# SMACOM Introduction

## The AI integrated system, SMACOM supports prudent investor’s accurate, faster investment decisions

**NIKKEI FTRI**

# About the "Nikkei FTRI"

Nikkei Financial Technology Research Institute (Nikkei FTRI) is member of Nikkei which is biggest economic news and information provider in ASIA.

## Client

No. of Financial Institution's customers

**80+**

No. of products provided to clients

**220+**

## Nikkei FTRI

Establishment　Since 1999
Capital　Nikkei　（100% Subsidiary）

### Business

News Sentiment Analysis, Accounting Fraud Detection, Credit Scoring Model, Valuation, Risk Control Management, Related Consulting, etc.,

### Our Technologies

Most of our analysts have PhD or Master degree in statistics, physics, etc. All of them makes full use of SAS, Python and R.

## Feature

### Member of the "Nikkei"

Unrestricted access to Nikkei Group news and various economic/market data

### Trustworthy

Nikkei FTRI is an official adviser for Risk Management Committee of Regional Bank Associations of Japan over 15 years

### Our Studies

Many experts refer to our research in the area of Credit Risk Management, Text Analysis, Accounting Fraud Detection et

# 1. Seeking Alpha (Our Service: "SMACOM")

Nikkei FTRI has provided news sentiment score to various investment bank and hedge funds. They all use our information for seeking alpha in capital market.

**Quick**

- News Sentiment
- Timely disclosure
- Nikkei news
- N Q N

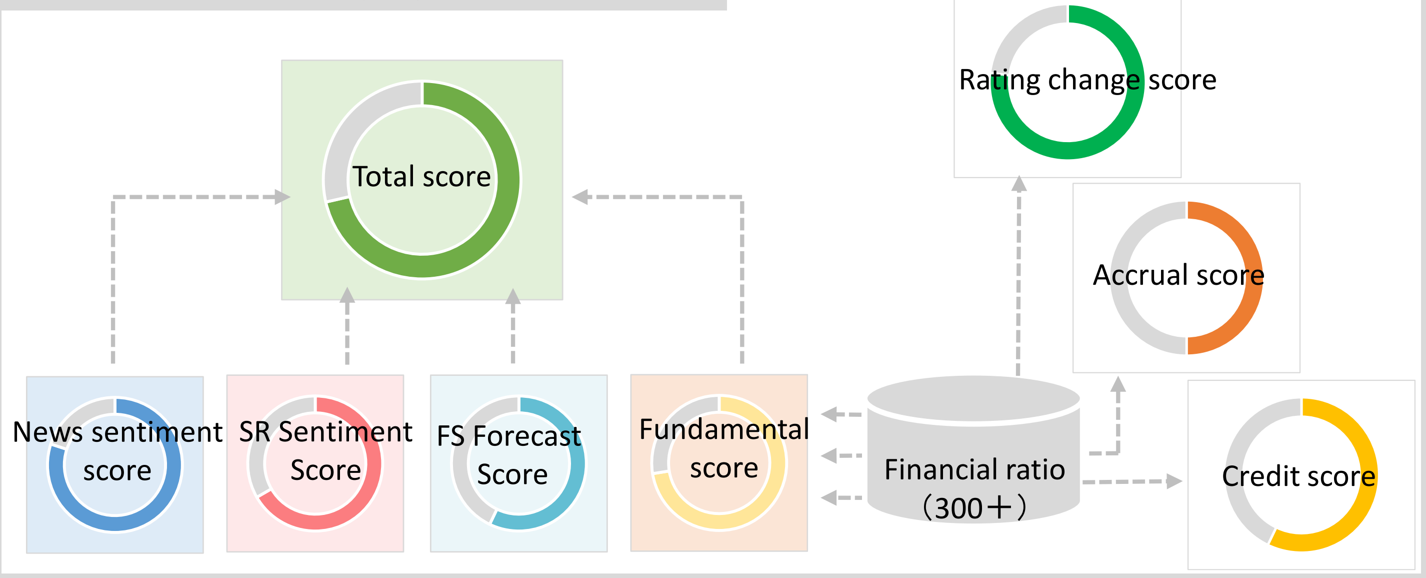
・POS
・Alternative

- sustainability
- Market trends
- Fundamental information
- Technical information

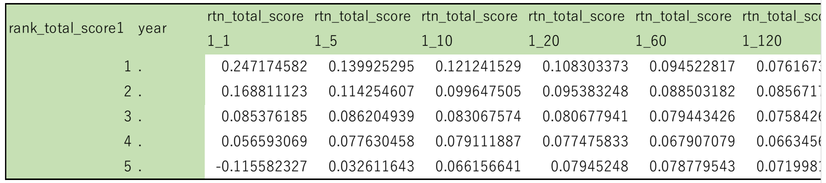
**日経金融工学研究所**

- Financial/Market information
- Credit/Rating/Accrual information
- Text analysis of annual report

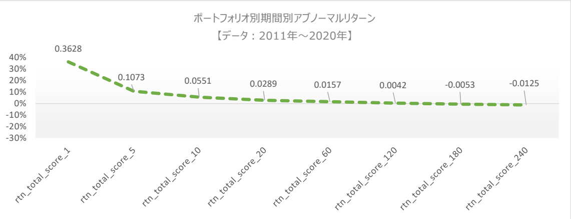
## Models and Scores (UI)


Total score
News sentiment score
SR Sentiment Score
FS Forecast Score
Fundamental score
Financial ratio（300＋）
Rating change score
Accrual score
Credit score

## Data and back test results



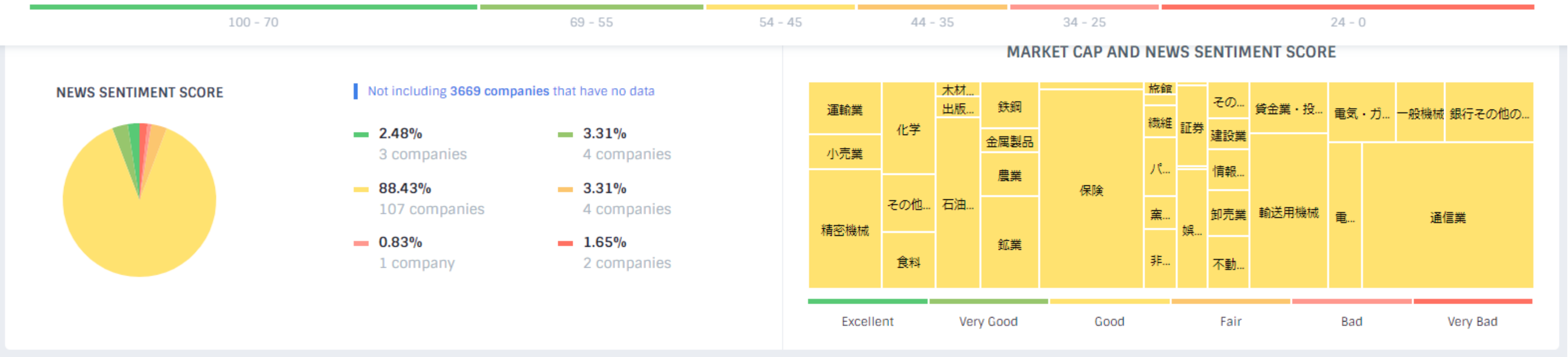
| rank_total_score1 | year | rtn_total_score 1_1 | rtn_total_score 1_5 | rtn_total_score 1_10 | rtn_total_score 1_20 | rtn_total_score 1_60 | rtn_total_sc 1_120 |
|---|---|---|---|---|---|---|---|
| 1 . | | 0.247174582 | 0.139925295 | 0.121241529 | 0.108303373 | 0.094522817 | 0.076167 |
| 2 . | | 0.168811123 | 0.114254607 | 0.099647505 | 0.095383248 | 0.088503182 | 0.085671 |
| 3 . | | 0.085376185 | 0.086204939 | 0.083067574 | 0.080677941 | 0.079443426 | 0.075842 |
| 4 . | | 0.056593069 | 0.077630458 | 0.079111887 | 0.077475833 | 0.067907079 | 0.066345 |
| 5 . | | -0.115582327 | 0.032611643 | 0.066156641 | 0.07945248 | 0.078779543 | 0.071998 |


ポートフォリオ別期間別アブノーマルリターン
【データ：2011年～2020年】

# 2． Models and scores

| | JAPAN (Listed company) | | Foreign 50 countries (Listed company) | |
|---|---|---|---|---|
| | Business Corporation | Financial Institutions | Business Corporation | Financial Institutions |
| Total Score | The best combination of fundamental, SR Sentiment, FS Forecast and news sentiment scores | | The best combination of fundamental and news sentiment scores | |
| Fundamental Score | Logistic regression with return as the dependent variable | | Logistic regression with return as the dependent variable | |
| SR Sentiment Score | Logistic regression with return as the dependent variable | | — | |
| FS Forecast Score | Logistic regression with return as the dependent variable | — | — | |
| News Sentiment Score | Neural network for estimating news sentiment(ALBERT) | | SVM for estimating news sentiment | |
| Credit Score | Logistic regression for estimating default (including Merton type variables) | | Logistic regression for estimating default (including Merton type variables) | |
| Accrual Score | Logistic regression for estimating accounting fraud | — | M-Score(beneish,1998)<br>F-Score(Dechow et al,2011) | — |
| Rating Change Score | Logistic regression for estimating rating change | | — | |

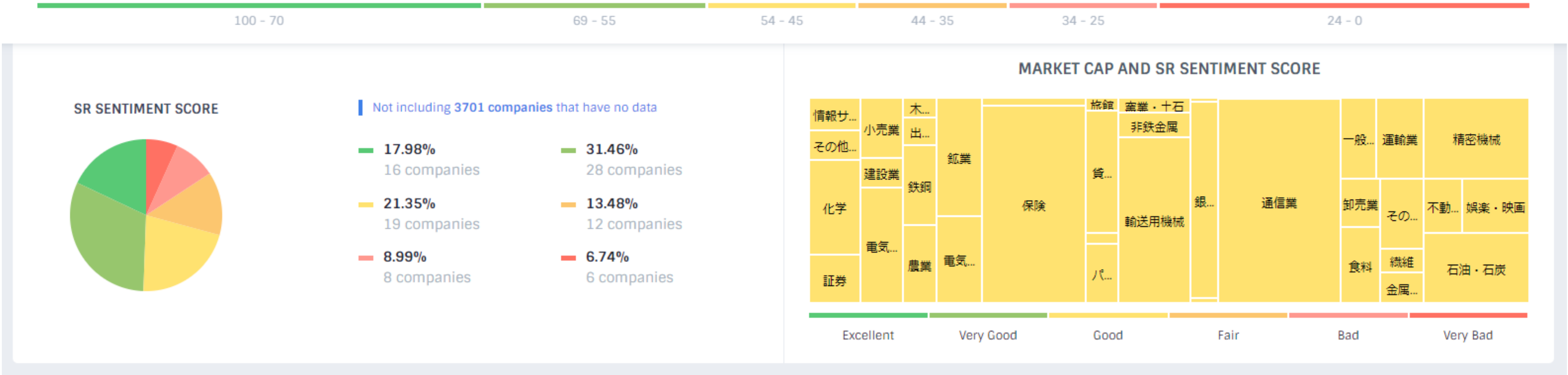
# 3－1．Score’s Details : News Sentiment Score


100 - 70
69 - 55
54 - 45
44 - 35
34 - 25
24 - 0
NEWS SENTIMENT SCORE
Not including 3669 companies that have no data
2.48%
3 companies
3.31%
4 companies
88.43%
107 companies
3.31%
4 companies
0.83%
1 company
1.65%
2 companies
MARKET CAP AND NEWS SENTIMENT SCORE
運輸業
小売業
精密機械
化学
その他...
食料
木材...
出版...
石油...
鉄鋼
金属製品
農業
鉱業
保険
旅館
繊維
パ...
窯...
非...
証券
娯...
その...
建設業
情報...
卸売業
不動...
貸金業・投...
輸送用機械
電気・ガ...
電...
一般機械
銀行その他の...
通信業
Excellent
Very Good
Good
Fair
Bad
Very Bad

## News Sentiment Score

News Sentiment Score from a AI_NLP model which calculates score from news. When the news is good for the company’s stock price, it’s close to 100 and when it’s negative, close to Zero.
Our Japanese analysts actually read/tag news and make training data for improving its quality. (Target: One day to One month)

# 3－2．　Score’s Details　: SR Sentiment Score


100 - 70
69 - 55
54 - 45
44 - 35
34 - 25
24 - 0
SR SENTIMENT SCORE

Not including **3701 companies** that have no data

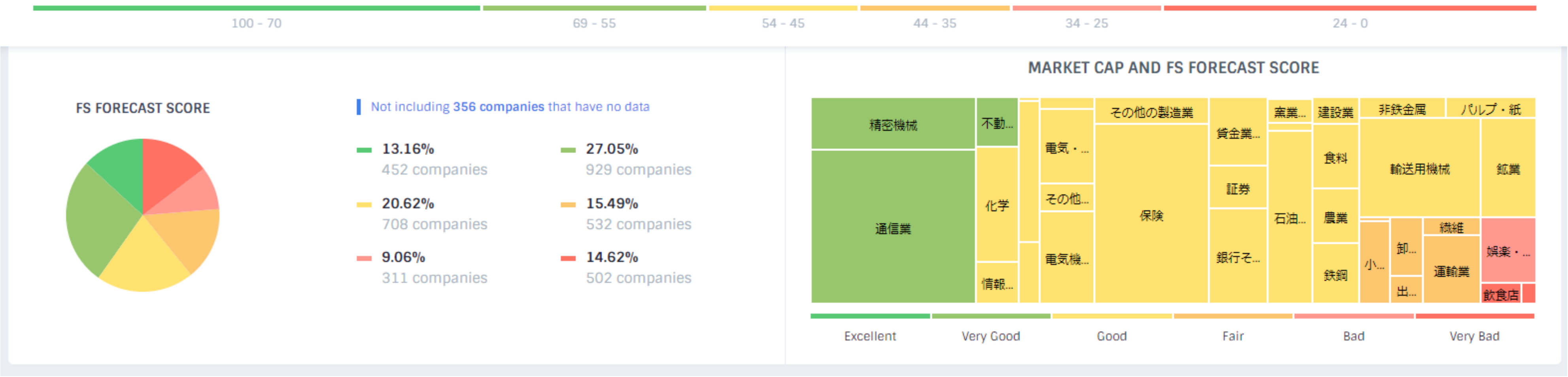
| | |
|---|---|
| 🟩 **17.98%**<br>16 companies | 🟩 **31.46%**<br>28 companies |
| 🟨 **21.35%**<br>19 companies | 🟧 **13.48%**<br>12 companies |
| 🟥 **8.99%**<br>8 companies | 🟥 **6.74%**<br>6 companies |

MARKET CAP AND SR SENTIMENT SCORE
情報サ...
その他...
化学
証券
小売業
建設業
電気...
木...
出...
鉄鋼
農業
鉱業
電気...
保険
旅館
貸...
パ...
窯業・土石
非鉄金属
輸送用機械
銀...
通信業
一般...
卸売業
食料
運輸業
その...
繊維
金属...
精密機械
不動...
娯楽・映画
石油・石炭
Excellent
Very Good
Good
Fair
Bad
Very Bad

## SR(Securities Report ) Sentiment Score

SR (Securities Report) Sentiment Score is the score derived from a security report (= 10K) disclosed by a company. The score mainly evaluates its readability and variety of vocabulary. Main information comes from "Management Analysis of Financial Condition, Results of Operations and Cash Flows" of “Business Overview” in the Annual Securities Report using Natural Language Processing. Adapting NLP technics on a securities reports which disclosed by listed company. Our SR sentiment score performs well in long term alpha through back testing. (Target: One year)

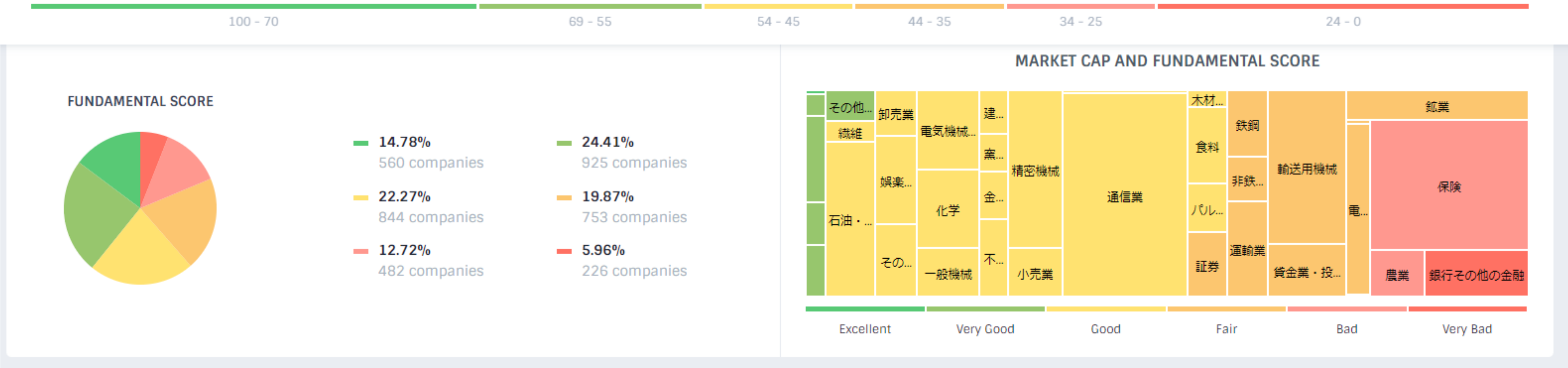
# 3－3.　Score’s Details　: FS Forecast Score


100 - 70
69 - 55
54 - 45
44 - 35
34 - 25
24 - 0
FS FORECAST SCORE
Not including 356 companies that have no data
13.16%
452 companies
27.05%
929 companies
20.62%
708 companies
15.49%
532 companies
9.06%
311 companies
14.62%
502 companies
MARKET CAP AND FS FORECAST SCORE
精密機械
不動...
通信業
化学
情報...
電気・...
その他...
電気機...
その他の製造業
保険
貸金業...
証券
銀行そ...
窯業...
石油...
建設業
食料
農業
鉄鋼
非鉄金属
パルプ・紙
輸送用機械
鉱業
繊維
小...
卸...
出...
運輸業
娯楽・...
飲食店
Excellent
Very Good
Good
Fair
Bad
Very Bad

## FS(Financial Statement ) Forecast Score

Each listed companies’ Financial Statement are forecasted using Nikkei FTRI’s FS forecasting simulator “AERIS”. AERIS is actually used by many banks for stress testing purpose and portfolio simulation. (Target: One year)

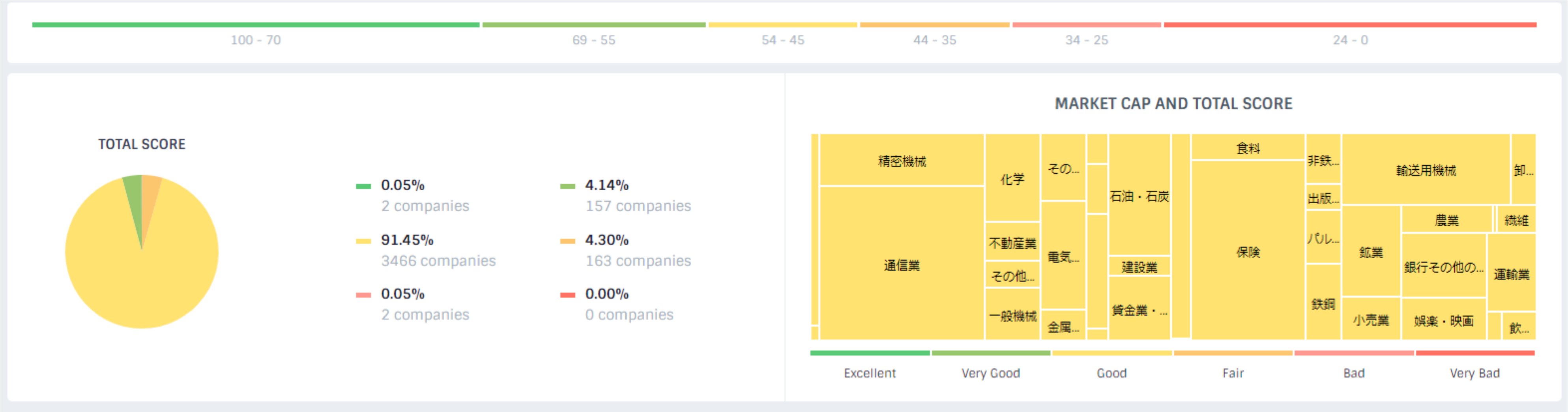
# 3－4.　Score’s Details　: Fundamental score


100 - 70
69 - 55
54 - 45
44 - 35
34 - 25
24 - 0
FUNDAMENTAL SCORE
14.78%
560 companies
24.41%
925 companies
22.27%
844 companies
19.87%
753 companies
12.72%
482 companies
5.96%
226 companies
MARKET CAP AND FUNDAMENTAL SCORE
その他...
繊維
石油・...
卸売業
娯楽...
その...
電気機械...
化学
一般機械
建...
窯...
金...
不...
精密機械
小売業
通信業
木材...
食料
パル...
証券
鉄鋼
非鉄...
運輸業
輸送用機械
貸金業・投...
鉱業
電...
保険
農業
銀行その他の金融
Excellent
Very Good
Good
Fair
Bad
Very Bad

## Fundamental Score

Fundamental Score is calculated from financial information of the company such as FCF and ROA. The score is selected from its uniqueness which are uncorrelated with the Fama and French Three Factors, in terms of making more alpha. (Target: One year)

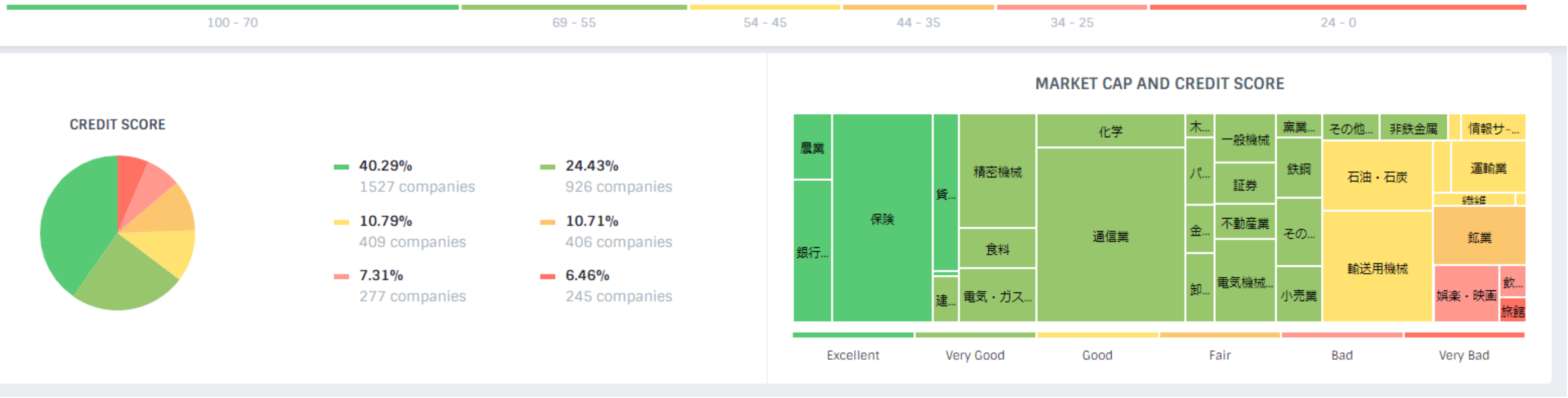
# 3－5.　Score's Details　: Total Score


100 - 70
69 - 55
54 - 45
44 - 35
34 - 25
24 - 0
TOTAL SCORE
0.05%
2 companies
4.14%
157 companies
91.45%
3466 companies
4.30%
163 companies
0.05%
2 companies
0.00%
0 companies
MARKET CAP AND TOTAL SCORE
精密機械
通信業
化学
不動産業
その他...
一般機械
その...
電気...
金属...
石油・石炭
建設業
貸金業・...
食料
保険
非鉄...
出版...
パル...
鉄鋼
輸送用機械
卸...
農業
繊維
鉱業
銀行その他の...
運輸業
小売業
娯楽・映画
飲...
Excellent
Very Good
Good
Fair
Bad
Very Bad

## Total Score

Total Score is aggregated score which aims to evaluate company's intrinsic value by using SMACOM output (from 1.to 4. scores) as input variables. (Target: One day to One year)

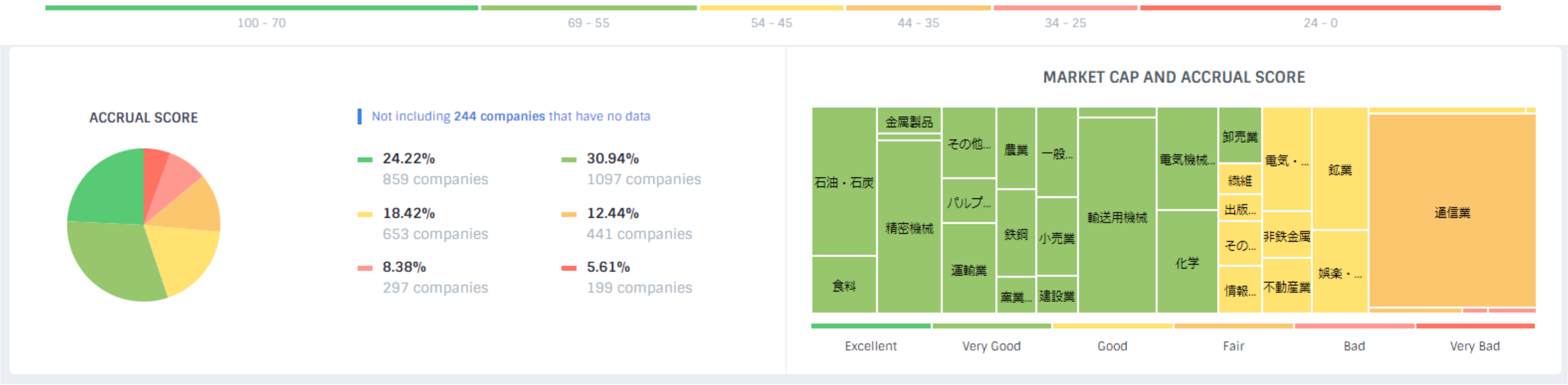
# 3－6．　Score’s Details ：Credit Score


100 - 70
69 - 55
54 - 45
44 - 35
34 - 25
24 - 0
CREDIT SCORE
40.29% 1527 companies
24.43% 926 companies
10.79% 409 companies
10.71% 406 companies
7.31% 277 companies
6.46% 245 companies
MARKET CAP AND CREDIT SCORE
農業
銀行...
保険
貨...
建...
精密機械
食料
電気・ガス...
化学
通信業
木...
パ...
金...
卸...
一般機械
証券
不動産業
電気機械...
窯業...
鉄鋼
その...
小売業
その他...
非鉄金属
石油・石炭
輸送用機械
情報サ-...
運輸業
繊維
鉱業
娯楽・映画
飲...
旅館
Excellent
Very Good
Good
Fair
Bad
Very Bad

## Credit Score

Credit Score calculates probability of default that a company could be in solvency in less then one year. For developing the credit scoring model, we used our unique default database which is exclusively collected and made by Nikkei FTRI. (Target: One year)

# 3－7.　Score’s Details　: Accrual Score

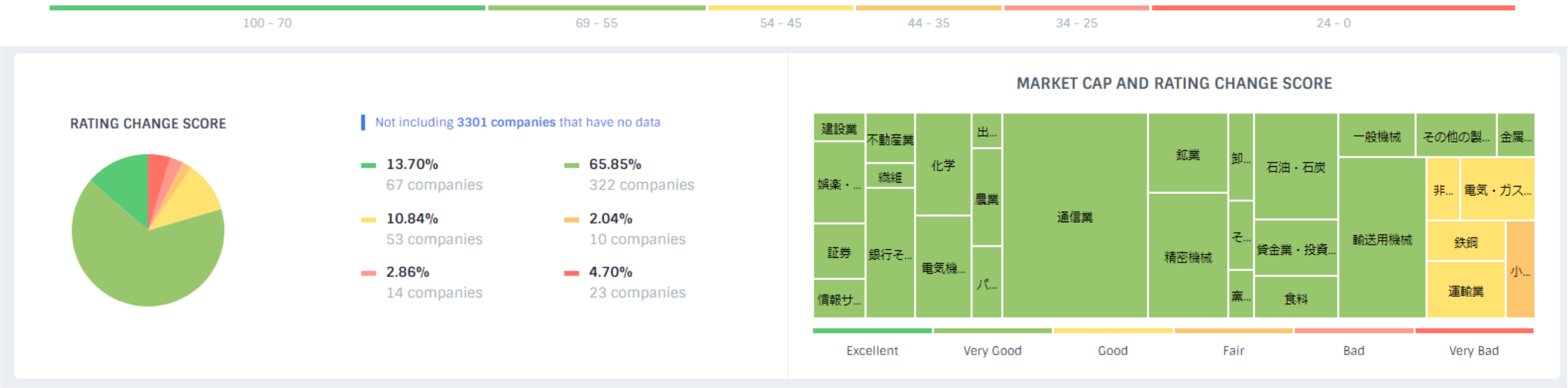


Not including **244 companies** that have no data

## Accrual Score

Accrual Score evaluates quality of accounting information disclosed by company. When the score is high, it means the company’s accounting information such as asset, sales, profit, etc. could be manipulated or less trustworthy. (Target: NA)

# 3－8.　Score’s Details　: Rating Change Score


100 - 70
69 - 55
54 - 45
44 - 35
34 - 25
24 - 0
RATING CHANGE SCORE
Not including 3301 companies that have no data
13.70%
67 companies
65.85%
322 companies
10.84%
53 companies
2.04%
10 companies
2.86%
14 companies
4.70%
23 companies
MARKET CAP AND RATING CHANGE SCORE
建設業
不動産業
化学
出...
通信業
鉱業
卸...
石油・石炭
一般機械
その他の製...
金属...
娯楽・...
繊維
農業
非...
電気・ガス...
証券
銀行そ...
電気機...
そ...
貸金業・投資...
輸送用機械
鉄鋼
精密機械
小...
情報サ...
パ...
運輸業
窯...
食料
Excellent
Very Good
Good
Fair
Bad
Very Bad

## Rating Change Score

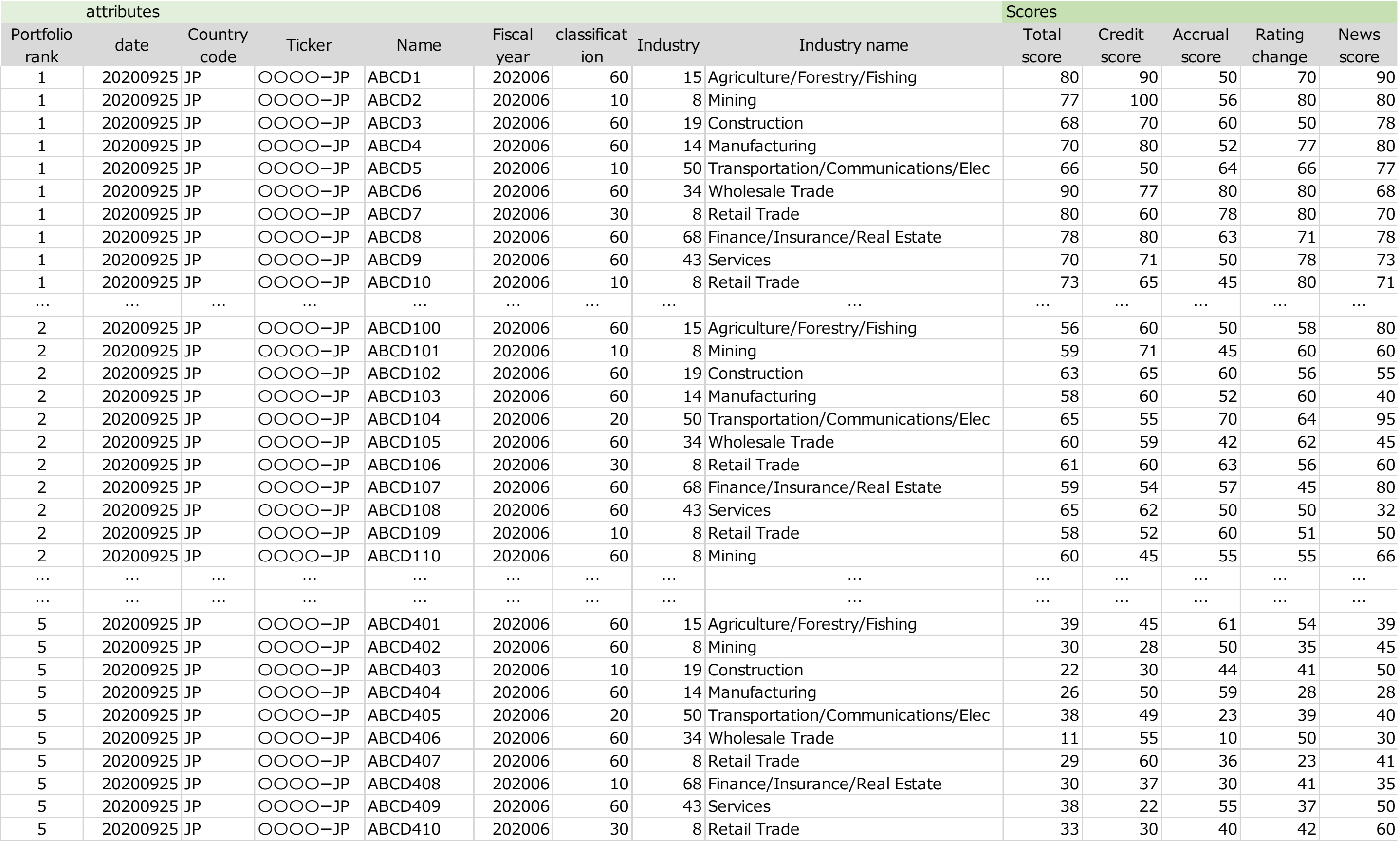
Rating Change Score estimates probability of changing Credit Rating of a company that have a credit rating from credit rating agency. (Target: 3M, 6M, 1Y)

# 4. Data

Past 5 year’s Back testing data is available for trial/evaluation purpose. Please feel free to ask us if you interested in its data. For developing own firm’s model and trading algorism, SMACOM also could provide various detailed data such as explanatory variables and ratios used in its models.

**Data distribution**

- **Download from UX**
- **Providing CSV file**
- **Provided by API**

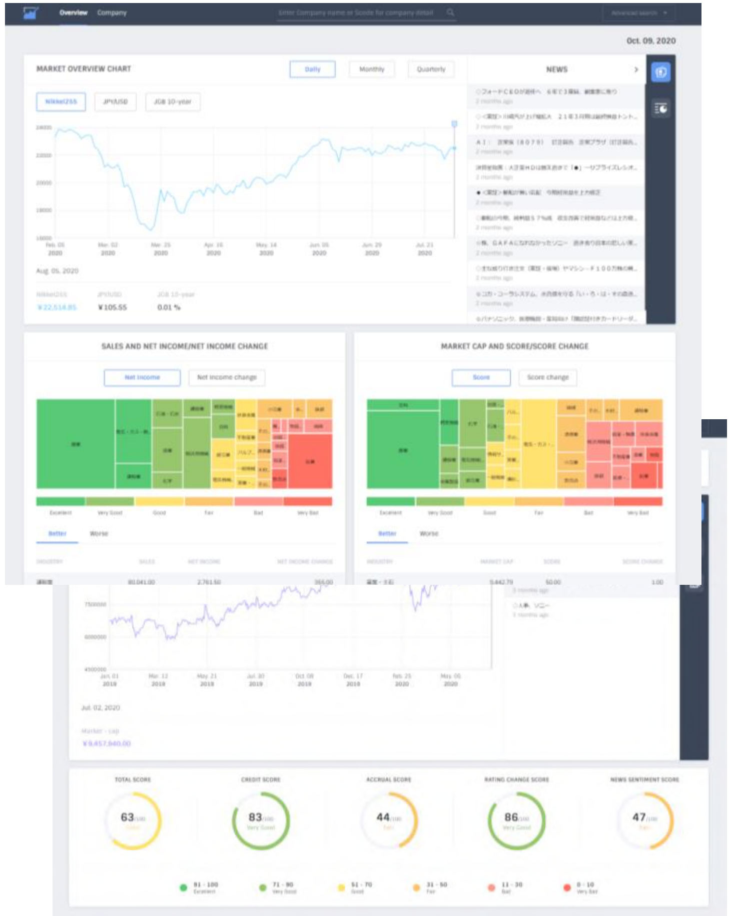


| attributes | | | | | | | | | Scores | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Portfolio rank | date | Country code | Ticker | Name | Fiscal year | classification | Industry | Industry name | Total score | Credit score | Accrual score | Rating change | News score |
| 1 | 20200925 | JP | ○○○○−JP | ABCD1 | 202006 | 60 | 15 | Agriculture/Forestry/Fishing | 80 | 90 | 50 | 70 | 90 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD2 | 202006 | 10 | 8 | Mining | 77 | 100 | 56 | 80 | 80 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD3 | 202006 | 60 | 19 | Construction | 68 | 70 | 60 | 50 | 78 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD4 | 202006 | 60 | 14 | Manufacturing | 70 | 80 | 52 | 77 | 80 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD5 | 202006 | 10 | 50 | Transportation/Communications/Elec | 66 | 50 | 64 | 66 | 77 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD6 | 202006 | 60 | 34 | Wholesale Trade | 90 | 77 | 80 | 80 | 68 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD7 | 202006 | 30 | 8 | Retail Trade | 80 | 60 | 78 | 80 | 70 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD8 | 202006 | 60 | 68 | Finance/Insurance/Real Estate | 78 | 80 | 63 | 71 | 78 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD9 | 202006 | 60 | 43 | Services | 70 | 71 | 50 | 78 | 73 |
| 1 | 20200925 | JP | ○○○○−JP | ABCD10 | 202006 | 10 | 8 | Retail Trade | 73 | 65 | 45 | 80 | 71 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 2 | 20200925 | JP | ○○○○−JP | ABCD100 | 202006 | 60 | 15 | Agriculture/Forestry/Fishing | 56 | 60 | 50 | 58 | 80 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD101 | 202006 | 10 | 8 | Mining | 59 | 71 | 45 | 60 | 60 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD102 | 202006 | 60 | 19 | Construction | 63 | 65 | 60 | 56 | 55 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD103 | 202006 | 60 | 14 | Manufacturing | 58 | 60 | 52 | 60 | 40 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD104 | 202006 | 20 | 50 | Transportation/Communications/Elec | 65 | 55 | 70 | 64 | 95 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD105 | 202006 | 60 | 34 | Wholesale Trade | 60 | 59 | 42 | 62 | 45 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD106 | 202006 | 30 | 8 | Retail Trade | 61 | 60 | 63 | 56 | 60 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD107 | 202006 | 60 | 68 | Finance/Insurance/Real Estate | 59 | 54 | 57 | 45 | 80 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD108 | 202006 | 60 | 43 | Services | 65 | 62 | 50 | 50 | 32 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD109 | 202006 | 10 | 8 | Retail Trade | 58 | 52 | 60 | 51 | 50 |
| 2 | 20200925 | JP | ○○○○−JP | ABCD110 | 202006 | 60 | 8 | Mining | 60 | 45 | 55 | 55 | 66 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 5 | 20200925 | JP | ○○○○−JP | ABCD401 | 202006 | 60 | 15 | Agriculture/Forestry/Fishing | 39 | 45 | 61 | 54 | 39 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD402 | 202006 | 60 | 8 | Mining | 30 | 28 | 50 | 35 | 45 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD403 | 202006 | 10 | 19 | Construction | 22 | 30 | 44 | 41 | 50 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD404 | 202006 | 60 | 14 | Manufacturing | 26 | 50 | 59 | 28 | 28 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD405 | 202006 | 20 | 50 | Transportation/Communications/Elec | 38 | 49 | 23 | 39 | 40 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD406 | 202006 | 60 | 34 | Wholesale Trade | 11 | 55 | 10 | 50 | 30 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD407 | 202006 | 60 | 8 | Retail Trade | 29 | 60 | 36 | 23 | 41 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD408 | 202006 | 10 | 68 | Finance/Insurance/Real Estate | 30 | 37 | 30 | 41 | 35 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD409 | 202006 | 60 | 43 | Services | 38 | 22 | 55 | 37 | 50 |
| 5 | 20200925 | JP | ○○○○−JP | ABCD410 | 202006 | 30 | 8 | Retail Trade | 33 | 30 | 40 | 42 | 60 |

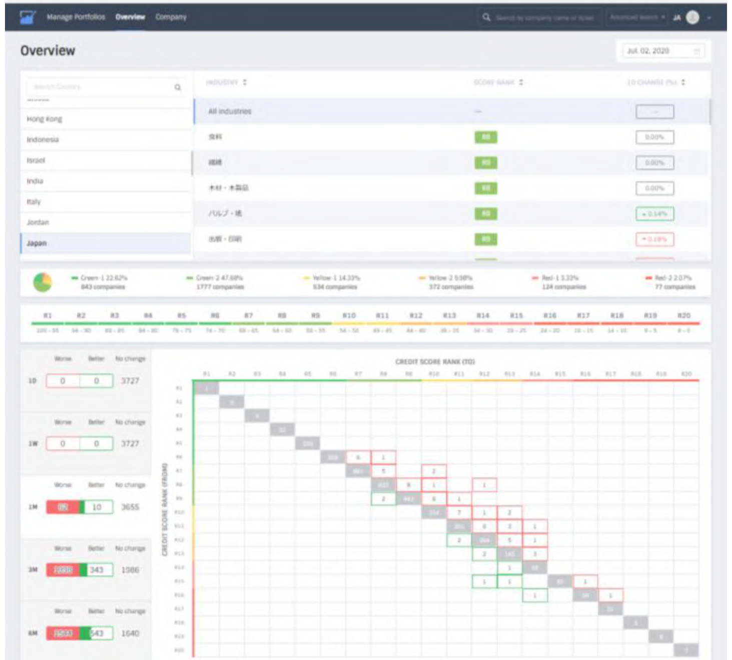
# 5. UIs

With SMACOM, you can check the trends and time-series trends of your portfolio by industry through advanced UI.

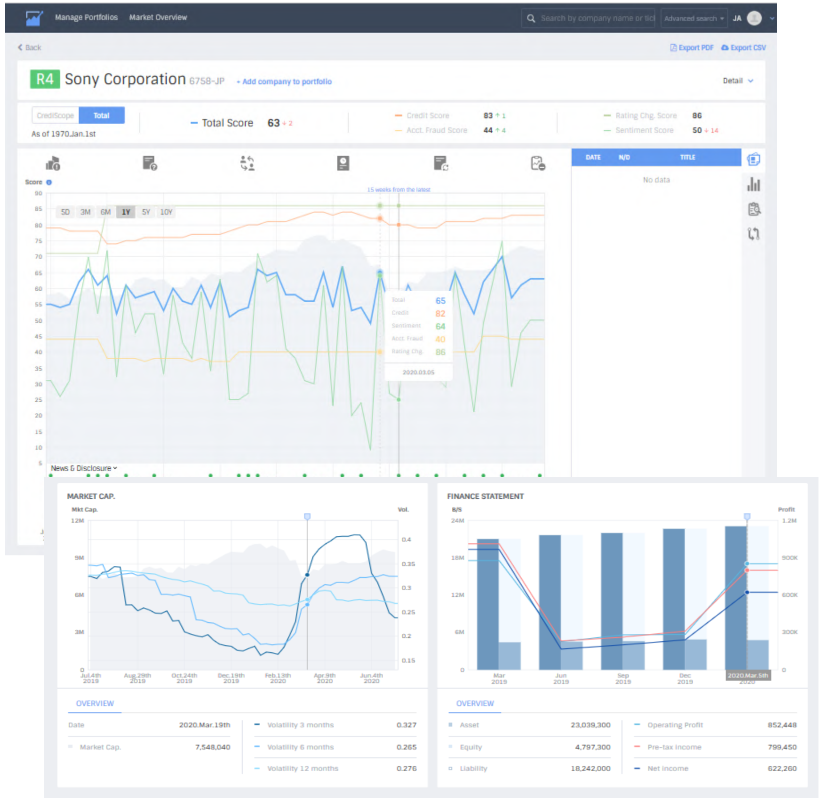
## Daily trends for the market


Overview
Company
Oct. 09, 2020
MARKET OVERVIEW CHART
Daily
Monthly
Quarterly
NEWS
Nikkei225
JPY/USD
JGB 10-year
Aug. 05, 2020
¥105.55
0.01 %
SALES AND NET INCOME/NET INCOME CHANGE
Net income
Net income change
MARKET CAP AND SCORE/SCORE CHANGE
Score
Score change
Better
Worse
Jul. 02, 2020
TOTAL SCORE
CREDIT SCORE
ACCRUAL SCORE
RATING CHANGE SCORE
NEWS SENTIMENT SCORE
63
83
44
86
47
91 - 100
71 - 90
51 - 70
31 - 50
11 - 30
0 - 10

## Portfolio quality

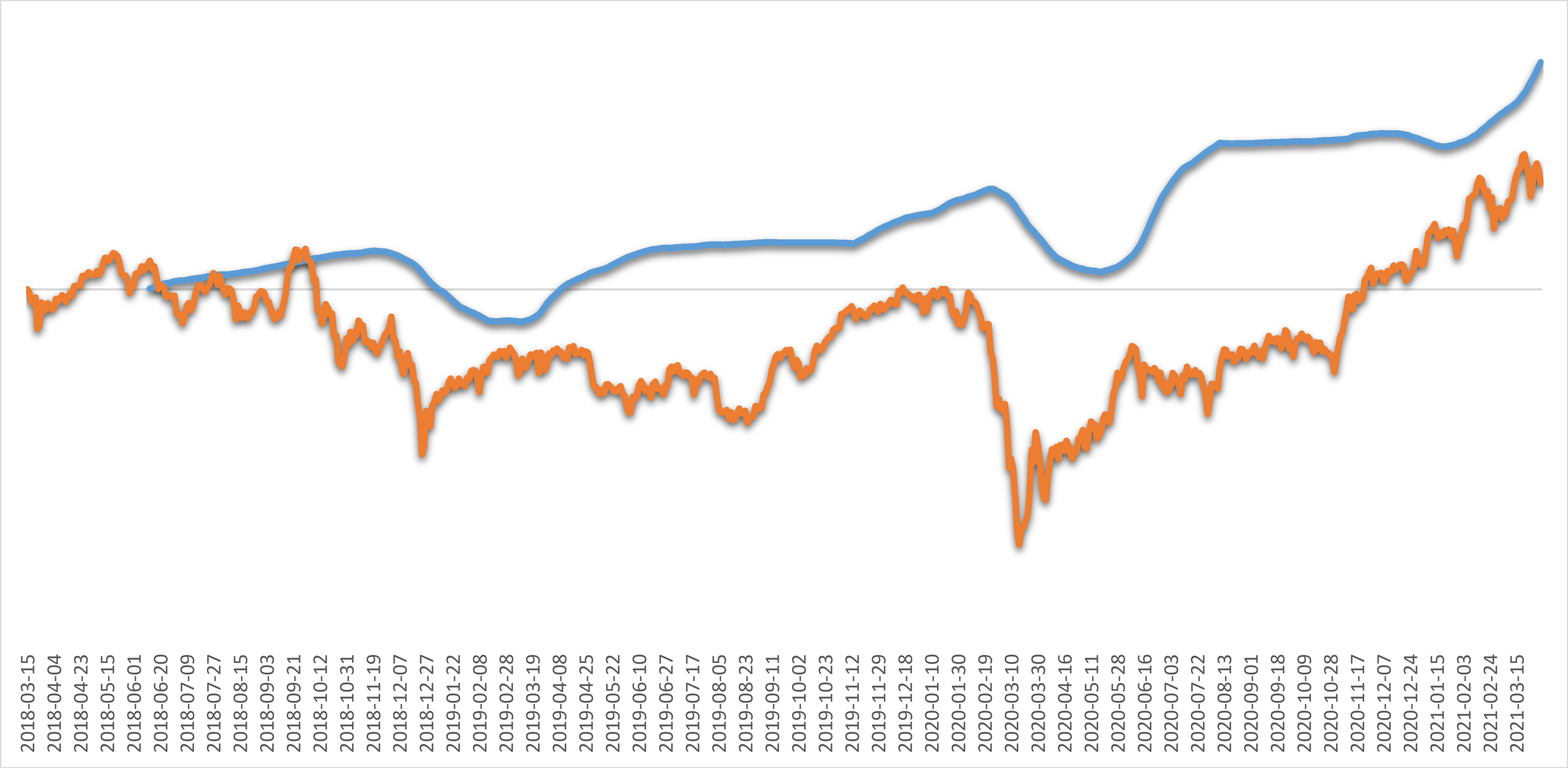

Manage Portfolios
Overview
Company
Overview
Jul. 02, 2020
Hong Kong
Indonesia
Israel
India
Italy
Jordan
Japan
All industries
CREDIT SCORE RANK (TO)
CREDIT SCORE RANK (FROM)
Worse
Better
No change
3727
3655
1986
1640

## Company characteristics


Manage Portfolios
Market Overview
Back
Export PDF
Export CSV
R4
Sony Corporation 6758-JP
+ Add company to portfolio
Detail
Total Score 63
83
44
86
50
News & Disclosure
MARKET CAP.
FINANCE STATEMENT
OVERVIEW
OVERVIEW

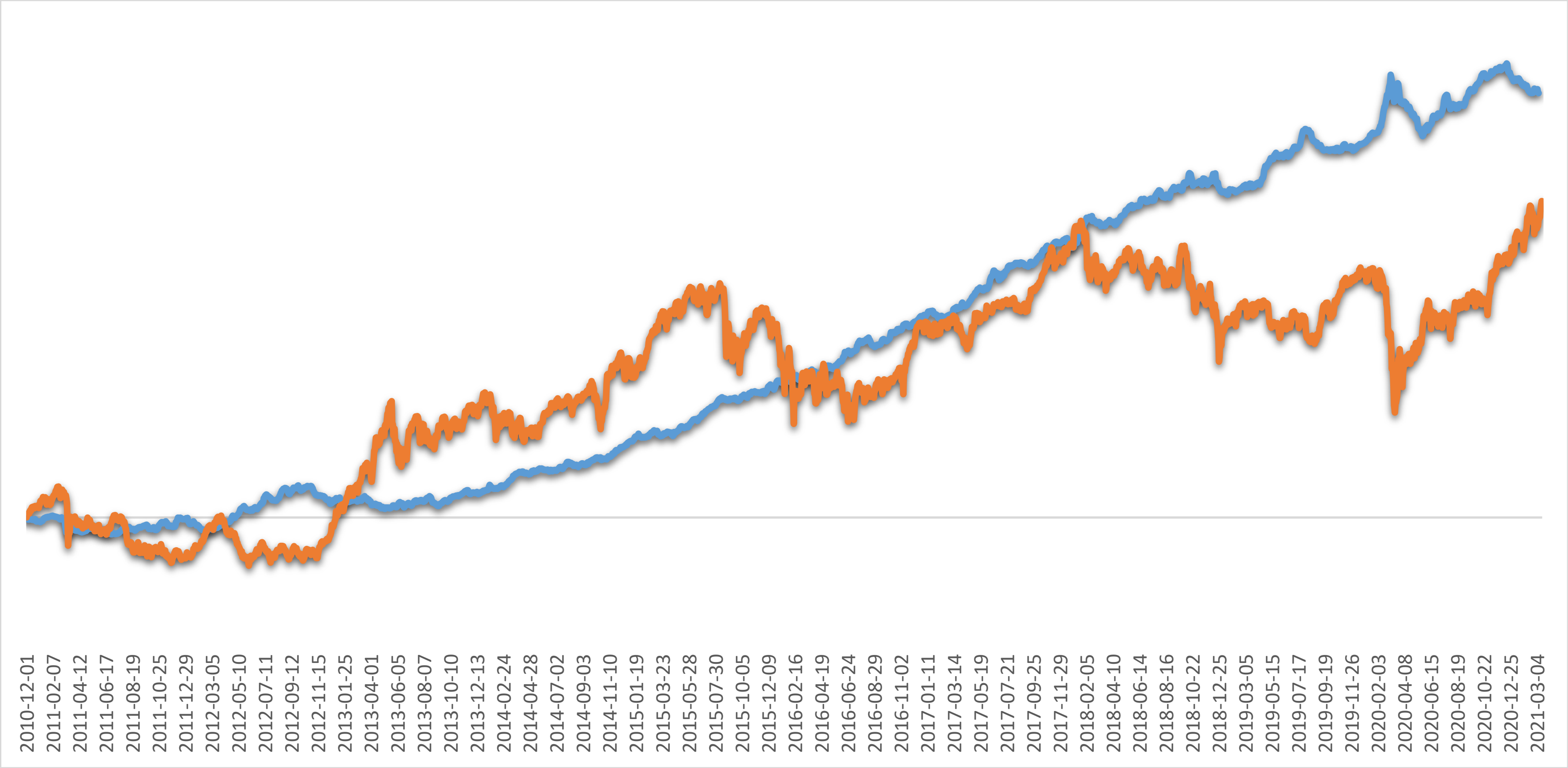
# 6. Performance(JAPAN Market) – Total Score

The performance of the Total Score, one of the scores delivered by SMACOM, can be evaluated using historical time series data as follows. We have used back data from March 2018 to March 2021. You are able to confirm that Total Score (Blue line) has outperformed over the long term against TOPIX (Orange line).



# 6. Performance(JAPAN Market) – News Sentiment Score

The performance of the News Sentiment Score from 2011 to 2021 has been measured. We can find that the News Sentiment Score (Blue line) also has outperformed against TOPIX (Orange line) over the term on the 5-day holding period.



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