlined in section 4.1.4.2, the comments mostly pertained to more general aspects and did not specifically address the issue of experimental development itself. The analysis of open statements made in section 4.1.4.4 thus holds for this section.

Literature – No evidence was collected.

¹¹² Q36.7: In your experience, did State Aid for RDI activities granted under the 2014 State Aid rules lead to **negative effects on competition**, in particular in the case of State Aid granted for...? Please elaborate on your replies and provide examples.

4.2 Efficiency

The leading question here is whether the State aid rules are seen as sufficiently clear, understandable and easily applicable to serve their purpose. This goes in particular to the definitions applied to ‘experimental development’ and ‘innovation cluster’. It goes without saying that a legal provision or rule must be clear in order to be understood and interpreted in a uniform way. This is even more important as the 2014 revision of State aid rules shifted the responsibility for granting the block-exempted State aid in full respect of the given criteria from the EU level institutions towards the Member States. Unclear rules would cause unnecessary administrative burden for all related parties (applicant, MSA and DG COMP) and lead to legal uncertainty and potentially to other undesirable effects.¹¹³ Legal certainty and clarity in turn are key to an efficient application of the GBER as well as the RDI framework.

4.2.1 Evaluation Question 5

EQ 5: Have the following current definitions, applicable under the State aid rules for RDI, been sufficiently clear to enable the implementation of the public support to the relevant activities in a manner, which addresses the relevant market failures without unduly distorting competition?

- the definition of “experimental development projects” (covered by Art. 2 (86) of the GBER and section 1.3 (j) of the RDI Framework respectively)
- the definition of “innovation cluster” (cf. Art. 2 (92) of the GBER and section 1.3 (s) of the RDI Framework respectively)

4.2.1.1 Definition of Experimental development projects

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The interview results suggest that the term ‘experimental development’ is sufficiently clear as 71.3% of the respondents agreed with the fact that its definition is sufficiently clear and another 75.7% thought that it is well-designed to address market failures. The majority of respondents (72.5%) did not notice significant changes in market failures with respect to experimental development. Some criticism comes up with the perceived linearity of the rules. The distinction between industrial research and experimental development seems to be unclear for some of the respondents as 18 out of 88 open statements pointed to difficulties with it. Furthermore, in the literature a lack of clarity arises with regard to a possible increase of aid intensities in case of ‘wide dissemination’¹¹⁴ as the term is not clearly defined, neither in the RDI Framework nor in the GBER.

Conclusion: Overall, the definition is considered well-designed in order to address market failures without unduly distorting competition. Certain improvement would be desired by some interviewees in the perceived linearity of the rules and by clarifying the demarcation between industrial research and experimental development. It was proposed by some of the interviewees to align the definitions with the TRL-scale.

Core interviews – As can be seen below, evidence is retrieved from the core interviews, notably by **Q12** asking whether the term ‘experimental development’ would be sufficiently clear. The current results suggest that 71.3% of respondents agreed this to be the case (9.3% even strongly agreed) whereas 28.7% disagreed (of which 7.8% ‘strongly’ disagreed).

¹¹³ Apart from other negative effects such as e.g. State aid complaints, award of illegal State aid, discouragement of cooperation, technology transfer and others.

¹¹⁴ The possible increase of aid intensity is described in Article 25, point 6(b)(ii) of the GBER.

Q12 <i>n=129</i>	Do you consider the current definition of the term “experimental development” in the 2014 State aid rules for RDI as sufficiently clear?	%
	Strongly agree	9.3%
	Agree	62.0%
	Disagree	20.9%
	Strongly disagree	7.8%
NB: In total, 148 interviewees responded with 19 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’		

Disaggregating the results of Q12 per stakeholder group suggests that cluster operators or users agree the most on with 93.8% expressing to find the definition of the term ‘experimental development’ to be clear. In this case, 12.5% agreed to a great extent. The group is followed by the associations with 90% and saw the Member State Authorities at the bottom end with 63.1%.¹¹⁵

Q12	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=10</i>)	30.0%	60.0%	0.0%	10.0%
Beneficiaries (<i>n=46</i>)	10.9%	58.7%	21.7%	8.7%
Cluster (<i>n=16</i>)	12.5%	81.3%	6.2%	0.0%
MSAs (<i>n=57</i>)	3.5%	59.6%	28.1%	8.8%

More specifically, **Q35**¹¹⁶ asks whether the definition of experimental development is well-designed to address market failures. The results to this question are presented in chapter 4.1.4.3. They show that the majority of respondents agreed (75.7%) of which 12.6% ‘strongly’ agreed.

In response to whether significant changes in market failures occurred since the implementation of the current RDI State aid rules, 72.5% said ‘No’ and 27.5% of the respondents said ‘Yes’.

Q39	Have you noticed significant changes in market failures since 2015 that are not addressed by the current RDI State aid rules for...?	Yes	No
39.1 <i>n=91</i>	experimental development	27.5%	72.5%
NB: In total, 160 interviewees responded with 69 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’			

The results below show that clusters, MSAs and beneficiaries were the most critical ones as almost one third of the respondents stated that they did notice significant changes in market failures.

Q39.1 Experimental development	Yes	No
Associations (<i>n=3</i>)	0.0%	100.0%
Beneficiaries (<i>n=31</i>)	29.0%	71.0%
Cluster (<i>n=9</i>)	33.3%	66.7%
MSAs (<i>n=37</i>)	29.7%	70.3%
Non-Aid (<i>n=11</i>)	18.2%	81.8%

¹¹⁵ See Figure 21 in Annex 7. This question was not posed to ‘non-aided undertakings’.

¹¹⁶ Q35: Have the 2014 RDI State aid rules for **experimental development** been well-adapted to help you addressing on-going market developments and contemporary market failures?

Open statements - In total, 88 open statements were given in response to **Q12.1**¹¹⁷. Of these, an overwhelming majority of 61 statements criticised the definition of experimental development. On the other hand, 22 open statements (25%) confirmed that the definition is well-adapted and 5 (6%) were neutral or not applicable to the specific interview question. A large number of 18 statements point to difficulties in the differentiation between industrial research and experimental development. One interviewee explained further in this regard that the definitions *"should be aligned with those of Frascati manual"*. The other open statements criticising the definition mostly point to its perceived complexity and sometimes difficult application in practise with regard to different aspects. No other common topic could thus be identified.

As illustrated before, **Q39** and its associated subquestions focus on different aid measures, only four open statements regarding experimental development specifically were given. In total 61 open statements were given of which 19 (31%) pointed to changes in market failures while 20 (33%) reinforced the answer that no significant changes were observed and 22 (36%) were neutral or not applicable in the sense that they did not refer to changes in market failures. Among the four statements with regard to changes in market failures in experimental development, two MSAs representing the same institution pointed out that *"there has been an increase in barriers related to evolutionary economics (network / information asymmetry), which mainly impacts experimental development and innovation clusters."* They furthermore explained that stakeholders nowadays have to be involved in complex networks in order *"to define how to address a challenge -thus before starting experimental developments"*.

In response to the open question **Q41**¹¹⁸ 133 responses were given. Criticism was pointed out by 74 (56%) of them while 48 (36%) were supportive and 11 (8%) were neutral or not applicable in the sense that they do not refer to the question. The answers given were quite heterogeneous. Five respondents pointed to the linearity of research categories in the TRLs as well as in the State aid rules. One respondent stated for instance that *"the TRL would be overall useful, but shouldn't be linear, as the different R&D stages would rather be a 'back and forth process'"*.

Literature – The limited literature available on this topic confirms most of the positions taken by interviewees. One general statement identified in the Bird & Bird study, is the recommendation *"to reflect both relevant scientific manuals in the RDI State aid rules, the Frascati Manual for R&D as well as the Oslo Manual for innovation."*¹¹⁹ Since the quoted study has been published in 2015 it does not explicitly refer to the revised State aid rules on RDI but is mentioned here as it provides a relevant hint on the Frascati manual for R&D to be taken into account. This finding is confirmed by a recent DG REGIO Survey¹²⁰ enquiring difficulties in granting State aid under different GBER articles by asking representatives of different authorities¹²¹. One respondent stressed that the harmonisation of terminology and

¹¹⁷ Q12.1: Do you consider the current definition of the term **experimental development** in the 2014 State Aid rules for RDI to be sufficiently clear?

¹¹⁸ Q41: Do you consider the current classification of research activities and **their translation into technology readiness levels (TRLs)** in the 2014 RDI framework well-designed to differentiate the various phases of research projects in practice?

¹¹⁹ e.g. EC RTD (2015). State aid support schemes for RDI in the EU's international competitors in the fields of Science, Research and Innovation. Bird & Bird Brussels, page 707ff.

¹²⁰ European Commission, DG REGIO Data on Compliance Measures ESIF 201 received on 31/07/2019.

¹²¹ Authorities managing the implementation of ESIF, authorities coordinating State aid matters, bodies implementing research and innovation support funded from ESIF or other public funding and a category named 'Other' were included.

definitions associated with experimental development as well as industrial research with the Frascati manual would be appropriate. Moreover, one publication notes a lack of clarity concerning the rules applicable to experimental development projects.¹²² In more detail, it is criticised that the term ‘wide dissemination’ possibly leading to an increase in aid intensities is not clearly defined.

4.2.1.2 Definition of innovation clusters

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses incl. open statements, literature

Findings: In overall terms, the definition of innovation clusters was judged to be clear by 75.8% of the interviewees. This is reflected in the results broken down by stakeholder groups in which the majority found the definition to be clear with the notable exception of MSAs. In this case, 35.6% of the representatives of MSAs found it only ‘very little’ clear. Some critique was for instance expressed with regard to the definition being perceived as too broad (where do the innovation clusters start – where do they end?). Other challenges were seen in understanding of the terms “independent parties” and “organised groups” or more generally, how many conditions would need to be met in order to qualify as an innovation cluster. On the other hand, two findings in the literature underline positive aspects such as a clear definition of the price that can be charged for using the cluster and a clear description of operation aid for innovation clusters.

Conclusion: The current definition of ‘innovation clusters’ can be seen as sufficiently clear to enable the implementation of public support addressing relevant market failures without unduly distorting competition. However, for the stakeholder group of MSAs it would be helpful to have a more detailed definition at hand.

Core interviews - Q13 asks respondents whether the term ‘innovation cluster’ is sufficiently clear (see table below). The interview results show that 75.8% found the rules sufficiently clear, 17.9% even expressed strong agreement. At the same time, 24.2% of the respondents disagreed (of which 4.2% ‘strongly’ disagreed).

Q13 <i>n=95</i>	Do you consider the current definition of the term “innovation clusters” in the 2014 State aid rules for RDI as sufficiently clear?	%
	Strongly agree	17.9%
	Agree	57.9%
	Disagree	20.0%
	Strongly disagree	4.2%
<i>NB: In total, 147 interviewees responded with 52 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’</i>		

Disaggregating the results by stakeholder groups reveals the following picture:

Q13	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=9</i>)	44.4%	55.6%	0.0%	0.0%
Beneficiaries (<i>n=24</i>)	25.0%	54.2%	12.5%	8.3%
Cluster (<i>n=17</i>)	23.5%	70.6%	0.0%	5.9%
MSAs (<i>n=45</i>)	6.7%	55.6%	35.6%	2.1%

¹²² Statement by Buts, C., Nicolaides, P., & Pirlet, H. (2019). Puzzles of the State aid Rules on RDI. European State aid Law Quarterly, 18(4), 489-509. The same statement also concerns industrial research projects. More specifically, the statement expresses that one condition under which the aid intensity may be increased is not clearly defined. The aid intensity may be increased if ‘the results of the project are widely disseminated through conferences, publication, open access repositories, or free or open source software.’ The authors criticise that the GBER does not define what exactly is meant by wide dissemination.

It is not surprising that the cluster representatives were the largest group to believe the definition of the term ‘innovation cluster’ to be clear (in total 94.1% agreement versus 62.3% of MSA). One could argue that this would be serving the most important purpose of the definition. On the other hand, the 37.8% of MSAs voting ‘very little’ or ‘not at all’ obviously struggled with the definition. Given their important role in terms of the State aid granting process, some further education on this particular term could thus, be helpful.

Additionally, **Q39** gives insight in respondents’ opinions of possible changes in market failures as can be seen below. The interview results show that 70.2% of respondents did not notice significant changes in market failures that are not addressed by the current RDI State aid rules for innovation clusters, while 29.8% did so.

Q39	Have you noticed significant changes in market failures since 2015 that are not addressed by the current RDI State aid rules for...?	Yes	No
39.3 n=57	innovation clusters	29.8%	70.2%
NB: In total, 160 interviewees responded with 103 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’			

From the table below it becomes apparent that with 36% saying ‘yes’, the stakeholder group of MSAs did notice significant changes in market failure at most.

Q39.3 Innovation clusters	Yes	No
Associations (n=2)	0.0%	100.0%
Beneficiaries (n=19)	31.6%	68.4%
Cluster (n=9)	22.2%	77.8%
MSAs (n=25)	36.0%	64.0%
Non-Aid (n=2)	0.0%	100.0%

Open statements – Assessing the reasons given by the interviewees why they see the definition not to be clear (enough) points to a number of issues. Many interview partners simply think that the definition is “too broad” or “too unspecific” (citation: *Where do innovation clusters start, where do they end?*). Others experienced uncertainties regarding the interpretation of “independent parties” and “organised groups” or how many/which conditions exactly need to be fulfilled by the structure to be considered as an innovation cluster. For instance, the question was raised if it is already sufficient to promote the sharing of facilities and the exchange of knowledge or if every single condition needs to be fulfilled (i.e. sharing of facilities, exchange of knowledge and expertise / knowledge transfer, networking, information dissemination, collaboration amongst organisations and undertakings).

In response to **Q13.1**¹²³ 58 statements were given in total with 33 (57%) pointing to criticism of the definition, 15 (26%) confirming that it is well-adapted and 10 (17%) being neutral or not applicable. Given the rather negative views expressed by MSAs the comments submitted by this stakeholder group in response to **Q13.1**¹²⁴ were reviewed with particular focus. Out of 34 statements given by representatives of MSAs¹²⁵ 22 expressed their difficulties with the definition while 8 confirmed their response that the definition is sufficiently clear. Another five perceive the definition being too broad and leaving too much room for interpretation. Finally, four statements

¹²³ Q13.1: Do you consider the current definition of the term *innovation clusters* in the 2014 State aid rules for RDI as sufficiently clear? Please elaborate.

¹²⁴ Q13.1: Do you consider the current definition of the term *innovation clusters* in the 2014 State aid rules for RDI as sufficiently clear? Please elaborate.

¹²⁵ 17 of them specified that they are an ‘Aid granting or Managing Authority’.

reveal that respondents find the definition itself clear but face obstacles in its application due to contrasting views of the EC and Member States.

In respect of the sub-question whether the definition of the aid measure would allow to address the relevant market failures has produced a number of open statements pointing to two findings:

- i. five interviewees felt uncomfortable with Art. 27.2 restricting Cluster aid to only one entity (the operator) which in turn forces to channel all the costs through the one "eligible" cluster operator and makes it more complicated to declare costs;
- ii. the limitation of operating aid to a period of ten years is found not sufficient by two interviewees given the long-term perspective needed to create and run such a cluster in a sustainable way.

Literature – Two statements were identified in this regard and point to positive aspects of the newly introduced Art. 27: i) the article is precise in stating that the price charged for using the cluster must be equal to the market price or it must cover the costs¹²⁶ and that ii) the description of operation aid for innovation clusters is an improvement.¹²⁷

¹²⁶ Buts, C., Nicolaides, P., & Pirllet, H. (2019). Puzzles of the State aid Rules on RDI. *European State aid Law Quarterly*, 18(4), 489-509.

¹²⁷ EC (2018). European Cluster Policy Forum – Towards modern cluster policy for industrial change and growth – Input paper 1st meeting.

4.3 Relevance

According to the Better Regulation Toolbox analysis associated with the evaluation criterion 'relevance' "should identify if there is any mismatch between the objectives of the intervention and the (current) needs or problems...".¹²⁸ In the specific context of RDI State aid rules, the beneficiaries' needs are determined first and foremost by existing market failures. These consist for instance in coordination problems, imperfect information as well as in limited access to finance. By its very nature, the RDI market development is dynamic, sometimes even disruptive. Technology advancements as well as global competition are constantly shaping the market environment with the need to accommodate such developments by a sufficiently flexible legal framework including the definition of related terms and eligibility criteria.

4.3.1 Evaluation Question 6

EQ 6: Has the scope of the experimental development definition (covered by Art. 2 (86) of the GBER and section 1.3 (j) of the RDI Framework respectively), as well as the rules applicable to experimental development projects (incl. eligible activities, eligible costs, aid intensities, aid beneficiaries), been well-adapted to on-going market developments and contemporary market failures faced by companies in Europe without unduly distorting competition?

4.3.1.1 Adaption to on-going market developments

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: According to core interview results, respondents feel majorly comfortable with the scope of the experimental development definition as 75.7% judged it to be well in line with on-going market developments. Similarly, 81.9% judged the eligibility criteria applicable to the experimental development definition as well-designed. At the same time, and echoing the discussion held in section 4.1.4.3, the level of aid intensities was addressed by four open statements as is the rapid technological developments. The latter especially was seen as a challenge for the current definition. No evidence was collected in the literature.

Conclusion: Both, the scope of the experimental development definition as well as the rules applicable to experimental development projects are seen to be well-adapted to on-going market developments. At the same time and as outlined before, some interviewees claim higher aid intensities in order to be able to compete globally and to create a level-playing field.

Core interviews – Two interview questions, **Q35** and **Q42.7** answer the evaluation question directly (see table below). **Q35** asks respondents if the rules have been well-adapted to help address on-going market developments and contemporary market failures. The interview results reveal that 75.7% assessed the rules to be well-adapted, 63.1% agreed and 12.6% even strongly agreed upon this question.

Q35 <i>n=103</i>	Have the 2014 RDI State aid rules for experimental development been well-adapted to help you address on-going market developments and contemporary market failures?	%
	Strongly agree	12.6%
	Agree	63.1%
	Disagree	18.4%
	Strongly disagree	5.9%
NB: In total, 161 interviewees responded with 58 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'		

¹²⁸ See the Better Regulation Toolbox, #47 Evaluation criteria and questions, p. 351 on relevance as presented at http://www.emcdda.europa.eu/system/files/attachments/7908/better-regulation-toolbox_1.pdf.

When disaggregating the results by stakeholder groups, it can be seen that agreement is highest among clusters and MSAs.

Q35	Strongly agree	Agree	Disagree	Strongly disagree
Associations (n=4)	0.0%	100.0%	0.0%	0.0%
Beneficiaries (n=38)	15.8%	55.3%	21.1%	7.8%
Cluster (n=14)	14.3%	71.4%	14.3%	0.0%
MSAs (n=39)	12.8%	61.5%	20.5%	5.2%
Non-Aid (n=8)	0.0%	75.0%	12.5%	12.5%

In addition, respondents agreed to an even greater extent to the question of whether the eligibility criteria were well-designed to address on-going market developments as seen in the table below. The interview results indicate that 81.7% judged the eligibility criteria to be well-designed to address experimental development, 48.9% to some extent and 32.8% even to a great extent.

Q42	Do you consider the eligibility criteria (eligible activities, costs, aid intensities, eligible beneficiaries) of the following support measures well-designed to address on-going market developments?	To a great extent	Some-what	Very little	Not at all
42.7 n=131	Experimental development	32.8%	48.9%	13.0%	5.3%
NB: In total, 161 interviewees responded with 30 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					

In response to **Q42.7** agreement is highest among beneficiaries and MSAs.

Q42.7 Experimental development	To a great extent	Somewhat	Very little	Not at all
Associations (n=5)	40.0%	40.0%	20.0%	0.0%
Beneficiaries (n=45)	37.8%	51.1%	8.9%	2.2%
Cluster (n=15)	26.7%	53.3%	20.0%	0.0%
MSAs (n=54)	31.5%	44.4%	14.8%	9.3%
Non-aid (n=12)	25.0%	58.3%	8.3%	8.4%

In total, the interview results present a very positive perception of the definition of experimental development as well as the rules applicable to projects of this kind.

Open statements - In addition to the results on **Q35.1**¹²⁹ presented in section 4.1.4.3, it is acknowledged that the rapid technological developments are a challenge in general for the current definitions as they cause ambiguities over time. This could be explained by four other statements given, stating that the translation into TRLs is relevant for some sectors, namely technology-driven R&D activities ones only. According to the interviewees 'societal challenges' or 'human research topics' are less technology driven. One interviewee thus proposes to develop: *Innovation Readiness Levels* in order to account for this development.

In addition, 31 open statements are given in response to **Q42.8**¹³⁰ asking the respondents to elaborate on the design of the eligibility criteria associated with

¹²⁹ Q35.1: Have the 2014 RDI State aid rules for **experimental development** been well-adapted to help you addressing on-going market developments and contemporary market failures? Please specify and provide examples.

¹³⁰ Q42.8: Do you consider the **eligibility criteria** (eligible activities, costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Please elaborate.

experimental development. Criticism was expressed by 15 (48%) of them while 10 (32%) found the eligibility criteria well-designed and 6 (20%) were neutral or not applicable to the specific interview question. Two interviewees claimed a higher aid intensity without further justifying this claim. The claim for higher aid intensities is underlined by the results obtained in a recent DG REGIO Survey.¹³¹ In response to whether difficulties were encountered associated with their RDI support measures falling under Art. 25 of the GBER, 42% of the respondents said 'Yes' and 58% said 'No'. In this respect, two respondents criticised the given aid intensities. One of them further pointed out that higher aid intensities in Art. 25 generally, not focused on experimental development, are needed as the activities are risk related.

Literature – No evidence was collected.

4.3.1.2 Adaption to market failures without unduly distorting competition

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: All core interview results in this respect show that the scope of the experimental development definition as well as the associated rules and their adaptation is approved in terms of their suitability to address underlying market failures without distorting competition as 72.5% and 71.6% of the respondents agreed respectively. More concretely, access to finance as well as the market failures associated with network failures and asymmetric information were indicated as most relevant for R&D / experimental development activities. No useful finding was collected in the literature.

Conclusion: Both, the scope of the experimental development definition as well as the rules applicable to experimental development projects are seen to be well-adapted to market failures without distorting competition. Access to finance as well as network and information asymmetries are identified to be the most relevant market failures in case of experimental development.

Core interviews – Reference is made to the evidence presented already in other sections of the study, namely EQ1.e/f, as well as sections 4.1.4.2 and 4.1.4.4 addressing the topic of potential negative i.e. market distorting effects of State aid. To recall the results of **Q36.2**¹³² on the 'definition of experimental development', 92.2% of respondents stated not to have experienced negative effects on competition as a consequence to State aid provided.

With regard to the evolution or change of market failures in the area concerned by Art. 25(2)c, the two following interview questions are relevant, **Q39.1** and **Q40.2**. **Q39** asks respondents whether they have noticed the significant changes in market failures that are not addressed by the rules for the experimental development. The majority of 72.5% respondents did not notice those changes since the new rules came into effect (Q39.1). At the same time, 27.5% of the respondents (equal to 13 individuals) noticed such changes. As can be seen below, **Q40** asks interviewees about the definitions set out in the 2014 RDI State aid rules. The results show that 71.6% of respondents found that the definition and scope of experimental development in particular help to support activities which address on-going market developments, while 28.4% did not share that opinion.

¹³¹ European Commission, DG REGIO Data on Compliance Measures ESIF 201 received on 31/07/2019.

¹³² Q36.2: In your experience, did State aid for RDI activities granted under the 2014 State aid rules lead to negative effects on competition, in particular in the case of State aid granted for experimental development?

Q39	Have you noticed significant changes in market failures since 2015 that are not addressed by the current RDI State aid rules for...?	Yes	No
39.1 n=91	experimental development	27.5%	72.5%
NB: In total, 160 interviewees responded with 69 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
Q40	In your view, do the definitions set out in the 2014 RDI State aid rules and the resulting scope of application of those definitions help to support activities which address on-going market developments and contemporary market failures?		
40.2 n=102	Definition and scope of experimental development	71.6%	28.4%
NB: In total, 157 interviewees responded with 55 ticking the option N/A percentage amounts calculated without responses received as 'not applicable/ don't know'			

Breaking the results down for each stakeholder group shows that clusters, MSAs and beneficiaries were the ones who did notice significant changes in market failures with regard to experimental development the most.

Q39.1 Experimental development	Yes	No
Associations (n=3)	0.0%	100.0%
Beneficiaries (n=31)	29.0%	71.0%
Cluster (n=9)	33.3%	66.7%
MSAs (n=37)	29.7%	70.3%
Non-Aid (n=11)	18.2%	81.8%

With regard to **Q40.2**, which is illustrated below, it becomes apparent that MSAs estimated most tentatively, as only 63% said 'yes' in response to whether the definition and scope of experimental development helped to support activities which address on-going market developments and contemporary market failures.

Q40.2 Definition and scope of experimental development	Yes	No
Associations (n=3)	100.0%	0.0%
Beneficiaries (n=29)	79.3%	20.7%
Cluster (n=13)	69.2%	30.8%
MSAs (n=46)	63.0%	37.0%
Non-Aid (n=11)	81.8%	18.2%

Open statements associated with **Q39.5**¹³³ give little insight in significant changes of market failures in practice, as the statements are very general and sometimes confuse market failures with competitive challenges (which was experienced in throughout the interview responses). In total, 61 interviewees provided statements on this topic. Of these, 19 respondents (31%) respondents were rather critical, 20 (33%) were supportive and 22 (36%) were neutral or not relevant for this issue. Two statements were given with regard to market failures in the field of experimental development, namely network and information asymmetries.¹³⁴ According to the interviewees, network failures arise as "different stakeholders have to be involved in complex networks, which geometry might vary overtime, mainly with the purpose to define how to address a challenge -thus before starting experimental development". Another interviewee speaking for an MSA observed "an increased need for finance for

¹³³ Q39.5: Have you noticed significant changes in **market failures** since 2015 that are not addressed by the current RDI State Aid rules for...? Please elaborate.

¹³⁴ The interviewees stated that this also concerns innovation clusters.

emerging start-ups, scale-ups and unicorns since 2015, hence this particular market failure has become worse over time."

In response to **Q40.5**¹³⁵, 79 open statements were given. Note has to be taken that these apply to all definitions concerned in the interview question, namely that of research infrastructures, experimental development, innovation clusters and process and organisational innovation. Of these 37 (47%) pointed to criticism of the definitions, 22 (28%) underlined their good design and 20 (25%) were neutral or not applicable. A total of 15 of these statements related to experimental development specifically but were quite heterogenous. As similar topic, difficulties with regard to the distinction between industrial research and experimental development was identified by three interviewees. This is supported by two respondents of a recent DG REGIO Survey¹³⁶ in which one respondent states that "*it is difficult to distinguish the different types of categories (for example industrial research / experimental development)*". Another respondent identifying the same difficulty further states that one level of financing for the two types, industrial research and experimental development would simplify the process. No relevant statements or common positions on the topic of market failures could be identified.

For triangulating the particular statement made on the increased need for finance the **literature review** assessed the SAFE 2019. Here it is observed that: *access to finance has steadily declined in importance throughout the survey years. In 2014, it was the fourth most pressing problem. (At present) the access to finance is the most pressing problem to (only) 7% of SMEs in the EU-28.*¹³⁷ This statement however, refers to SMEs in general, and not to the ones active in R&D&I. This finding can thus not be used to invalidate the finding above.

4.3.2 Evaluation Question 7

EQ7: Has the scope of State aid rules on investment aid for research infrastructures, investment and operating aid for innovation clusters and aid for process and organisational innovation, including the applicable definitions, been well-designed/fit for purpose in view of the on-going market developments and market failures faced by companies in Europe without unduly distorting competition?

7.1 In particular:

- a. Market failures (Did the rules correspond to contemporary market failures?)
- b. Eligible activities
- c. Eligible beneficiaries
- d. Eligible costs
- e. Aid intensities

7.2 Have the rules corresponded to contemporary

- a. Innovation models and innovation challenges, including those relevant for SMEs?
- b. Technology advancements, including in the area of key-enabling technologies (KETs)?
- c. Global value chains?

7.3 Have the rules led to increased RDI activities of the aid beneficiaries and in the case of clusters – of the RDI activities of their users?

¹³⁵ Q40.5: In your view, do the **definitions** set out in the 2014 RDI State aid rules and the resulting scope of application of those definitions help to support activities which address on-going market developments and contemporary market failures? Please elaborate.

¹³⁶ European Commission, DG REGIO Data on Compliance Measures ESIF 201 received on 31/07/2019.

¹³⁷ Doove, S., Kwaak, T., & Span, T. (2015). Survey on the access to finance of enterprises (SAFE). Analytical Report, European Commission., page 131.

4.3.2.1 EQ 7.1.a Correspondence to contemporary market failures

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The interview results show that in case of all three aid measures concerned a majority of respondents considered State aid necessary to engage in the respective RDI activities. This was particularly the case for innovation clusters where 100% of the respondents agreed. Additionally, the literature points to the special need of SMEs to finance gaps. The results furthermore show that a majority of respondents did not notice significant changes in market failures.

- Art. 26 ‘Investment aid for research infrastructure’: 93.3% of the respondents considered State aid necessary. According to the interview results global competition is the main market reason associated with the development or upgrade of research infrastructure. Moreover, 82.3 % of the respondents denied significant changes in market failures.
- Art. 27 ‘Aid for innovation clusters’: 100% of the respondents considered State aid necessary. Concerning innovation clusters, the respondents of the interviews identified coordination and network failures as the main market failure. Moreover, 70.2 % of the respondents denied significant changes in market failures. Regarding innovation clusters, two open statements pointed to upcoming market failures regarding Art. 27 in evolutionary economics (network/ information asymmetries).
- Art. 29 ‘Aid for process and organisational innovation’: 77% of the respondents considered State aid necessary. In the case of process and organisational innovation an uncertain rate of return is judged to be the greatest obstacle to overcome. Moreover, 77.8 % of the respondents denied significant changes in market failures.

Conclusion: Similar to the findings in EQ1.a, the market failures experienced by interviewees seem to be sufficiently addressed by the rules. Two interviewees identified changes in market failures with respect to innovation clusters due to an increase in network failures and information asymmetries.

Core interviews – Q32 asks clusters and beneficiaries whether they considered State aid necessary according to each aid measure concerned. The interview results below illustrate that 93.3% inferred that the rules were necessary for the development or upgrade of research infrastructure, 60% of them even strongly agreed upon this statement. Considering the RDI activities such as setting up an innovation cluster and operation of innovation cluster, 100% agreed upon the necessity of State aid. Regarding the process and organisational innovation, 77% of respondents agreed upon the need of State aid and 23% disagreed.

It is thus noticeable that State aid seems to be most necessary in the case of innovation clusters.

Q32	Do you consider that State aid was necessary for you to carry out any of the following RDI activities?	Strongly agree	Agree	Disagree	Strongly disagree
32.2 n=15	Development/upgrade of research infrastructure	60.0%	33.3%	6.7%	0.0%
NB: In total, 15 interviewees responded with 0 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
32.3 n=10	Setting up innovation cluster	90.0%	10.0%	0.0%	0.0%
NB: In total, 13 interviewees responded with 3 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
32.4 n=10	Operation of innovation cluster	90.0%	10.0%	0.0%	0.0%
NB: In total, 13 interviewees responded with 3 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
32.6 n=13	Process and organisation innovation	38.5%	38.5%	23.0%	0.0%
NB: In total, 13 interviewees responded with 0 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					

Disaggregating the results by stakeholder groups shows that both beneficiaries and clusters agree that the State aid was necessary for development/upgrade of research infrastructure.

Q32.2	Development/upgrade of research infrastructure	Strongly agree	Agree	Disagree	Strongly disagree
Beneficiaries (n=10)		60.0%	30.0%	10.0%	0.0%
Cluster (n=5)		60.0%	40.0%	0.0%	0.0%

In the case of setting up an innovation cluster even more interviewees, representing the stakeholder groups of beneficiaries and clusters strongly agree with the necessity of State aid.

Q32.3	Setting up innovation cluster	Strongly agree	Agree	Disagree	Strongly disagree
Beneficiaries (n=4)		75.0%	25.0%	0.0%	0.0%
Cluster (n=6)		100.0%	0.0%	0.0%	0.0%

Considering the operation of innovation cluster, again both beneficiaries and clusters strongly agree upon the need consider of the State aid.

Q32.4	Operation of innovation cluster	Strongly agree	Agree	Disagree	Strongly disagree
Beneficiaries (n=4)		75.0%	25.0%	0.0%	0.0%
Cluster (n=6)		100.0%	0.0%	0.0%	0.0%

All respondents who belong to clusters agreed upon the need of State aid to carry out process and organisational innovation, as opposed to beneficiaries, 33.3% of which had a different opinion.

Q32.6 Process and organisation innovation	Strongly agree	Agree	Disagree	Strongly disagree
Beneficiaries (n=9)	44.4%	22.2%	33.4%	0.0%
Cluster (n=4)	25.0%	75.0%	0.0%	0.0%

The responses to another relevant question, **Q33**¹³⁸, are presented in section 4.1.1.1 above: ‘Global competition’, closely followed by ‘uncertain rate of return’ were identified as main reasons for State aid in the case of research infrastructures, whereas in case of setting-up an innovation cluster, ‘coordination and network failures’ were considered as the main reasons. With particular regard to the *operation of an innovation cluster* as well as *process and organisational innovation*, the ‘uncertain rate of return’ was another challenge for which State aid was deemed necessary.

In respect of changes occurring to the market failures defined by the 2014 State aid rules **Q39.2-4** had been posed to all stakeholder groups (and presented in sections 4.1.4, 4.3.1 and 4.1.3.2). With regard to the specific aid measures concerned in the table below, an overwhelming majority of respondents believed that no significant changes would have happened since 2015. A total of 82.3% of interviewees did not notice significant changes in market failures that are not addressed by the rules for research infrastructure, while 17.7% did so. Regarding innovation clusters and process and organisational innovation, the answer ‘no’ was chosen by 70.2% and 77.8% of respondents respectively.

Q39	Have you noticed significant changes in market failures since 2015 that are not addressed by the current RDI State aid rules for...?	Yes	No
39.2 n=79	research infrastructure	17.7%	82.3%
NB: In total, 161 interviewees responded with 82 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’			
39.3 n=57	innovation clusters	29.8%	70.2%
NB: In total, 160 interviewees responded with 103 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’			
39.4 n=63	process and organisational innovation	22.2%	77.8%
NB: In total, 160 interviewees responded with 97 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’			

Disaggregating the results by stakeholder groups shows that beneficiaries and MSAs did notice significant changes in market failures in case of research infrastructures.

Q39.2 Research infrastructure	Yes	No
Associations (n=3)	0.0%	100.0%
Beneficiaries (n=26)	23.1%	76.9%
Cluster (n=8)	0.0%	100.0%
MSAs (n=34)	23.5%	76.5%
Non-Aid (n=8)	0.0%	100.0%

In the case of innovation clusters some more interviewees, representing the stakeholder groups of MSAs, beneficiaries and clusters did notice significant changes in market failures.

¹³⁸Q33: What were the main market reasons why you considered State aid necessary to engage in the following RDI measures....?

Q39.3 Innovation clusters	Yes	No
Associations (<i>n</i> =2)	0.0%	100.0%
Beneficiaries (<i>n</i> =19)	31.6%	68.4%
Cluster (<i>n</i> =9)	22.2%	77.8%
MSAs (<i>n</i> =25)	36.0%	64.0%
Non-Aid (<i>n</i> =2)	0.0%	100.0%

In process and organisational innovation, again beneficiaries and MSAs did notice significant market failures.

Q39.4 Process and organisational innovation	Yes	No
Associations (<i>n</i> =2)	0.0%	100.0%
Beneficiaries (<i>n</i> =22)	31.8%	68.2%
Cluster (<i>n</i> =8)	0.0%	100.0%
MSAs (<i>n</i> =25)	28.0%	72.0%
Non-Aid (<i>n</i> =6)	0.0%	100.0%

Core interviews – Q40 asks interviewees whether the definitions in the 2014 RDI State aid rules help to support activities which address on-going market developments and contemporary market failures? The interview results show that 71.9% inferred that the definition and scope of research infrastructure was helpful, while 28.1% of respondents did not assume so. Considering the definition and scope of innovation clusters, 68.7% agreed that the rules help to address on-going market developments and contemporary market failures, while 31.3% of respondents did not agree upon that. Regarding the definition and scope of process and organisational innovation, 71.2% found the rules to be helpful, while 28.8% of respondents did not think so.

Q40	In your view, do the definitions set out in the 2014 RDI State aid rules and the resulting scope of application of those definitions help to support activities which address on-going market developments and contemporary market failures?	Yes	No
40.1 <i>n</i> =96	Definition and scope of research infrastructure	71.9%	28.1%
NB: In total, 158 interviewees responded with 62 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
40.3 <i>n</i> =67	Definition and scope of innovation clusters	68.7%	31.3%
NB: In total, 158 interviewees responded with 91 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			
40.4 <i>n</i> =66	Definition and scope of process and organisational innovation	71.2%	28.8%
NB: In total, 158 interviewees responded with 92 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'			

Disaggregating the results by stakeholder groups shows that agreement among associations is highest while MSAs are less approving in case of research infrastructure.

Q40.1 Definition and scope of research infrastructure	Yes	No
Associations (<i>n</i> =3)	100.0%	0.0%
Beneficiaries (<i>n</i> =30)	80.0%	20.0%
Cluster (<i>n</i> =11)	90.9%	9.1%
MSAs (<i>n</i> =44)	56.8%	43.2%
Non-Aid (<i>n</i> =8)	87.5%	12.5%

In the case of innovation clusters, agreement was highest among associations and non-aided undertakings. Again, MSAs judged less approvingly.

Q40.3 Definition and scope of innovation clusters	Yes	No
Associations (n=3)	100.0%	0.0%
Beneficiaries (n=15)	73.3%	26.7%
Cluster (n=10)	90.0%	10.0%
MSAs (n=34)	52.9%	47.1%
Non-Aid (n=5)	100.0%	0.0%

It is noticeable that agreement by MSAs slightly increased in case of process and organisational innovation.

Q40.4 Definition and scope of process and organisational innovation	Yes	No
Associations (n=2)	100.0%	0.0%
Beneficiaries (n=15)	86.7%	13.3%
Cluster (n=10)	70.0%	30.0%
MSAs (n=32)	59.4%	40.6%
Non-Aid (n=7)	85.7%	14.3%

With regard to **open statements** in response to Q39.5¹³⁹ not too many findings were obtained on the changes in market failures related to the aid measures concerned. In response to Q39.5¹⁴⁰ 61 open statements were given in total of which 20 (33%) pointed to changes in market failures, 19 (31%) denied such changes and 23 (36%) were neutral or not applicable in the sense that they did not respond to the interview question. With respect to Art. 26 three statements were given. None of these statements relate to significant changes in market failures themselves but rather to difficulties arising within the application of this article. One of them expresses difficulties with respect to the application of the claw-back mechanism and another would like to see more funding for pilot research. The third respondent suggests that the infrastructure of research institutions should be extended *"to companies as well, not only to scientific organisations"*.

With respect to Art. 27 five statements were given by interviewees in total. Two of these interviewees representing the same MSA stated that *"there has been an increase in barriers related to evolutionary economics (network/ information asymmetry), which mainly impacts experimental development and innovation clusters"*.

With respect to Art. 29, only two statements were given. One representative of an MSA pointed out that *"the topic digitalisation (also AI and Quantencomputing) is not emphasised enough"*.

Literature – The publications referring to a financing gap affecting SMEs, particularly the ones active in innovation were presented in section 4.1.1.1. For this particular sub-question, it can be concluded that the State aid rules appear to be most relevant for SMEs that try to be innovative but are challenged with finance gaps. More generally, the literature also points to upcoming other barriers to RDI activities than

¹³⁹ Q39.5: Have you noticed significant changes in **market failures** since 2015 that are not addressed by the current RDI State Aid rules for...? Please elaborate.

¹⁴⁰ Q39.5: Have you noticed significant changes in **market failures** since 2015 that are not addressed by the current RDI State Aid rules for...? Please elaborate.

market failures such as organisational and institutional rigidities or missing personnel.¹⁴¹

4.3.2.2 EQ 7.1.b Definition of eligible activities

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The interviewees judged the eligibility criteria to be well-designed in general and adequately addressing the on-going market developments. Notwithstanding, some difficulties in the identification and distinction of certain eligible activities were mentioned in open comments and validated by statements from two literature sources.

- Art. 26 'Investment aid for research infrastructures': 75.9% of the interviewees found the eligibility criteria (eligible activities, eligible costs, aid intensities, eligible beneficiaries) associated with investment aid for research infrastructure generally well-designed. Concerning eligible activities statements in the literature as well as in the interviews were found expressing ambiguities in the differentiation of economic and non-economic activities.
- Art. 27 'Aid for innovation clusters': 69.8% of the interviewees found the eligibility criteria (eligible activities, costs, aid intensities, eligible beneficiaries) associated with the set-up or upgrade and/or operation of innovation clusters generally well-designed. Regarding eligible activities the maximum funding period of ten years is criticised by three interviewees out of six criticizing eligible activities with respect to innovation clusters.
- Art. 29 'Aid for process and organisational innovation': 76.6% of the interviewees considered the eligibility criteria (eligible activities, costs, aid intensities, eligible beneficiaries) associated with process and organisational innovation as generally well-designed. According to two interviewees out of four pointing to criticism concerning eligible activities, difficulties arise with respect to the distinction between the two.

Conclusion: Generally, the eligibility criteria are judged to be well-designed with minor difficulties arising in the distinction of economic and non-economic activities, the ten-year funding period of clusters and the differentiation of process and organisational innovation.

Core interviews – Q42 asks respondents whether the eligibility criteria are well-designed to address on-going market developments (see in the table below). In response to each sub-question concerning the aid measures examined in **EQ 7**, namely **Q42.1**, **3** and **5**, the majority of respondents considered the eligibility criteria well-designed. In more detail, for the 'development or upgrade of research infrastructure' 75.9% of the respondents agreed with 25% agreeing 'to a great extent' while 50.9% agreed to the rating category 'somewhat'. The numbers are similar regarding process and organisational innovation and are slightly lower regarding innovation clusters. It is noticeable that 10.8% of the respondents determined the eligibility criteria for the 'set-up or upgrade and/or operation of innovation clusters' not to be well-designed 'at all'.

¹⁴¹ See e.g. Institut des Politiques Publiques (Cottet, S.; Henriët, S.; Millock, K., Monnet, M., Romanello, L.) (2017) "Evaluation intermédiaire des aides "Programmes d'investissements d'avenir" de l'ADEME".

Q42	Do you consider the eligibility criteria (eligible activities, costs, aid intensities, eligible beneficiaries) of the following support measures well-designed to address on-going market developments?	To a great extent	Some-what	Very little	Not at all
42.1 n=112	Development or upgrade of research infrastructure	25.0%	50.9%	15.2%	8.9%
NB: In total, 162 interviewees responded with 50 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
42.3 n=84	Set-up or upgrade and/or operation of innovation clusters	21.4%	48.8%	19.0%	10.8%
NB: In total, 161 interviewees responded with 77 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
42.5 n=90	Process and organisational innovation	22.2%	54.4%	15.6%	7.8%
NB: In total, 160 interviewees responded with 70 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					

Disaggregating the results by stakeholder groups shows that agreement among associations was highest while MSAs were least affirmative in their replies to the evaluation question as applicable to research infrastructures.

Q42.1 Development or upgrade of research infrastructure	To a great extent	Somewhat	Very little	Not at all
Associations (n=6)	50.0%	33.3%	16.7%	0.0%
Beneficiaries (n=40)	27.5%	60.0%	5.0%	7.5%
Cluster (n=11)	36.4%	45.5%	18.1%	0.0%
MSAs (n=48)	18.8%	43.8%	22.9%	14.5%
Non-Aid (n=7)	14.3%	71.4%	14.3%	0.0%

In case of aid for the set-up or upgrade of innovation clusters, agreement was highest among non-aided undertakings. Again, MSAs were least affirmative in their replies to the evaluation question, as applicable to innovation clusters.

Q42.3 Set-up or upgrade and/or operation of innovation clusters	To a great extent	Somewhat	Very little	Not at all
Associations (n=7)	42.9%	42.9%	14.2%	0.0%
Beneficiaries (n=22)	31.8%	50.0%	9.1%	9.1%
Cluster (n=13)	23.1%	61.5%	15.4%	0.0%
MSAs (n=36)	8.3%	41.7%	30.6%	19.4%
Non-Aid (n=6)	33.3%	66.7%	0.0%	0.0%

It is noticeable that agreement by MSAs increased in case of process and organisational innovation.

Q42.5 Process and organisational innovation	To a great extent	Somewhat	Very little	Not at all
Associations (n=5)	40.0%	40.0%	20.0%	0.0%
Beneficiaries (n=31)	29.0%	51.6%	9.7%	9.7%
Cluster (n=14)	7.1%	78.6%	14.3%	0.0%
MSAs (n=34)	20.6%	44.1%	23.5%	11.8%
Non-Aid (n=6)	16.7%	83.3%	0.0%	0.0%

Open statements in response to **Q42** are presented below in accordance with the specific aid-measure concerned.

- **Q42.2**¹⁴² Development or upgrade of research infrastructure

In total, 66 statements were given in response to **Q42.2**. Here, 28 (42%) of these point to criticism while 20 (30%) express accordance with the eligibility rules and 18 (28%) were neutral or not applicable. In the current and following sections 4.3.2.2-4.3.2.5 comments given with respect to each eligibility rule concerned will be considered. In this chapter, comments given with respect to eligible activities will be analysed only.

Whether public funding to a research infrastructure falls under State aid or not, is determined by the scale at which this undertaking pursues 'economic' versus 'non-economic' activities.¹⁴³ Four interviewees' statements, all representing MSAs, point to difficulties in differentiating between these two categories which would lead to uncertainties especially for universities and research organisations. More specifically, one interviewee stated that *"it often leads to a very artificial distinction. Also, research organisations are often not at all equipped with the right analytical accounting tools to make this distinction"*. Another respondent added that *"it is difficult to prove that profits are completely reinvested in R&D activities"*.

This finding can be confirmed by a recent DG REGIO Survey¹⁴⁴. Representatives of different authorities¹⁴⁵ were asked whether they have encountered any difficulties with meeting the requirements of Art. 26, GBER if their RDI support measures fall under it. 65% of the respondents denied any difficulties while 35% did notice them. Of these 35%, 7 further elaborated in statements that they encountered difficulties with calculating the ratio of economic activities and thereby the differentiation of economic and non-economic activities.

- **Q42.4**¹⁴⁶ Set-up or upgrade and/or operation of innovation clusters

In response to **Q42.2**, 42 respondents elaborated on their response. To be precise, 23 of them mentioned criticism while 7 were supportive and 12 neutral or not applicable. As above, statements with regard to eligible activities will be analysed in the following.

In total, six statements were given with regard to eligible activities associated with Art. 27. With the exception of one, all statements were given by MSAs.

With regard to operating aid granted for innovation clusters, three interviewees all representing MSAs, stated their opinion that a funding period of more than ten years would be needed to support the development of sustainable structures e.g.: *"smaller innovation clusters risk not being viable after ten years"*.

- **Q42.6**¹⁴⁷ Process and organisational innovation

¹⁴² Q42.2: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Development or upgrade of research infrastructure. Please elaborate.

¹⁴³ See RDI Framework, 2.11, 20. Where a research organisation or research infrastructure is used for both economic and non-economic activities, public funding falls under State aid rules only insofar as it covers costs linked to the economic activities (6)

¹⁴⁴ European Commission, DG REGIO Data on Compliance Measures ESIF 201 received on 31/07/2019.

¹⁴⁵ Authorities managing the implementation of ESIF, authorities coordination State aid matters, bodies implementing research and innovation support funded from ESIF or other public funding and a category named 'Other' were included.

¹⁴⁶ Q42.4: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Set-up or upgrade and/or operation of innovation clusters. Please elaborate.

In this case, 39 open statements were given in response to **Q42.6** with 18 (46%) pointing out criticism, 14 (36%) being supportive and 7 (18%) neutral or not applicable ones. In the following, only open statements concerning eligible activities are analysed.

With regard to eligible activities and Art. 29, four open statements were given by interviewees. Two of these interviewees representing MSAs stated that they find it difficult to clearly distinguish between ‘product’- and ‘process’- related innovation and judge the eligibility criteria not to be consistent with daily practice.

Available **literature** sources validate the existence of uncertainties with regard to the distinction of economic and non-economic activities in case of the development or upgrade for research infrastructure (Art. 26). For instance, Buts et al.¹⁴⁸ state that uncertainty arises with regard to several sub-topics, namely: *“the definition of an undertaking, education and research, research organisation, knowledge transfer, wide dissemination and effective collaboration.”* The authors admit that a clearer picture can be obtained by consulting other EU documents. One example would be the Commission Notice on the notion of State aid (NoA)¹⁴⁹ from which it can be inferred that *“knowledge transfer through consultancy services or the preparation of feasibility studies is an economic activity”*.

Finally, the European Strategy Forum on Research Infrastructures Innovation Working Group recommends *“to revisit the regulatory requirements related to the granting of State aid with regard to research infrastructures in increasing the (...) “economic activities” limits which allow them to benefit from tax exemption.”*¹⁵⁰

4.3.2.3 EQ 7.1.c Definition of eligible beneficiaries

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: Evidence on the quality of the design of the rules concerning eligible beneficiaries is very limited as no statements were found in the literature and only few comments were made as part of the interviews to the specific aid measures concerned. Criticism pointed out by the few statements given is outlined with respect to each aid measure.

- Art. 26 ‘Investment aid for research infrastructures’: Difficulties appeared to arise within the aid measure of research infrastructures with regard to the categorisation of research organisations as large enterprises.
- Art. 27 ‘Aid for innovation clusters’: regarding aid to innovation clusters respondents expressed criticism of the the provision limiting support to cluster operators exclusively.
- Art. 29 ‘Aid for process and organisational innovation’: No criticism was mentioned with regard to the rules defining eligible beneficiaries in the case of aid for process and organisational innovation.

Conclusion: Only little evidence was collected in the interviews on eligibility rules for beneficiaries. However, the evidence given points to well-designed eligibility rules over all three

¹⁴⁷ Q42.6: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Process and organisational innovation. Please elaborate.

¹⁴⁸ See e.g. Buts, C., Nicolaides, P., & Pirlet, H. (2019). Puzzles of the State aid Rules on RDI. *European State aid Law Quarterly*, 18(4), 489-509.

¹⁴⁹ Point 32 of European Commission, ‘Commission Notice on the notion of State aid as referred to in Art. 107(1) of the Treaty on the Functioning of the European Union’ (2016) OJ C 262, 19.7.2016 (NoA).

¹⁵⁰ European Strategy Forum on Research Infrastructures Innovation Working Group (2018) *Innovation-oriented Cooperation of Research Infrastructures*, page 37.

aid measures concerned. Criticism was expressed with regard to the categorisation of research organisations as large enterprises and the possibility to receive funding as cluster operator only.

Core interviews – See a description of overall results to **Q42.1, 3, 5** in the preceding section 4.3.2.2.

Open statements are presented according to each sub-measure as follows:

- **Q42.2**¹⁵¹ Development or upgrade of research infrastructure

As outlined in section 4.3.2.2, this chapter takes into account statements on eligible beneficiaries given in the respective interview questions only. In total, six statements were given with respect to eligible beneficiaries. Two of these interviewees, both representatives of MSAs, stated that it would be helpful not to categorise research organisations as large enterprises in order to foster collaboration with them. One interviewee elaborated on this by stating that: *“the categorisation makes it difficult for research organisations to contribute with their own funds given the low aid intensities.”*

- **Q42.4**¹⁵² Set-up or upgrade and/or operation of innovation clusters

Supplementing the statements described in section 4.2.1.2 given in response to **Q13.1**¹⁵³, 5 critical notes pertain to the GBER provision 27 (2) as the condition to be registered as a *legal entity operating the cluster would cause too much administrative effort*. In addition, *existing business would be reluctant to join a new legal structure, especially if they would be part of a larger group*. One MSA asked whether it would not be possible to combine the two articles (27 and 28) and/ or to create a new one to let the cluster as such, benefit directly from State aid.

Only two interviewees elaborated on the eligible beneficiaries in response to Q42.4. They both represent the same MSA and recommend addressing both cluster operators and users in one single scheme. According to them, aid should not be *“restricted to the legal entity operating the cluster but possible to all organisations contributing to defining its service offer (in line with the definition)”*. They also stated that a single scheme would encourage the use of innovation clusters and that *“the focus should be on the use of services and administrative burden should be limited in order to incentivise genuine SMEs to use such services”*.

- **Q42.6**¹⁵⁴ Process and organisational innovation

Two statements were received on eligible beneficiaries with regard to Art. 29. Both agreed with the eligibility rules for beneficiaries in Art. 29. One representative of an association found the rules *“very important in order to support the emerging innovation”* and additionally stated that the *“involvement of research associations as well as the public sector could be beneficial”*. Another interviewee representing a beneficiary stated that they *“appreciate that also large Business can Benefit from State aid”*.

¹⁵¹ Q42.2: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Development or upgrade of research infrastructure. Please elaborate.

¹⁵² Q42.4: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Set-up or upgrade and/or operation of innovation clusters. Please elaborate.

¹⁵³ Q13.1: Do you consider the current definition of the term *innovation clusters* in the 2014 State aid rules for RDI as sufficiently clear? Please elaborate.

¹⁵⁴ Q42.6: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Process and organisational innovation. Please elaborate.

Literature – No specific statement was identified in the literature.

4.3.2.4 EQ 7.1.d Definition of eligible costs

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The rules are seen as ‘fit for purpose’ by more than 70% of the respondents. A few insights obtained from open statements point for instance to difficulties in declaring certain costs. Critique comes up with respect to the more favourable use of simplified cost options that should be used more often in the RDI State aid rules. This was mentioned by 12 interviewees in response to two open questions. No evidence in the literature was collected.

- Art. 26 ‘Investment aid for research infrastructure’: With respect to aid for research infrastructure it is sometimes unclear which costs are eligible when the provisions refer to tangible and intangible costs. Furthermore, three interviewees pointed to the more favourable use of simplified cost options with respect to Art. 26.
- Art. 27 ‘Aid for innovation clusters’: No specific evidence collected.
- Art. 29 ‘Aid for process and organisational innovation’: Uncertainties arise with respect to special topics in the area of personnel costs regarding the rules for aid for process and organisational innovation.

Conclusion: Overall, the rules on how to declare eligible costs were seen as ‘fit for purpose’ by more than 70% of the interviewees, however no literature is available to triangulate this finding. Some criticism points to the more favourable use of simplified cost options such as flat rates and lump sums.

Core interviews – See a description of overall results to **Q42.1, 3, 5** in section 4.3.2.2.

In addition to **Q42**¹⁵⁵, the following results on **Q43** asking interviewees whether they consider the procedures associated with cost declaration as ‘fit for purpose’. In response to this question, a majority of 70.3% answered ‘Yes’, while 29.7% replied negatively.

Q43 n=128	Do you consider the current rules on how to declare eligible costs (both direct and indirect) under the State aid rules as ‘fit for purpose’?	%
	Yes	70.3%
	No	29.7%
NB: In total, 161 interviewees responded with 33 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’		

Disaggregation by stakeholder groups shows that beneficiaries and non-aided undertakings were the most critical ones with regard to the rules for eligible costs.

Q43	Yes	No
Associations (n=5)	100.0%	0.0%
Beneficiaries (n=45)	66.7%	33.3%
Cluster (n=16)	81.3%	18.7%
MSAs (n=50)	68.0%	32.0%
Non-Aid (n=12)	66.7%	33.3%

Open statements are presented according to each evaluated sub-measure in the following.

¹⁵⁵ Q42: Do you consider the **eligibility criteria** (eligible activities, costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments?

- **Q42.2**¹⁵⁶ Development or upgrade of research infrastructure

A total of 12 open statements with respect to eligible costs were given of which 2 reinforced their positive answer to the main question and 9 pointed to criticism. Three statements given by MSAs pointed to simplified cost options such as lump sums or flat rates. While two state that these would be favourable in certain cost categories another finds it unfortunate that the Management fee is included in the flat rate. Furthermore, two statements by MSAs were given with regard to the investment costs in tangible and intangible assets as it would not be clear whether these included *“the maintenance of infrastructures, insurance costs or personnel costs that occur during the purchasing process”*. Another interviewee would like to see the management fee included in eligible costs.

Furthermore, two interviewees representing the same MSA criticised the focus of Art. 26 on investment costs. In their opinion, the use of research infrastructures should be supported through State aid. They even pointed to information asymmetries in this regard as SMEs would not be aware of the services provided by such infrastructures.

- **Q42.4**¹⁵⁷ Set-up or upgrade and/or operation of innovation clusters

Six statements were given with respect to eligible costs for innovation clusters with no common topic identified. One interviewee representing a beneficiary expressed the need of an *“extended cost catalogue”*, albeit without further elaborating on what was needed to be included specifically.

- **Q42.6**¹⁵⁸ Process and organisational innovation

Five open statements with respect to eligible costs in case of process and organisational innovation were given. One interviewee, representing a beneficiary stated to appreciate the possibility to benefit from State aid as a large enterprise thus, being satisfied with the given rules. Another comment noted uncertainties existing with regard to *“personnel costs”*; concrete examples were provided such as lack of consistent definitions on maternity or sick leave. Moreover, the application process as well as the later reporting duties were determined to be complicated and confusing by the interviewee representing a beneficiary in Sweden.

In response to **Q43.1**¹⁵⁹, 82 open statements were given with 43 (52%) pointing to criticism, 31 (38%) being supportive and 8 (10%) neutral or not applicable ones. Nine of them pointed to the preferable use of simplified cost options such as flat rates or lump sums. One typical statement given in this regard says that *“A practical consideration would be to allow a flat-rate approach / lump sums for the accounting of certain costs (e.g. indirect costs)”*.

Literature – No specific statement was identified in the literature.

¹⁵⁶ Q42.2: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Development or upgrade of research infrastructure. Please elaborate.

¹⁵⁷ Q42.4: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Set-up or upgrade and/or operation of innovation clusters. Please elaborate.

¹⁵⁸ Q42.6: Do you consider the **eligibility criteria** (eligible activities, eligible costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Process and organisational innovation. Please elaborate.

¹⁵⁹ Q43.1: Do you consider the current rules on how to declare **eligible costs** (both direct and indirect) under the State Aid rules as ‘fit for purpose’? Please elaborate.

4.3.2.5 EQ 7.1.e Definition of aid intensities

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: In this particular section there were six open comments provided by interviewees who would like to see higher aid intensities. However, no concrete reasons underpinned such requests. Triangulating these statements with the literature reviewed, suggests again that the aid intensities defined are well accepted. No evidence was collected in the literature.

Conclusion: The aid intensities can be seen as well-accepted with some calls for higher aid intensities. Too few statements with respect to the aid measures concerned were collected in order to draw clear conclusions on each article respectively.

Core interviews – See a description of overall results to **Q42.1, 3, 5** as in the section 4.3.2.2.

- **Q42.4**¹⁶⁰ Development or upgrade of research infrastructure

In total, ten **open statements** regarding aid intensities were given. However, they did not deliver much insight as most of respondents were merely concerned by the level of aid intensity, obviously wishing to see those at a higher rather than lower level. Also, only a few statements were targeting the design of the aid intensities specifically. In more detail, three open statements were given with respect to Art. 26 of which none was useful for the analysis, six with respect to Art. 27 and one with respect to Art. 29.

- **Q42.4**¹⁶¹ Set-up or upgrade and/or operation of innovation clusters

With regard to Art. 27 one representative of an MSA stated that *"it is recommended, particularly in cluster and network funding, to allow third-party services ("monetary benefits", personnel transfers, etc.) to be counted towards the aid intensity"*. In the case of clusters, another interviewee representing an association stated that *"the 50% private co-financing in general can only be assured by larger clusters, which have many members and also some LEs that support the cluster"*. The interviewee explained that smaller clusters with mostly SMEs as members gain less by means of membership fees. This might make large enterprises with more financial means more attractive members for such clusters.

- **Q42.6**¹⁶² Process and organisational innovation

One representative of an MSA did not approve of the great differences in aid intensities for SMEs versus large enterprises under Art. 29. In particular, the interviewee states that he *"would like to underline the fact that for larger organizations, digitization projects are very disruptive and have a larger impact on operations than in the case for SMEs. While we understand that aid intensity should be capped to lower levels than for SMEs, we do not understand why there are additional obstacles for large enterprises and why aid intensities are so different [...]"*.

¹⁶⁰ Q42.4: Do you consider the **eligibility criteria** (eligible activities, costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Set-up or upgrade and/or operation of innovation clusters. Please elaborate.

¹⁶¹ Q42.4: Do you consider the **eligibility criteria** (eligible activities, costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Set-up or upgrade and/or operation of innovation clusters. Please elaborate.

¹⁶² Q42.6: Do you consider the **eligibility criteria** (eligible activities, costs, aid intensities, eligible beneficiaries) of the following support measures are well-designed to address on-going market developments? Process and organisational innovation. Please elaborate.

Literature – The EU Law Compendium judges that in comparison to the previous rules in force in 2007-2013 the aid intensities for the aid measures concerned can be considered to be well-designed. In particular, the authors approve of the aid intensities considering economic activities in research infrastructures' and – in case of innovation clusters - the (higher) aid intensity as well as the simplification of the formerly complex system of bonuses.¹⁶³

4.3.2.6 EQ 7.2.a Addressing innovation models and challenges

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The RDI State aid rules on the 'development or upgrade of research infrastructure' were found to accommodate contemporary innovation models and challenges as well as technological advancements by 80% of the interviewees. In case of the set-up or upgrade of innovation clusters 76.2% of the interviewees agreed while 78% did so in case of process and organisational innovation. The few qualitative statements collected suggested some refinements for the rules to keep pace with the rapid digital development. No evidence was collected in the literature.

Conclusion: The RDI State aid rules on the 'development or upgrade of research infrastructure', 'the set-up or upgrade of innovation clusters' and 'process and organisational innovation' are found by a majority of interviewees to accommodate contemporary innovation models and challenges as well as technological advancements. Some refinements for the rules to keep pace with the rapid digital development in areas such as artificial intelligence or quantum computing were suggested by interviewees.

Core interviews – Another aspect is assessed through **EQ 7.2**, which is the extent to which the State aid rules would correspond to contemporary innovation models and challenges as well as technological advancements. In response to **Q44** a majority of respondents confirmed that the aid measures concerned incentivised RDI activities addressing contemporary innovation challenges (see table below). In more detail, in case of the development or upgrade of research infrastructure, 80% found that the rules address contemporary innovation challenges, 45% thought so to some extent and 35% even to a great extent. Turning to setting-up or upgrading of innovation clusters, 76.2% considered the rules to be applicable, 49.3% of which to some extent and 26.9% even to a great extent. Taking process and organisational innovation into consideration, 77.9% determined the rules to be relevant, 48% to some extent and 29.9% even to a great extent.

Q44	To what extent have the 2014 RDI State aid rules been applicable to the measures mentioned below, incentivised RDI activities which allow to address contemporary innovation challenges?	To a great extent	Some-what	Very little	Not at all
44.1 n=100	Development or upgrade of research infrastructure	35.0%	45.0%	15.0%	5.0%
NB: In total, 161 interviewees responded with 61 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
44.2 n=67	Set-up or upgrade of innovation clusters	26.9%	49.3%	14.8%	9.0%
NB: In total, 160 interviewees responded with 93 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
44.3 n=77	Process and organisational innovation	29.9%	48.0%	14.3%	7.8%
NB: In total, 160 interviewees responded with 83 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					

¹⁶³ Pesaresi, N., Siaterli, C., Van de Castele, K., & Flynn, L., Leuven: Claeys & Casteels. (2016). EU Competition Law, Volume IV, PART 3 – Compatibility rules, Chapter 17 – Research, development and innovation, Carlos Tenreiro and Gueorgui Ianakiev, page 572.

Disaggregation by stakeholder groups shows that MSAs were the most critical ones with respect to each aid measure concerned.

Q44.1 Development or upgrade of research infrastructure	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =5)	40.0%	60.0%	0.0%	0.0%
Beneficiaries (<i>n</i> =37)	40.5%	51.4%	5.4%	2.7%
Cluster (<i>n</i> =10)	40.0%	60.0%	0.0%	0.0%
MSAs (<i>n</i> =39)	28.2%	33.3%	28.2%	10.3%
Non-Aid (<i>n</i> =9)	33.3%	44.4%	22.3%	0.0%

In the case of Art. 27 aid for innovation clusters, agreement was highest among associations and associations and non-aided undertakings.

Q44.2 Set-up or upgrade of innovation clusters	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =5)	60.0%	40.0%	0.0%	0.0%
Beneficiaries (<i>n</i> =22)	27.3%	63.6%	0.0%	9.1%
Cluster (<i>n</i> =12)	41.7%	50.0%	8.3%	0.0%
MSAs (<i>n</i> =25)	12.0%	36.0%	36.0%	16.0%
Non-Aid (<i>n</i> =3)	33.3%	66.7%	0.0%	0.0%

In case of Art. 29 aid for process and organisational innovation, agreement was highest among associations and non-aided undertakings.

Q44.3 Process and organisational innovation	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =3)	33.3%	66.7%	0.0%	0.0%
Beneficiaries (<i>n</i> =28)	42.9%	42.9%	7.1%	7.1%
Cluster (<i>n</i> =11)	27.3%	72.7%	0.0%	0.0%
MSAs (<i>n</i> =29)	13.8%	41.4%	31.0%	13.8%
Non-Aid (<i>n</i> =6)	50.0%	50.0%	0.0%	0.0%

Open statements – In response to the associated open question **Q44.4**¹⁶⁴, 69 open statements were given in total of which 29 (42%) pointed to criticism while 21 (30%) were supportive and 19 (28%) neutral or not applicable to the specific question asked. Rather vague statements show that interviewees were not able to evaluate whether the rules address innovation models and challenges.¹⁶⁵ At the same time, five respondents illustrated further examples for the rules not (appropriately) accommodating rapid developments concerning artificial intelligence, digital security, quantencomputing, and connectivity. These interviewees thus conclude that the rules address contemporary innovation challenges to some extent only.

Literature – No specific statement was identified in the literature.

¹⁶⁴ Q44.4: To what extent have the 2014 RDI State Aid rules been applicable to the measures mentioned below, incentivised RDI activities which allow to **address contemporary innovation challenges**? Please elaborate.

¹⁶⁵ This is also shown by the interview results as the amount of interviewees ticking option 'Not applicable' was high for each sub-question.

4.3.2.7 EQ 7.2.b Addressing technology advancements, including KETs

Quantitative evidence: DG GROW Data on KETs and digital technologies; **Qualitative evidence:** Interview responses, literature

Findings: The interview results show that 80.9% of the respondents judged the 2014 RDI State aid rules to incentivise technology advancements or innovation in case of ‘the development or upgrade of research infrastructure’, 68.8% thought so in case of innovation clusters and 69.8% in the case of process and organisational innovation. In the area of KETs an innovation gap has been identified as manufacturing and the creation of patents in this area decreases in Europe. No evidence was collected on how this development relates to the revised RDI State aid rules. No evidence was collected in the literature.

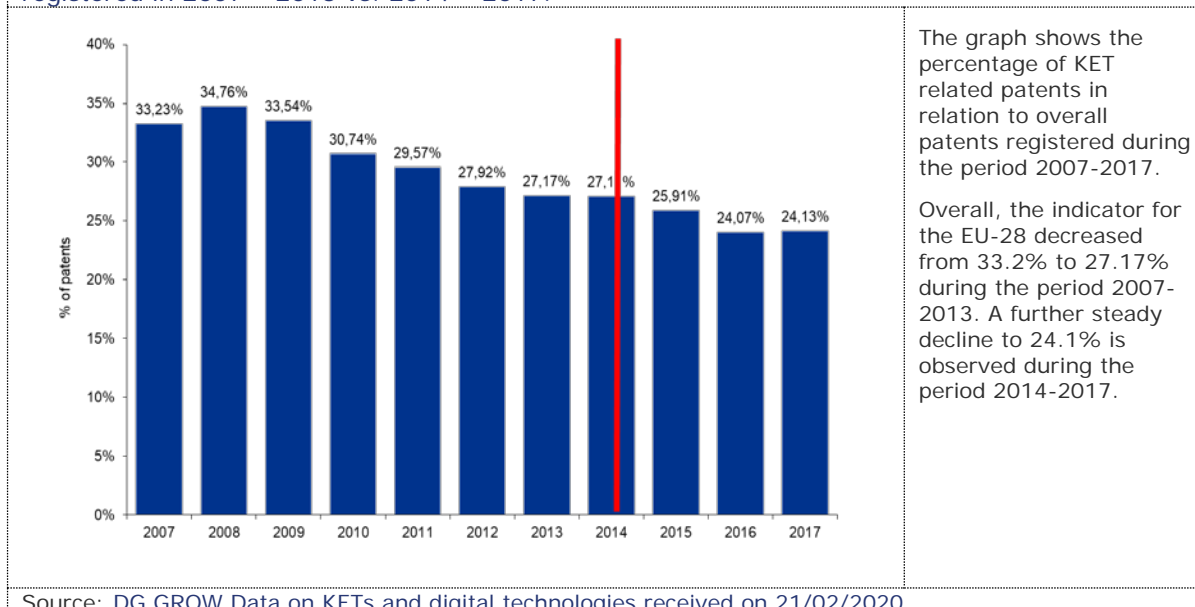
Conclusion: From the interview results it can be concluded that the rules corresponded to technology advancements and innovation. At the same time, four open statements point to the possibility that such advancements can be attributed to the 2014 RDI State aid rules to a certain extent only. It is unclear, how the negative development in the area of KETs relates to the revised RDI State aid rules.

Quantitative evidence – one initially promising source was attempted to be tapped for enquiring one part of **EQ 7.2.b**, on the uptake of innovation in the particular area of KETs is provided by the DG GROW’s KET Observatory data base.¹⁶⁶ The graph below shows the evolution of the KETS share of patents in the EU-28 over the time period 2007-2017. The introduction of the revised GBER rules in 2014 is displayed by a red bar in the graph. According to DG GROW, six technologies are associated with KETs: micro and nanoelectronics, nanotechnology, industrial biotechnology, advanced materials, photonics, and advanced manufacturing technologies. Over the period of 2008-2017, a steady decline of the indicator can be observed. In this respect, DG GROW outlines on the KETs Observatory webpage that *“one of the major weaknesses of Europe with regard to KETs lies in the difficulty of translating its knowledge base into marketable goods and services. This innovation gap has been identified as the European ‘Valley of Death’. KETs-related manufacturing is decreasing in the EU and patents are increasingly being exploited outside the EU”*.¹⁶⁷

¹⁶⁶ The data is publicly available in DG GROW’s KETs Observatory until 2015 and will be updated in March 2020: <https://ec.europa.eu/growth/tools-databases/kets-tools/kets-observatory>. The study team received the updated data beforehand in order to include it in this study report.

¹⁶⁷ https://ec.europa.eu/growth/industry/policy/key-enabling-technologies_en

Figure 8: Evolution of the percentage of KET related patents in relation to overall patents registered in 2007 – 2013 vs. 2014 – 2017.



Core interviews – As can be seen below, **Q45** asks interviewees whether the rules have allowed to engage in RDI measures incentivising technology advancements or innovation, including in the area of KETs. Responses to **Q45.1** reveal that this holds especially true for the ‘development or upgrade of research infrastructure’ - 80.9% agreed upon that, 50% of which to some extent and 30.9% even to a great extent. Regarding the set-up or upgrade and/or operation of innovation clusters, 68.8% judged related State aid rules to incentivise technology advancements or innovation, 47.5% to some extent and 21.3% even to a great extent. At the same time, 14.8% of respondents did not think that way at all. Turning to the process and organisational innovation, the interview results also indicate that 69.8% assumed that the rules incentivised technology advancements or innovation, 49.3% of which to some extent and 20.5% even to a great extent. It is noticeable that 9.7% of the respondents stated that this holds ‘not at all’.

Q45	To what extent have the 2014 RDI State aid rules listed below, allowed to engage in RDI measures incentivising technology advancements or innovation, including in the area of Key Enabling Technologies (KETs)?	To a great extent	Some-what	Very little	Not at all
45.1 n=94	Development or upgrade of research infrastructure	30.9%	50.0%	11.7%	7.4%
NB: In total, 161 interviewees responded with 67 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’					
45.2 n=61	Set-up or upgrade and/or operation of innovation clusters	21.3%	47.5%	16.4%	14.8%
NB: In total, 142 interviewees responded with 81 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’					
45.3 n=73	Process and organisational innovation	20.5%	49.3%	20.5%	9.7%
NB: In total, 161 interviewees responded with 88 ticking the option N/A. Percentage amounts calculated without responses received as ‘not applicable/ don’t know’					

Disaggregating the interview results by stakeholder groups reveals that agreement is high among beneficiaries while MSAs are least affirmative. This holds for all three aid measures presented in more detail in the following. With regards to the development or upgrade of research infrastructure, beneficiaries were the most approving on whether the 2014 RDI State aid rules allowed to engage in RDI measures incentivising technology advancements.

Q45.1 Development or upgrade of research infrastructure	To a great extent	Somewhat	Very little	Not at all
Associations (n=3)	33.3%	66.7%	0.0%	0.0%
Beneficiaries (n=37)	43.2%	43.2%	8.1%	5.4%
Cluster (n=11)	18.2%	72.7%	9.1%	0.0%
MSAs (n=36)	25.0%	41.7%	19.4%	13.9%
Non-Aid (n=7)	14.3%	85.7%	0.0%	0.0%

In case of the set-up or upgrade of innovation clusters, agreement was highest among associations and non-aided undertakings. Again, MSAs replies to the evaluation question were affirmative to a smaller extent.

Q45.2 Set-up or upgrade and/or operation of innovation clusters	To a great extent	Somewhat	Very little	Not at all
Associations (n=4)	25.0%	75.0%	0.0%	0.0%
Beneficiaries (n=25)	40.0%	32.0%	12.0%	16.0%
MSAs (n=29)	6.9%	51.7%	24.1%	17.3%
Non-Aid (n=3)	0.0%	100.0%	0.0%	0.0%

It is noticeable that agreement by MSAs was the lowest in case of process and organisational innovation.

Q45.3 Process and organisational innovation	To a great extent	Somewhat	Very little	Not at all
Associations (n=2)	0.0%	100.0%	0.0%	0.0%
Beneficiaries (n=26)	38.5%	42.3%	15.4%	3.8%
Cluster (n=9)	33.3%	55.6%	11.1%	0.0%
MSAs (n=30)	6.7%	43.3%	30.0%	20.0%
Non-Aid (n=6)	0.0%	83.3%	16.7%	0.0%

Open statements reveal that the interviewees acknowledged the importance of technology advancements, including in the area of KETs. In more detail, 25 open statements were given in total. Here, 6 (24%) of them confirmed a positive impact of the rules on technology advancements, including in the area of KETs. Another 10 (40%) of them pointed to criticism while 9 (36%) were neutral or not applicable to the specific question or the rules themselves. Four out of the ten statements mentioned beforehand pointed out that an uptake in innovation in the area of KETs was rather due to other factors e.g. their respective regional policies than due to the amended GBER rules. Two of them found that not enough attention is put on technology advancements. In concrete terms, one of them noted that *"new concepts (...) in cybersecurity etc. were not foreseeable in 2014"* hence, an update of the State aid rules would be needed.

Literature – No useful findings were identified from the literature.

4.3.2.8 EQ 7.2.c Correspondence to global value chains

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: Overall, interview results point to correspondence of the 2014 RDI State aid rules with global value chains. At the same time, 4 out of 20 respondents to the associated open question identified unequal conditions in competition with e.g. Asian countries. No evidence was collected in the literature.

Conclusion: Overall, interview results point to correspondence of the 2014 RDI State aid rules with global value chains. However, also some evidence is given with respect to unequal conditions in competition in comparison with non-EU countries.

Core interviews – Q46 inquires whether the State aid rules are well-adapted to promote projects in contemporary global value chains (see table below). In case of 'development or upgrade infrastructure', 73.7% assessed the rules to be applicable, 55.6% of which to some extent and 18.1% even to a great extent. Considering the set-up and/or upgrade of innovation clusters, 75% judged the rules to be relevant, 57.7% to some extent and 17.3% even to a great extent. In case of process and organisational innovation, 75.9% agreed, 62.1% to some extent and 13.8% even to a great extent.

Q46	Do you consider that the 2014 RDI State aid rules applicable to the following measures have been well adapted to promote projects in contemporary global value chains?	To a great extent	Some-what	Very little	Not at all
46.1 n=72	Development or upgrade of research infrastructure	18.1%	55.6%	20.8%	5.5%
NB: In total, 159 interviewees responded with 87 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
46.2 n=52	Set-up and/or operation of innovation clusters	17.3%	57.7%	23.1%	1.9%
NB: In total, 159 interviewees responded with 107 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					
46.3 n=58	Process and organisational innovation	13.8%	62.1%	22.4%	1.7%
NB: In total, 159 interviewees responded with 101 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'					

Disaggregating the results above by stakeholder groups shows again that MSAs are critical. At the same time, beneficiaries and associations were the stakeholder groups agreeing the most. This holds for all sub-questions presented below.

Q46.1 Development or upgrade of research infrastructure	To a great extent	Somewhat	Very little	Not at all
Associations (n=4)	25.0%	75.0%	0.0%	0.0%
Beneficiaries (n=28)	32.1%	50.0%	14.3%	3.6%
Cluster (n=8)	0.0%	75.0%	12.5%	12.5%
MSAs (n=25)	12.0%	56.0%	28.0%	4.0%
Non-Aided (n=7)	0.0%	42.8%	43%	14.2%

In case of Art. 27 aid for innovation clusters, agreement was highest among associations and clusters.

Q46.2 Set-up or upgrade and/or operation of innovation clusters	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =4)	25.0%	75.0%	0.0%	0.0%
Beneficiaries (<i>n</i> =17)	23.5%	58.8%	17.7%	0.0%
Cluster (<i>n</i> =11)	27.3%	63.6%	9.1%	0.0%
MSAs (<i>n</i> =18)	5.6%	55.6%	38.8%	0.0%
Non-Aided (<i>n</i> =2)	0.0%	0.0%	50.0%	50.0%

The same holds for Art. 29 aid for process and organisational innovation where agreement was highest among associations and beneficiaries.

Q46.3 Process and organisational innovation	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =2)	0.0%	100.0%	0.0%	0.0%
Beneficiaries (<i>n</i> =20)	30.0%	55.0%	15.0%	0.0%
Cluster (<i>n</i> =11)	9.1%	72.7%	18.2%	0.0%
MSAs (<i>n</i> =19)	5.3%	68.4%	26.3%	0.0%
Non-Aided (<i>n</i> =6)	0.0%	33.3%	50.0%	16.7%

Open statements did not deliver much first-hand insights as only 20 interviewees responded to the associated open question. Of these, 7 statements (35%) underlined that the rules have been well-adapted to promote projects in contemporary global value chains, 9 (45%) pointed to criticism and 4 (20%) were neutral or not applicable as they did not respond to the given interview question. Four statements point to unequal conditions in competition with e.g. Asian countries. A typical statement given in this regard is illustrated by the following example: *“Global competition with Asia is uneven. Global value chains are currently not really supported by State aid”*.

Literature – No useful findings were identified from the literature.

4.3.2.9 EQ 7.3 Increase of RDI activities of aid beneficiaries including cluster users

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: -The majority of open statements given (42 of 66 in total) confirm that additional RDI activities were carried out. Additionally, interview results show that this also holds for cluster users as 86% of the respondents find that the possibility to provide State aid to both, cluster operators and users led to an increase of RDI activities of the users. With respect to Art. 26 and Art. 29 no specific evidence was collected. Furthermore, no evidence was collected in the literature.

Conclusion: According to the evidence collected, it can be stated that an increase of RDI activities of aid beneficiaries including those of cluster users occurred. No specific evidence with respect to the aid measures concerned was collected.

Core interviews – The responses received for **Q29**¹⁶⁸ are presented in detail in section 4.1.2.3. In a nutshell, 41.3% of the respondents stated that the possibility to provide State aid to both, innovation cluster operators as well as users led to an increase of RDI activities of the users, another 41.3% thought so ‘to some extent’ (adding up to a majority of 82.6% who were positive in this respect).

¹⁶⁸ Q29: Do you think that the possibility to provide State aid to both, cluster operators as well as its members/users has led to an increase of RDI activities of the members/users which are SMEs?

Open statements in response to **Q37**¹⁶⁹ are used as main source in order to answer **EQ 7.3** although they were not focused on the specific aid measures concerned. In total, 66 open statements were given with 42 confirming that additional RDI activities were carried out and seven stating that this was not the case. Another 17 were not applicable in the sense that they did not answer the specific question asked. Of the 42 interviewees confirming additional RDI activities, 20 elaborate further and typically state that they *"carried out additional RDI activities as a result of previously aided"*. A good example of the entrepreneurial mindset in this respect was given by the following comment *"usually, projects containing a technical Risk will be conducted with State aid. If they are successful, the next step will be integrated into normal RDI activities by firms. Projects undertaken with State aid thus are often on a preliminary stage"*.

Literature – No useful findings were identified from the literature.

¹⁶⁹ Q37: Has your company carried out additional RDI activities as a result of previously aided RDI activities?

4.4 Coherence

In order to ensure an effective contribution of the revised RDI State aid rules to the EU 2020 strategy and to enable potential synergies with other EU policies, ‘coherence’ is defined as another evaluation criterion. As stated in a proposal for the European Council Regulation 2015/1588¹⁷⁰: “(coherence)... is especially important for situations in which a project is funded both by EU funds managed centrally by the Commission as well as by funds under the control of Member States.” This pertains in particular to Horizon 2020, the EU’s main financial instrument for implementing RDI-related initiatives including industrial competitiveness/ innovation. As the evaluation questions specify, it is mainly the consistency of the respective objectives as well as of the rules that should be evaluated under this criterion.

4.4.1 Evaluation Question 8

EQ 8: Has the scope of State aid rules on innovation clusters and research infrastructures been coherent with the objectives of the EU Horizon programme and its rules?

- Are State aid rules of the GBER and the RDI Framework on research infrastructures coherent with the objectives of the Horizon 2020 programme and its rules?
- Are State aid rules of the GBER and the RDI Framework on innovation clusters coherent with the objectives of the Horizon 2020 programme and its rules?

4.4.1.1 Research infrastructures

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The need for a coherent set of rules for EU funds and State aid is widely agreed upon in the literature, albeit not focusing on the specific aid measures concerned. One critical statement has been collected expressing that synergies cannot be created between RDI funding activities at the EU level (namely through H2020) and the EU RDI State aid rules in place due to different intervention logics and complexity of the different funding. However, this could not be confirmed by results from a recent DG REGIO Survey as well as core interview results. In the core interview results, 74.2% of the respondents believed that the different rules concerning research infrastructure are coherent. At the same time, a considerable group of 25.8% believed that they are not. The open statements reveal that this group mainly consisting of MSAs finds the eligibility rules governing H2020 more favourable.

Conclusion: Overall, the scope of the State aid rules on research infrastructures is judged to be coherent with the objectives of the EU Horizon programme and its rules. General criticism, albeit not focused on the aid measure concerned, was expressed with respect to different eligibility rules as they are considered to be more favourable under H2020. This holds especially in the case of aid intensities. The creation of synergies between the rules is thus seen hampered.

Core interviews – Q48 asks respondents to estimate the extent of coherence of research infrastructures with the Horizon 2020 programme and its rules, as it is illustrated in the below table. The interview results show that 74.2% found the rules to be coherent, 51.8% to some extent and 22.4% even judged them to be coherent to a great extent. It is noticeable that 12.9% of the respondents found the rules not coherent at all.

¹⁷⁰ Proposal for a Council Regulation amending Council Regulation 2015/1588 on the application of Art.107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid, COM(2018) 398 final, page 1.

Q48 <i>n=85</i>	To what extent do you consider the State aid rules for <u>research infrastructure</u> to be coherent with the Horizon 2020 programme and its rules?	%
	To a great extent	22.4%
	Somewhat	51.8%
	Very little	12.9%
	Not at all	12.9%
NB: In total, 162 interviewees responded with 77 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'		

Disaggregation by stakeholder groups shows that beneficiaries and clusters judged the rules to be coherent the most with agreeing to 89.6% and 85.8% respectively. With 57.9%, agreement is the lowest among the stakeholder group of MSAs.

Q48	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=5</i>)	20.0%	60.0%	20.0%	0.0%
Beneficiaries (<i>n=29</i>)	37.9%	51.7%	6.9%	3.5%
Cluster (<i>n=7</i>)	42.9%	42.9%	14.2%	0.0%
MSAs (<i>n=38</i>)	10.5%	47.4%	18.4%	23.7%
Non-Aided (<i>n=6</i>)	0.0%	83.3%	0.0%	16.7%

Open statements in response to the open question associated with **Q48** were given by 44 respondents. In this case, 16 (36%) of the statements pointed to criticism, 13 (31%) were supportive and 14 (33%) were neutral or not applicable as they do not respond the question. No statement refers to the aid measure concerned, namely research infrastructure, directly. In general, 7 statements out of the 16 pointing to criticism were given with respect to differences in the eligibility rules. Except for one they were all given by the representatives of the stakeholder group MSA. More specifically, four of these statements criticise the aid intensities in the State aid rules. One exemplary statement is given by the following: *"The aid intensities defined in H2020 regulations are more favourable for the beneficiaries. As the aid intensity is considerably lower under GBER and R&D framework, beneficiaries may apply for H2020 grants instead of aid under GBER or R&D framework"*.

Literature - Finally, the literature review revealed a critical statement, namely in respect to the facilitation of synergies between RDI support funding activities at EU through H2020 and the EU RDI State aid rules in place. The report published by DG RTD states that although efforts were undertaken to establish synergies with other EU funds, *"further coherence is hampered by the different intervention logics and complexity of the different funding and other rules such as State aid rules"*.¹⁷¹ However, this finding cannot be confirmed by a recent DG REGIO Survey¹⁷². Representatives of different authorities¹⁷³ were asked whether they have encountered any difficulties with meeting the requirements of Art. 26, GBER if their RDI support measures fall under it. The results show that 65% of the respondents denied any difficulties while 35% did notice them.

¹⁷¹ EC DG RTD (2017) LAB – FAB – APP Investing in the European future we want - Report of the independent High Level Group on maximising the impact of EU Research & Innovation Programmes.

¹⁷² European Commission, DG REGIO Data on Compliance Measures ESIF 201 received on 31/07/2019.

¹⁷³ Authorities managing the implementation of ESIF, authorities coordinating State aid matters, bodies implementing research and innovation support funded from ESIF or other public funding and a category named 'Other' were included.

4.4.1.2 Innovation clusters

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses, literature

Findings: The 71 responses received to Q47¹⁷⁴ in core interviews show that the majority of 71.8% respondents judged the State aid rules for innovation clusters to be coherent with the H2020 programme and related rules. A total of 45 open statements included 7 supportive statements and 28 pointed to criticism. Another 7 open statements out of the 28 that pointed to weaknesses, also hinted at differences with respect to the eligibility rules governing H2020 in comparison to those in the RDI State aid rules.

Conclusion: The scope of the State aid rules on innovation clusters as defined in the GBER and the RDI Framework is found to be coherent with the objectives of the Horizon 2020 programme and its rules. Seven interviewees suggested in open statements that the eligibility rules, particularly for eligible beneficiaries and aid intensities, are more favourable for beneficiaries under H2020. As above, this conclusion holds in general and is not specifically made for aid for innovation clusters.

Core interviews - Q47 asks to what extent respondents consider the State aid rules for innovation clusters to be coherent with the Horizon 2020 programme and its rules (see table below). The majority (71.8%) of the respondents determined the rules to be consistent: 49.3% of the respondents judged the rules to be somewhat consistent and 22.5% to a great extent. It is noticeable that 15.5% of the respondents ascertained the rules not to be coherent at all.

Q47 <i>n=71</i>	To what extent do you consider the State aid rules for <u>innovation clusters</u> to be coherent with the Horizon 2020 programme and its rules?	%
	To a great extent	22.5%
	Somewhat	49.3%
	Very little	12.7%
	Not at all	15.5%
NB: In total, 163 interviewees responded with 92 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'		

When disaggregating the responses to **Q47** by stakeholder group, it is visible that agreement was highest among the beneficiaries and the innovation cluster sub-group. These agreed to 94.5% and 83.4% respectively, whilst the MSAs judged much more cautiously in comparison as 50% of the respondents agree.

Q47	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n=5</i>)	20.0%	60.0%	0.0%	20.0%
Beneficiaries (<i>n=18</i>)	39.0%	55.5%	0.0%	5.5%
Cluster (<i>n=12</i>)	41.7%	41.7%	16.6%	0.0%
MSAs (<i>n=30</i>)	3.3%	46.7%	23.3%	26.7%
Non-Aided (<i>n=6</i>)	33.3%	50.0%	0.0%	16.7%

In total, 45 respondents elaborated on their previous reply in the **open statements** in **Q47.1**¹⁷⁵. Here, 7 (16%) open statements were rather supportive, 28 (62%) pointed to weaknesses in the rules and 10 (22%) were neutral, i.e. neither stating that the rules are coherent nor that they are not, or not applicable to the specific question. Seven¹⁷⁶ open statements belonging to the group of statements that point to criticism

¹⁷⁴ Q47: To what extent do you consider the State aid rules for innovation clusters to be coherent with the Horizon 2020 programme and its rules?

¹⁷⁵ Q47.1: To what extent do you consider the State aid rules for innovation clusters to be coherent with the Horizon 2020 programme and its rules? Please elaborate on your reply and provide examples.

¹⁷⁶ Five of them were given by MSAs, one by a Beneficiary and one by a Non-aided undertaking.

referred to different eligibility rules. More specifically, three of them, pointed to more favourable aid intensities under H2020. A good example is the following: *“The aid intensities defined in H2020 regulations are more favourable for the beneficiaries. As the aid intensity is considerably lower under GBER and R&D framework, beneficiaries may apply for H2020 grants instead of aid under GBER or R&D framework”*. Similarly, three more respondents stated that the eligibility rules would differ between the two sets of rules. Only 4 of the 45 open statements relate to innovation clusters. Specifically, on the case of innovation clusters two interviewees representing MSAs stated that *“H2020 projects usually allow to fund different entities whereas in the case of innovation clusters State aid is restricted to the legal entity operating the cluster”*.¹⁷⁷

There were no findings in the **literature** for this particular evaluation question.

4.4.2 Evaluation Question 9

EQ 9: Have the eligibility rules on State aid for investment into research infrastructures been coherent with State aid provisions for other categories of infrastructure covered by the GBER?

Quantitative evidence: N/A; **Qualitative evidence:** Interview responses

Findings: The available evidence is too limited to provide a robust finding. The responses received on the related Q49¹⁷⁸ in core interviews suggest that the group of stakeholders knowledgeable on the topic (i.e. little more than one third of respondents) majorly considers the rules on research infrastructures to be coherent with other categories of infrastructure covered by the GBER, i.e. 80% agreed, whilst 20% did not. Of the 27 open statements given, 5 revealed some critical opinions on aspects related to the rules' application. The literature review did not identify specific statements in this particular regard.

Conclusion: Due to the high number of responses saying 'Don't know/Not applicable' as well as inconclusive open statements, the evidence is too limited to draw robust findings. Little evidence collected points out that the eligibility rules on State aid for investment into research infrastructure is rather coherent with State aid provisions for other categories of infrastructure in the GBER.

Core interviews - Q49 asks about the extent to which the interviewees consider the State aid rules for investment into research infrastructure to be coherent with State aid provisions for other categories of infrastructure of the GBER (see table below).

Note should be taken that a majority of respondents (102 of 162) was not able to give an answer to this question. From the remaining 37% as 'actual respondents' the majority, 80% considered the definitions to be coherent, 18.3% 'strongly' agreed with this notion. On the other hand, 20% of interviewees disagreed, again a considerable portion of respondents did so 'strongly'.

Q49 <i>n=60</i>	To what extent do you consider the State aid rules for investment into research infrastructure to be coherent with State aid provisions for other categories of infrastructure of the GBER?	%
	Strongly agree	18.3%
	Agree	61.7%
	Disagree	8.3%
	Strongly disagree	11.7%
<i>NB: In total, 162 interviewees responded with 102 ticking the option N/A. Percentage amounts calculated without responses received as 'not applicable/ don't know'</i>		

¹⁷⁷ Through the aforementioned GBER Art. 27.

¹⁷⁸ Q49: To what extent do you consider the State aid rules for investment into research infrastructure to be coherent with State aid provisions for other categories of infrastructure of the GBER?

In order to learn more about the interviewees' specific experience with the rules and their provisions on research infrastructures, further assessments have been done to enquire about the specific stakeholder groups' opinions. The table below provides details on the responses (percentage) received per stakeholder group, showing that the MSAs, Business and Research Associations as well as cluster users are the ones most concerned with the topic (showed by their lowest share in ticking 'Not applicable'). See details below:

Q49	To a great extent	Somewhat	Very little	Not at all
Associations (<i>n</i> =4)	25.0%	50.0%	25.0%	0.0%
Beneficiaries (<i>n</i> =13)	7.7%	76.9%	7.7%	7.7%
Cluster (<i>n</i> =6)	16.7%	83.3%	0.0%	0.0%
MSAs (<i>n</i> =32)	21.9%	53.1%	9.4%	15.6%
Non-Aided (<i>n</i> =5)	20.0%	60.0%	0.0%	20.0%

The number of **open statements** was low, in total 27 statements. In this case, 11 statements (41%) expressed agreement with the coherence of the rules, 5 statements (19%) were mentioning some weaknesses with regard to coherence and 10 40% were neutral or did not responded directly to the question. Two statements concerned the topic of aid intensities regarding coherence with one representative of an MSA expressing that it is unclear why the aid intensity is *'different for research infrastructures as compared to the infrastructure category of "aid for local infrastructure"'*. Two other interviewees, both representing MSAs as well, expressed that they do not find the definition of infrastructures well-designed. One of them elaborated that *"different kinds of infrastructures makes classification difficult, coherence could be increased"*. A majority of statements, namely 12, reflected on the rules associated with aid for research infrastructures in general without drawing further conclusions on their coherence with other provisions of the GBER.

Literature – No relevant statements identified.

Annexes

- Annex 1 Evaluation Matrix
- Annex 2 Country Sample Statistics on RDI investments and State aid
- Annex 3 Literature and data sources
- Annex 4 Interview Questionnaire



other
publications
and subscriptions

<http://ec.europa.eu/competition/publications>

