

Text Analysis of Risk Disclosures: 2011-2020

Amy Butler



Introduction

- Public Companies
- Annual Reports
- Securities and Exchange Commission



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended September 26, 2020

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____.

Commission File Number: 001-36743



Apple Inc.

(Exact name of Registrant as specified in its charter)

California

(State or other jurisdiction
of incorporation or organization)

**One Apple Park Way
Cupertino, California**

(Address of principal executive offices)

94-2404110

(I.R.S. Employer Identification No.)

95014

(Zip Code)

(408) 996-1010

(Registrant's telephone number, including area code)

Apple Inc.

Form 10-K

For the Fiscal Year Ended September 26, 2020

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Apple Inc.
Form 10-K
For the Fiscal Year Ended September 26, 2020
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Previous Research

- Sentiment analysis as feature in stock price prediction
- Report topics as features to predict bank failures
- Risk topics of Item 1A. Risk Factors
 - Israelsen (2014)
 - 2006-2010 reports



My Project



- 2011 – 2020
- Entire report
- Companies in S&P 500
- Paragraphs about risk
- Topic Modeling



Risk Topics

- | | | |
|------------------------|----------------------|-------------------|
| 1. Regulation | 9. Security | 17. Loans |
| 2. Risk Management | 10. Foreign Exchange | 18. Derivatives |
| 3. Interest Rate | 11. Capital | 19. Liquidity - 1 |
| 4. Credit | 12. Commodity | 20. Liquidity - 2 |
| 5. Insurance | 13. Fair Value | 21. Stock |
| 6. Product Development | 14. Disclosure | 22. Other |
| 7. Market | 15. Accounting | |
| 8. Investment | 16. Internal Control | |




Top Risk Topics - #4

7%

Credit

rating, counterparty, exposure,
collateral, customer, default



Top Risk Topics - #4

7%

Credit

rating, counterparty, exposure,
collateral, customer, default

The Company's strategy for credit risk management includes well-defined, centralized credit policies, uniform underwriting criteria, and ongoing risk monitoring and review processes for all commercial and consumer credit exposures. The strategy also emphasizes diversification on a geographic, industry and customer level, regular credit examinations and management reviews of loans exhibiting deterioration of credit quality. The credit risk management strategy also includes a credit risk assessment process, ...




Top Risk Topics - #3

8%

Interest Rate

rate, debt, swap,
fixed, change, variable



Top Risk Topics - #3

8%

Interest Rate

rate, debt, swap,
fixed, change, variable

We are exposed to **interest rate** risk due to the mismatch between the **interest** expense we pay on our loans at **fixed rates** and the **variable rates** of **interest** we receive from cash, cash equivalents and other short-term investments. We have issued long-term **debt** in U.S. dollars at **fixed interest rates** based on the market conditions at the time of financing. We believe that the fair value of our **fixed rate debt changes** when the underlying market **rates** of **interest** change, and we may use **interest rate swaps** to modify such market risk....




Top Risk Topics -#2

10%

Risk Management

committee, policy, board,
activity, operational, officer



Top Risk Topics -#2

10%

Risk Management

committee, policy, board,
activity, operational, officer

We manage enterprise risk using an integrated framework that includes **board**-level oversight, administration by a group of cross-functional **management committees**, and day-to-day implementation by a dedicated risk **management** team led by the Chief Risk **Officer** ("CRO"). We also utilize the "Three Lines of Defense" risk **management** model ...




Top Risk Topics - #1

15%

Regulation

result, operation, condition,
cost, change, law



Top Risk Topics - #1

15%

Regulation

result, operation, condition,
cost, change, law

The U.S. and foreign **laws** and **regulations** that apply to our **operations** are complex and may **change** rapidly, and our efforts to comply and keep up with them require significant resources and increase the **costs** and risks of doing business in these jurisdictions. The **regulations** we are subject to have become more stringent over time, may decrease the need for our services, impose significant **operational** limits on our business and may be inconsistent across jurisdictions. Further, the **laws** and **regulations** affecting our business are subject to **change**

Top Risk Topics - #1

15%

Regulation

result, operation, condition,
cost, change, law

Additionally, success in preclinical work or early stage clinical trials does not ensure that later stage or larger scale clinical trials will be successful or that **regulatory** approval will be obtained. In addition, even if later stage clinical trials are successful, **regulatory** authorities may delay or decline approval of our product candidates. **Regulatory** authorities may disagree with our view of the data, require additional studies or disagree with our trial design or endpoints. **Regulatory** authorities may also...

Top Risk Topics - #1

15%

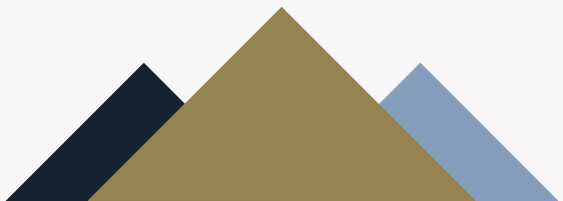
Regulation

result, operation, condition,
cost, change, law

Delays in obtaining any required environmental **regulatory** approvals, failure to obtain and comply with them or **changes** in environmental **laws** or **regulations** to more stringent compliance levels could **result** in additional **costs** of **operation** for existing facilities or development of new facilities being prevented, delayed or subject to additional **costs**. Although it is not expected that the **costs** to comply with current environmental **regulations** will have a material adverse effect on the Duke Energy Registrants' financial position, **results** of **operations** or cash flows due to **regulatory cost** recovery, the Duke Energy Registrants are at risk that the **costs** of complying with environmental **regulations** in the future will have such an effect.

Risk Topics of Each Report

- Weighted topic components of each paragraph by number of words
- Averaged for each annual report
- K-means clustering on report topic components



Risk Topic Clusters, 1-4



Financial

Loan
Interest Rate
Capital
Credit



Consumer

Product Development
Regulation
Disclosure



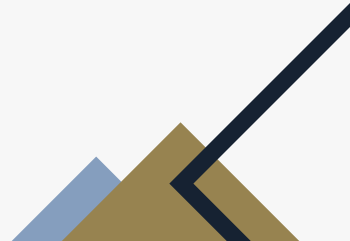
Insurance

Insurance
Regulation
Interest Rate



Energy

Commodity
Regulation
Market



Risk Topic Clusters, 5-8



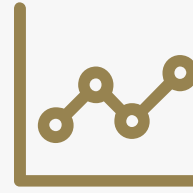
Rates

Interest Rate
Regulation
Foreign Exchange



Security

Regulation
Security
Product Development



Investment

Regulation
Interest Rate
Investment



Accounting

Accounting
Disclosure
Other

Future Work

- Each company over time
- 'Other' Risk Topics
- Topic components as model features



Conclusion

- Natural Language Processing
- Topic Modeling
- K-means Clustering



Thanks!



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