

The impact of COVID-19 on analysts' sentiment about the banking sector



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This policy brief note is based on a working paper² that applies sentiment analysis tools to text data in order to quantify the impact of COVID-19 on the analysts' opinions. Using this methodology, it is possible to transform qualitative non-structured data into a quantitative index that can be used to compare reports from different periods, countries and sources. The results show that the pandemic worsens banking sentiment in Europe, which coincides with higher uncertainty in the stock market. There are also regional differences in the decline in sentiment, and higher divergence is observed across different sources as well.

¹ The opinions in this Policy Brief are solely the authors' and do not necessarily represent those of Banco de España or the Eurosystem.

² This piece is based on Aguilar, A. and D. Torres (2021). "[The impact of COVID-19 on analysts' sentiment about the banking sector](#)". Banco de España Working Paper No. 2124.

Sentiment analysis provides an objective assessment of analysts' opinions, which can be used to compare its evolution across time and gathers information about the existence of consensus or discrepancies between analysts in a given period of time. Financial analysts and rating agencies provide research and publications that offer their qualitative assessment. The information conveyed in these reports can be very useful as an overview of analysts' opinions and market sentiment during periods of high volatility. More precisely, this policy brief focus on the period immediately before and after the inception of the pandemic to determine the impact of COVID-19 on their perspective for the banking sector.

Text mining techniques applied to financial and economic reports have been of increasing importance for a wide variety of texts such as monetary policy press conferences, transcripts, earning calls, press news or analysts' opinions. Our work belongs to the set of work that aims to transform qualitative and non-structured information about entities into a quantitative measure of the textual tone that provides a Sentiment Index. More precisely, we apply existing financial dictionaries into analysts' reports about European banks to evaluate the opinion of each analyst report. Therefore, **the index provides us an objective quantitative index about analysts' opinions and also a way to check differences between analysts that could be of interest in itself.**

We have built a database of analysts' reports which contains documents from 15 European Banks, from five economies of the Euro Area (i.e., Germany, France, Italy, Spain and Netherlands³) classified into two periods. The sample includes 627 specialized reports classified from different sources: Financial Data Providers (Bloomberg); Rating Agencies reports (Moody's, Fitch Connect, S&P); and Investment Bank Reports (Deutsche Bank Research, Morgan Stanley Research). The first period refers to the two months immediately prior to the start of the COVID-19 outbreak in Europe (January and February 2020). The second period (post-COVID) let us assess the impact immediately after the beginning of the crisis in April and May. That way, one can analyse the reaction of analysts during a short time window, when the main event observed in the financial markets was the beginning of the pandemic and the implemented lockdowns⁴.

The Sentiment Index (SI) conveys information both about the tone (positive or negative) and its magnitude, as the higher the value of the index (in absolute terms) the more positive or negative the sentiment will be. Sentiment analysis is based on the classification of documents according to two extreme values (positivity and negativity) to get the polarity of each document and in the end, provide a quantitative index. Positive and negative terms can be referred to as connote terms while the rest of the words in a document are defined as neutral. Therefore, SI can be interpreted as the ratio of the difference between positive and negative words, expressed as a percentage over number of words in a document.

The pandemic caused a significant deterioration of analyst's perception about European banks (Figure 1) as we observe lower median values of the index during the post-Covid period in all countries and, especially in Italy, while the change is nearly inexistent in the Netherlands. This more pessimistic perspective is aligned with the higher level of uncertainty observed in the stock market and estimates downgrades.

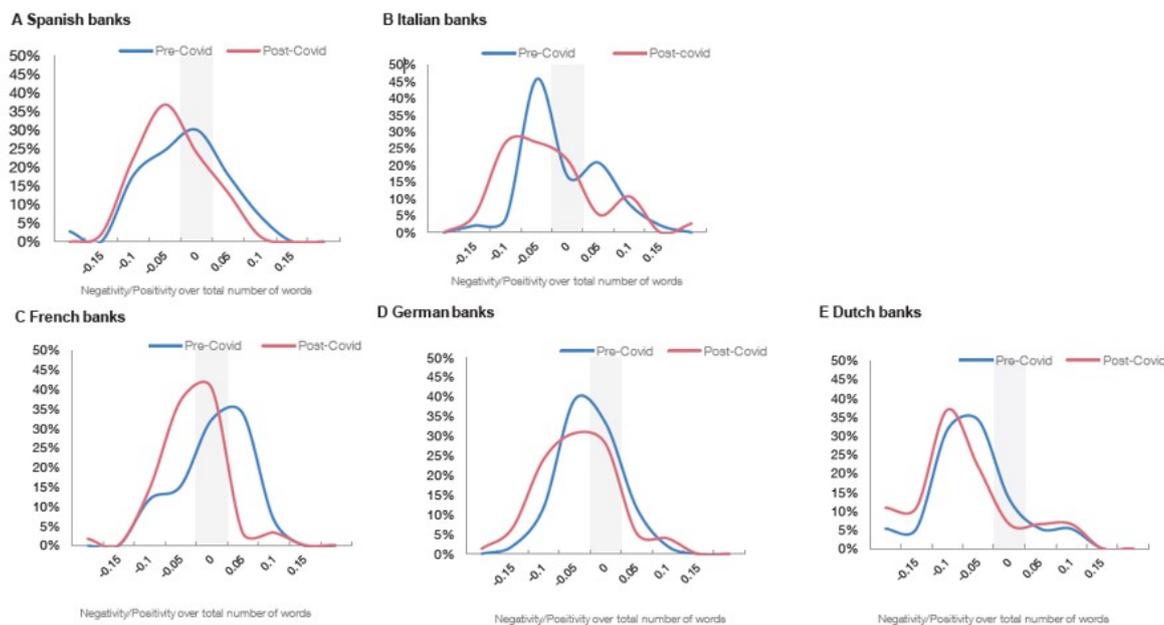
The impact of Covid has also been reflected in the distribution of the index, where there are differences in the dispersion of analyst' sentiment. For most of the European banks, a **lower disparity is observed during**

³ The sample of Spanish Banks includes: Santander, BBVA, CaixaBank, Bankia, and Sabadell. German banks refer to Deutsche Bank and Commerzbank. In the case of France, we choose BNP Paribas, Credit Agricole and Societe. Italian banks refer to Intesa Sanpaolo, Unicredit, and Mediobanca and the Dutch sample is formed by ING Bank and ABN Amro.

⁴ We exclude the evolution afterward as other events such as the measures implemented by country governments and Central Banks, as well as the later recovery.

April and May so that there is a clear consensus about the deterioration of sentiment. In Italy, there was a significant increase in the variety of opinions, perhaps reflecting the uncertainty related to the impact of Covid on the Italian economy, a country that was affected earlier by the pandemic. The obtained results are robust to changes in the sample of reports and to the dictionary employed to word classification.

Figure 1: Analysts' sentiment distribution for European banks



Figures show the percentage of reports in each range of IS values. The vertical bar highlights the reports having a neutral sentiment, i.e., the ones neither with positive nor negative words or the ones showing equivalence between the number of positive and negative words. Observations in the left-side show negative values while in the right-side one can see the positive values.

The SI obtained for each report and medians over countries or entities constitute a quantitative measure that can be compared with other indicators such as earnings or profits estimates as well as stock prices and its volatility. More precisely, these sentiment indicators point to the heterogeneity of banks' characteristics within and across countries. Hence, changes in the SI conveyed on analysts' reports might be also driven by economic or fundamental data and not only because of a more pessimistic sentiment caused by the pandemic. For that reason, we explore how analyst's perception has been affected by the evolution of key performance indicators, such as the EPS or ROE ratio.

The results indicate that inherent bank characteristics, as expected, account for a high proportion of the variance of the SI (Table 1). There is a significant and positive effect of EPS on sentiment analysis, meaning that the higher the decrease (increase) in the value of EPS the higher the deterioration (improvement) of analyst's sentiment. The second and third column show the effect of a change in EPS and ROE analysts' estimates are also significant and positive.

Additionally, **factors related to general deterioration of economic and financial perspectives because of the pandemic, caused a negative impact on analysts' sentiment.** The COVID impact coefficient (Table 1) reflects changes in the SI that are not explained by fundamental data so that even controlling for intrinsic characteristics, the COVID-19 inception had a significant and negative effect on banking sector perspectives.

Table 1: Bank Fixed effect regressions

	Sentiment Index	Sentiment Index	Sentiment Index
EPS	0.0337*** (0)		
EPS estimates		0.0107** (0.004)	
ROE estimates			0.00307** (0.002)
COVID impact	-0.0215*** (0)	-0.0251*** (0)	-0.0287*** (0)
#Observations	30	30	30
R ²	0.715	0.481	0.518
RHO	0.841	0.813	0.780

p-values in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001. RHO refers to the "Intra-class" correlation and indicates how much of the total variance is explained by the differences across banks. The following specifications have been estimated: $IS_{it} = \beta_0 + \beta_1 X_{it} + \alpha_i + u_{it}$, where IS_{it} refers to the median of the SENTI for each bank and time period $t \in \{t=1 \text{ pre-Covid}, t=2 \text{ post-Covid}\}$, X_{it} shows the EPS, EPS estimates and ROE estimates, respectively, α_i is the individual bank effect not changing over time, and u_{it} is the error term. The number of observations refers to a panel containing 15 banks and 2 periods.

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