Review of DG ECFIN's Twitter communication activities
September 2022

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1. Aim of Report

The following report presents an evaluation of DG ECFIN's communication activities covering the period from 1 September 2021 to 31 August 2022. The analysis includes a social media performance assessment based on the Twitter account benchmarking results, a Twitter audience analysis of the users mentioning @ecfin or taking part in related conversations, and a sentiment analysis focused on the discussions around two predefined topics, the Economic Governance Review and the European Semester, considered as one topic and the Invest EU Programme.

Taking into consideration the key findings uncovered in this assessment of DG ECFIN's communication efforts can help draw conclusions and recommendations to further enhance the account's performance.

2. Methodology

This report analyses several aspects of DG ECFIN's Twitter account performance and the sentiment around its communication activities from 1 September 2021 to 31 August 2022, focusing on three individual tasks that have been chosen based on DG ECFIN's current needs, as described below.

2.1 Twitter Account Benchmarking

The Twitter account benchmarking relies on data from an external social media analytics tool, Rival IQ, which provides additional capabilities not offered natively by Twitter.

The benchmarking analysis compares the qualitative performance of the DG ECFIN account against other similar-sized accounts that share overlapping target audiences and topics covered during the defined period.

The result is a high-level comparison between other relevant Twitter accounts that provides insights on whether @ecfin is within market averages, is outperforming its 'competition' or leaves room for improvement.

2.2 Twitter Audience Analysis

The data for the Twitter audience analysis were gathered via the Brandwatch online listening tool. This report analyses the audience mentioning @ecfin or engaging with its content without distinguishing between followers and non-followers, while excluding any owned mention activity. This analysis provides an overview of all users who are relevant to DG ECFIN and its policies and aims to gain insights into @ecfin's audience in terms of demographics, interests, professions and geolocation as well as help identify the most engaged users.

2.3 Topic-based Sentiment Analysis

The sentiment analysis was carried out via the Brandwatch tool on two predefined topics, the Invest EU Programme and the following two topics that were considered as one, Economic Governance Review and European Semester. This analysis utilises an AI-powered NLP-driven method to analyse text and assess the sentiment of the tracked mentions. This automated classification was further enhanced with human validation, through manual labelling of data. This analysis aims to measure the sentiment around the aforementioned topics and define the topics related to positive or negative conversations.

3. Disclaimer

The activities described in the above section are subject to the following admissions, as agreed with DG ECFIN.

- The social listening analysis covers public web pages (websites, blogs, forums, etc.) and social media posts. The total number of tracked mentions is calculated based on the match with the defined query and includes online sources that contain at least one mention of the designated hashtags, related keywords and phrases. As regards social media sources, access to Facebook, Instagram and LinkedIn posts/data is restricted due to privacy settings, so mentions from these three platforms are very limited. It should be noted that the mentions have been harvested globally and are language agnostic.
- Location data are determined on the basis of multiple inputs, including self-reported location data such as profile info, geo-coordinates, geo-IPs, domain data and time zone. The numbers and insights provided by Brandwatch that address gender, geolocation, interests and professions represent only the part of the Twitter audience whose members chose to share this data.
- As regards the manual sentiment analysis, please note that in some cases the mentions are open to multiple interpretations and thus were classified on an assumption-based approach.
- The specific list of Twitter accounts to be used for benchmarking was provided by DG ECFIN. The benchmarking exercise examines two different monitoring periods for the Twitter followers' analysis and the Twitter posts' performance to align with the available data on the Rival IQ platform.
- DG ECFIN also provided the focus topics for the sentiment analysis.

4. Twitter Account Benchmarking

The Twitter account benchmarking was conducted with the use of the Rival IQ platform. Covering the period from 1 September 2021 to 31 August 2022, the following aspects were analysed: the number of followers and the entailed evolution, tweets and their engagement level, and interactions per tweet. These KPIs were compared against a list of similar accounts provided by DG ECFIN, including @EU_Finance, @EU_Social, @EU_Taxud, @EIB and @EBRD.

NB The Twitter followers' comparison is limited to the period 11 June 2022 to 10 September 2022 so as to align with Rival IQ's data availability on the DG ECFIN account.

During the monitoring period, @ecfin's Twitter following grew by 1,282 followers reaching 63.5 thousand followers, marking a 2.06% rise. Compared to similar accounts, however, DG ECFIN's recorded growth was just above the competitor average. It is worth mentioning that the number of tweets published by @ecfin were quite limited (1,014) compared to the other similar accounts. In terms of engagement, the total engagement of the @ecfin Twitter account according to Rival IQ data numbered 16,317 interactions, which was below the competitor average of 24.2 thousand, mainly attributed to the low tweet volume. However, the interactions per tweet for the analysed period were 32.5, delivering the second-highest engagements per tweet score among its competitors.

4.1 Number of Followers/Change in Followers

The bar chart below (Chart 1) displays the number of Twitter followers @ecfin gained during the monitoring period, compared to the Twitter followers growth in the previous period for DG ECFIN and similar accounts.
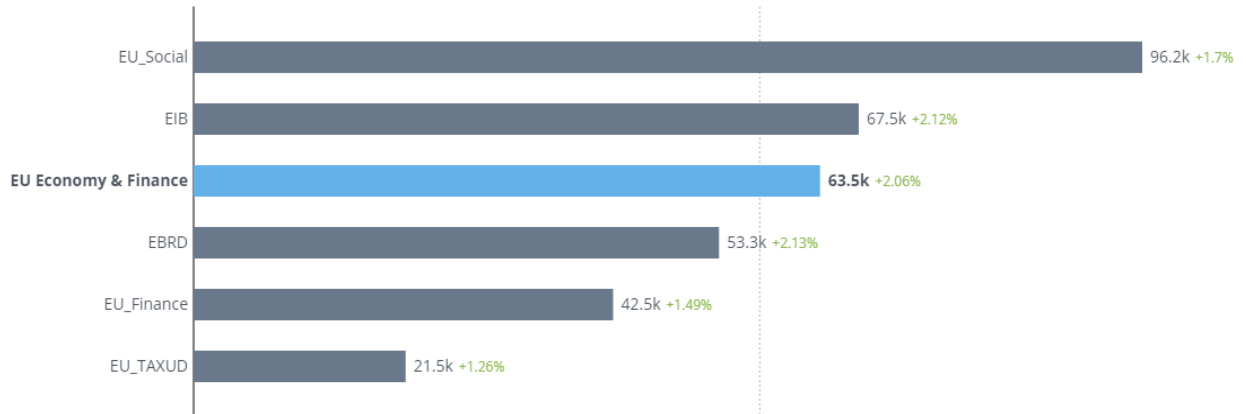

Chart 1. Comparison of Twitter Followers (11 June 2022 to 10 September 2022 vs 11 March 2022 to 10 June 2022)

Between 11 June and 10 September 2022, @ecfin's Twitter followers count rose by 2.06% to 63.5 thousand followers. Compared to similar accounts, EU_Taxud registered the smallest growth (1.26%) in its Twitter following, followed by EU_Finance which registered a 1.49% increase in followers. Additionally, the EU_Social Twitter account, which holds the highest number of followers among its competitors, registered only a mere 1.7% growth in followers.

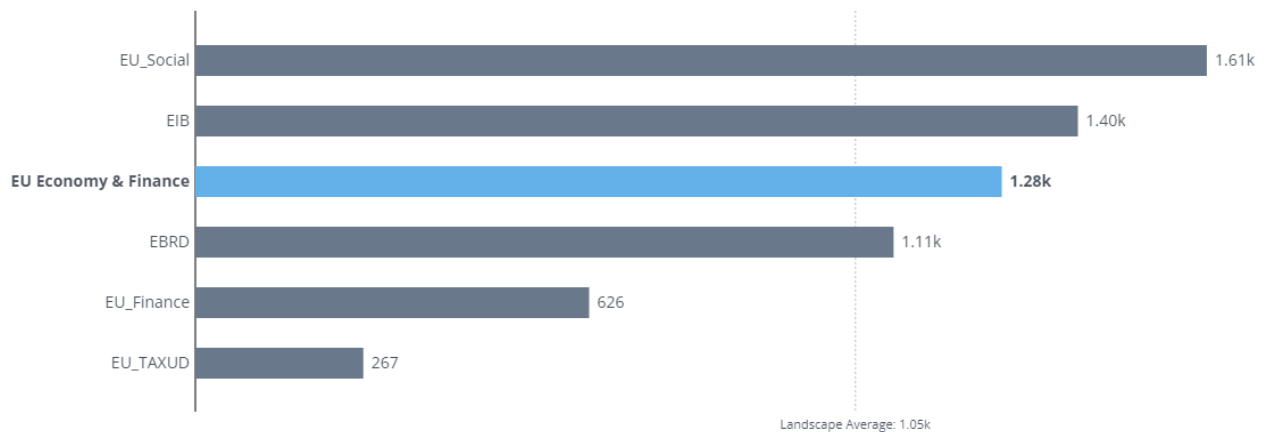Chart 2 provides the net change in Twitter followers for @ecfin and similar accounts.

Chart 2. Net Change in Twitter Followers (11 June 2022 to 10 September 2022 vs 11 March 2022 to 10 June 2022)

By the end of the reporting period, DG ECFIN grew its followers' base by 1,282 followers. It fell behind EU_Social which noted a net change of 1,608 Twitter followers and EIB which registered an increase of 1,403 followers. On the other hand, DG TAXUD recorded the lowest growth in follower volume compared to other similar accounts. Overall, the net change in followers for @ecfin put the account just above the competitor average of 1.05 thousand.

4.2 Number of Tweets

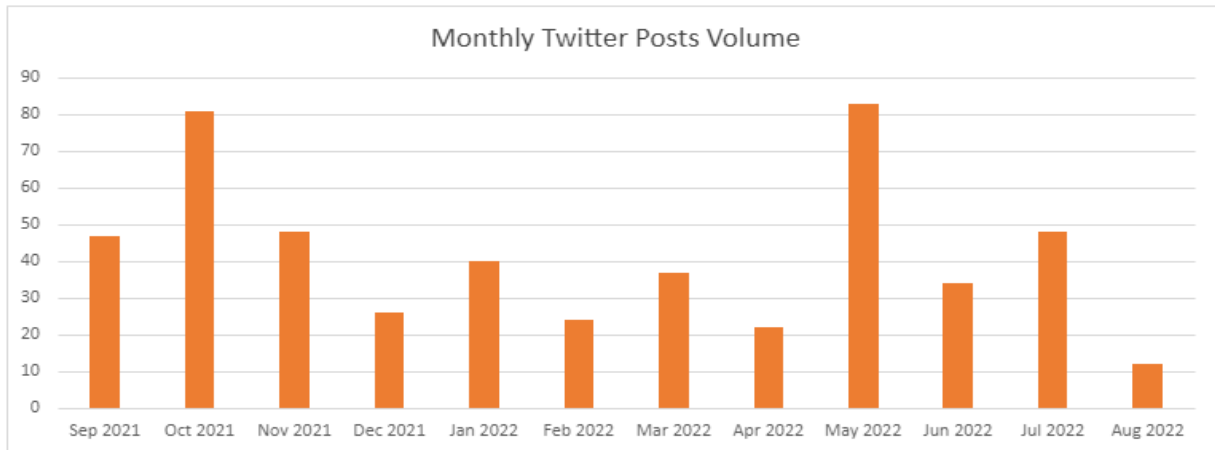Chart 3 illustrates the volume of DG ECFIN's Twitter original posts by month.

Chart 3. Monthly Evolution of DG ECFIN's Tweets

The monitoring period (1 September 2021 to 31 August 2022) includes 12 full months of activity. The months of May and October contributed to the overall volume with 83 and 81 tweets, respectively. August, meanwhile, recorded the lowest number of tweets: 12. In October, the top three most engaging posts referred to the EU Sustainable Investment Summit 2021, which garnered a total of 598 interactions by the engaged audiences. While in May, the tweets that gained the most traction were about the Brussels Economic Forum held on 17 May and quoting @GitaGopinath and @IMFnews on rise of commodity and food prices.

Chart 4 illustrates the total number of @ecfin's tweets from 1 September 2021 to 31 August 2022 compared to the number of tweets posted by other institutions and organisations.
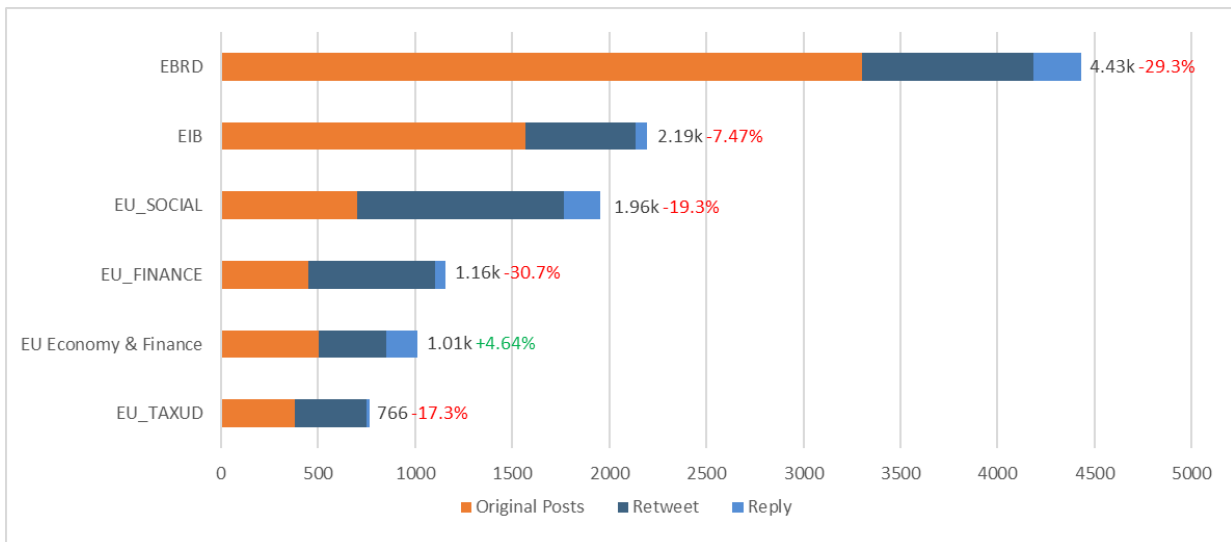

Chart 4. Number of Tweets (1 September 2021 to 31 August 2022 vs previous period)

During the reference period, DG ECFIN sent out 1,014 tweets. Out of these, 34% were retweets and 16% replies. The total number of tweets by @ecfin was below the competitor average of 1,920, contributing to its low ranking compared to other similar accounts. On the other hand, @ecfin

displayed a 4.64% increase in tweets volume, while the remaining accounts in question all reported negative growth rates compared to the previous period.

4.3 Number of Engagements/Interactions

Chart 5 compares @ecfin's total engagement to that of similar accounts during the reference period.
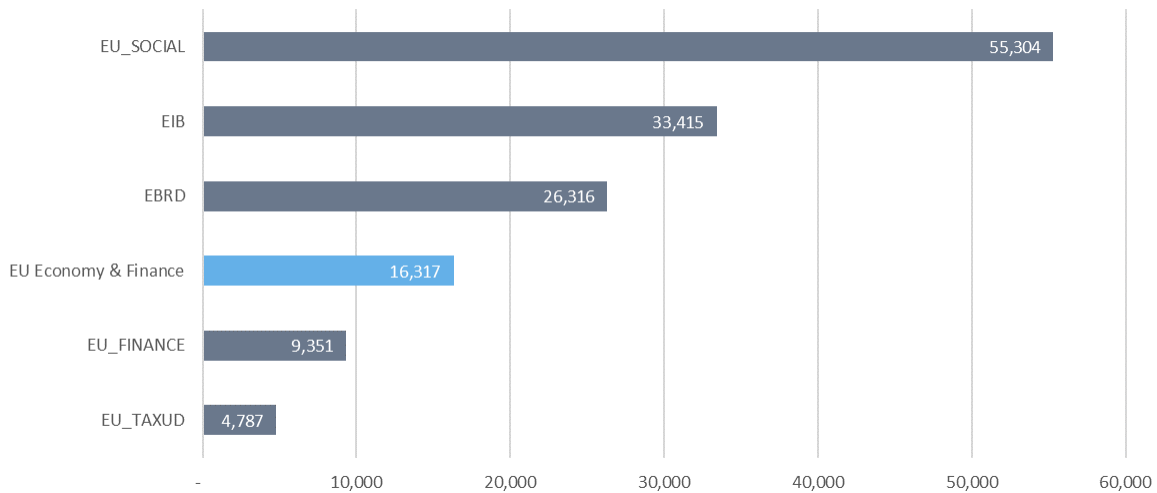

Chart 5. Total Engagement (1 September 2021 to 31 August 2022 vs previous period)

The total engagement of the @ecfin Twitter account according to Rival IQ data reached 16.3 thousand, which was below the competitor average of 24.2 thousand. This can be partly explained by the relatively low tweet volume compared to the other accounts.

The most engaging tweet during the monitoring period was the 'Euro 20th anniversary' post published on 18 January, which featured a video of people from various Member States sharing their views on what the euro means to them. The post generated a total of 641 interactions, with an engagement rate of 1.05% per follower. This value represents the total number of interactions per follower on this tweet, expressed as a percentage. The average engagement rate per follower for @ecfin's tweets during the reference period was 0.053%.

The second tweet in terms of engagement was posted on 1 June 2022. The post garnered 478 interactions with an engagement rate of 0.77%. The tweet announced Croatia's candidacy for adoption of the euro on 1 January 2023. The post was accompanied by an infographics carousel featuring information on the euro adoption's timeline and Croatia's current stance towards the required economic criteria.

The third most engaging tweet was an open call for registrations to the EU Sustainable Investment Summit. The EU Sustainable Investment Summit 2021 was the first annual event of the European Commission on sustainable investment, which set the objective for Europe to become the first climate-neutral continent by 2050. The post accrued 380 interactions and registered twelve times higher engagement compared to the average of @ecfin's other tweets.

4.4 Interactions per Tweet

The following bar chart (Chart 6) presents the interactions per tweet accumulated by @ecfin over the monitored period.
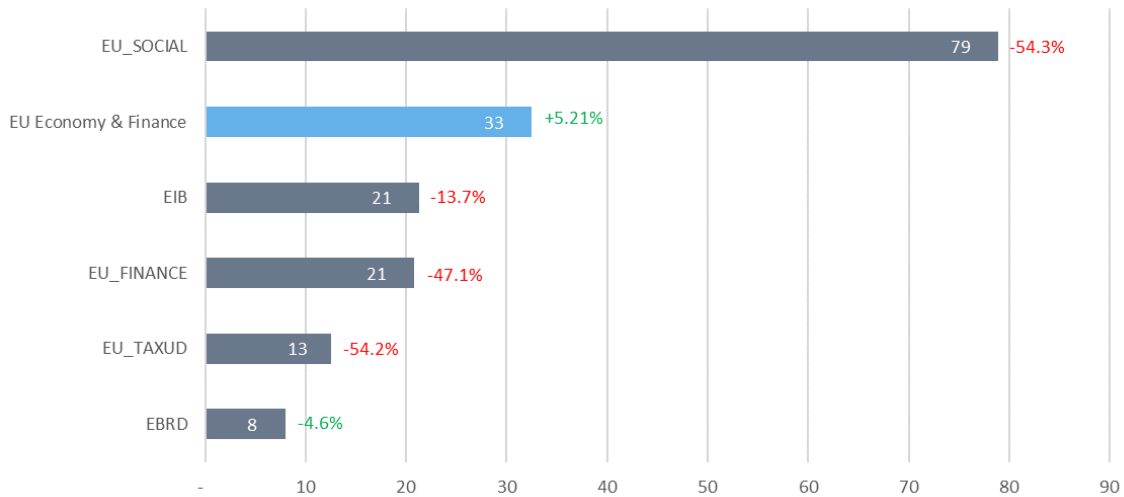

Chart 6. Total Engagement per Tweet (1 September 2021 to 31 August 2022 vs previous period)

The @ecfin account's interactions per tweet (defined as the average number of retweets, replies and likes per tweet) for the analysed period were 32.5, with the competitor average being at 29 interactions per tweet, which in turn shows that @ecfin scored the second-highest engagement per tweet, outpacing most of the competitors. At 78.9, EU_Social was the leader in terms of interactions, although registering the biggest negative change in terms of engagement per tweet (54.3%) compared to the previous period. EBRD recorded the lowest interactions per tweet (8), while DG TAXUD took the penultimate spot with 13 interactions per tweet, along with a 54.2% drop compared to the previous period.

5. Twitter Audience Analysis

This section presents an overview of DG ECFIN's Twitter audience covering the period from 1 September 2021 to 31 August 2022. This analysis focuses on the audience mentioning @ecfin or engaging with its content without distinguishing between followers and non-followers, while excluding any owned mention activity.

The first section, Demographics Overview, introduces a breakdown of DG ECFIN's Twitter audience in terms of gender, geolocation, interests and occupation. The next section, Top Authors and Top Hashtags, presents the accounts that interacted the most with the @ecfin Twitter account in the reference period, as well as the most frequently used hashtags. The last section, called Topics Overview, presents the most popular topics, discussed by DG ECFIN and its audience on Twitter during the monitoring period.

5.1 Demographics Overview

Twitter conversations involving @ecfin during the evaluation period produced 15,116 mentions by 7,496 unique authors. The majority of these conversations were retweets by other accounts mentioning DG ECFIN.
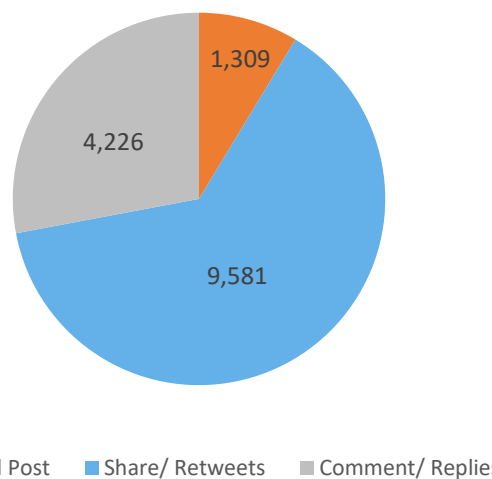

Chart 7. Mentions Breakdown per Mention Type

Out of the 7,496 unique authors, only 3,979 authors could be classified by gender.
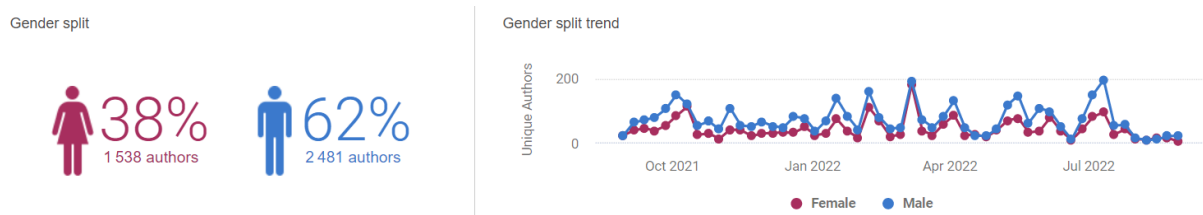

Chart 8. Authors' Gender Split and Volume of Mentions per Gender

The DG ECFIN's Twitter audience comprised 38% women and 62% men, indicating that the male authors were more engaged in Twitter than female authors. The interest of the male audience peaked on 10 July 2022, mainly driven by retweets of the @euronews post on Europe's plans to cut its reliance on Russian fossil fuels by 2027.
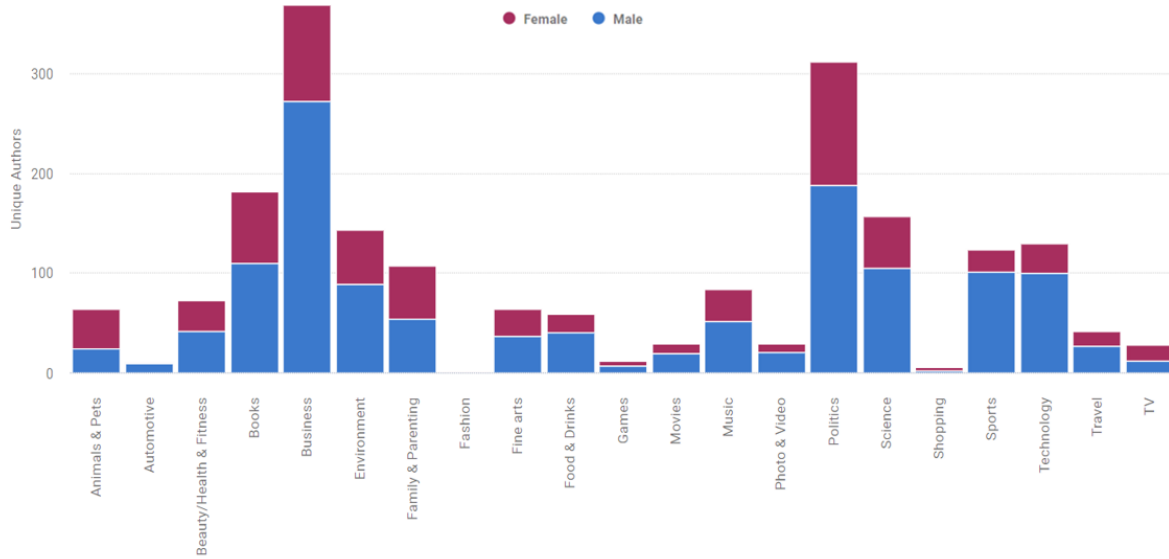

Chart 9. Interests Breakdown per Gender

The chart 9 displays the interests of authors broken down by gender. It appears that male authors are more active, compared to female authors, in the topics of business, environment, politics, science and technology.
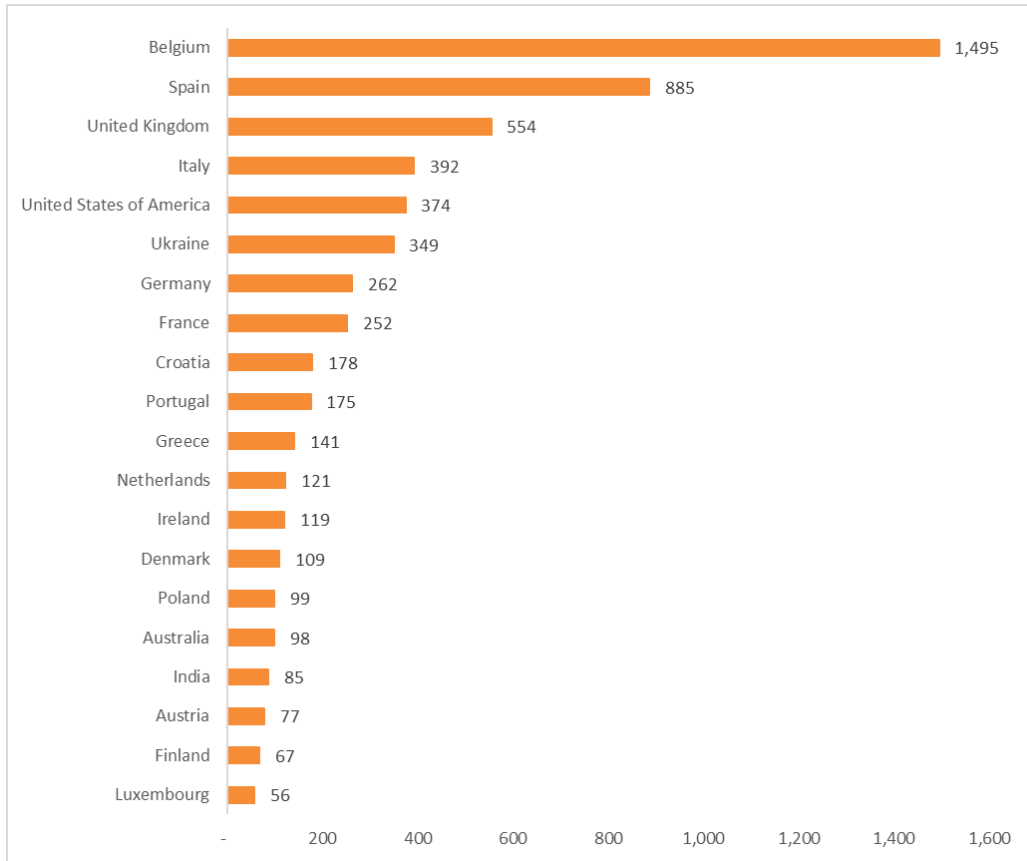
Country	Mentions
Belgium	1,495
Spain	885
United Kingdom	554
Italy	392
United States of America	374
Ukraine	349
Germany	262
France	252
Croatia	178
Portugal	175
Greece	141
Netherlands	121
Ireland	119
Denmark	109
Poland	99
Australia	98
India	85
Austria	77
Finland	67
Luxembourg	56

Chart 10. Top 20 Countries in Mention Volume

In terms of geolocation, @ecfin's Twitter mentions originated primarily from European countries, such as Belgium (1,495), Spain (885), the United Kingdom (554) and Italy (392). Belgium's top rank can be attributed to the various EU institution accounts and EU executives engaging with DG ECFIN-related content. The United States of America was found in the top five countries of origin, with 374 mentions coming from the country. The top 20 countries amounted to 89% of the total mentions, while as expected the EU-27 countries gathered a total of 70% of mentions.
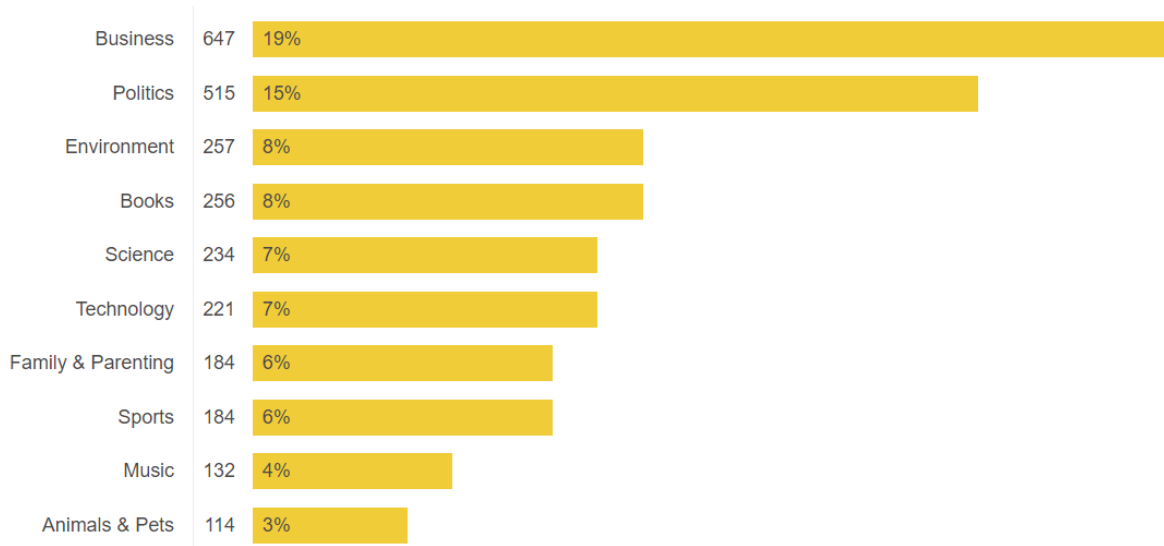
Chart 11. Authors' Top 10 Interests

The top three interests of @ecfin's Twitter audience were business, politics and environment. Business was the primary interest amounting to 19% of total authors, followed by politics with 16%. The results of the interest analysis align with DG ECFIN's relevant topics that revolve mainly around EU economic policies that have a direct impact on the fields of business, politics, environment and technology.

Chart 12. Main Topics Comparison by Author Interests

A deeper analysis on the topics of discussions revealed that the authors interested in business engaged more with topics regarding the 'Recovery and Resilience Facility', the 'EU Sustainable Investment Summit', the 'InvestGreenEU Summit', 'fiscal policy', 'green transition', and 'green and digital'. Additionally, the respective authors were more engaged with topics regarding Croatia and Germany. On the other hand, topics that involved 'Russian fossil fuels', 'scale up renewable energy', 'Summer 2022 #ECForecast', '#Iran Rgm' and '#Iran #Teachers' were more popular among the authors interested in politics. Topics referring to the war in Ukraine and the European economy were discussed by authors interested in both business and politics.
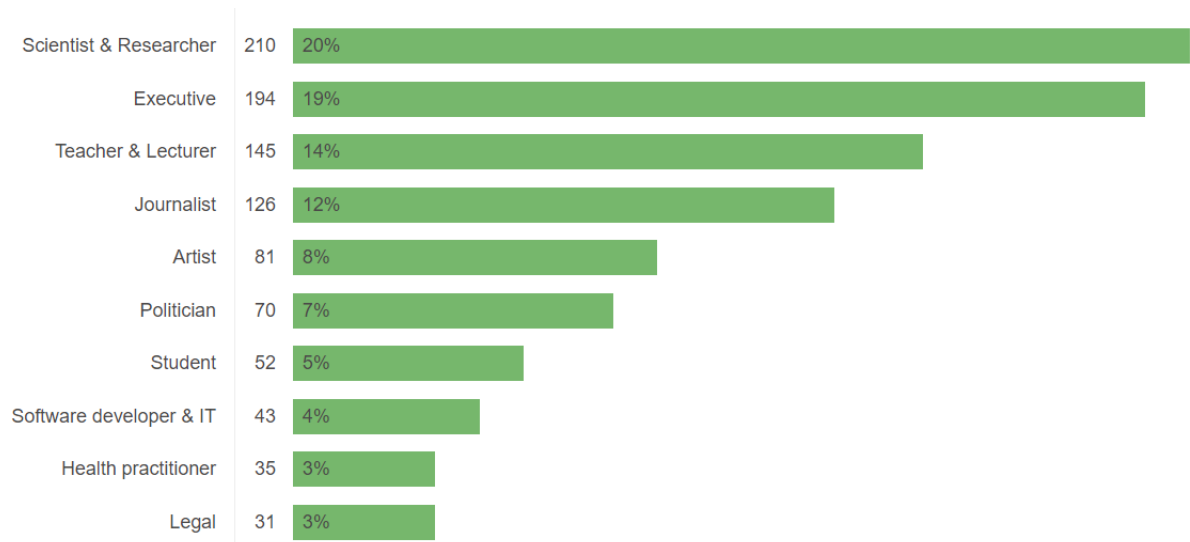
Chart 13. Authors' Top 10 Professions

Profession	Count	Percent
Scientist & Researcher	210	20%
Executive	194	19%
Teacher & Lecturer	145	14%
Journalist	126	12%
Artist	81	8%
Politician	70	7%
Student	52	5%
Software developer & IT	43	4%
Health practitioner	35	3%
Legal	31	3%

The top four occupations associated with @ecfin were scientist/researcher, executive, teacher/lecturer and journalist. The most popular profession was scientist/researcher with 20% of total authors, and next was executive amounting to 19% of authors. This suggests that academics, EU executives and journalists are the driving force in the dialogue in DG ECFIN's sphere, reinforcing the idea that the discussions are steered by key political figures and professionals who are closely involved with DG ECFIN's policies.

Chart 14. Main Topics Comparison by Author Professions

Executives appeared more involved around topics like 'EU Sustainable Investment Summit', '#InvestEU Portal', 'Recovery and Resilience Facility', 'Breaking news', 'euro coins' and 'single currency'. In addition, executives were more engaged with topics related to the countries of Croatia, Greece, Russia, Ukraine and Italy, while both scientists/researchers and executives were equally involved around topics regarding Spain and 'climate change'. The most popular topics among the scientists/researchers were those around 'Spring 2022 #ECForecast', 'GDP', 'EU's economy', 'path of growth', 'fossil fuels' and 'Eurozone'.

5.2 Top Authors and Top Hashtags

The table 1 features the top 20 accounts that were the most impactful in the discussions about @ecfin on Twitter during the reference period.

TWEETER	MATCHING TWEETS	IMPACT ⓘ AVERAGE ▼	TWITTER ⓘ FOLLOWERS	REACH ⓘ AVERAGE
@EU_Commission	5	78.7	1 717 952	72 133
@MikeBloomberg	1	78.7	2 704 125	63 312
@GabrielMariya	1	78.5	75 479	62 477
@IMFNews	1	77.1	1 914 172	67 695
@EUCouncil	3	75	697 893	67 830
@euronews	25	73.7	530 228	102 462
@OECDinnovation	1	72.7	31 743	21 404
@KlaasKnot	1	72.2	5 644	37 264
@TheProgressives	1	71.5	127 140	29 465
@tigray_micky	1	71.5	2 040	36 673
@jchatterleyCNN	2	71.4	89 785	28 720
@ecb	4	70.9	688 612	51 760
@USTreasury	1	70.2	981 271	42 382
@rscholtalbers	1	69.5	1 602	13 472
@jersiovic	2	69.2	307	34 939
@parallel_mike	1	69	144	29 906
@OECD	2	68.3	672 629	40 244
@RaphCmt	1	68.3	134	6 559
@HartwigSchafer	1	67.3	105 639	25 166
@PueyoIgnacio	1	66.7	1 517	29 408

Table 1. Top 20 Most Impactful Authors

The majority of the authors engaged with DG ECFIN's Twitter account belonged to EU institutions and organisational accounts related to economic policies. The organisational accounts comprise the European Commission, the European Council, the account for International Monetary Fund breaking news, Euronews (a European and multilingual television news channel), OECD Innovation (Organisation for Economic Co-operation and Development), and the Socialists and Democrats Group in the European Parliament.

As regards individual accounts, among the most impactful accounts were Mike Bloomberg, an American politician, businessman and author, EU Commissioner Mariya Gabriel, and Klaas Knot, chairman of the Dutch central bank, De Nederlandsche Bank.

The case of the European Commission's account is indicative of its authority, achieving the highest impact score with a significant reach across engaged audiences. Mike Bloomberg is also a great example of the importance of a large following, by reaching the second place in terms of impact score with a single matching tweet. Mariya Gabriel, known for her involvement in various social and political issues, occupies the third place, even though her follower count is relatively low compared to other authors. Euronews' contribution in relevant conversations with 25 tweets, concerning the Real Economy macroeconomic TV series,played an important role as far as impact ranking is concerned.

Out of the top five hashtags mentioning @ecfin, the most frequently used was the hashtag #realeconomy, featured in a total of 1,810 tweets. In second place, with a total of 1,038 mentions, was the hashtag #iran, related to various protests or the elimination of the official exchange rate. The hashtags #nextgenerationeu, #investgreeneu and #nextgeneu were used 848, 751 and 722 times, respectively. The hashtag #fijezaya, which stands for the demand for fixed-term contracts in public administration, was used 720 times in a predominantly negative sentiment.

5.3 Topics Overview

During the reference period, the @ecfin Twitter audience discussions focused on the following topics featured on Chart 15.
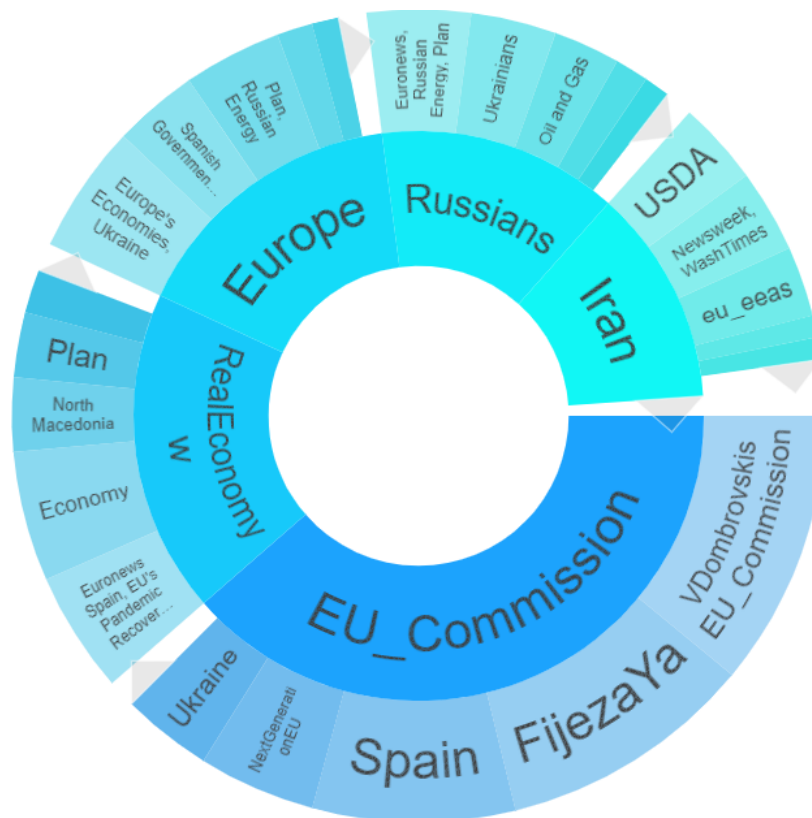

Chart 15. Topics Wheel

Relevant discussions or mentions of the European Commission (@EU_Commission) were found in 224 mentions. 'RealEconomy' emerged as the second most popular topic amounting to 109 mentions, while the topic of Europe generated 95 mentions. Lastly, the topic about Russians that relates to Russian fossil fuels dependency attracted 81 mentions.

6. Sentiment Analysis - Economic Governance Review and European Semester

The online social listening tool Brandwatch was used to conduct sentiment analysis on two predefined topics, Economic Governance Review and European Semester, which were considered as one topic. This analysis utilises an AI-powered (natural language processing) NLP-driven method to analyse text and detect positive or negative opinions in tracked mentions.

6.1. Social Listening Overview

This section presents an evaluation of the online discussions that revolved around the topics of the Economic Governance Review and European Semester and covers the period from 1 September 2021 to 31 August 2022.
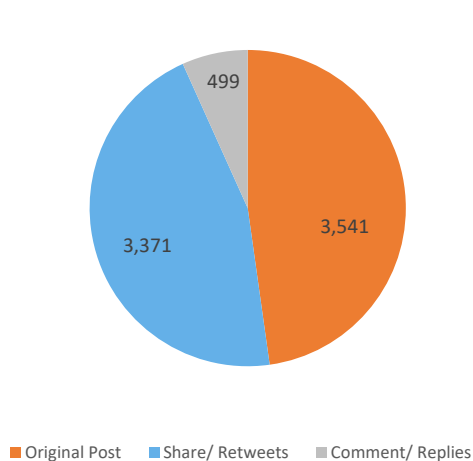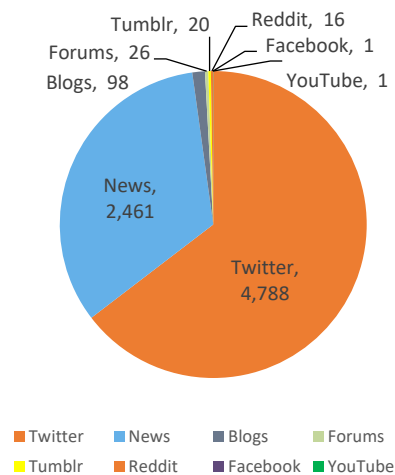

Chart 16. Mention Types

Chart 17. Content Sources

Relevant online conversations produced a total of 7,411 mentions generated by 3,021 unique authors. Out of the tracked mentions, the majority were original posts (48%), from 766 unique authors, while the remaining mentions were shares/retweets (45%) and comments/replies (7%). As regards content sources, Twitter was the predominant source with 65% of mentions, followed by news (33%), and the remaining 2% of mentions was split among forums, blogs, Reddit, Tumblr, Facebook and YouTube.

The line chart 18 below showcases the daily progression in the number of mentions during the monitoring period that included mentions of the relevant topics. As evident from the daily evolution graph, the release of the Spring and Fall packages attracted the attention of the engaged audiences, generating surge of mentions around November 2021 and May 2022.
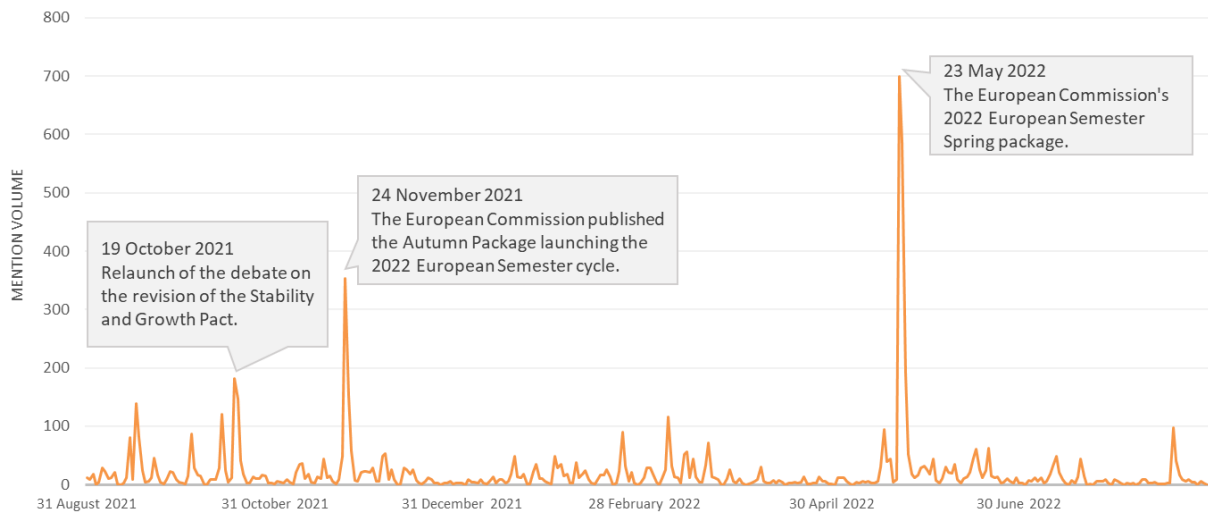
Chart 18. Daily Evolution of Mentions (1 September 2021 to 31 August 2022)

Chart 19. Most Trending Topics (1 September 2021 to 31 August 2022)

As indicated in the word cloud above, the situation in Ukraine occupied the discussions and emerged as the trending topic of discussion. Mentions revolved around the economic consequences of the invasion of Ukraine by Russian military forces demonstrating the need to halt EU dependency on fossil fuels not only from Russia but overall.

6.2. Top 20 Stakeholders Analysis

The top 20 most impactful Twitter authors involved in relevant discussions included stakeholders from EU institutions, politicians, journalists and non-profit organisations. The EU institution accounts included the European Commission and European Commission representation for countries (Spain, France), the European Council and Council press. A large number of authors were politicians, commissioners and ministers from Estonia, France, Latvia and Luxembourg, like Paolo Gentiloni, former Prime Minster of Italy and Commissioner for Economy. There were journalists from Germany, France and Italy and from Politico Europe, a news organisation covering EU political issues. Finally, two of the top authors included non-profit organisation Greenpeace and one of its initiatives for climate change 'money for change'.

6.3. Sentiment Analysis Overview

AI-based sentiment analysis with cutting-edge methodologies, empowered by human validation, was conducted on the totality of the tracked mentions to identify the sentiment expressed in the relevant conversations. The analysis revealed that the majority of mentions registered an overall neutral sentiment (7,176, or 97% of the total), while 127 (2%) mentions were classified as positive, and 108 mentions recorded a negative sentiment.
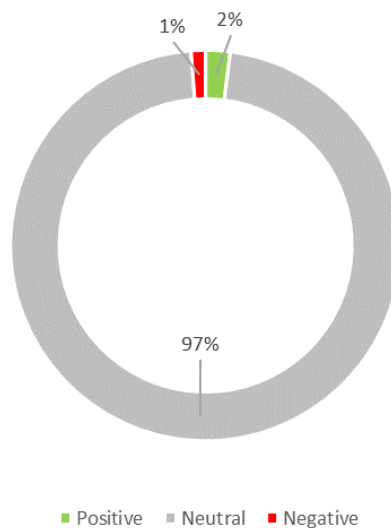

Chart 20. Sentiment Breakdown

As displayed in the pie chart 20, the most prominent underlying sentiment was neutral. Aligned with this fact, the majority of mentions were comprised of generic statements, updates, news or topics, and invitations to public events, like debates and presentations, related to the European Semester and Economic Governance Review. Furthermore, the dialogue was mainly driven by European institution accounts, such as the European Commission and European Council, as well as political figures, key decision-makers and EU Member State representatives.

Chart 21. Sentiment Word Cloud for Top Hashtags, Keywords and Phrases

The word cloud above depicts the overall sentiment of the top hashtags, keywords and phrases related to European Semester and Economic Governance Review. Overall sentiment on the topics discussed was primarily neutral. The most popular topics of neutral sentiment related to the 'Commission', registering 2,735 mentions (77%) revolving around the invitation for the Economic Governance Review public debate, the publication of France's 2022 report for 'National Reform Programme', and the presentation of reforms and fiscal recommendations for EU countries.

The second most popular topic was 'recovery', found in 2,125 mentions (60%) referring to the recovery and resilience plans' implementation in the European Semester and their interconnection, the economic recovery of the EU based on green and digital transformation and coordination of fiscal policies and the benefits that the Recovery and Resilience Facility brings together with the European Semester. Following the top two topics was 'policy', which was found in 2,043 mentions (57%), concerning social, economic, justice and fiscal policies, etc., in connection to the European Semester.
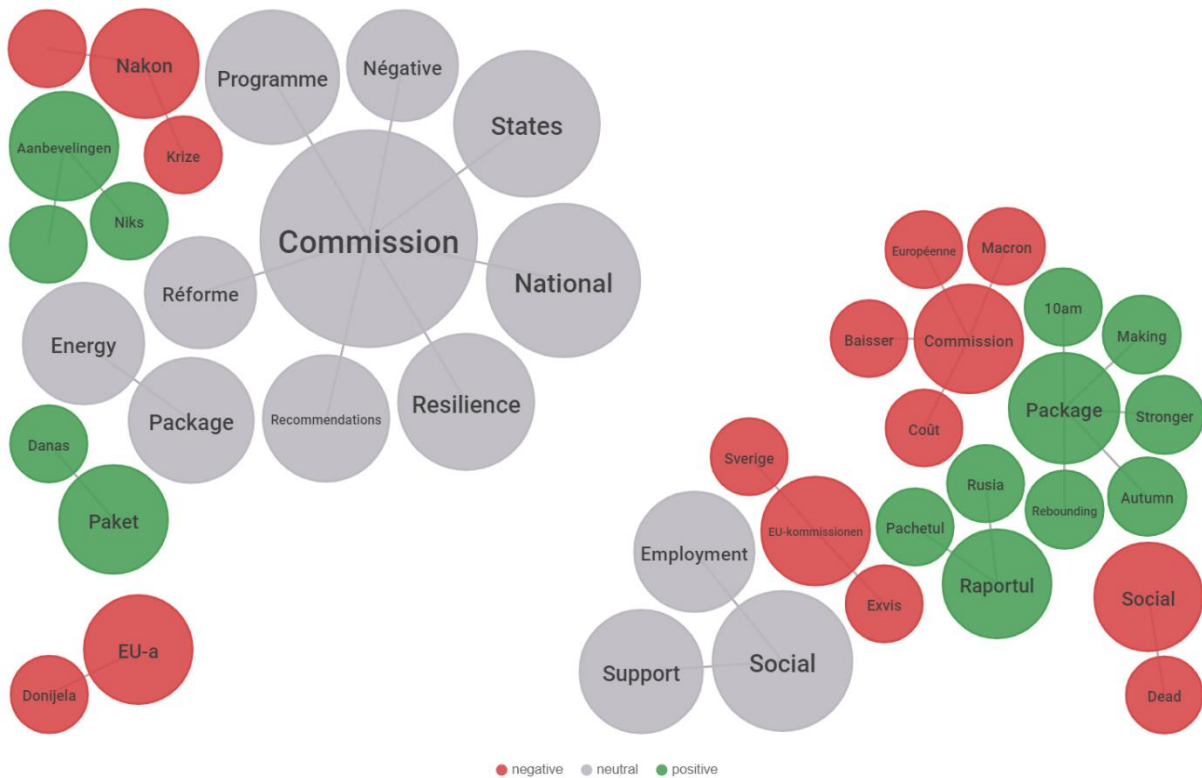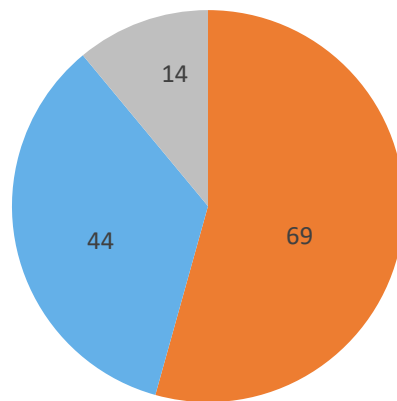
Chart 22. Bubble Chart of Popular Words Correlated with Sentiment

Additionally, the above bubble chart 22 illustrates the most frequently used keywords related to the European Semester and Economic Governance Review and their interconnected relationships. The bubble size reflects the volume of mentions each keyword amassed and it's coloured based on the underlying sentiment. The word 'Commission' presents once again the most widely used word and correlates with the terms Resilience, Reforme, National, States, Programme, and Package.

6.4. Positive Sentiment

Out of the total tracked 7,411 mentions, 127 were classified as positive, generated by 102 unique authors.

Chart 23. Positive Sentiment Mentions Breakdown per Mention Type

6.4.1. Demographics

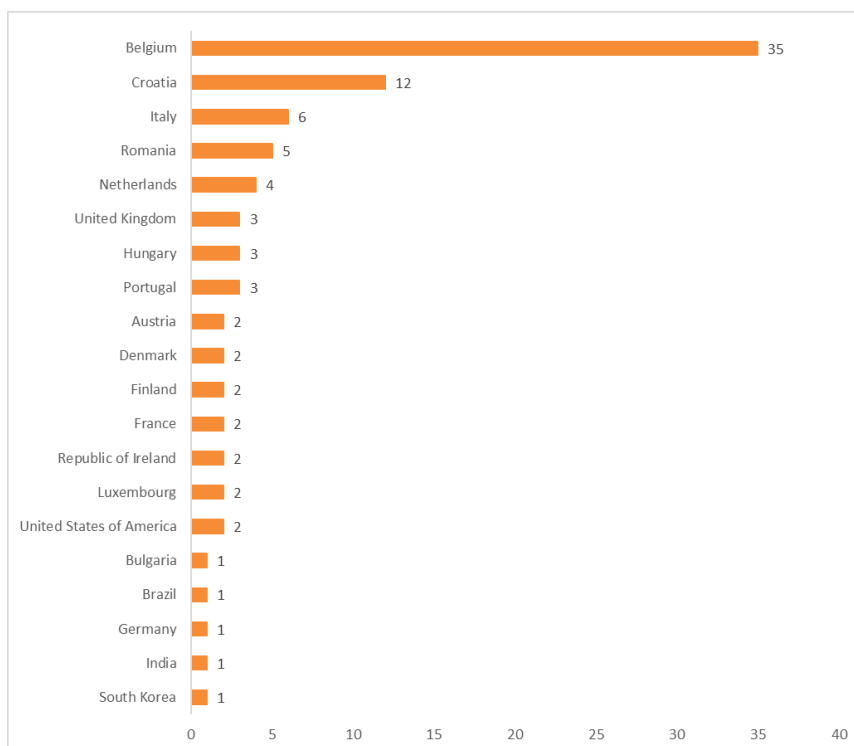The chart 24 below depicts the top 20 countries in terms of volume of positive sentiment mentions.

Chart 24. Positive Sentiment Mentions per Country

Belgium accrued the most positive mentions, as could be expected on account of the breadth of Twitter accounts of EU European institutions, political figures and EU Member State representatives. The second origin country was Croatia, with mentions by the Croatian European Commission's Twitter

account and Ognian Zlatev, head of European Commission representation in Croatia. Italy ranked third, owing to mentions from Antonio Parenti, head of European Commission representation in Italy and several Italian accounts from the general public.

Chart 25. Authors' Gender Split for Positive Sentiment Mentions

Out of the total 102 unique authors, 56 could be classified based on their gender. Male authors were almost 20% more than female authors, showing that males were more involved in relevant topics.

6.4.2. Authors

AUTHOR NAME	SOURCE	MENTIONS⊙ MENTIONS	IMPACT⊙ AVERAGE ▼	REACH⊙ AVERAGE
@Yuriko_Backes	twitter.com	1	71.3	20981
@etuc_ces	twitter.com	1	70.3	20815
@VDombrovskis	twitter.com	1	56.4	21172
@CroatiaInEU	twitter.com	1	52.8	14477
@PaschalD	twitter.com	2	51.2	16649
@helenadalli	twitter.com	1	45.4	11092
@RCERomania	twitter.com	1	44.3	9934
@CER_EU	twitter.com	1	43.8	10434
@annimarttinen	twitter.com	1	41.1	6461
@EC_AVService	twitter.com	1	41	8782

Table 2. Top Positive Sentiment Twitter Authors

The table 2 above displays the top authors per impact score out of positive sentiment mentions. Top individual authors of mentions with positive sentiment were Yuriko Backes, the Finance Minister of Luxembourg, Valdis Dombrovskis, politician from Latvia, former Prime Minister and European Trade Commissioner, Paschal Donohoe, Ireland's Minister for Finance and President of Eurogroup, Helena Dalli, the European Commissioner for Equality, and Anni Marttinen, chief economist at SOSTE, a non-profit umbrella organisation from Finland concerned with social affairs and health.

Additionally, the top organisational authors of mentions with positive sentiment were the European Trade Union Confederation, the official accounts of permanent representation of Croatia in the EU and representation of the European Commission in Romania. Among the top authors was also the Centre for European Reform (an award-winning think tank in Belgium, Germany and the United Kingdom,

devoted to improving the quality of the debate on the EU, and finally the European Commission's audiovisual service, offering EU news and audiovisual archives online and via Europe by Satellite.

6.4.3. Topics

Chart 26. Positive Sentiment of Top Hashtags, Keywords and Phrases

The most popular term used in mentions was the hashtag #europeansemester, found in 54 mentions covering a wide range of positive content like praising the European Semester as a prime example to be used for inspiration for the rest of the EU, characterising it as a way of ensuring fairness and addressing inequality, and referring to the EU emerging stronger, greener and more digital thanks to the autumn package of the European Semester. Other popular keywords were 'package' with 29 mentions regarding the European Semester autumn package, with mentions referring to the EU rebounding stronger from crisis and becoming greener and more digital, 'today' found in 25 mentions regarding the participation of the authors in several events like debates on 'fiscal matters', the 2022 launch of European Semester, and the Directorate-General for Economic and Financial Affairs' (ECFIN) procedures for allowing Croatia to join the euro area.

Fading ▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭ Trending

Chart 27. Positive Sentiment Trending Topics

Chart 27 depicts the trending topics identified in the positive sentiment topics wheel in Chart 28, based on volume of mentions and according to the timeline of the analysis.

Chart 28. Positive Sentiment Topics

Out of the total 127 mentions classified by positive sentiment, 59 mentions fall under these 10 main thematic categories. The 'European Semester Autumn Package' was the most popular positive sentiment topic with 18 positive mentions. Mentions referred to Europe rebounding stronger from crisis and becoming greener and more digital. Furthermore, they mentioned the new cycle of European economic policy coordination and its newly formed interconnection with the Recovery and Resilience Facility, which will help the European Semester with better guidance towards Member States in making a success of the green and digital transitions and building a more resilient EU economy. The second most popular topic referred to the 'importance' of European Semester in connection to terms, concepts, procedures or organisations affiliated with it. Following in third place was the 'Economic Governance Review' topic, where mentions expressed excitement and gratitude for participating in political meetings, events or panels associated with the 'Economic Governance Review', while the top

mention in terms of reach concerned a positive message regarding Europe's optimistic economic recovery and growth based on forecasts and presented the 'Economic Governance Review' as a tool that can help the EU face challenges and tackle economic issues.

6.4.4. Top 10 Positive Mentions by Reach

This section displays the top 10 mentions with positive sentiment ranked by estimated reach.

01 ⭐ 🐦 **VDombrovskis (Valdis Dombrovskis)** @VDombrovskis ✓   19 Oct
Europe is on track to economic recovery & beating growth forecasts. But we still face challenges, which our **economic governance review** should tackle head-on: 📌 high deficits & debt 📌 need for more investment 📌 complex rules The debate starts today. https://t.co/woCEeOGwza

02 ⭐ 🐦 **Yuriko_Backes (Yuriko Backes)** @Yuriko_Backes ✓   17 Jun
Constructive meeting with EU Commissioner for the Economy @PaoloGentiloni about the Stability & Growth Pact, the **European semester** as well as the various @EU_Commission @EU_Taxud proposals important for LU. https://t.co/jp8wo4eHCv

03 ⭐ 🐦 **etuc_ces (EUROPEAN TRADE UNION)** @etuc_ces ✓   24 Nov
The GDP of a country is a poor indicator of wellbeing because wealth so often doesn't trickle down The 'beyond GDP' agenda announced by @PaoloGentiloni today is an important step towards an economy that puts people before profit #EuropeanSemester

04 ⭐ 🐦 **ecfin (EU Economy & Finance)** @ecfin ✓   24 Nov
#EuropeanSemester Autumn Package: rebounding stronger from the crisis and making Europe greener and more digital Today @EU_Commission launches the 2022 **European Semester** cycle of economic policy coordination, which draws upon the Autumn 2021 #ECForecast. 👉 https://t.co/USGtkIpY1o https://t.co/WwgDveXQat

05 ⭐ 🐦 **Paschald (Paschal Donohoe)** @Paschald ✓   28 Sep
Today I was happy to participate in the week of #FiscalMatters debates organised by @NEF. I spoke about euro-area budgetary coordination as we recover from #Covid19, the upcoming **economic governance review** and the role of #Eurogroup. Full speech: https://t.co/7odiUSIzz7 https://t.co/oAHJ9u5f6z

06 ⭐ 🐦 **Paschald (Paschal Donohoe)** @Paschald ✓   7 Dec

While in Brussels, I was delighted to meet Belgium's Prime Minister @alexanderdecroo and Finance Minister @vincent_v_p. We discussed #Eurogroup priorities, including the **economic governance review** and banking union. https://t.co/aj3axNvMWj

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07 ⭐ 🐦 **CroatiaInEU (Croatia in the EU)** @CroatiaInEU ✓   17 Jun

Another important day for #Croatia and Minister Marić in Luxembourg. Today's #ECOFIN will complete several steps in the procedure to allow #Croatia to join the euro area. HREU🔲 Also on minister's agenda: ▶️ #EuropeanSemester 2022 ▶️ #RRF ▶️ #Ukraine ▶️ Corporate #taxation https://t.co/3CNVhm3d6N

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08 ⭐ 🐦 **helenadalli (Helena Dalli)** @helenadalli ✓   24 May

Ensuring fairness & addressing inequalities are at the heart of today's #EuropeanSemester Spring Package with #equality considerations informing country-specific recommendations. Read more: https://t.co/QjFLfJ7g1N #UnionOfEquality https://t.co/QWFoM1OPwq

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09 ⭐ 🐦 **CER_EU (CER)** @CER_EU ✓   14 Apr

The EU's area of freedom, security and justice has not evolved as it should have. The EU should rethink the way it works, and could do well to draw inspiration from the #EuropeanSemester and the EU's post-pandemic #RecoveryFund. 🖌️ @CaminoMortera #AFSJ https://t.co/VUJa9eC6rO

---

10 ⭐ 🐦 **RCERomania (European Commission)** @RCERomania ✓   24 May

The European Semester Spring Package provides support & guidance 2 years after the first impact of the #COVID19 pandemic & in the context of the current invasion of Ukraine by Russia. The country report on RO is available here: https://t.co/zQLMVqOjiS #EuropeanSemester https://t.co/prpFd0W5TP

Table 3. Top Positive Sentiment Mentions

The top mentions classified by positive sentiment covered a wide range of topics, expressing optimism and revealing good news. Most of the top posts included positive feelings and feedback on meetings between key political stakeholders, regarding the European Semester and Economic Governance Review, and EU and country-specific economic matters. Important positive topics were Europe's economic recovery and beating growth forecasts and having the Economic Governance Review as a weapon to fight against potential challenges, the European Semester's 'beyond GDP' agenda, as a step towards an economy that is putting people as priority versus profit, the European Semester ensuring fairness and addressing inequalities and the think-tank 'Centre for European Reform' being considered as a source of inspiration for freedom, security and justice.

6.5. Negative Sentiment

Out of the total tracked 7,411 mentions, 107 were classified as negative, generated by 91 unique authors.
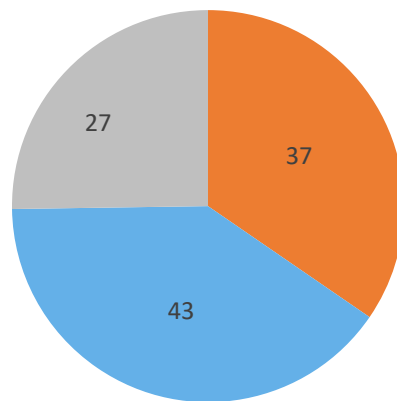
Chart 29. Negative Sentiment Mentions Breakdown per Mention Type

The majority of mentions were shares/ retweets (43), while original posts amounted to 37 and comments and replies amounted to 27. The primary source of mentions was Twitter, accounting for 96% of all negative mentions, while News and Reddit followed with 2% of mentions each.

6.5.1. Demographics

The chart 30 below depicts the top 20 countries in terms of volume of negative sentiment mentions.
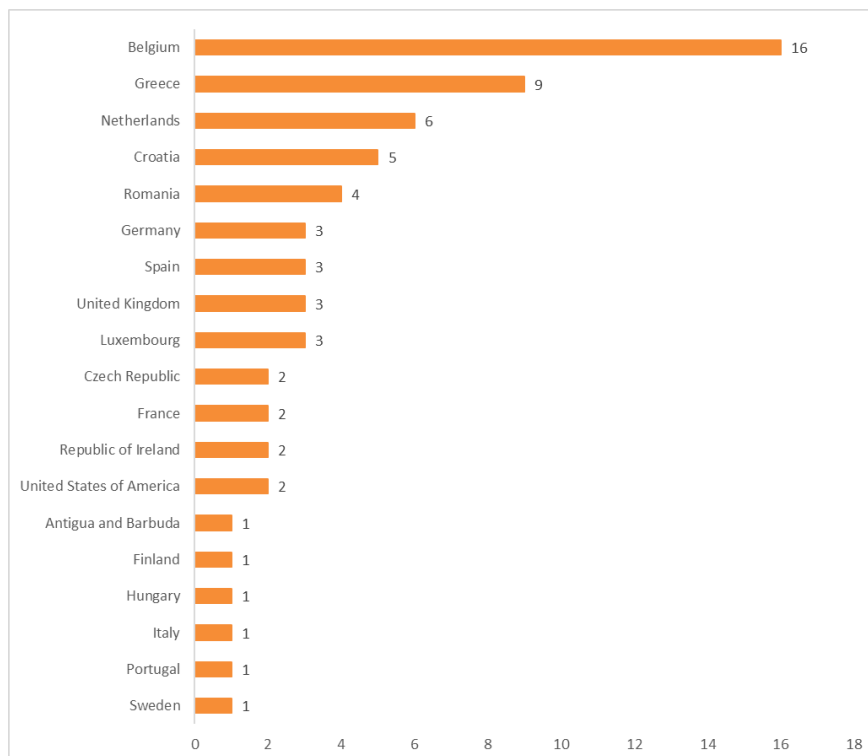
Chart 30. Negative Sentiment Mentions per Country

- The most negative sentiment mentions were recorded from Belgium, originating from EU stakeholders' Twitter accounts such as EU policy analysts, journalists and people working in EU-affiliated organisations. The negative mentions raised concerns on a range of issues related to social inequalities, relative poverty, Luxembourg's school system, EU housing market, Greek economy supervision developments, France pension system reformations and many more.

- The second top country was Greece, with mentions mainly initiated by the general public, criticising the rationale behind some decisions of the Greek political party in power.

- The third country was Netherlands, owing to Pieter Gerrit Kroeger's mentions – a historian and former editor-in-chief of ScienceGuide – and individual accounts stating negative opinions for the country's renewable energy, private rental market and macroeconomic imbalances.

24% 12 authors   76% 38 authors

Chart 31. Authors' Gender Split for Negative Sentiment Mentions

Out of the total 91 unique authors whose mentions displayed negative sentiment, only 50 could be classified based on their gender. Male authors were 52% more than female authors, showing that males were far more involved in relevant topics.

6.5.2. Authors

AUTHOR NAME	SOURCE	MENTIONS MENTIONS	IMPACT AVERAGE ▼	REACH AVERAGE
@sinnfeinireland	twitter.com	1	57.9	23023
@avrailas	twitter.com	1	52.8	7375
@diego_bxl	twitter.com	2	44.8	11679
@ZEK_Praha	twitter.com	2	42.6	9321
@lucabattanta	twitter.com	1	41.8	9621
@PGKroeger	twitter.com	3	39.3	7739
@contemplation19	twitter.com	1	39.1	1463
@hofverberg	twitter.com	1	38.7	5046
@kmlvrmln	twitter.com	1	38.5	4891
@social_platform	twitter.com	1	35.7	5984

Table 4. Top 10 Negative Sentiment Twitter Authors

The table 4 above shows the top 10 most impactful authors that published negative sentiment tweets. Top individual authors of mentions with negative sentiment were Pieter Gerrit Kroeger, a historian and former editor-in-chief of ScienceGuide, Martin Hofverberg, chief economist at the Tenant Association, journalists and general public accounts involved in economic and political commentary. Additionally, the top organisational authors of mentions with negative sentiment were Sinn Féin, Irish republican party dedicated to the reunification of Ireland, the information service for representation of the European Commission in the Czech Republic, and Social Platform the leading organisation working in the EU for social rights.

6.5.3. Topics

Chart 32. Negative Sentiment of Top Hashtags, Keywords and Phrases

The most popular term used in negative mentions was the keyword 'CSRs' referring to country-specific recommendations, found in 17 mentions and specifically discussing the ending of lignite dependence for Greece. The sum of Greek hashtags and phrases around 'CSRs' originates from a single mention and related retweets, which entertains the possibility of Greece's earlier-than-planned lignite phase-out taking place in order to be able to sell rights and generate revenue that reduces deficit, based on Greece's 2022 national reform and stability programme report. The hashtag #νδ_συμμορια is calling the Greek political party in power a gang and #τψρμ is an acronym translating roughly to 'why did you vote them' (anti-government political stances). In addition, engagement with the original mention included several comments, which gathered massive amounts of likes and retweets (compared to the post itself), accusing the Greek political party in power of political agendas and scandals.

πιθανοτατα
έλλειμμα
socially μπορούμε
διαβάζοντας
κριζε απολιγνιτοποίησης fifth πρόωρης
#eueconomicgovernance #europeansemester
#covid19 social worst #νδ_συμμορια
Commission δικαιώματα
μειώνουν
system πουλάμε

Fading ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ Trending

Chart 33. Negative Sentiment Trending Topics

Chart 34 depicts the trending topics discussed in the negative sentiment word cloud (Chart 33), based on volume of mentions and according to the timeline of the analysis.

Chart 34. Negative Sentiment Topics

Out of the total mentions classified by negative sentiment, 54 out of the 110 mentions fall under 10 main thematic categories. The most popular negative sentiment topic was 'European Semester' mentioned 24 times through posts. Relevant mentions with the highest reach under that topic referred to European Semester giving negative assessment of government economic policies, housing market comments about underdevelopment in the private rental market and concerns about rising household debt.

The second most popular topic discussed 'Politician and teacher unions' refers to the Luxembourgish school system as problematic, based on the 2022 stability programme country report. The third topic referred to 'Share and the 2030 targets', talking about the Netherlands being the fifth worst performing EU Member State in terms of share of renewable energy and gross final energy consumption, having one of the largest gaps between 2020 share and 2030 targets, based on the 2022 stability programme country report.

6.5.4. Top 10 Negative Mentions by Reach

Top 10 Negative Mentions by Reach

This section displays the top 10 mentions with negative sentiment ranked by estimated reach.

sinnfeinireland (Sinn Fein) @sinnfeinireland ✓ — 26 May
European Semester Spring Package gives negative assessment of Government's economic policies – Pearse Doherty TD @PearseDoherty https://t.co/hI7ASzgZy5 https://t.co/POAne9cUFW

PGKroeger (PG Kroeger) @PGKroeger — 23 May
"The Netherlands was the fifth worst performing Member State in terms of the share of renewable energy in the gross final energy consumption in 2020, and has one of the largest gaps between the 2020 share and the 2030 targets." https://t.co/WFFRxpMrZb

avrailas (avrailas) @avrailas — 23 May
What does one learn by reading @EU_Commission's CSRs ... That (probably) one of the reasons for the early de-lignitization of the country was to be able to sell rights and have revenues that reduce the deficit!!! #τψρμ #ΝΔ_SYMMORIA https://t.co/acak0V3NzG https://t.co/MWeVpzAauU
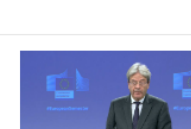
PGKroeger (PG Kroeger) @PGKroeger — 23 May
"The private rental market remains underdeveloped. The lack of a wellfunctioning middle segment on the rental market encourages households to buy. Rigidities on the supply side add to the distortions in the housing market." Brussel seint @hugodejonge. EU https://t.co/WFFRxpuR7D

lucabattanta (Luca Battanta) @lucabattanta — 26 May
@Comemigirano @outonoman Oh yeah (let's say that even the supervision does not shine in my opinion) and it must be added that an absolutely incomplete control of the fiscal policy given the constraints we have in the EU https://t.co/KEbcymlRil

PGKroeger (PG Kroeger) @PGKroeger — 23 May
"The Commission concluded that the Netherlands is experiencing macroeconomic imbalances. In particular, vulnerabilities relate to high private debt and a large current account surplus, which carry cross-border relevance." EUhttps://t.co/WFFRxpuR7D

HousingEurope (Housing Europe) @HousingEurope — 24 Nov
#EuropeanSemester European Commissioner for Economy, @PaoloGentiloni stresses that house price growth has increased in the EU, raising a concern particularly where household debt is high or rising fast. https://t.co/Ec5ZZCn2Ib

JeanComte (Jean Comte) @JeanComte — 23 May
Like every year, here is the moment when the European Commission asks France to reform its pension system 🙄 https://t.co/aJbj27g1mh https://t.co/m2XrjVz5rD

kmlvrmln (Kmlvrmln) @kmlvrmln — 23 May
A strict EU Commission for BE, including when it comes to climate change and energy transition. 'Too little and too slow', are the new recommendations of the EU Semester. https://t.co/RuoOr98V57 https://t.co/vlKjkurGjE

EgmontInstitute (Egmont Institute) @EgmontInstitute — 23 Sep
Nevertheless, this should hardly come as a surprise given the absence of binding social objectives in the EU recovery plan #EUSocialPolicy @MarcelMuraille @EgmontInstitute → https://t.co/xoThnHjklj https://t.co/kYTXbwg5qC
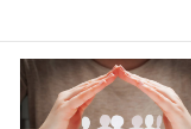
Table 5. Top Negative Sentiment Mentions

Based on table 5, the top 10 mentions characterised by negative sentiment covered a wide range of topics, expressing either dissatisfaction, sarcasm or concern. Discussions revolved around the negative assessment of government economic policies, the EU housing market prices growth, and worries for debt levels and country-specific issues. Another Twitter account referred to Belgium's climate change and energy transition as slow and considers the Netherlands to be experiencing macroeconomic imbalances and its private rental market to be underdeveloped and afflicted by distortions. Sarcastic posts were made regarding France's pension system, while Greece's earlier-than-planned lignite phase-out was met with scepticism with people questioning the Greek political party in power for its motives. Finally, the EU's recovery plan was considered to have a lack of binding social objectives.

7. Sentiment Analysis – InvestEU Programme

The online social listening tool Brandwatch was used to conduct sentiment analysis on the topic of InvestEU Programme. This analysis utilises an AI-powered (natural language processing) NLP-driven method to analyse text and detect positive or negative opinions in tracked mentions.

7.1. Social Listening Overview

This section presents an evaluation of the online discussions that revolved around the topic of the InvestEU Programme and covers the period from 1 September 2021 to 31 August 2022.
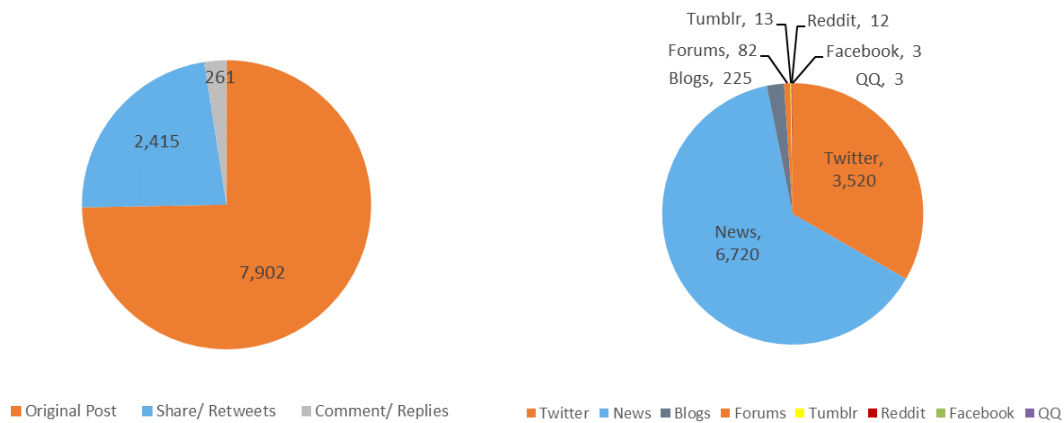
Chart 35. Mention Types

Chart 36. Content Sources

Relevant online conversations produced a total of 10,578 mentions generated by 2,794 unique authors. Out of the tracked mentions, the majority were original posts (75%), while the remaining mentions were shares/retweets (23%) and comments/replies (2%). As regards content sources, news were the predominant sources with 64% of mentions, followed by Twitter (33%), and the remaining 2% of mentions was split among forums, blogs, Reddit, Tumblr, Facebook and QQ.

The line chart 37 below showcases the daily progression in the number of mentions during the monitoring period that included mentions of the relevant topics. As evident from the daily evolution

graph, the InvestEU agreements and the Greece 2.0 Invest EU loans related discussions triggered the two highest surges of mentions throughout the evaluation period.

Chart 37. Daily Evolution of Mentions (1 September 2021 to 31 August 2022)
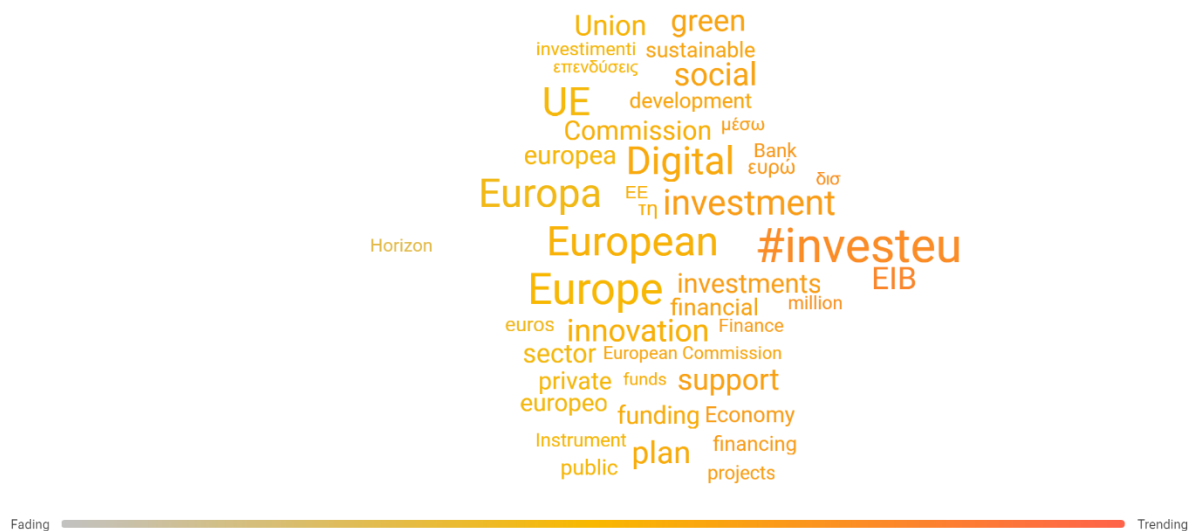
Chart 38. Trending Topics

As indicated in the graph above, the most trending topics relate to #investeu and EIB (European Investment Bank), followed by 'investment' and numerical references like 'million' or the Greek word 'δισ' which is short for billions. Mentions revolved around agreements, funding across the EU, and news regarding the InvestEU Programme and EIB-affiliated topics like innovation & investments, green and digital transformation, the economic impact of the war in Ukraine and the COVID-19 pandemic, and many more fragmented discussions.

7.2. Top 20 Stakeholders Analysis

The top 20 most impactful Twitter authors involved in relevant discussions included stakeholders from EU institutions, politicians, journalists, and some organisations or public accounts. The European institution accounts included the European Commission, European Commission representation for Spain, Erasmus+ and the Directorate-General for Environment (DG ENV).

Many authors were politicians, including Paolo Gentiloni, former Prime Minster of Italy and Commissioner for Economy, Margrethe Vestager, Executive Vice-President of the European Commission for a Europe Fit for the Digital Age, Bülent Özcan, Ministry of Foreign Affairs, Director-General for Financial Cooperation and Project Implementation, Florika Fink-Hooijer, Director-General of DG ENV, and Sven Giegold, State Secretary in the Federal Ministry for Economic Affairs and Climate Action, Germany.

There were many journalists and news companies from Greece, Italy, Poland, Portugal and even India. Finally, other top authors included the Twitter account for Swedish Ministry of Labour and Employment and Ministry of Economic Affairs and Employment, and Emre Alkin, a Turkish academic and a public user.

7.3. Sentiment Analysis Overview

AI-based sentiment analysis with cutting-edge methodologies, empowered by human validation, was conducted on the totality of the tracked mentions to identify the sentiment expressed in the relevant conversations. The analysis revealed that the majority of mentions registered an overall neutral sentiment (10,427, or 98.6% of the total), while 140 (1.3%) mentions were classified as positive, and only 9 (0.1%) mentions recorded a negative sentiment.
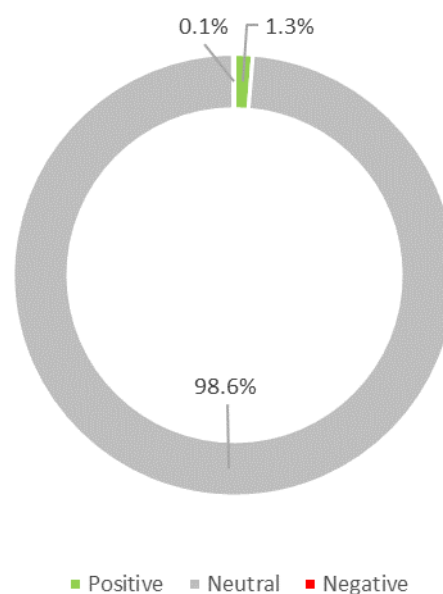
Chart 39. Sentiment breakdown

As displayed in the pie chart above, the most prominent underlying sentiment was neutral. Aligned with this fact, the majority of mentions were comprised of generic statements, news, updates on agreements, communications regarding funding opportunities and investments for economic and social issues, and invitations to public events, related to the InvestEU Programme. Furthermore, the discussions were mainly driven by a large number of news companies, European institution accounts, such as the European Commission and EIB, as well as political figures, key decision-makers and EU Member State representatives.
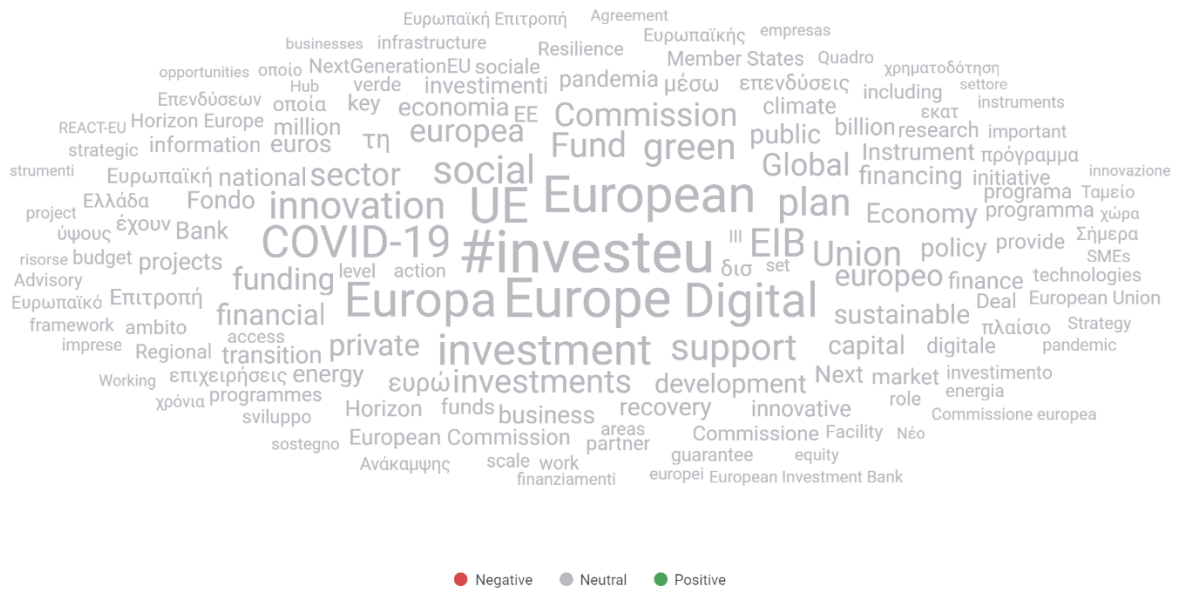
Chart 40 Sentiment Word Cloud for Top Hashtags, Keywords and Phrases

The word cloud above depicts the overall sentiment of the top hashtags, keywords and phrases related to the InvestEU Programme. Overall sentiment on the topics discussed was primarily neutral. The most popular topics of neutral sentiment related to the hashtag #investeu, registering 2,831 mentions (27% of total mentions), and the words 'Europe', included in 24% of all mentions, or 'European', with 23%. The topics containing these words were of similar thematic content and were related to agreements between key stakeholders like the EIB and European Investment Fund, newly introduced products to support businesses financially, programmes boosting digitalisation, and sustainability and creation of jobs across the EU, having an impact on local, national and European levels.
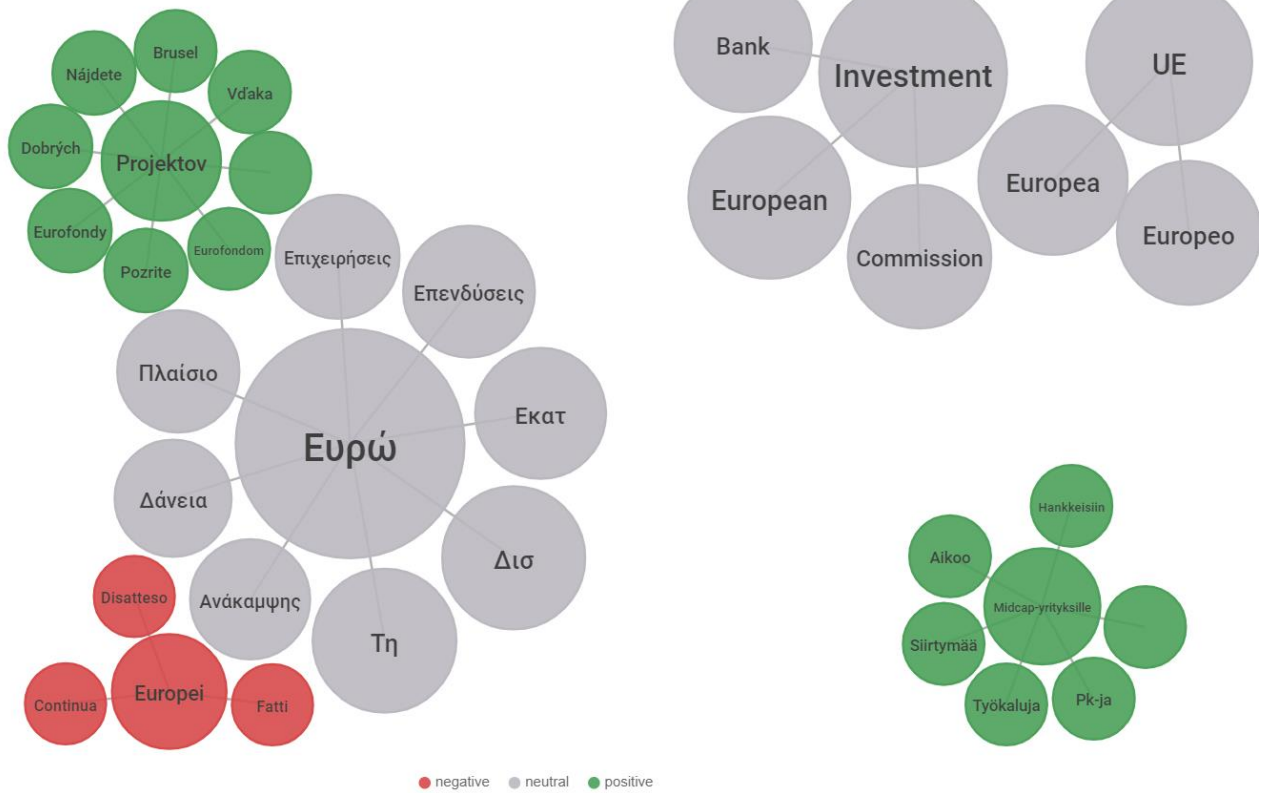
Chart 41. Bubble Chart of Popular Words Correlated with Sentiment

Additionally, the above bubble chart illustrates the most frequently used keywords related to the InvestEU Programme. The bubble size reflects the volume of mentions each keyword amassed and it's coloured based on the underlying sentiment. The words 'Investment' and 'Ευρώ' (which means 'euro' in Greek) appear as the most popular words, indicating most neutral sentiment topics revolved around discussions for capital, loans, economic recovery, investments and organisations associated with endeavours of this nature; additionally, the large number of Greek mentions are derived from the Greece 2.0 plan providing loans to SMEs.

7.4. Positive Sentiment

Out of the total tracked 10,578 mentions, 140 were classified as positive, generated by 101 unique authors.
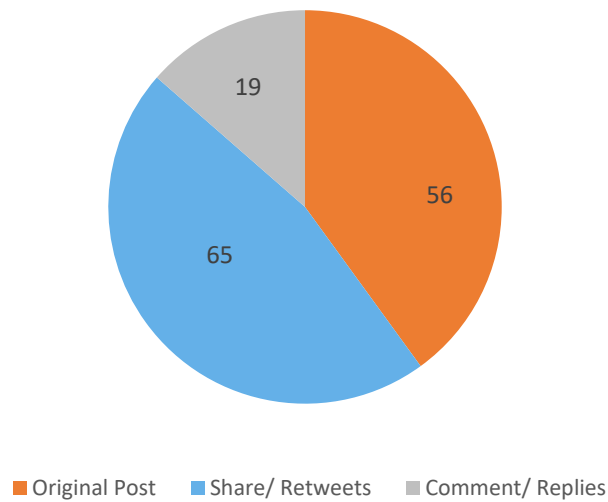
Chart 42. Positive Sentiment Mention Types

7.4.1. Demographics

The chart below depicts the top 20 countries in terms of volume of positive sentiment mentions.
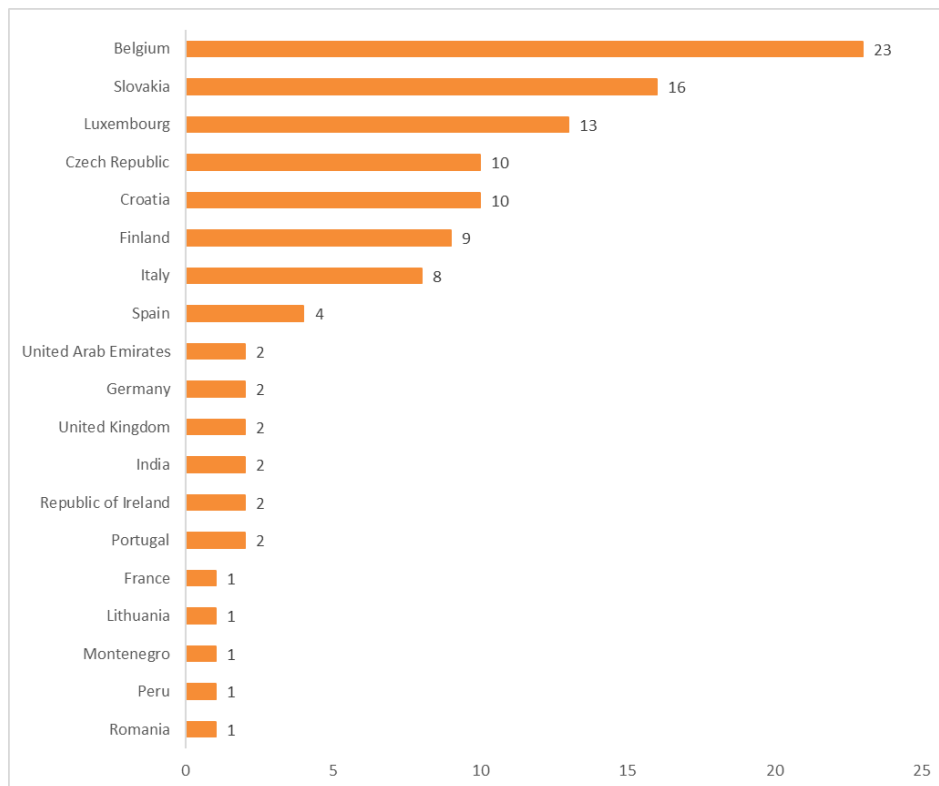
Chart 43. Positive Sentiment Mentions per Country

Belgium accrued the most positive mentions (23), as could be expected on account of the breadth of Twitter accounts of EU institution accounts, political figures and EU Member State representatives. The

second origin country was Slovakia, with 16 mentions referring to the EU's assistance towards the country through funding for constructing or renovating Slovakian schools or monuments, leisure centres and important environmental landscapes. Luxembourg ranked third, with mentions highlighting several investments and funding agreements connected with the EIB, regarding a greener and more digital Europe. Additionally, many people were congratulating the involved stakeholders in the aforementioned agreements and expressing delight, feeling proud and thankful.

7.4.2. Authors

| AUTHOR NAME	SOURCE	MENTIONS ⓘ MENTIONS	IMPACT ⓘ AVERAGE ▼	REACH ⓘ AVERAGE
@vestager	twitter.com	1	67.1	41655
@EIB	twitter.com	2	63.9	20853
@GPGualaccini	twitter.com	1	63.4	15966
@riotta	twitter.com	1	62	28733
@sven_giegold	twitter.com	2	59.5	22903
@JMFernandesEU	twitter.com	1	57.4	9048
@McGuinnessEU	twitter.com	1	55.5	15176
@ambiente_pt	twitter.com	1	55.5	12039
@LilyanaPavlova	twitter.com	1	55.1	10405
@JornaKerstin	twitter.com	1	54.5	7654

Table 6. Top Positive Sentiment Twitter Authors

The table 6 above displays the top authors per impact score out of positive sentiment mentions. Top individual authors of mentions with positive sentiment were Margrethe Vestager, Executive Vice-President of the European Commission for a Europe Fit for the Digital Age, GianPaolo Gualaccini, President of the Regulations Council, and Sven Giegold, State Secretary in the Federal Ministry for Economic Affairs and Climate Action. Furthermore, there was José M. Fernandes, the EPP coordinator for the Budgets Committee, Mairead McGuinness, Commissioner for Financial Services, Financial Stability and Capital Markets Union, Lilyana Pavlova, Vice-President of the EIB. In addition, the organisational account of the EIB and the account of the Portuguese office of the Minister for the Environment and Climate Action were also among the top authors.

7.4.3. Topics
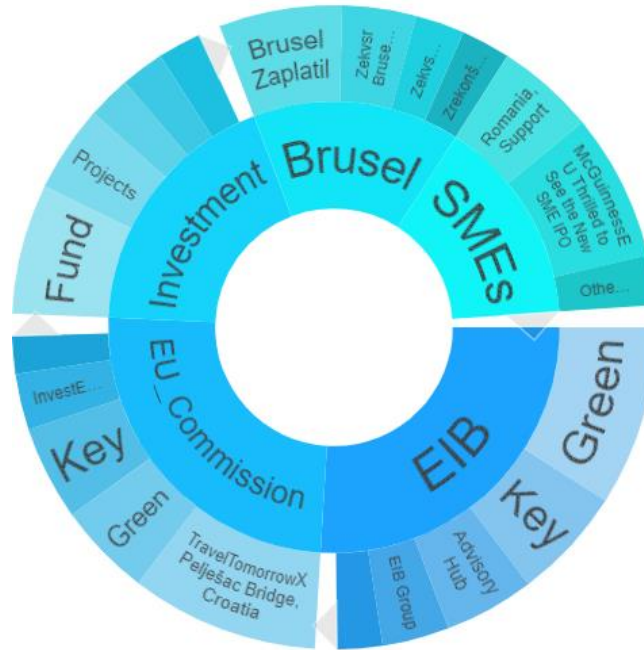
Chart 44. Positive Mentions Topics Wheel

● Negative   ● Neutral   ● Positive

Chart 45. Positive Sentiment of Top Hashtags, Keywords and Phrases

The most popular term used in mentions was the hashtag #investeu, found in 122 mentions (87% of total positive mentions), where discussions regarded numerous activities related to the InvestEU Programme and institutions closely related to it. Examples of relevant discussions include investments that make a difference towards green and digital transition as well as climate-related issues like circular economy, and assisting SMEs with scalability and growth. The acronym 'EIB' was the second most popular term, being found in a lot of mentions hand in hand with the #investeu hashtag, as the EIB is one of the primary stakeholders for funding and lending capital. The hashtag #eufunds was popular

among positive sentiment mentions, as it was accompanying posts referring to the funding allocations towards infrastructural work supported by the EU through its investments.

Chart 46. Positive Sentiment Trending Topics

Chart 46 depicts the trending topics identified in the positive sentiment word cloud chart X, based on volume of mentions and according to the timeline of the analysis.

7.4.4. Top 10 Positive Mentions by Reach

This section displays the top 10 mentions with positive sentiment ranked by estimated reach.

01	vestager (Margrethe Vestager) @vestager ✓	5 Apr

vestager (Margrethe Vestager) @vestager ✓ — 5 Apr
We are already mobilising massive public and private investment to deliver on the green and digital transition. Thanks @EIB President Werner Hoyer. The #InvestEU Fund launched last year is already making a real difference. https://t.co/dn5Vps8Glj

riotta (Gianni Riotta) @riotta ✓ — 10 Nov
Proud of my good buddy and mentor Imt Lucca Professor Fabio Pammolli! Chairperson The Investment Committee of the #InvestEU Fund.

sven_giegold (Sven Giegold) @sven_giegold ✓ — 8 Jul
Die @EIB hat Ihr Programm #InVestEU in Berlin gestartet. Das ist eine gute Nachricht für Klima- und Digitalinvestitionen. Doch damit das wirklich nachhaltigen Mehrwert bringt, muss die @EIB mehr Innovation und Risiko wagen. Meine freche Rede zum Launch: https://t.co/5JrQldss4i

EIB (European Investment Bank) @EIB ✓ — 30 Aug
The €18m #investEU loan to Tapojarvi will cover the company's investment in a slag processing & valorisation plant in Italy. The project promotes the shift towards a #CircularEconomy that reduces the environmental impact of stainless steel manufacturing. https://t.co/LdC9SCPIui https://t.co/FeTZjKwHlN

EIB (European Investment Bank) @EIB ✓ — 7 Jul
In BerlinꝹ, EIB VP Fayolle introduces products to deploy #InvestEU, focusing on higher risk and innovative projects, with support & knowledge sharing under #InvestEU Advisory Hub. Through projects like social housing in Hannover, we will deliver a greener, more inclusive Germany https://t.co/xZnbcC8Iu6

sven_giegold (Sven Giegold) @sven_giegold ✓ — 8 Jul
Die @EIB hat Ihr Programm #InVestEU in Berlin gestartet. Das ist eine gute Nachricht für Klima- und Digitalinvestitionen. Doch damit das wirklich nachhaltigen Mehrwert bringt, muss die @EIB mehr Innovation und Risiko wagen. Meine freche Rede zum Launch: https://t.co/203E6A5Ilk

EPPGroup (EPP Group) @EPPGroup ✓ — 25 May
RT @JMFernandesEU Congratulations to Romania for using **InvestEU** to mobilize 2.5 billion in favor of SMEs and energy efficiency in buildings! Romania is the first Member State to use the **InvestEU** national compartment to support its SMEs. These are great news!

carloalberto (C.A. Carnevale-Maffè) @carloalberto — 11 Nov
Congratulazioni a @FabioPammolli, eletto a capo del Fondo #InvestEU. Investire responsabilmente per favorire sviluppo e innovazione è l'atto economico e civile più importante di tutti. Forza Fabio!

GPGualaccini (GianPaolo Gualaccini) @GPGualaccini — 16 Jul
AL @cnel_it ISTITUITO L'OSSERVATORIO SULL'APPRENDIMENTO PERMANENTE E INVECCHIAMENTO ATTIVO E RELAZIONE DEL CONS. #GUALACCINI SU FONDO EU #EFSI E #INVESTEU https://t.co/YDhxqatDxC @LJahierEU @preglias @SignorAldo @paoloigna1 @franciungaro @ManuelaBellipan INTERESSANTE! https://t.co/twZ6phn7z8

McGuinnessEU (Mairead McGuinness) @McGuinnessEU ✓ — 22 Jun
Thrilled to see the new SME IPO Fund initiative under #InvestEU Equity finally setting off: helping accompany EU SMEs on their way to public listing, and creating opportunities for EU exchanges. #CMU 🔗 https://t.co/uMnKe9jHsi https://t.co/AahASPBZkG

Table 7. Top Positive Sentiment Mentions

7.5. Negative Sentiment

Out of the total tracked 10,578 mentions, 9 were classified as negative, generated by 9 unique authors.
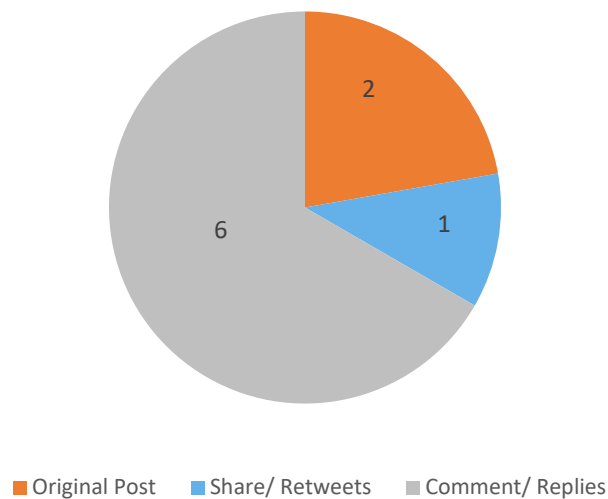
Chart 47. Negative Sentiment Mention Types

7.5.1. Authors

| AUTHOR NAME | SOURCE | MENTIONS | IMPACT | REACH |
		MENTIONS	AVERAGE ▾	AVERAGE
@replicantN7M/	twitter.com	1	75.5	53574
@LJahierEU	twitter.com	1	49.4	5513
@VITAnonprofit	twitter.com	1	47.6	13008
@PhoenixHjh	twitter.com	1	25	3377
@lmggregory	twitter.com	1	5.5	1774
@Adansonia06(	twitter.com	1	0	0
@noneedtofollo	twitter.com	1	0	0

Table 8. Top Negative Sentiment Twitter Authors

The table 8 above shows the most impactful authors that published negative sentiment tweets. Top individual authors included former president of the European Economic and Social Committee Luca Jahier, while the majority were public accounts; moreover, there was also the organisational account of Vita International, a non-profit Italian proactive media for information on the third sector.

7.5.2. Topics

● Negative   ● Neutral   ● Positive

Chart 48. Negative Sentiment of Top Hashtags, Keywords and Phrases

7.5.3. Top 10 Negative Mentions by Reach

01 ⭐
🐦 **replicantN7MAA (replicant N7MAA)** @replicantN7MAA   28 Aug
2 years as a presenter (not journalist) at Mega. This is her entire cv. Today he declares "Chair C4AI | ICT | Foresight Innovation Digital Strategy | CSR | **InvestEU** | Blockchain" The EU has such in the EP committees. Wondering where to freeze this year? https://t.co/y1FIT7C3oi
↩ Reply ⇄ Retweet ♥ Like | ➜ Engage

02 ⭐
🐦 **VITAnonprofit (VITA.it)** @VITAnonprofit   24 Jan
RT @LJahierEU The partnership principle has already been part of the logic of the European Structural Funds for many years. It is the true ratio of the extraordinary success of EFSI now #InvestEU . But in fact it continues to be largely ignored or misunderstood and disregarded.
↩ Reply ⇄ Retweet ♥ Like | ➜ Engage

03 ⭐
🐦 **LJahierEU (Luca Jahier)** @LJahierEU   24 Jan
The partnership principle had already been part of the logic of the European structural funds for many years. It is the true ratio of the extraordinary success of EFSI now #InvestEU . But in fact it continues to be largely ignored or misunderstood and disregarded.
↩ Reply ⇄ Retweet ♥ Like | ➜ Engage

04 ⭐
🐦 **PhoenixHjh (Phoenix NLBRKR)** @PhoenixHjh   26 Jan
burning trees is CO2 neutral or better yet: better burn the tree to let it rot because the rotting process emits much more CO2. I'm not making it up myself. (source has been removed from website) https://t.co/fDjk2zZ2IU https://t.co/7HaCWo6734
↩ Reply ⇄ Retweet ♥ Like | ➜ Engage

05 ⭐
🐦 **lmggregory (GREGORY LMG .!!!)** @lmggregory   30 Aug
@replicantN7MAA """"C4AI Chair | ICT | Digital Strategy for Prospective Innovation | CSR | **InvestEU** | Blockchain"...""" but who knows the oxen are reading English titles and fishing...😂😂 😂😂😂 another fabrication creating impressions for the kids...😂😂😂
↩ Reply ⇄ Retweet ♥ Like | ➜ Engage

06 ☆	🐦 **Adansonia0604 (Baobab)** @Adansonia0604	9 Jun
	Recently, I've been thinking about subsidized policies (Green Deal, **InvestEU** , etc.) around Europe's climate tech, but the information is too scattered, and there are limits to research in second and third languages. is welcoming	
	↩ Reply ⇄ Retweet ♥ Like | → Engage	

07 ☆	🐦 **noneedtofollow1 (Noneed)** @noneedtofollow1	8 Dec
	@davcarretta Not bad also the austerity imposed on member states in the sovereign crisis of 2012 and all NEINs to any advancement of EMU up to the inevitable **InvestEU** . Personally, my opinion of her has been negative for many years.	
	↩ Reply ⇄ Retweet ♥ Like | → Engage	

08 ☆	🔴 **198Throwawayy** - **reddit.com** (Reddit)	30 Nov
	InvestEU: The European plan mobilising billions to boost slumping investment	
	"Socialism is when I don't like this!!!"	
	→ Engage	

09 ☆	🔴 **MassiveCorner8512** - **reddit.com** (Reddit)	29 Nov
	InvestEU: The European plan mobilising billions to boost slumping investment	
	"Because socialism is cancer. Never worked and newer will."	
	→ Engage	

Table 9. Top Negative Sentiment Mentions

Negative sentiment mentions were quite limited and focused on several topics. Some authors expressed disapproval towards Eva Kaili, Vice-President of the European Parliament, questioning her qualifications on account of her lack of relevant work experience and career background. Luca Jahier considers the 'partnership principle' to be ignored and disregarded, despite his claim that it is the true ratio of the success of the InvestEU Programme. An interesting mention pointed out that information on subsidised policies around Europe's climate tech is scattered and there are limits to research in second and third languages. Other discussions revolved around CO_2 emissions from burning trees, austerity measures for Member States in the 2012 crisis connected to Economic and Monetary Union and the InvestEU Programme, while some individuals on Reddit expressed their dislike of socialism under a thread concerning the InvestEU Programme mobilising billions to boost slumping investment.

8. Key Findings & Recommendations

8.1. Twitter Benchmarking

Between 11 June and 10 September 2022, @ecfin Twitter following grew to 63,538, recording a 2.06% rise compared to the previous period. During the 12-month period from 1 September 2021 to 31 August 2022, the total number of @ecfin tweets was 1,014, which was below the competitor average of 1,920. The total engagement of DG ECFIN's Twitter account was 16,317, which was also behind the competitor average of 24,200.

Overall, @ecfin's Twitter following puts it just above the competitor average and on an upward trajectory in follower growth rate. As regards number of tweets, @ecfin is second-to-last compared to similar accounts, outranking only DG TAXUD's Twitter account with 766 published tweets. The relatively low engagement (compared to other similar accounts) of the @ecfin's Twitter account is in line with the significantly low volume of tweets. On the other hand, @ecfin's total engagement per

tweet is considerably higher than most of its competitors. This suggests that @ecfin's tweets are well received by the engaged audience. Therefore, we propose increasing the volume of published tweets to drive further engagement as well as follower growth.

As regards content performance, based on the Rival IQ assessment of @ecfin's top performing tweets, engagement among followers was mainly driven by several specific posts. These were posts related to the upcoming adoption of the euro currency by Croatia, as well as 'Green Investment' and 'Transition towards climate neutrality' related to the EU Sustainable Investment Summit. Also, the 'Euro 20th anniversary' post on 18 January generated the highest number of interactions with an engagement rate of 1.05%. This specific post represents a content topic easily consumed by broad audiences compared to more rigid, policy-specific or technical content pieces.

8.2. Twitter Audience Analysis

The key findings derived from the analysis of DG ECFIN's Twitter audience are outlined below.

Demographic analysis revealed that DG ECFIN's Twitter audience comprised mostly men (62%). The male audience was more actively involved in the topics of business, environment, politics, science and technology. In terms of geolocation, most authors originated from European countries, with Belgium taking the lead. This aligns with the fact that various EU institutional accounts and EU executives engaging with ECFIN related content are based in Belgium.

As regards authors' interests, the most popular topics were business, politics and the environment which attests to the pillars of ECFIN's produced content and relevant policies. Author profession analysis showed that the top four occupations associated with @ecfin were scientist/researcher, executive, teacher/lecturer and journalist. In addition, most of the top authors engaged with ECFIN's Twitter account belonged to EU Institutions and organisational accounts related to economic policies, while the most influential individual authors were Mike Bloomberg, EU commissioner Mariya Gabriel and Klaas Knot, chairman of the Dutch central bank 'De Nederlandsche Bank'. This suggests that currently the dialogue in the ECFIN's sphere is mostly driven by key political figures and professionals who are closely involved with ECFIN's policies.

Based on the findings, DG ECFIN's related discussions seem to be initiated mainly by key stakeholders at the European or national level, EU Institutions, related organisations as well as individuals with a strong social media presence. In order to gain more reach across social media audiences and to draw the general public's interest in ECFIN policies, we would recommend a slightly different social media content approach. We propose simplifying @ecfins's content by using more visuals (e.g., GIF, video or infographics). Another proposal is to build up existing popular content, sharing @ecfin's views on key issues and topics that matter to followers. This will make it easier to move from a Brussels-oriented discussion to a two-way conversation between European, nationals, local stakeholders without alienating any of the existing followers.

8.3. Sentiment Analysis

The sentiment analysis covers the period from 1 September 2021 to 31 August 2022 and evaluates the online discussions that revolved around the topics of the European Semester and the Economic Governance Review (as one topic) and the InvestEU programme.

8.3.1. Economic Governance Review and European Semester

Relevant online conversations produced a total of 7,411 mentions generated by 3,021 unique authors. Of these tracked mentions, almost half were original posts (48%), while Twitter was the primary source with 65% of total mentions. Daily evolution analysis revealed two major surges of mentions around the dates of the Autumn and spring Package publications. The 20 most impactful Twitter authors involved in relevant discussions included stakeholders from EU institutions, politicians, journalists and non-profit organisations.

The sentiment analysis revealed that almost all (97%) of the mentions displayed an overall neutral sentiment. This is in line with the fact that most neutral mentions were comprised of generic statements, updates, and news related to the European Semester and Economic Governance Review. Subsequently, the most popular topics of neutral sentiment related to the 'Commission', 'National Reform Programme' and 'Recovery'.

Positive sentiment mentions reached 127, generated by 102 unique authors. Belgium accrued the most positive mentions, as could be expected on account of the breadth of Twitter accounts of EU European institutions, political figures, and EU Member State representatives. Male authors were almost 20% more than female authors, showing that males were more involved in relevant topics. As regards the topics of discussion, the most popular term used in positive mentions was the hashtag #europeansemester used in posts of praise for the European Semester as an inspiration and a way to ensure fairness and address inequality, while the 'European Semester Autumn Package' emerged as the most popular topic. Overall, top mentions classified by positive sentiment covered a wide range of topics, expressing optimism, revealing good news, and sharing feedback on meetings between key political stakeholders.

Out of the total tracked mentions, 107 were classified as negative, generated by 91 unique authors. The most negative sentiment mentions were recorded from Belgium, by EU stakeholders' Twitter accounts expressing concern about a range of issues – from social inequality and relative poverty to the EU housing market, Greek economy supervision developments and France pension system reformations. Additionally, Greece accrued a significant number of negative mentions mainly initiated by the general public, criticising the rationale behind some decisions of the national government.

Overall, the mentions around the topics of the European Semester and Economic Governance Review displayed an overall neutral sentiment. This is expected given the topics discussed and the authors involved. The positive mentions, on the other hand, indicate there are advocates among the engaged Twitter authors. The @ecfin's Twitter presence could benefit from collaboration with influential Twitter accounts that could work as amplifiers of the DG ECFIN's policies and further disseminate its messages. In addition, the negative mentions revealed potential communication gaps, and highlighted important issues like house market prices and macroeconomic imbalances in the Netherlands. It also spotlighted concerns or skepticism towards certain key issues like rising household debt and specific government economic policies.

8.3.2. InvestEU Programme

Relevant online conversations produced a total of 10,578 mentions generated by 2,794 unique authors. Of the tracked mentions, the majority (75%) were original posts, given that News was the primary source with 64% of total mentions. Daily evolution analysis revealed multiple spikes of

mentions triggered by various events such as the Chips Act, InvestEU agreements and Greece 2.0 InvestEU loans.

The overall underlying sentiment was neutral with discussions primarily driven by EU institutions and key political figures. The neutral classified mentions mainly referred to agreements, event announcements, news updates and generic statements, while most neutral sentiment topics revolved around discussions about capital, loans, economic recovery, investments and organisations associated with endeavours of this nature. On the other hand, individual author mentions which included personal statements and opinions on related topics displayed mostly a positive underlying sentiment except for a few negative mentions.

Positive sentiment amounted to 140 mentions, generated by 101 unique authors. These mentions originated mainly by EU institutions, key figures or organisations and referred to funding allocations towards infrastructural work, investments that make a difference towards green and digital transition as well as climate-related issues like circular economy and assisting SMEs with scalability and growth.

Mentions characterised by negative sentiment were written predominantly by public Twitter accounts except for two mentions. Negative opinions covered a range of topics focusing on personal opinions for issues related to the vice-president of the European parliament, finance, climate, and socialism. Among these mentions, an interesting tweet by Luca Jahier referred to the 'partnership principle' which he said is ignored and disregarded. Another user pointed out that information on subsidised policies around Europe's climate technology is scattered and there are limits to research in second and third languages.

Overall, the volume of mentions related to the InvestEU topic shows the broad reach across the engaged audiences. Nevertheless, the number of mentions classified as negative was extremely limited. These mentions, however, can prove useful in identifying communication gaps, underlying important issues and addressing the general public's concerns.