

## Quantitative Research

## Fed's monetary policy: Our NLP model forecast a 5.25% terminal rate

- The NLP model suggests that the Fed's terminal rate will stand between 4.25% and 5.25%
- In addition, the model classified June, July, September, November, and December's monetary policy statements with the same topic of today's press release
- The model continues to ratify the consistency between the language used by the Fed in its monetary policy statements and the current tightening cycle
- Despite the tone was dovish in today's statement, the model supports our view that the terminal rate will probably reach 5.25% (upper bound)

**Fed's topics classification using NLP and ML techniques.** In July 2022 we published a research note where we described a model using natural language processing (NLP) techniques that classify and interpret the FOMC statements. In addition, it also provides a methodology to confirm whether the communication made by the Central Bank is consistent with the monetary policy implemented (refer to: [Welcome to the Machine \(Learning\): An NLP framework for analyzing the Fed's monetary policy statements](#)).

The relationship between the Fed funds rate and the semantic classification obtained was also analyzed. In this regard, the most important finding in our research note was the degree of strength in the relationship between the Fed funds rate and the semantic classification obtained, given that the latter can explain 9 out of 10 rate movements. The model also defines the range of variation of the terminal reference rate (refer to Chart 1).

**The model estimates a terminal rate between 4.25% and 5.25% (upper range).** Despite that today's monetary policy announcement has a more dovish bias with regards to February's *communiqué*, the model classified the statement with the central topic that anticipates the terminal rate between 4.25% and 5.25% (refer to Chart 2). Nevertheless, it is important to highlight that the probability of the current topic has been decreasing substantially with today's statement, as result we do not discard that in the next monetary policy statement the Fed's communication will change, reaching the upper bound of the terminal rate and the end of the current restrictive cycle.

In addition, the model has classified since June 2022 all the monetary policy statements with the same topic of today's press release. We also highlight that our model allowed us to anticipate, from the beginning of the restrictive cycle in the US (March 16, 2022), a terminal rate within the above-mentioned range (refer to Chart 1).

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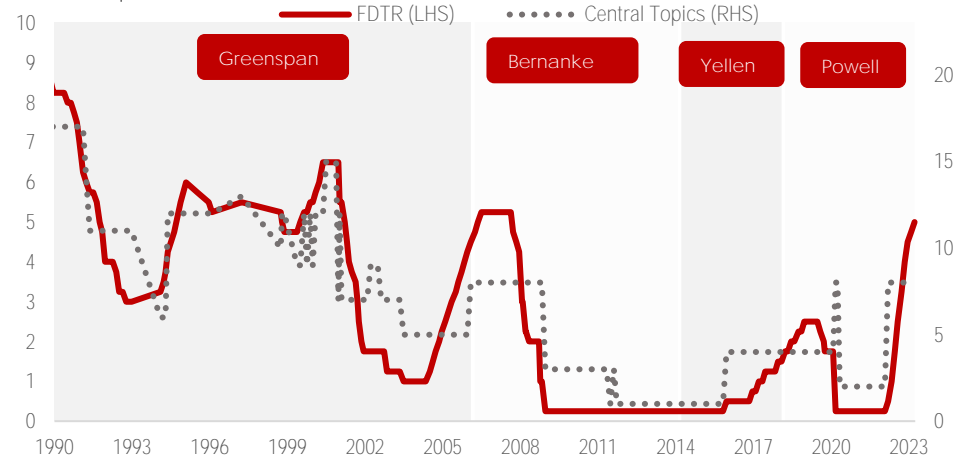
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**We maintain our 5.25% forecast for the terminal rate (upper range)** Looking ahead, the above-mentioned NLP framework will continue to allow us to identify any change in the Fed's terminal rate through the classification of the monetary policy announcements.

Chart 1: Banorte's Fed Topic Index vs Fed Funds Rate (upper range)

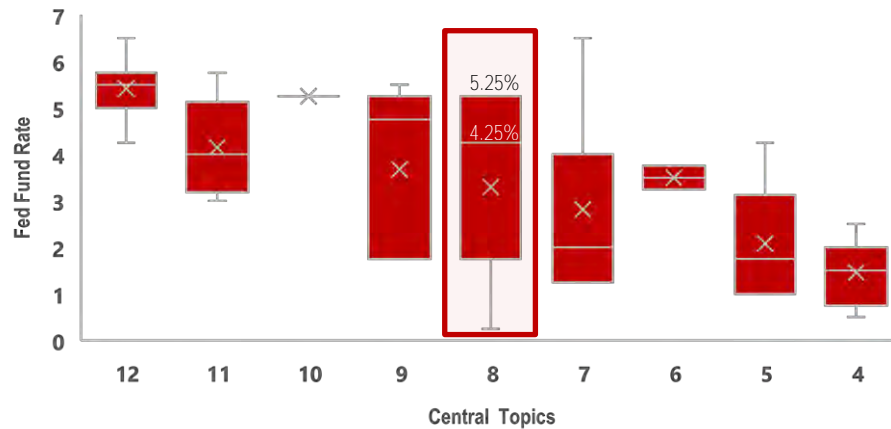
%: Central Topics



Source: Banorte, Federal Reserve, Bloomberg

Chart 2: Range of Fed Funds Rate by Topic

Central Topics



Source: Banorte, Federal Reserve, Bloomberg

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We, Alejandro Padilla Santana, Juan Carlos Alderete Macal, Alejandro Cervantes Llamas, Manuel Jiménez Zaldívar, Marissa Garza Ostos, Katia Celina Goya Ostos, Francisco José Flores Serrano, José Luis García Casales, Víctor Hugo Cortes Castro, José Itzamna Espitia Hernández, Carlos Hernández García, Leslie Thalia Orozco Vélez, Hugo Armando Gómez Solís, Yazmin Selene Pérez Enríquez, Cintia Gisela Nava Roa, Miguel Alejandro Calvo Domínguez, José De Jesús Ramírez Martínez, Gerardo Daniel Valle Trujillo, Luis Leopoldo López Salinas, Isaías Rodríguez Sobrino, Paola Soto Leal, Daniel Sebastián Sosa Aguilar and Andrea Muñoz Sánchez, certify that the points of view expressed in this document are a faithful reflection of our personal opinion on the company (s) or firm (s) within this report, along with its affiliates and/or securities issued. Moreover, we also state that we have not received, nor receive, or will receive compensation other than that of Grupo Financiero Banorte S.A.B. of C.V for the provision of our services.

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<b>HOLD</b>	When the share expected performance is similar to the MEXBOL estimated performance.
<b>SELL</b>	When the share expected performance is lower than the MEXBOL estimated performance.

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