

FedBERT

Data exploration and existing models

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Data extraction

- Web scraping from FED website.
- We extract FOMC statements, FOMC minutes and board member speeches.

Data extraction/cleaning

- Selenium was used to extract all the html links from the different FED web pages.

Board of Governors of the Federal Reserve System
The Federal Reserve, the central bank of the United States, provides the nation with a safe, flexible, and stable monetary and financial system.

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Home > Monetary Policy > Federal Open Market Committee

Federal Open Market Committee

About the FOMC

Meeting calendars and information

Transcripts and other historical materials

FAQs

Document Filter

Date: 01/01/1936 to 07/29/2020

Type:

☐ Agendas
☐ Bluebooks
☐ Greenbooks
☐ Minutes (1993-Present)
☐ Policy Statements
☐ SEP: Individual Projections
☐ Transcripts and Presentation Materials
☐ Historical Minutes

☐ Beige Books/Redbooks
☐ Chairman's FOMC Press Conferences
☐ Memos
☐ Minutes of Actions (1967-1992)
☐ Records of Action (1936-1992)
☐ Tealbooks
☐ Executive Committee Minutes
☐ Memoranda of Discussion

Submit

FOMC materials			
Meeting Date	Type	Document	Date
July 28-29, 2020	Statement	HTML PDF	July 29, 2020
July 28-29, 2020	Beige Book	HTML PDF	July 15, 2020

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Speeches of Federal Reserve Officials

2005 Change Year

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December 14, 2005
Remarks on receipt of honorary degree
Chairman Alan Greenspan
Convocation, New York University, New York, New York

December 6, 2005
Remarks on receipt of Internal Capital Measures and Regulatory Capital Requirements
Governor Susan Schmidt Bies
At the International Center for Business Information's Risk Management Conference: Basel Summit, Geneva, Switzerland

December 5, 2005
Economic Growth: Lessons from the Sioux Falls Experience
Governor Mark W. Olson
At a Rotary Club luncheon, Sioux Falls, South Dakota

December 2, 2005
International imbalances
Chairman Alan Greenspan
Before the Advancing Enterprise Conference, London, England

December 2, 2005
Budget policy
Chairman Alan Greenspan
To the Federal Reserve Bank of Philadelphia Policy Forum, Philadelphia, Pennsylvania (videotaped remarks)

November 30, 2005
Recent Developments in Regulatory Capital
Governor Susan Schmidt Bies
At the Standard & Poor's North American Financial Institutions Conference, New York, New York

November 29, 2005
Vice Chairman Roger W. Ferguson, Jr.
Recent Changes in Household Finances and Home Lending
To the monthly meeting of the Epsilon Boule Fraternity for African-American Leaders, Washington, D.C. (on November 16)

Data extraction/cleaning

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Federal Open Market Committee

[FOMC Minutes](#)

Minutes of the Federal Open Market Committee

July 28-29, 2020

A joint meeting of the Federal Open Market Committee and the Board of Governors was held by videoconference on Tuesday, July 28, 2020, at 10:00 a.m. and continued on Wednesday, July 29, 2020, at 9:00 a.m.¹

PRESENT:

Jerome H. Powell, Chair
John C. Williams, Vice Chair
Michelle W. Bowman
Lael Brainard
Richard H. Clarida
Patrick Harker
Robert S. Kaplan
Neel Kashkari
Loretta J. Mester
Randal K. Quarles

Thomas I. Barkin, Raphael W. Bostic, Mary C. Daly, Charles L. Evans, and Michael Strine, Alternate Members of the Federal Open Market Committee

James Bullard, Esther L. George, and Eric Rosengren, Presidents of the Federal Reserve Banks of St. Louis, Kansas City, and Boston, respectively

James A. Clouse, Secretary
Matthew M. Luecke, Deputy Secretary

```
print(data_pd.loc[2,'text'])
```

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Matthew M. Luecke, Deputy Secretary

Michelle A. Smith, Assistant Secretary

Mark E. Van Der Weide, General Counsel

Michael Held, Deputy General Counsel

Stacey Tevlin, Economist

Beth Anne Wilson, Economist

Shaghil Ahmed,² Michael Dotsey, Beverly Hirtle, Trevor A. Reeve, Ellis W. Tallman, William Wascher, and Mark L.J. Wright, Associate Economists

Lorie K. Logan, Manager, System Open Market Account

Ann E. Misback, Secretary, Office of the Secretary, Board of Governors

Eric Belsky,³ Director, Division of Consumer and Community Affairs, Board of Governors; Matthew J. Eichner,⁴ Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors; Michael S. Gibson, Director, Division of Supervision and Regulation, Board of Governors; Andreas Lehnert, Director, Division of Financial Stability, Board of Governors

Daniel M. Coates, Deputy Director, Division of Research and Statistics, Board of Governors; Brian M. Boudie,⁵ Director, Division of Monetary Operations, Board of Governors

- Around 4 millions words, most of them coming from the minutes and speeches.

	Number	Period	Total words (M)
Statements	206	1994-2020	78 806
Minutes	243	1993-2020	1 539 020
Speeches	890	1996-2020	2 781 519
			4 399 345

Tokenizing and masking

[CLS] following the [MASK] plunge since the great depression , employment [MASK] activity rebounded faster and more sharply than anticipated . [SEP] but [MASK] recent resurgence in [MASK] cases is a [MASK] reminder that the pandemic remains the key [MASK] of the economy's course . [SEP]

FinBERT

1. Google BERT - the original BERT paper trained on wikipedia
2. FinBERT Prime - Train BERT from scratch using 10K filings from the years 2017, 2018, and 2019, covering 4392 companies
3. FinBERT Pre2K - Training BERT from scratch using 10K filings from 1998 and 1999, covering 4786 companies
4. FinBERT Combo - Training BERT from the last checkpoint of BERT-Base Uncased using all 10K filings along with Wikipedia and Book data.

Performance Measures - Prediction of masked words and next sentence prediction.

Experiment - predicting masked words

Financial

We adjust our **earnings** for items that we believe do not reflect the underlying operations of the **company**. These are non **cash** items consisting of primarily the loss on financial **instruments** at fair value and income **taxes**.

Fed

The **recovery** is likely to face headwinds even if the downside risks do not materialize.

Fiscal support will remain vital. It will be **appropriate** to shift the focus of monetary policy from stabilization to **accommodation** by supporting a full recovery in **employment** and a sustained return of **inflation** to its objective .

Results - Financial

Ground truth

We adjust our **earnings** for items that we believe do not reflect the underlying operations of the **company**. These are non **cash** items consisting of primarily the loss on financial **instruments** at fair value and income **taxes**.

Google BERT

We adjust our **judgement** for items that we believe do not reflect the underlying operations of the **system**. These are non **financial** items consisting of primarily the loss on financial **assets** at fair value and income **level**.

FinBERT Prime

We adjust our **earnings** for items that we believe do not reflect the underlying operations of the **business**. These are non **cash** items consisting of primarily the loss on financial **instruments** at fair value and income **taxes**.

FinBERT Pre-2000

We adjust our **operations** for items that we believe do not reflect the underlying operations of the **segments**. These are non **cash** items consisting of primarily the loss on financial **instruments** at fair value and income **taxes**.

FinBERT Combo

We adjust our **results** for items that we believe do not reflect the underlying operations of the **business**. These are non **recurring** items consisting of primarily the loss on financial **instruments** at fair value and income **taxes**.

Results - Fed

Ground truth

The **recovery** is likely to face headwinds even if the downside risks do not materialize. **Fiscal** support will remain vital. It will be **appropriate** to shift the focus of monetary policy from stabilization to **accommodation** by supporting a full recovery in **employment** and a sustained return of **inflation** to its objective .

Google BERT

The **economy** is likely to face headwinds even if the downside risks do not materialize. **Financial** support will remain vital. It will be **possible** to shift the focus of monetary policy from stabilization to **recovery** by supporting a full recovery in **debt** and a sustained return of **GDP** to its objective .

FinBERT Prime

The **company** is likely to face headwinds even if the downside risks do not materialize. **Government** support will remain vital. It will be **important** to shift the focus of monetary policy from stabilization to **inflation** by supporting a full recovery in **2018** and a sustained return of **capital** to its objective .

FinBERT Pre-2000

The **company** is likely to face headwinds even if the downside risks do not materialize. **This** support will remain vital. It will be **necessary** to shift the focus of monetary policy from stabilization to **stabilization** by supporting a full recovery in **value** and a sustained return of **capital** to its objective .

FinBERT Combo

The **fed** is likely to face headwinds even if the downside risks do not materialize. **This** support will remain vital. It will be **necessary** to shift the focus of monetary policy from stabilization to **recovery** by supporting a full recovery in **inflation** and a sustained return of **capital** to its objective .

Summary

- Data relatively clean
- Easily obtainable data
- FinBERT does not generalize to other financial applications
- Google BERT has flexible applications

Q&A