

Sol LeWitt

Insights & Analysis Project Environment, Social and Governance

Quote:

“Having the data is not enough. I have to show it in ways people both enjoy and understand.”

- Hans Rosling (1948-2017)

2006 Ted Talk

Key Takeaways

Exploratory Data Analysis - Setup

Review method to extract and transform data into information using easily accessible technology

Insights & Analysis

Review the impact of corporate social governance across S&P 500 companies using Hans Rosling style charts

Inspire & Educate

Share ideas that empower our global consultants and users to extract even more value out of FactSet

Exploratory Data Analysis Setup

Hypothesis

Corporate Social Governance

Studies have shown that corporate investments in Environment, Social and Governance (ESG) scores may provide higher market performance. There are early and promising results on the effects of ESG on Total Returns. My hypothesis is that social governance is recognized by our largest companies, and as these companies grow, they pull the rest of the market with them, therefore eventually making all companies more responsible in regards to their environment, social welfare, and governance.

Data

S&P 500 Companies (2010-2017, Quarterly)

Revenue and Market Cap Data

MSCI ESG Data

FactSet Revere RBICS Classification

Data Sources

MSCI Environment Social Governance (SCG) Data

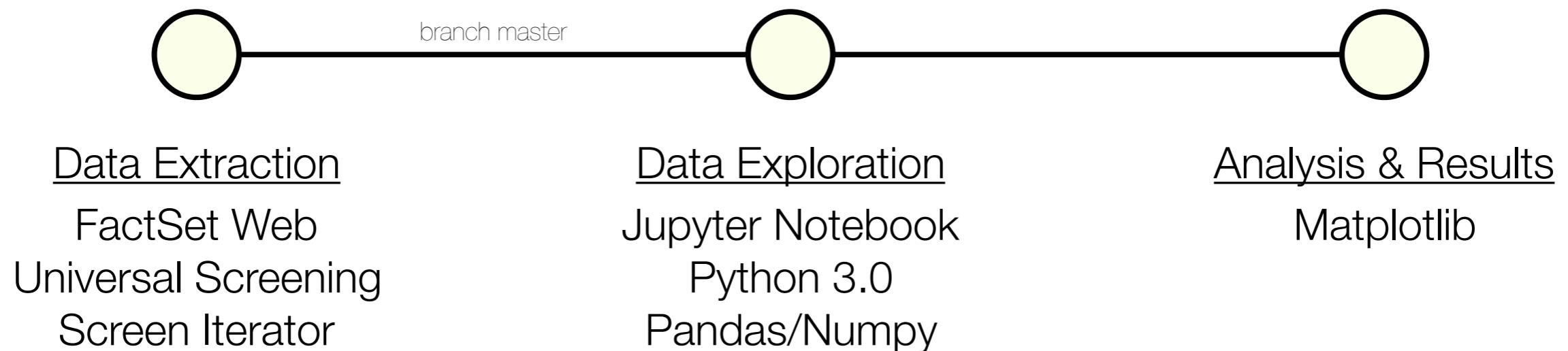
Corporate MSCI ESG Research Intangible Value Assessment (IVA) provides research, ratings, and analysis of companies' risks and opportunities arising from environmental, social, and governance (ESG) factors. Through an in-depth analysis of material issues for the industry and rigorous benchmarking against industry peers, MSCI ESG IVA can reveal hidden risks or opportunities that may not be captured by conventional financial analyses. Coverage includes Carbon Emissions, Water Stress, Toxic Emissions & Waste; Labor Management; Health & Safety; Corporate Governance; Business Ethics; Anticompetitive Practices. ([link](#))

FactSet Revere Business Industry Classification System

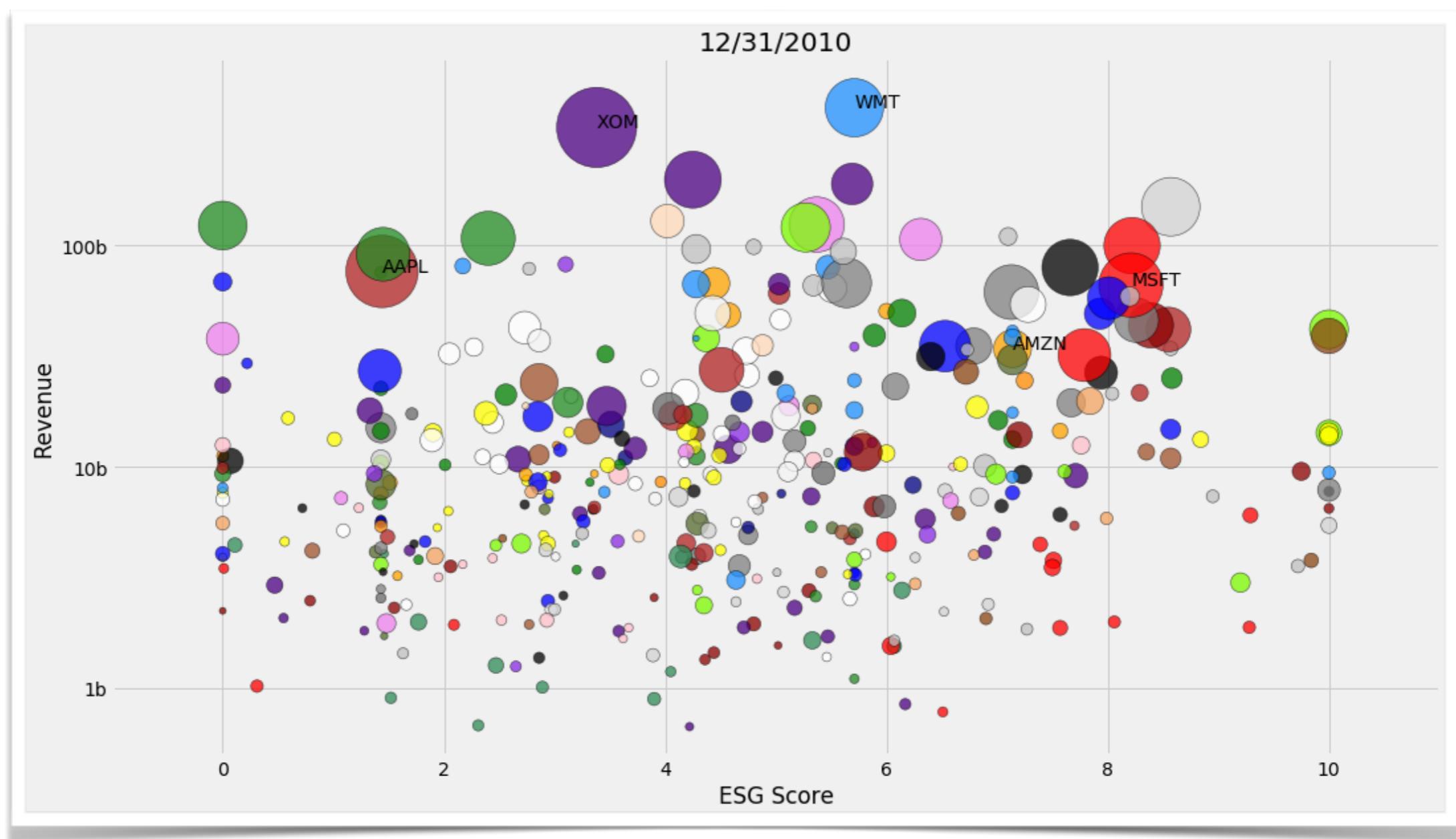
A Comprehensive structured taxonomy to classify companies. Delivers a granular view for investors by classifying companies using a bottom-up approach according to the products and services they provide. By combining this approach with a top-level grouping based on companies' behavior similarities and stock co-movement, FactSet RBICS delivers unprecedented precision for 1,400+ sector groups. ([link](#))

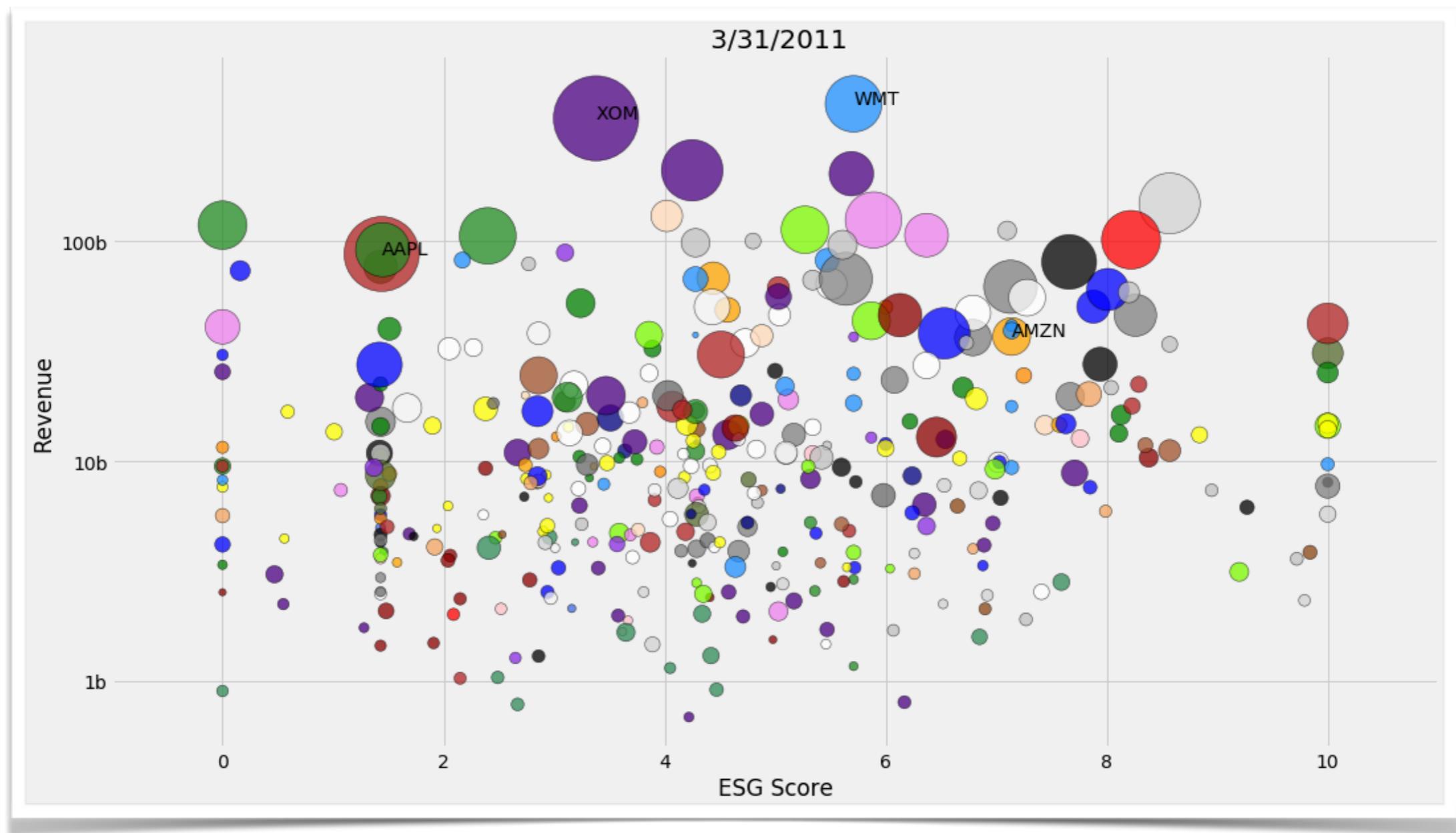
EDA Process

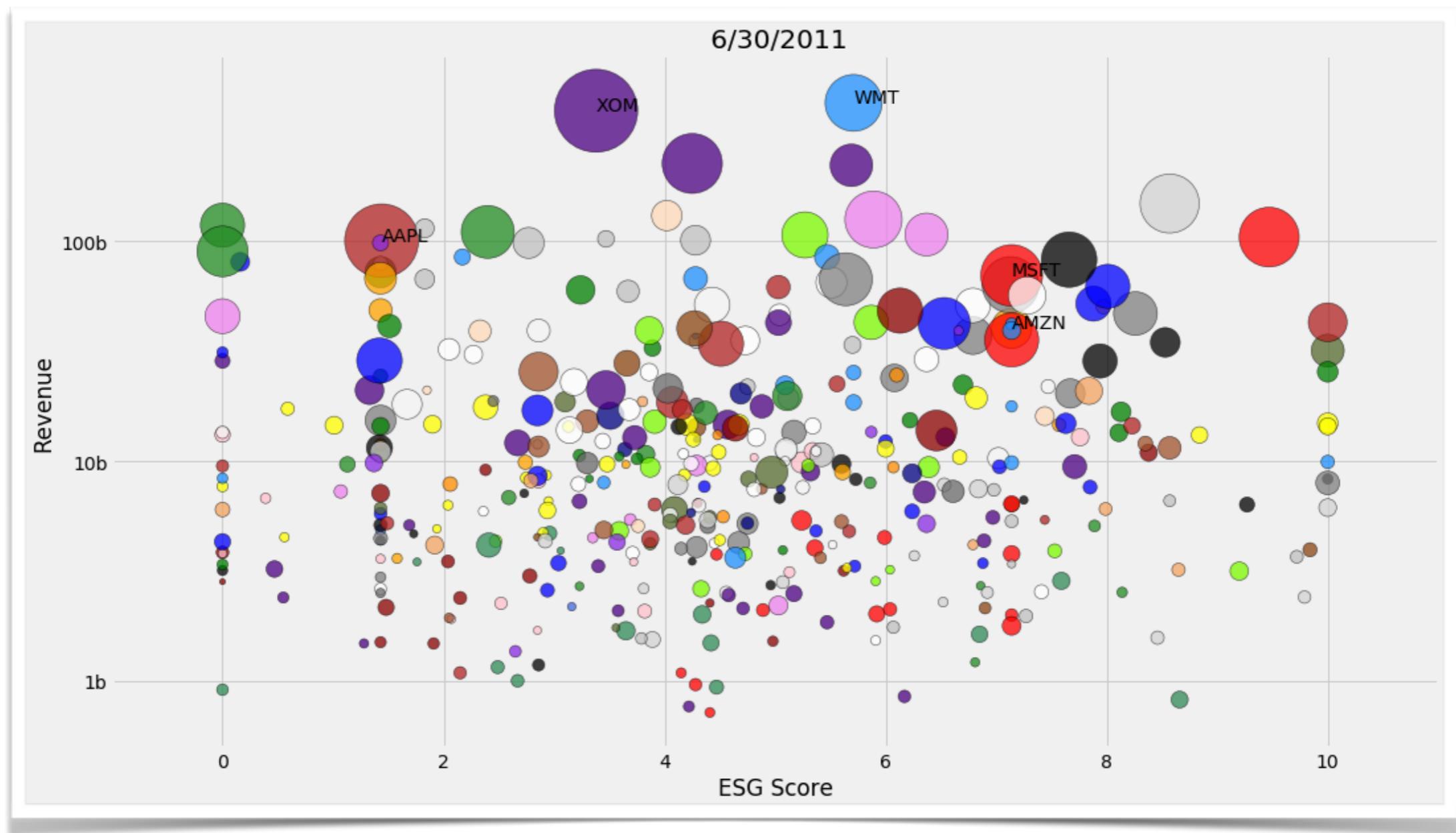
Using technology with KISS principle

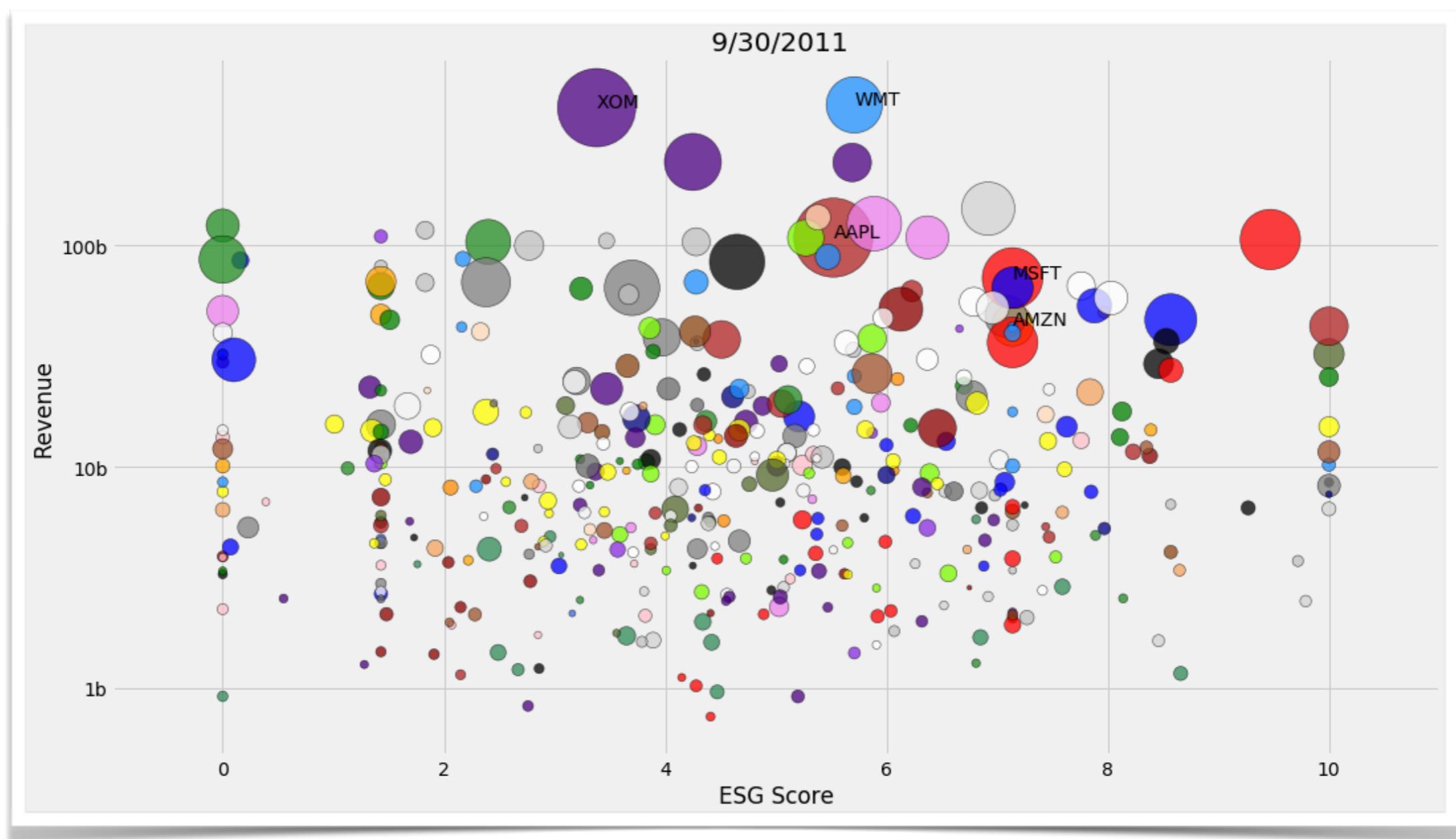


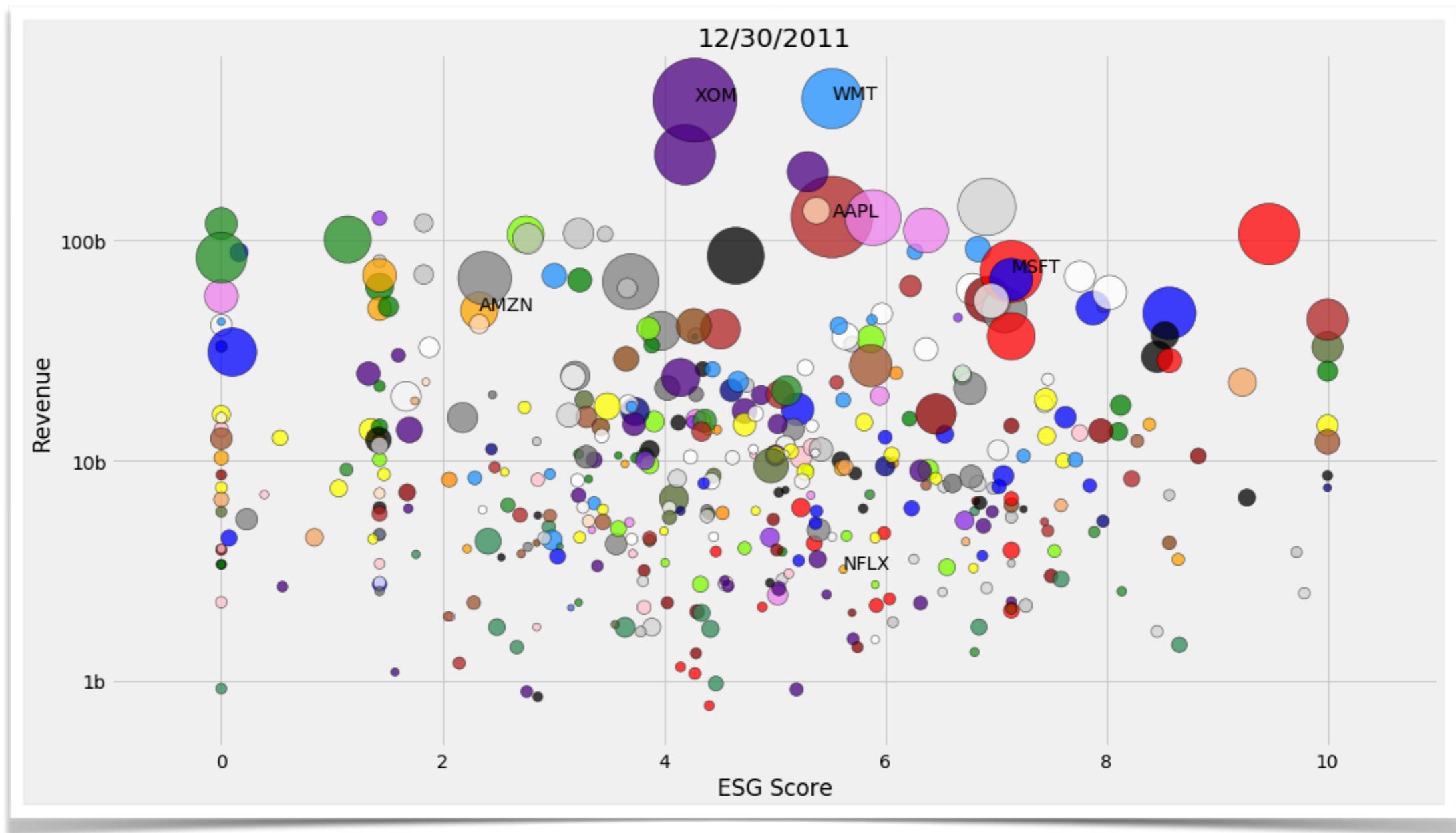
Insights & Analysis

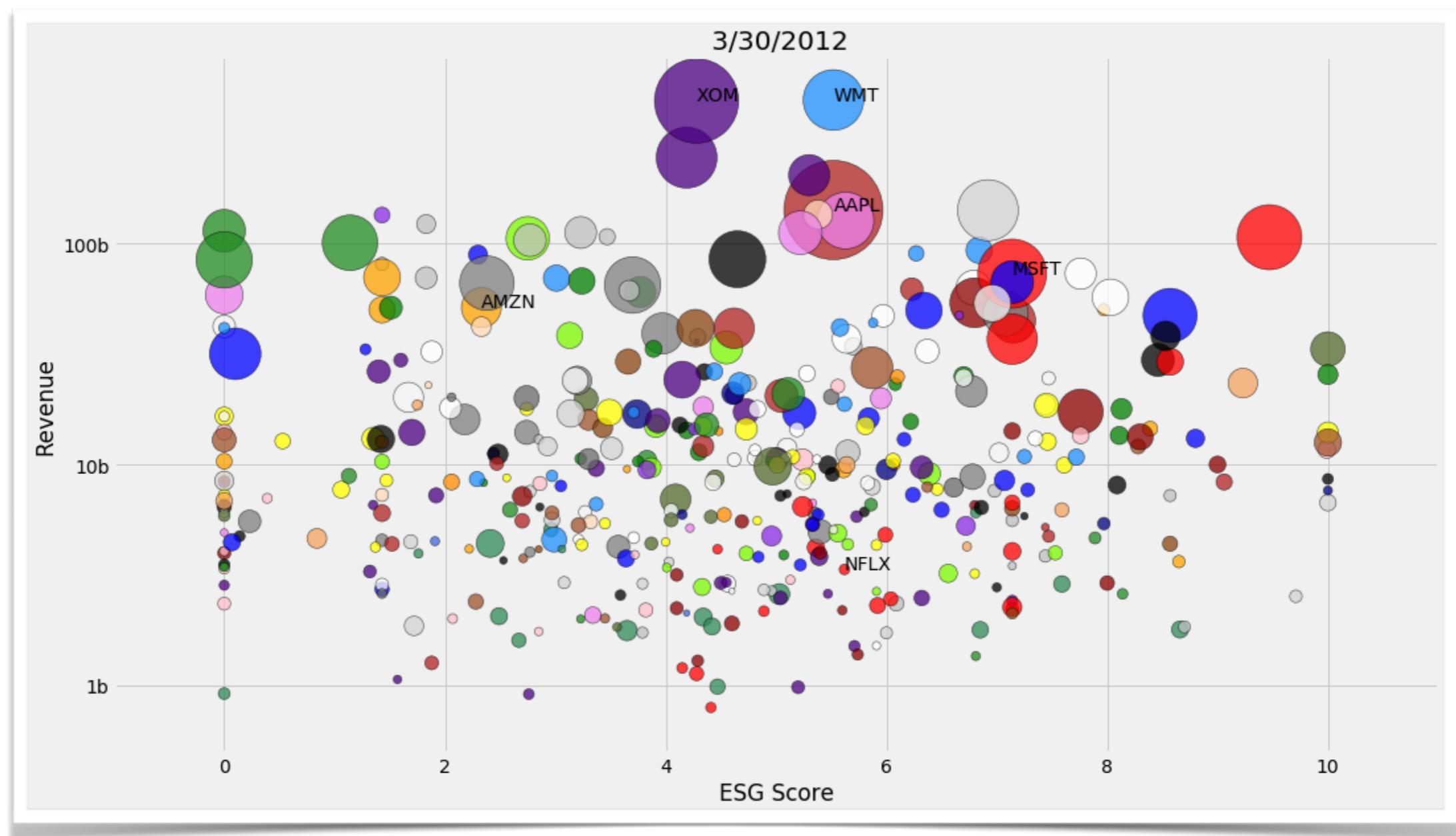


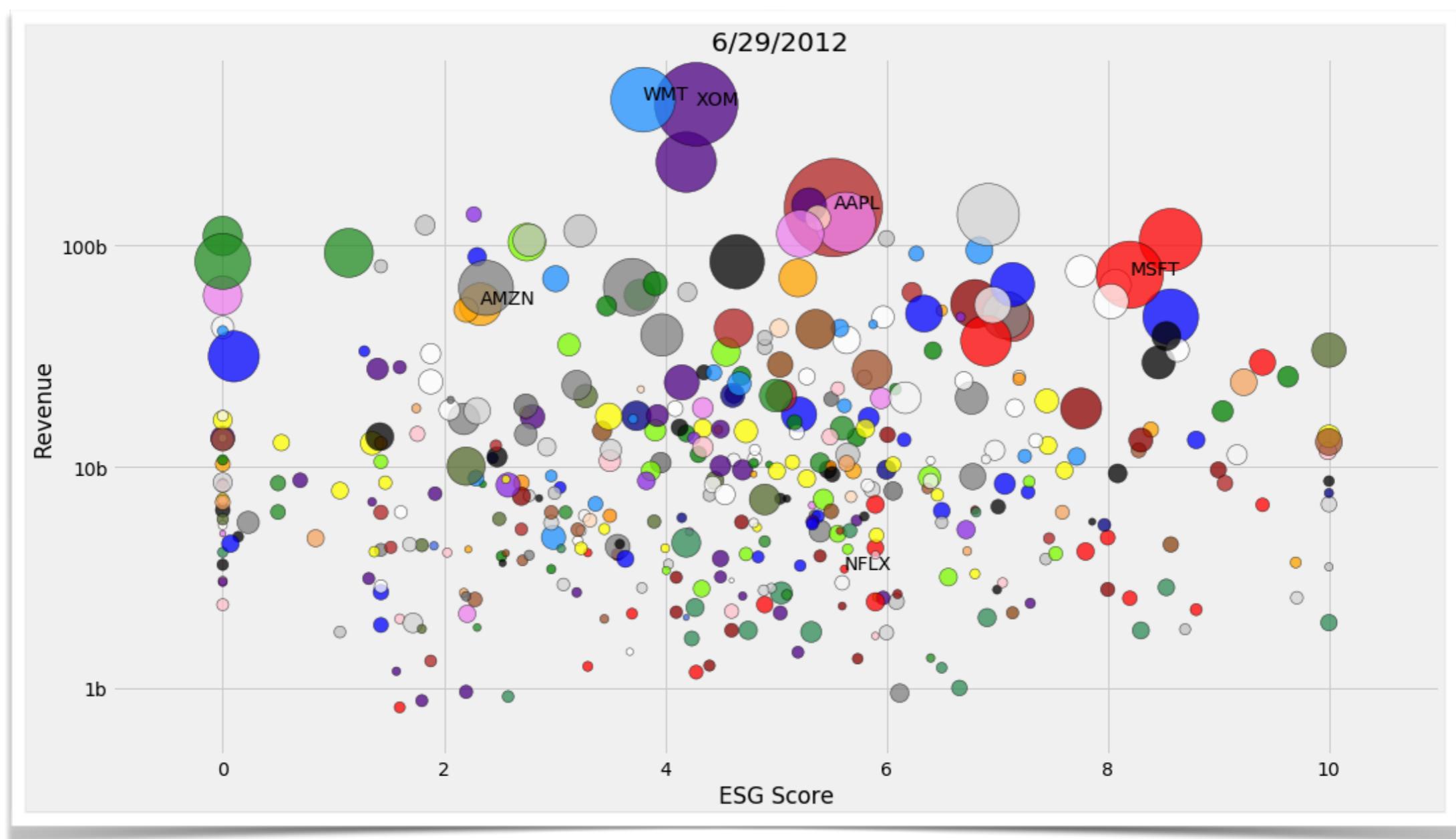


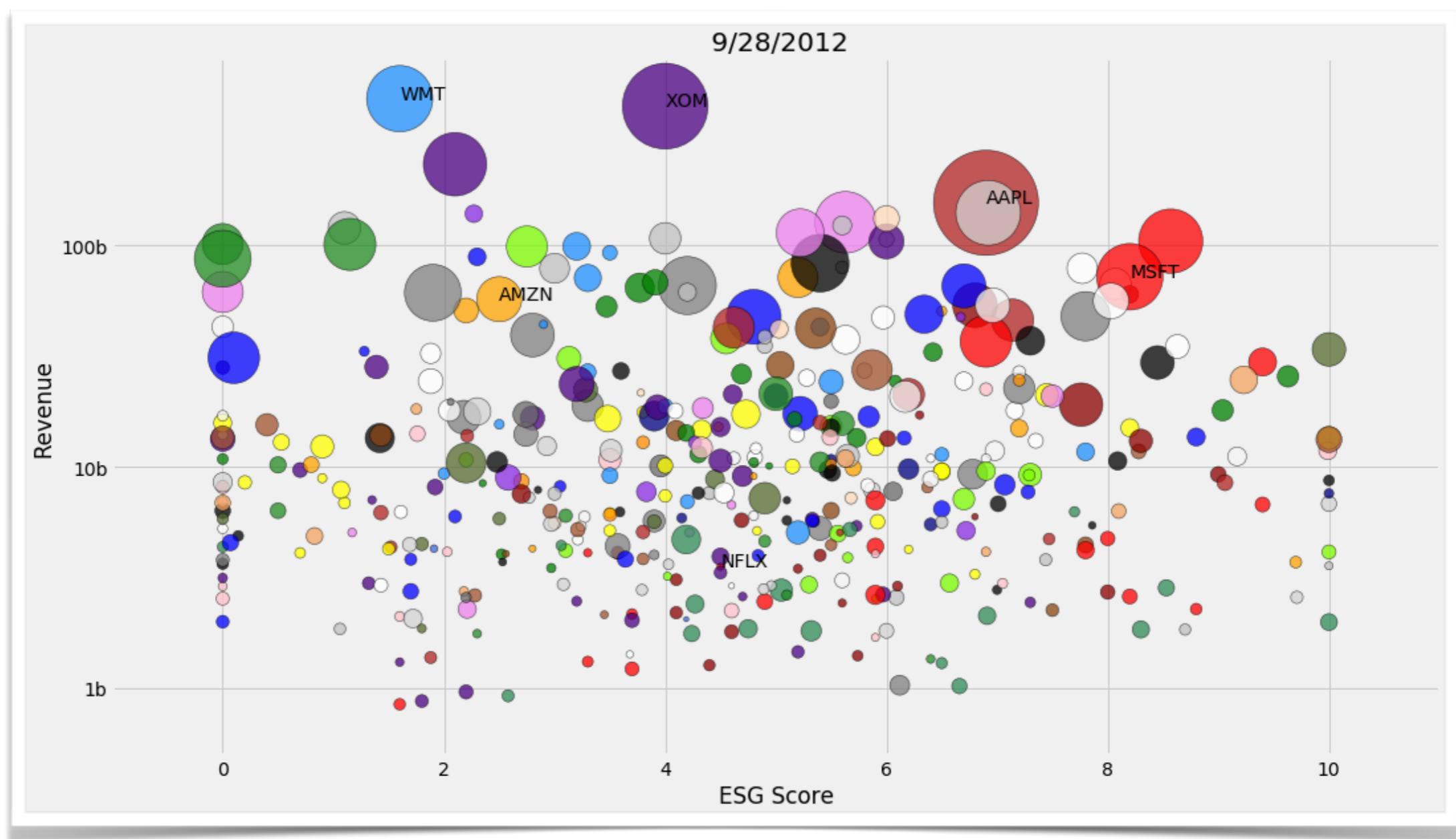


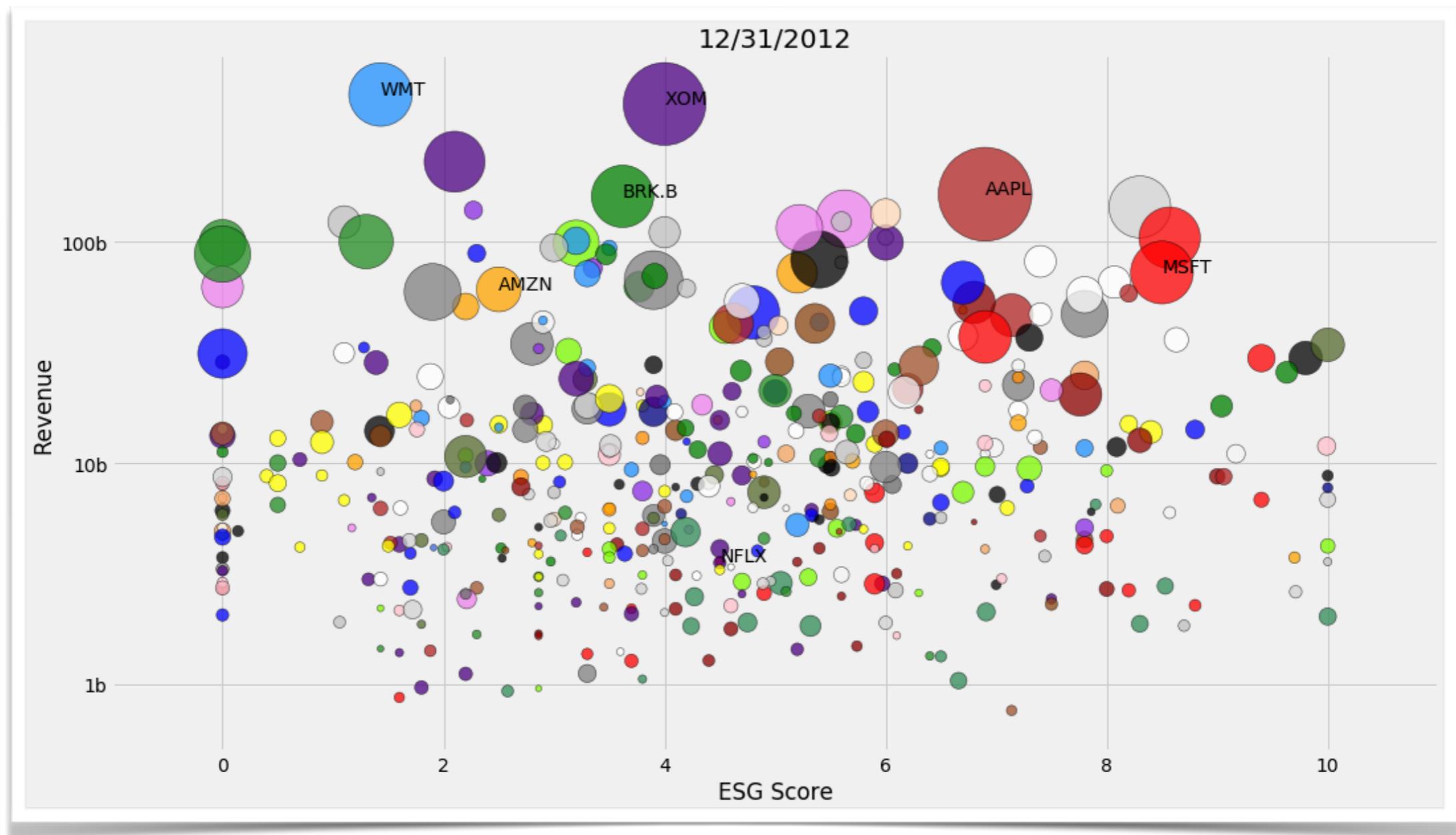


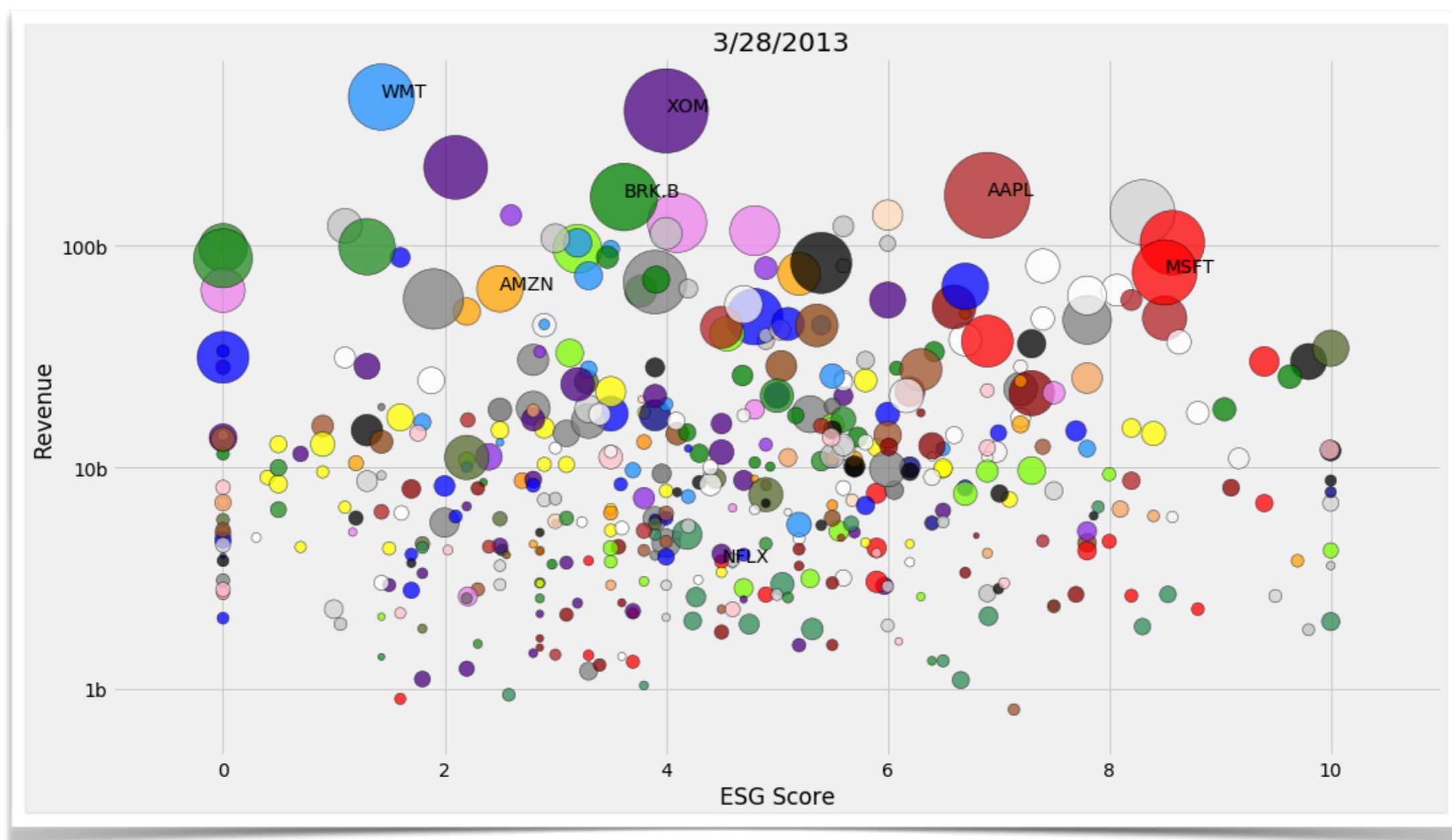


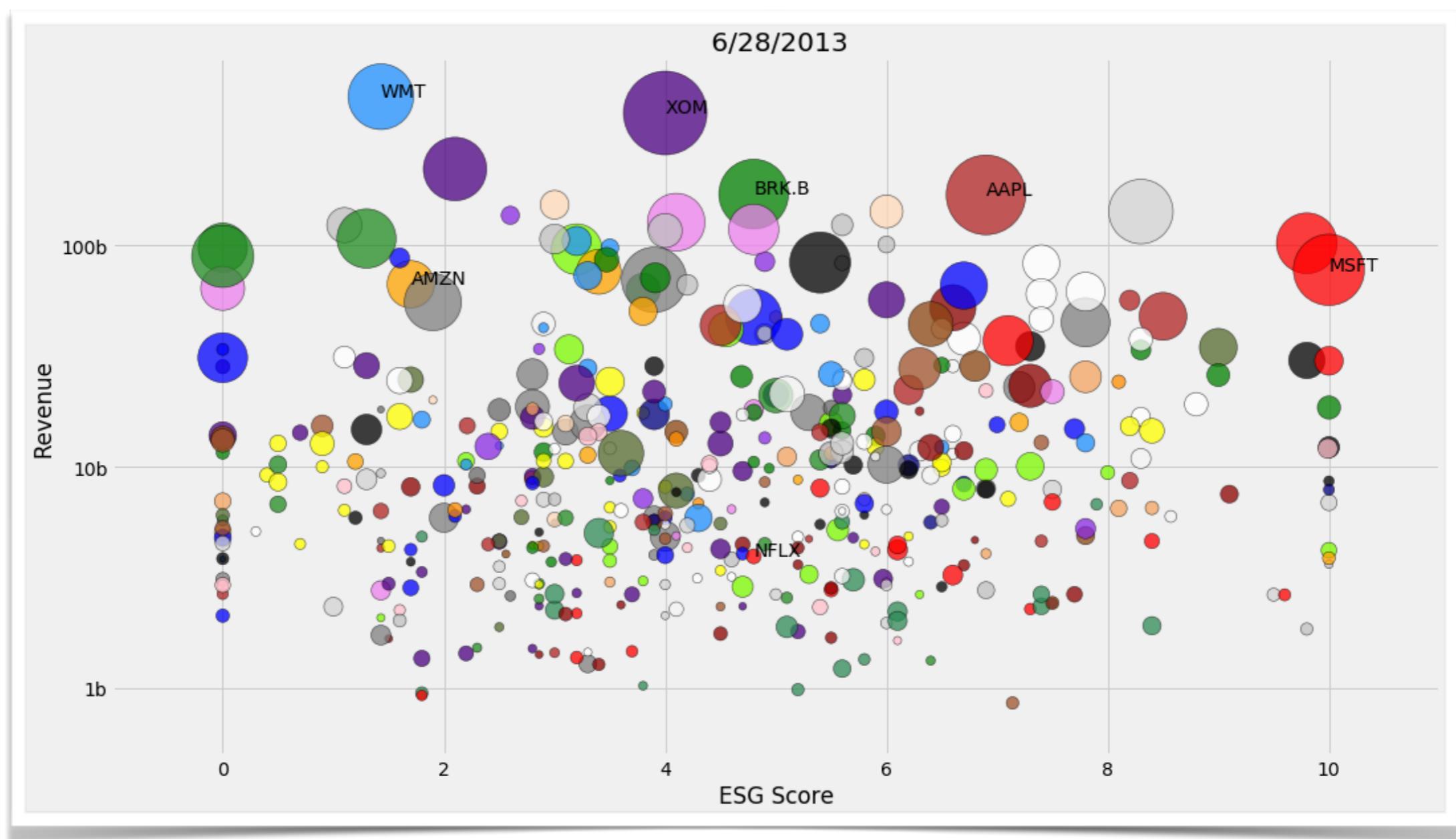


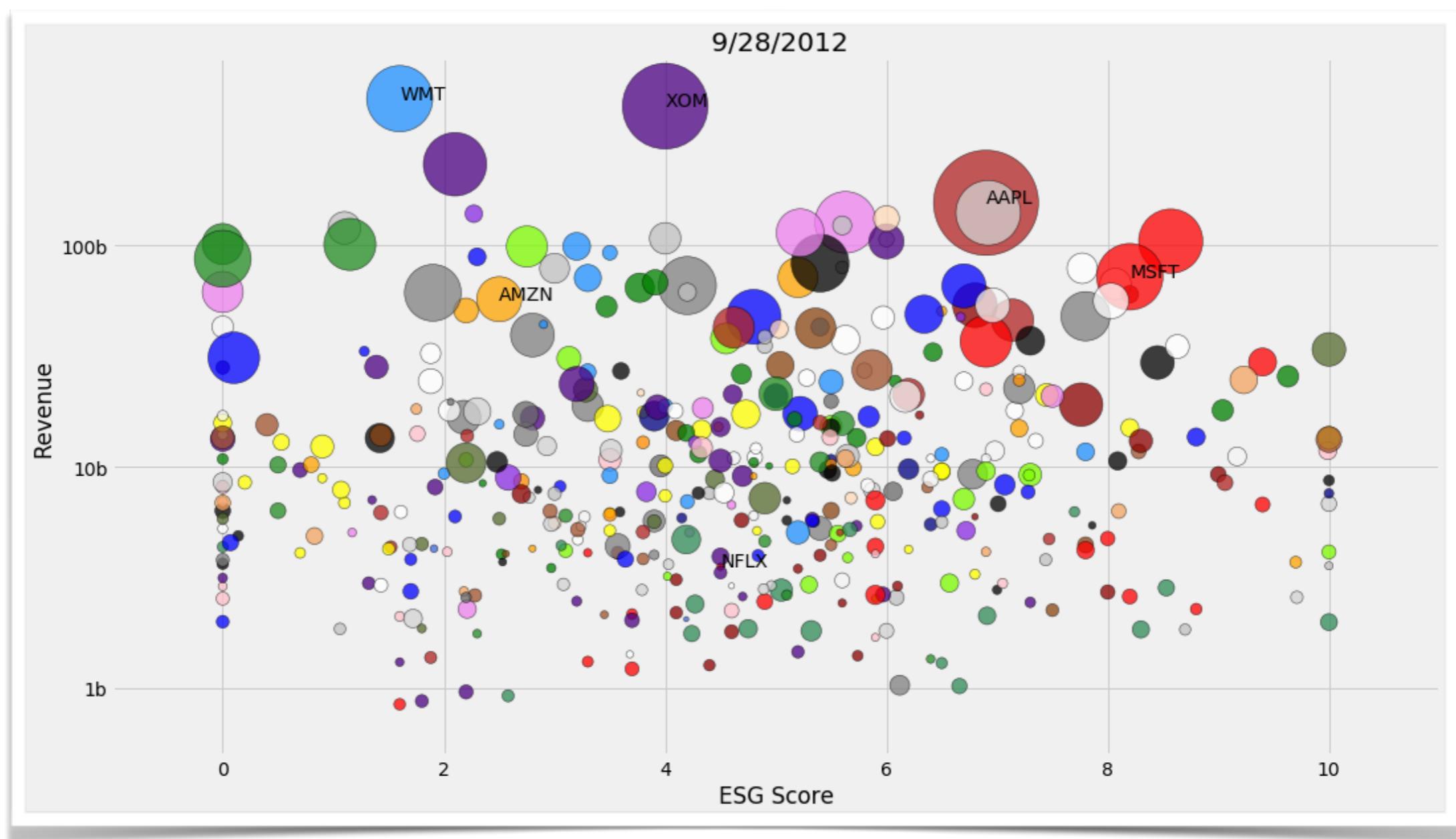


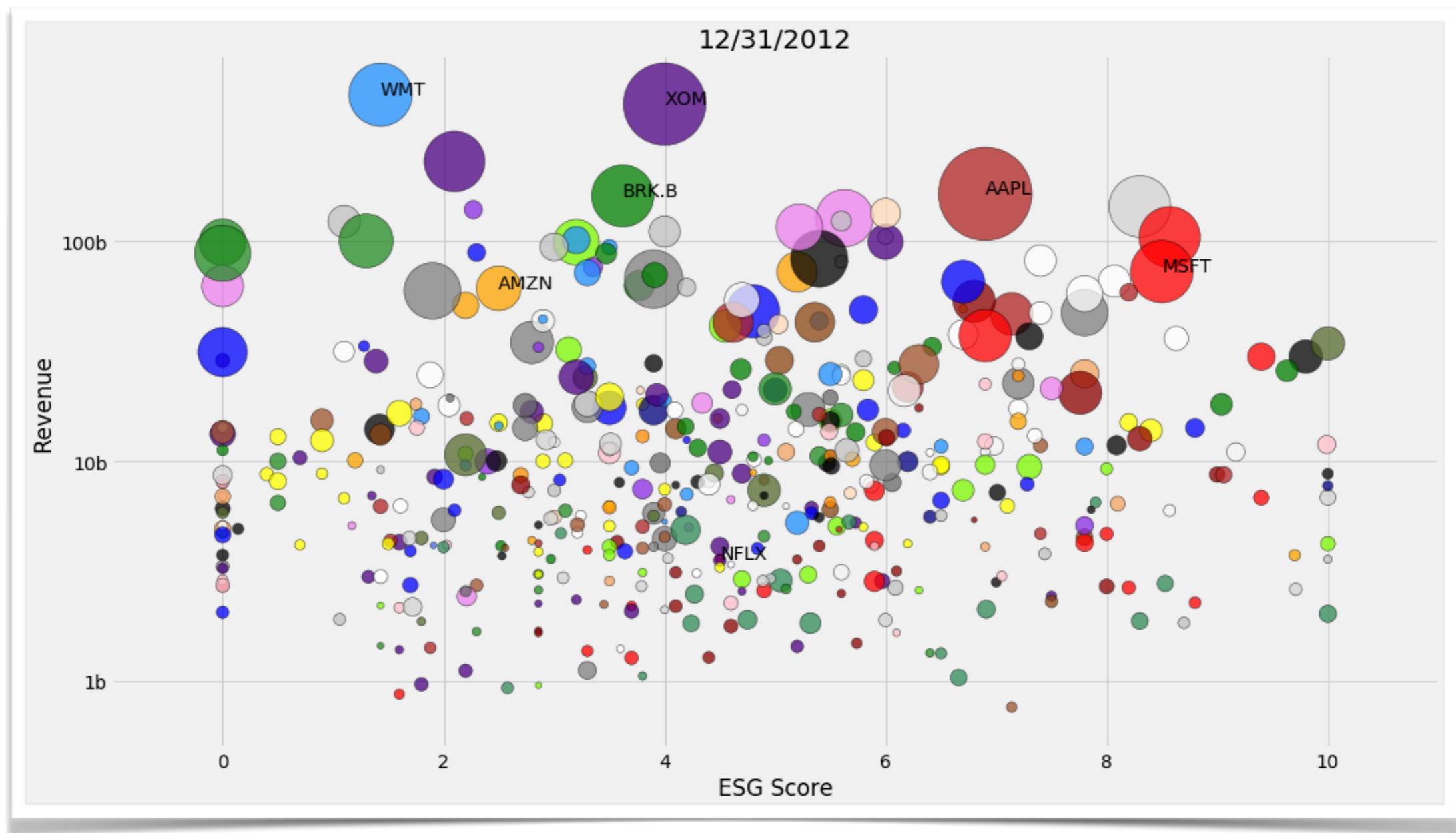


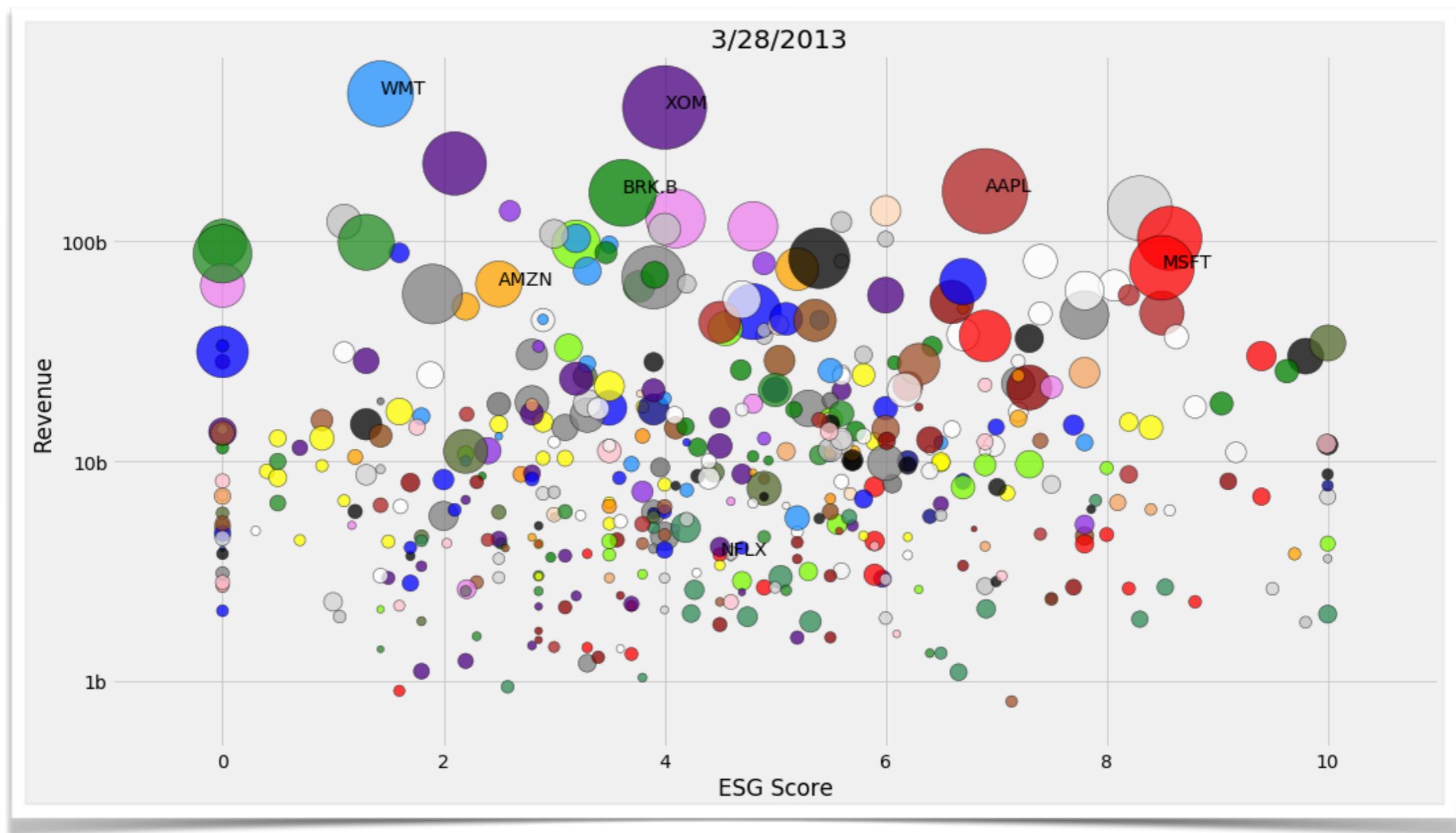


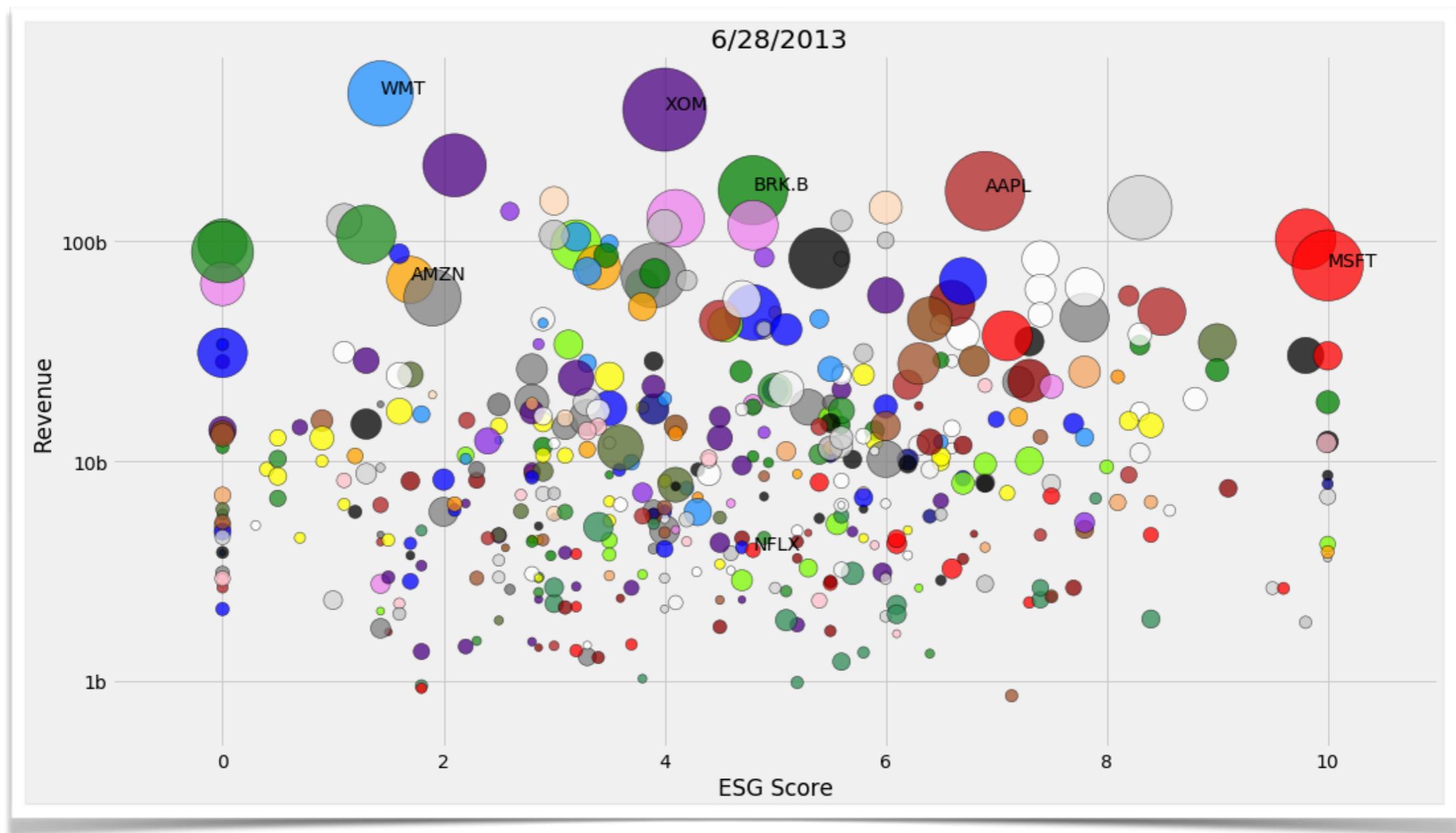


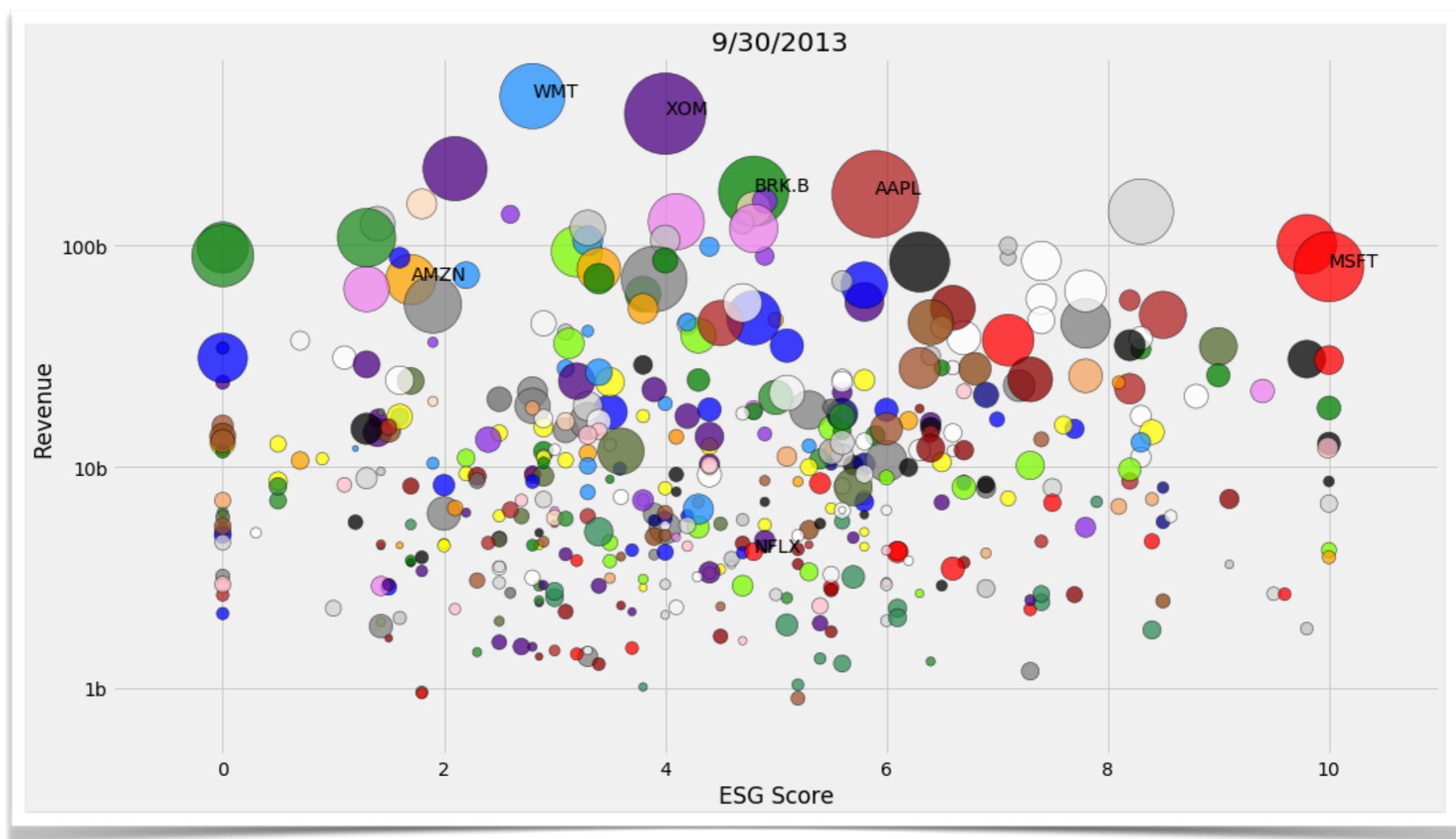


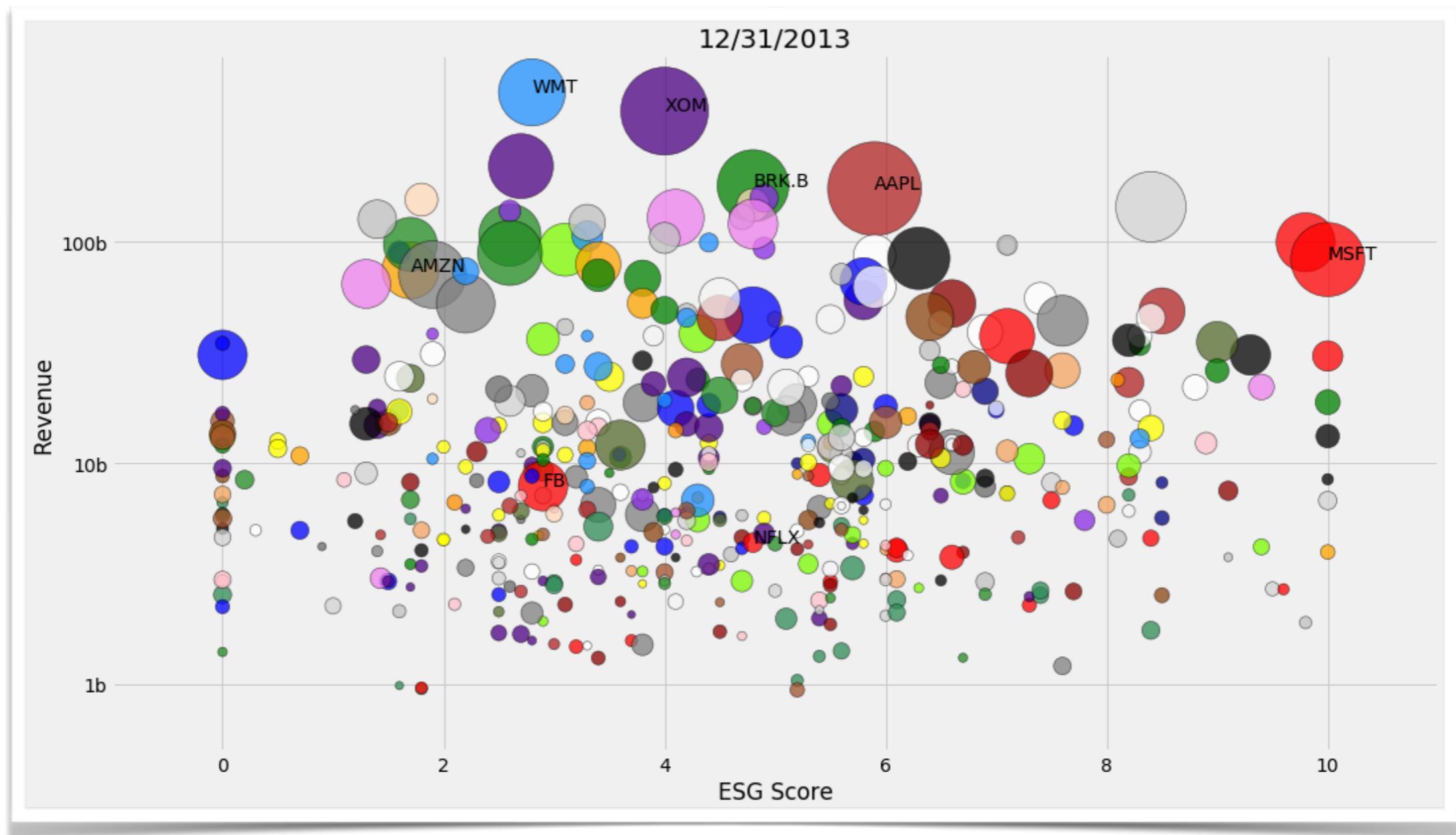


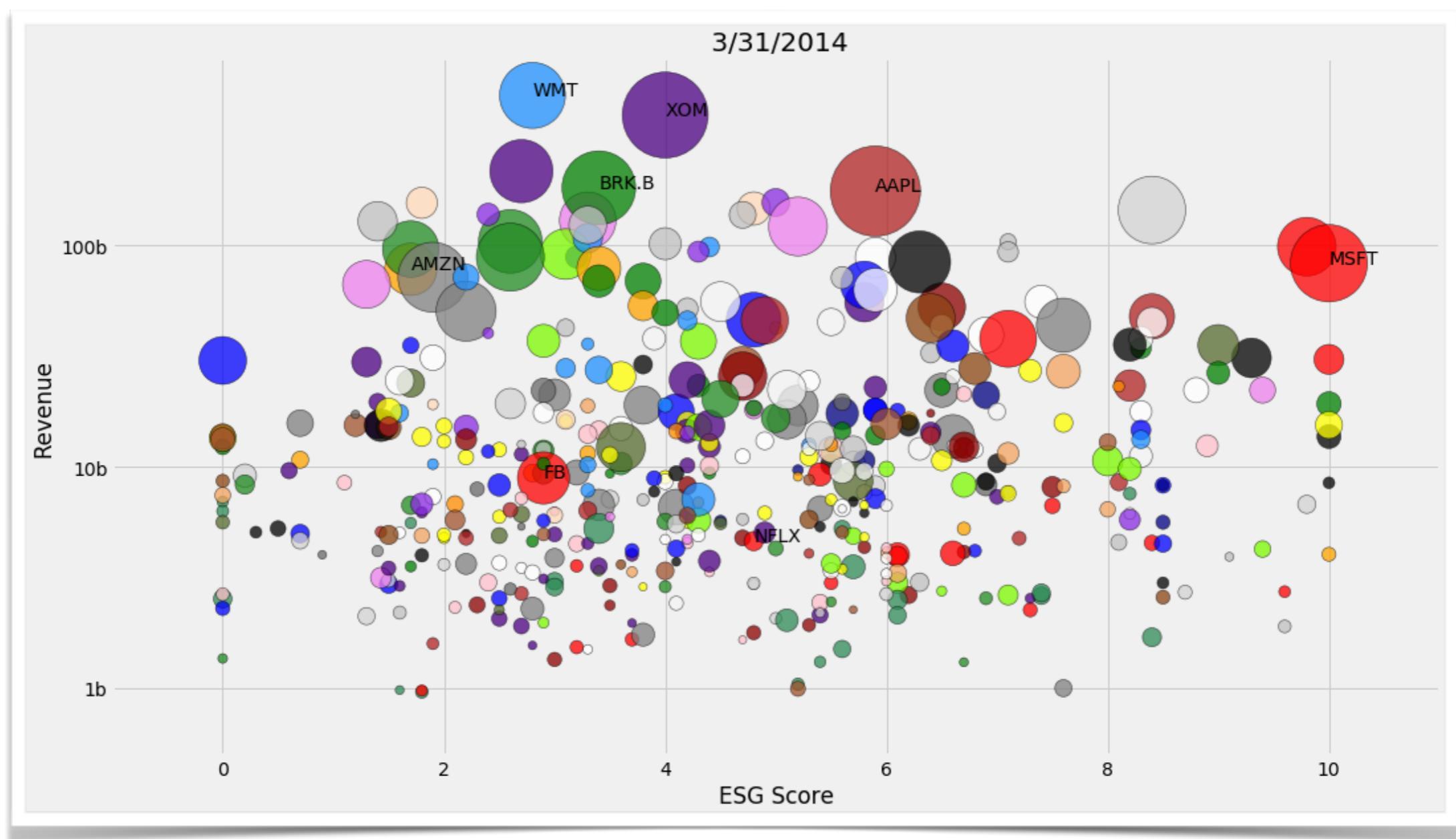


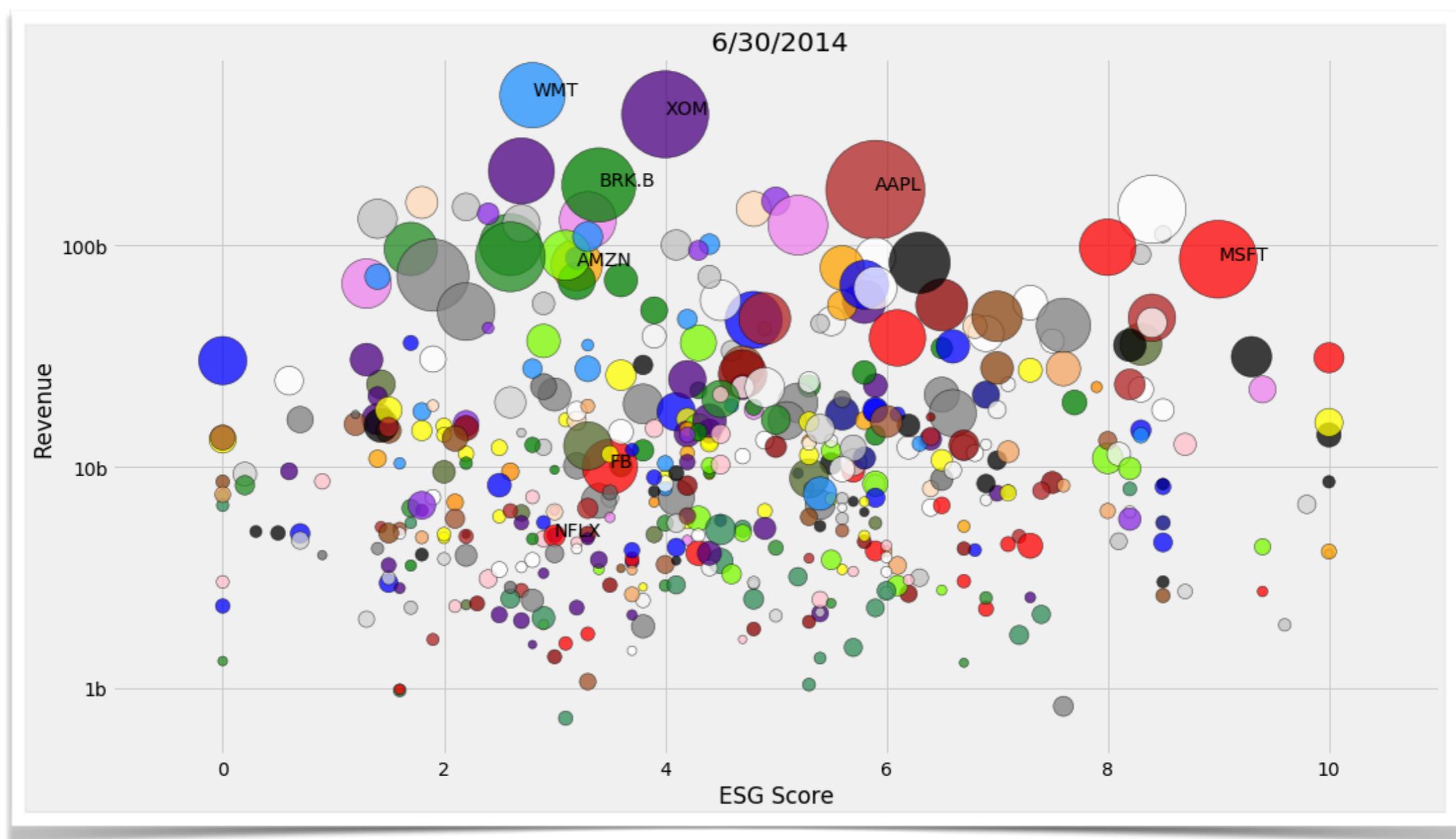


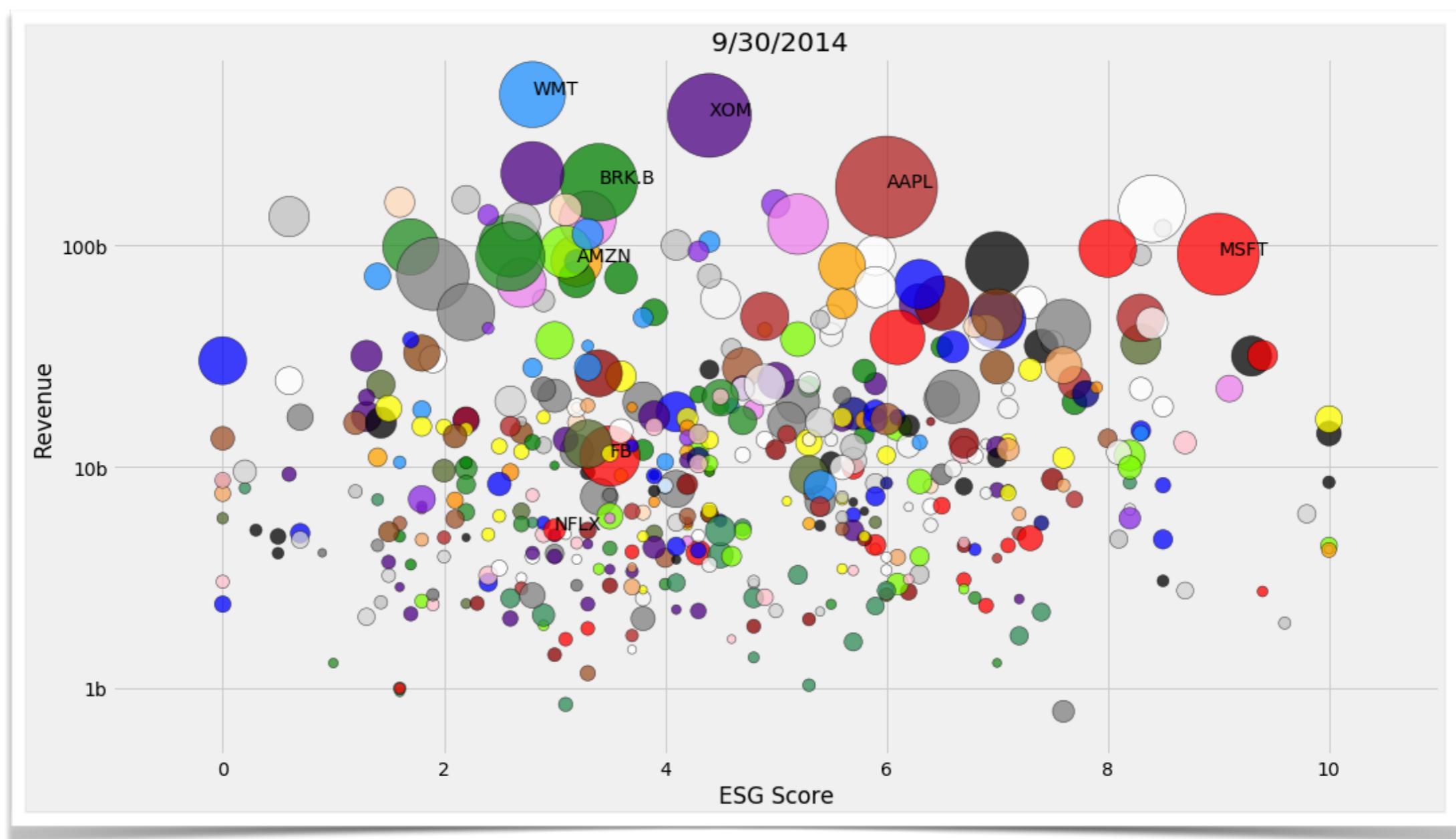


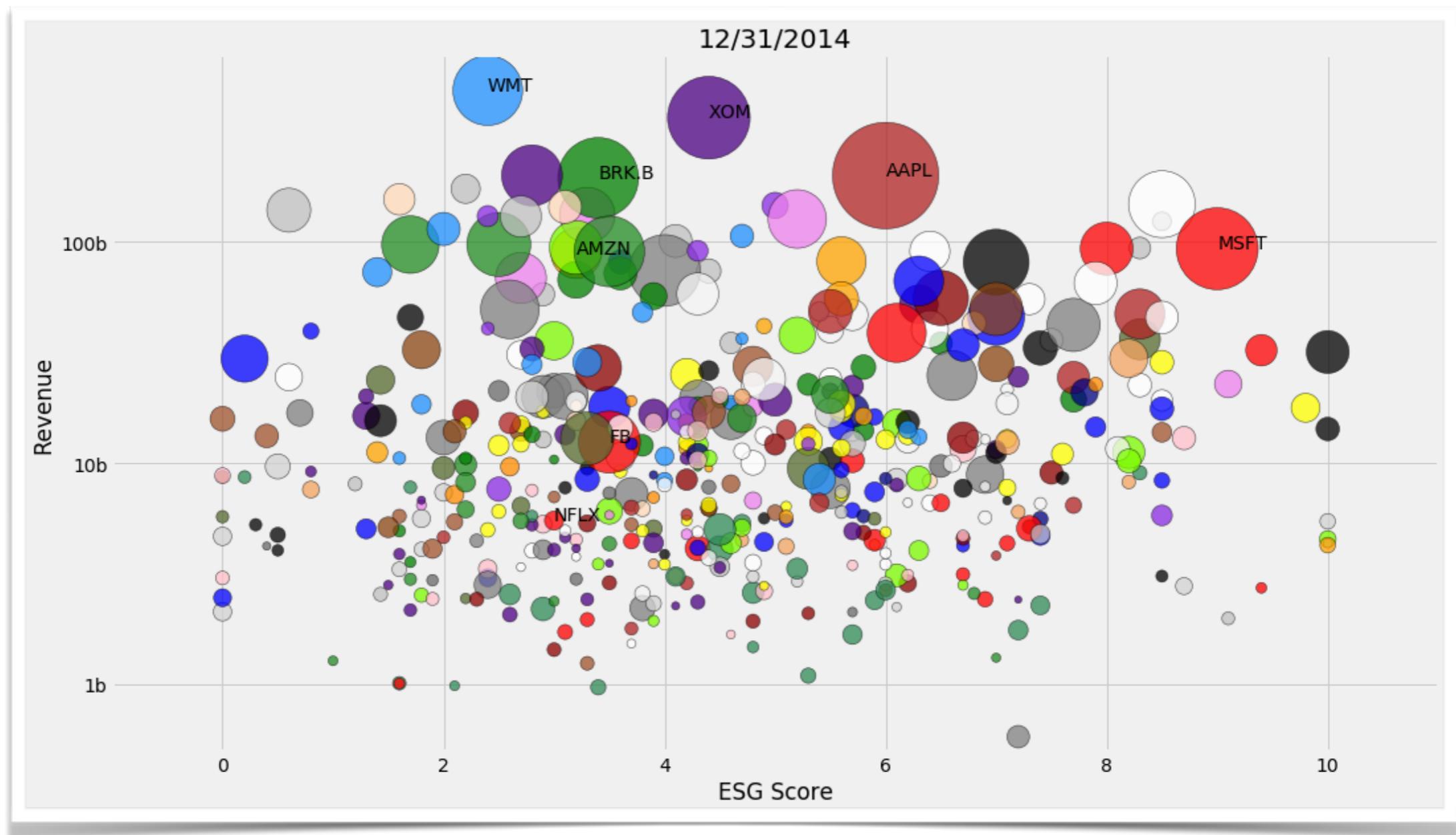


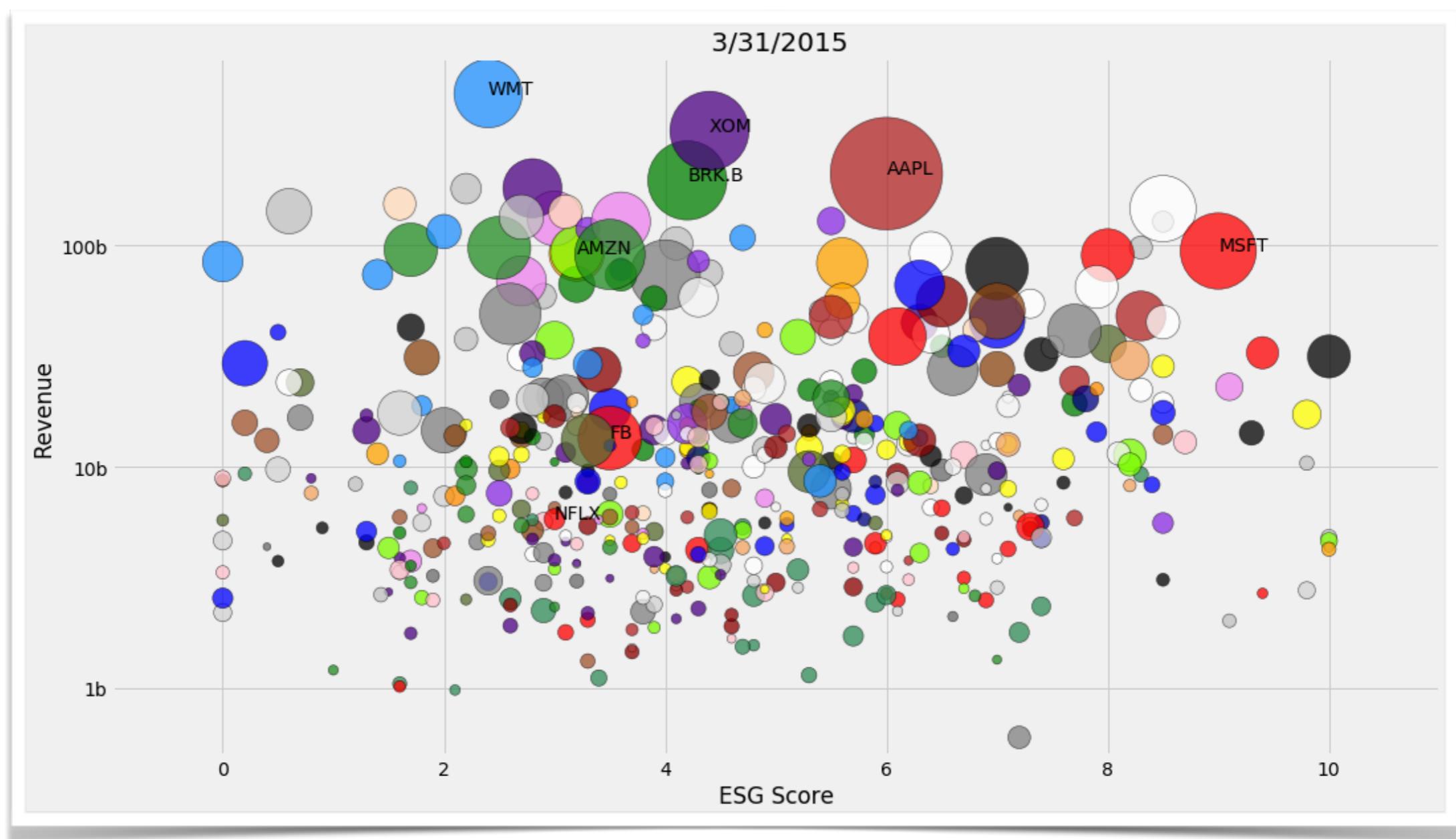


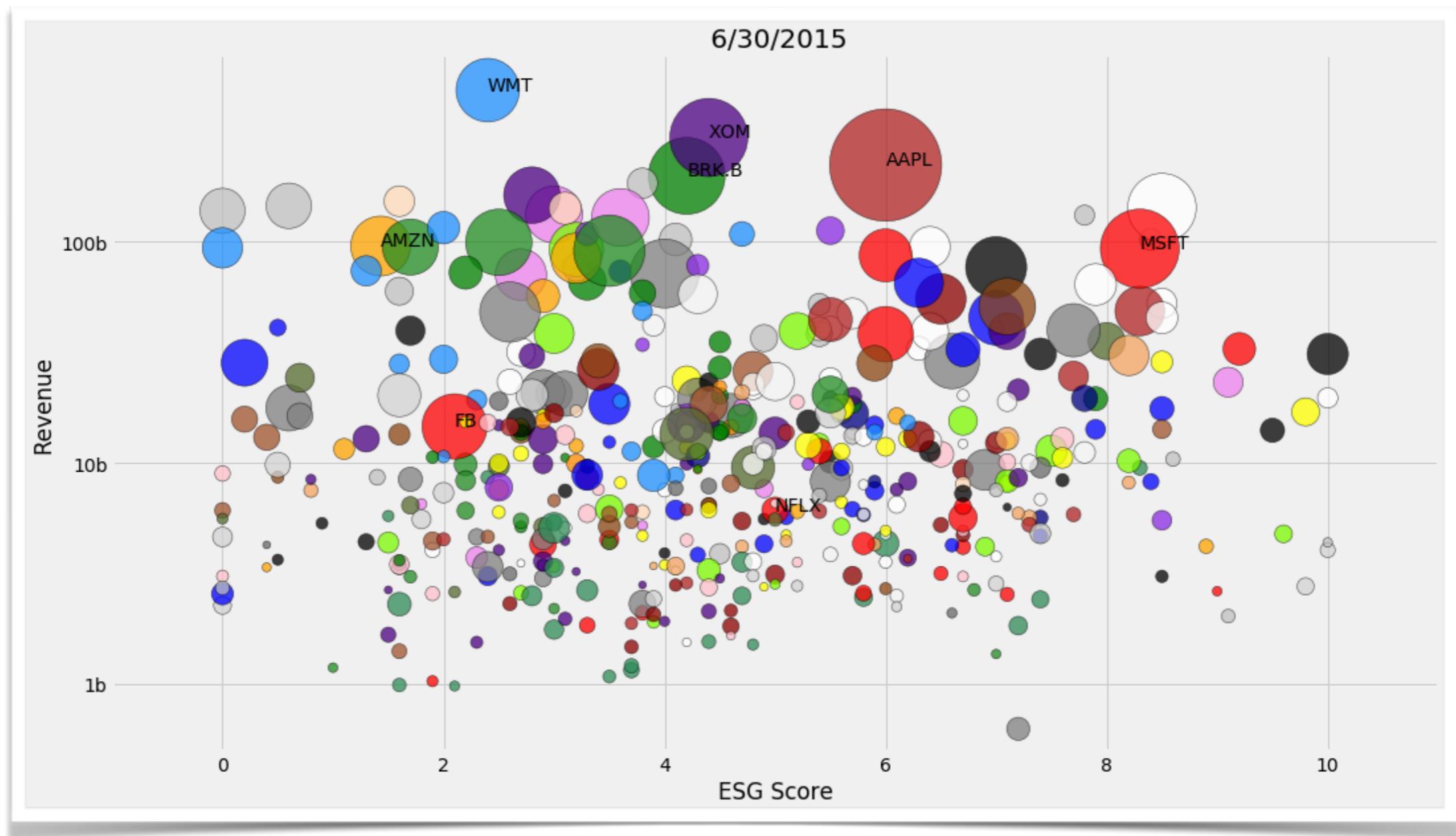


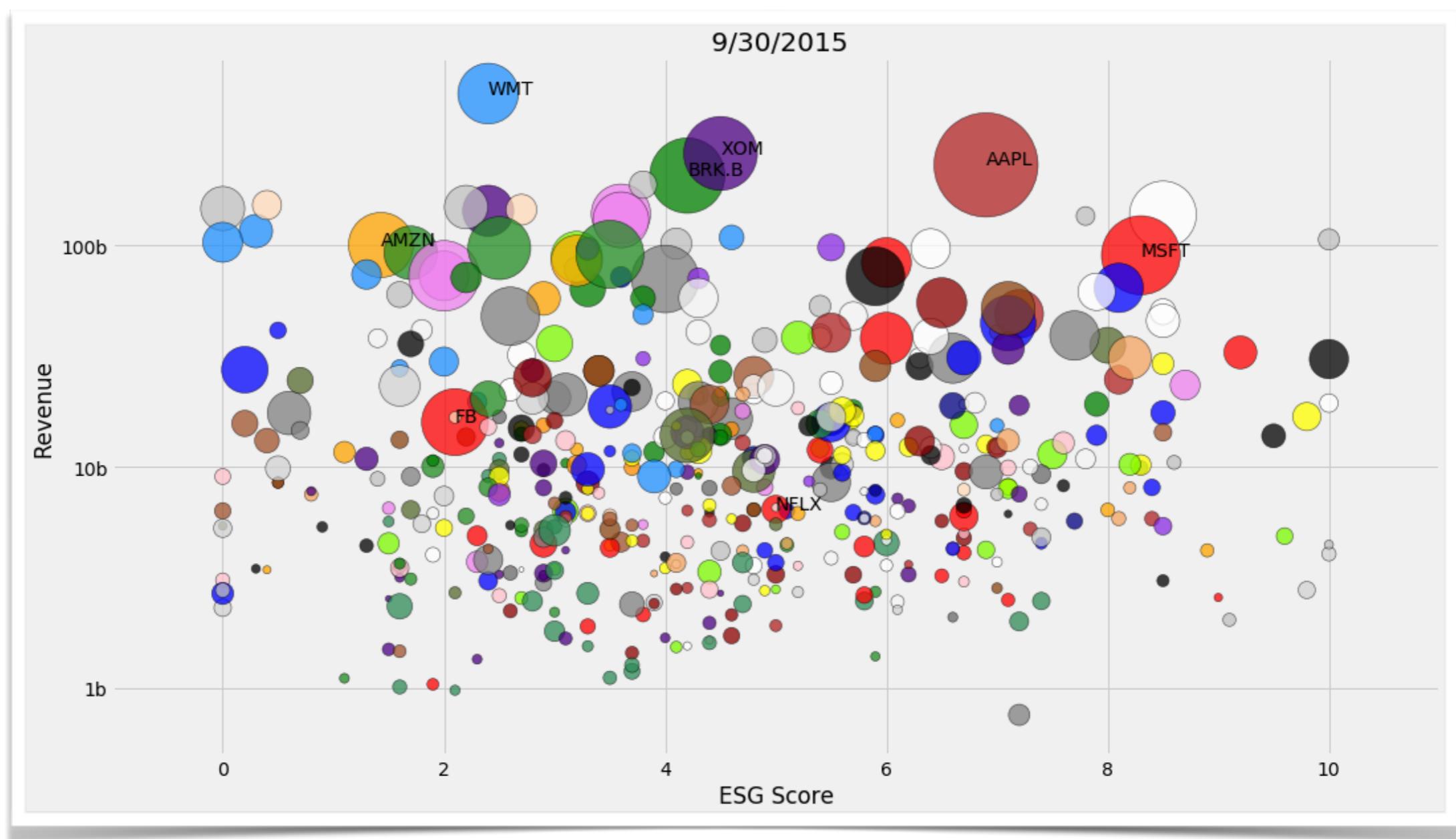


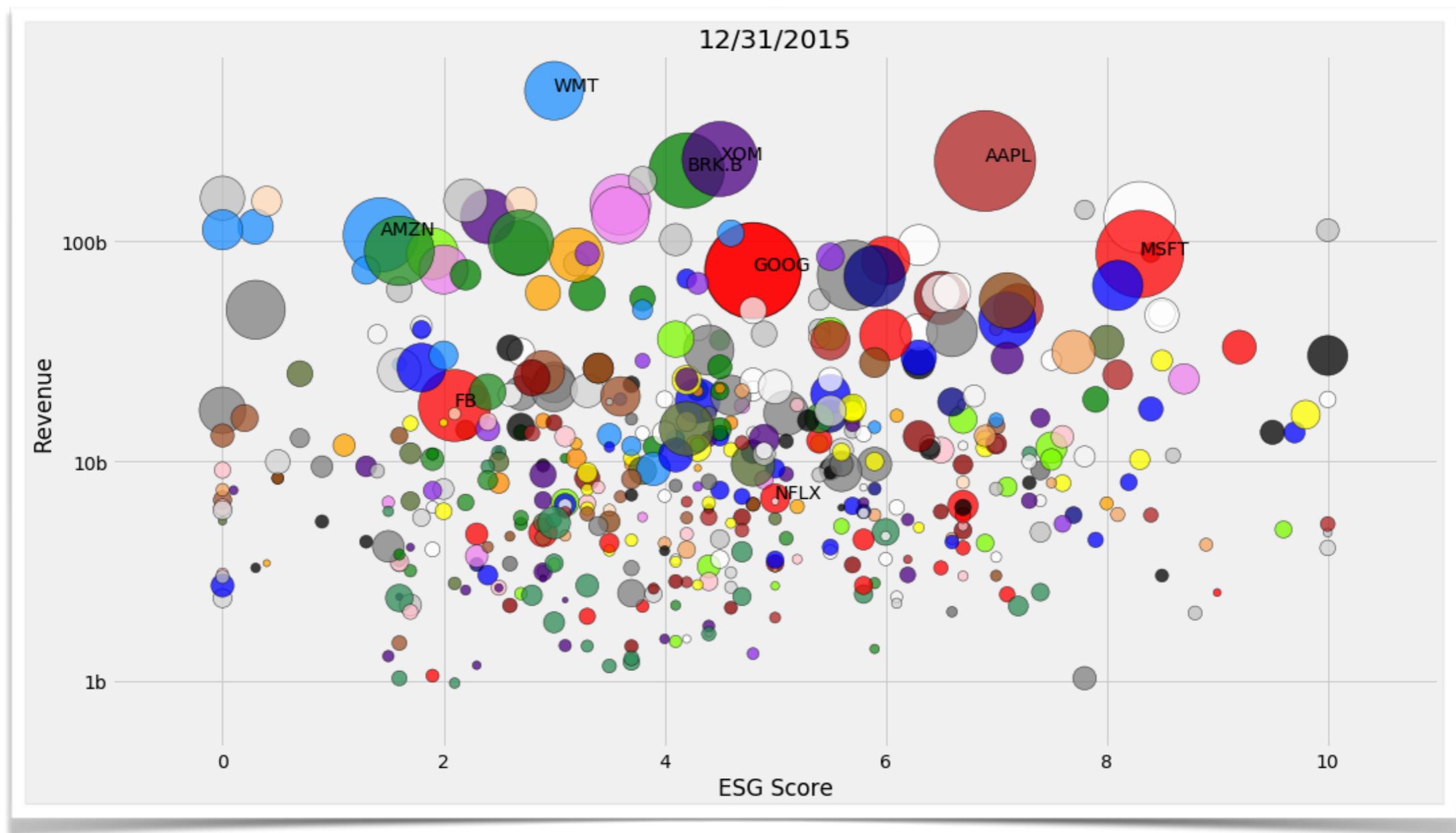


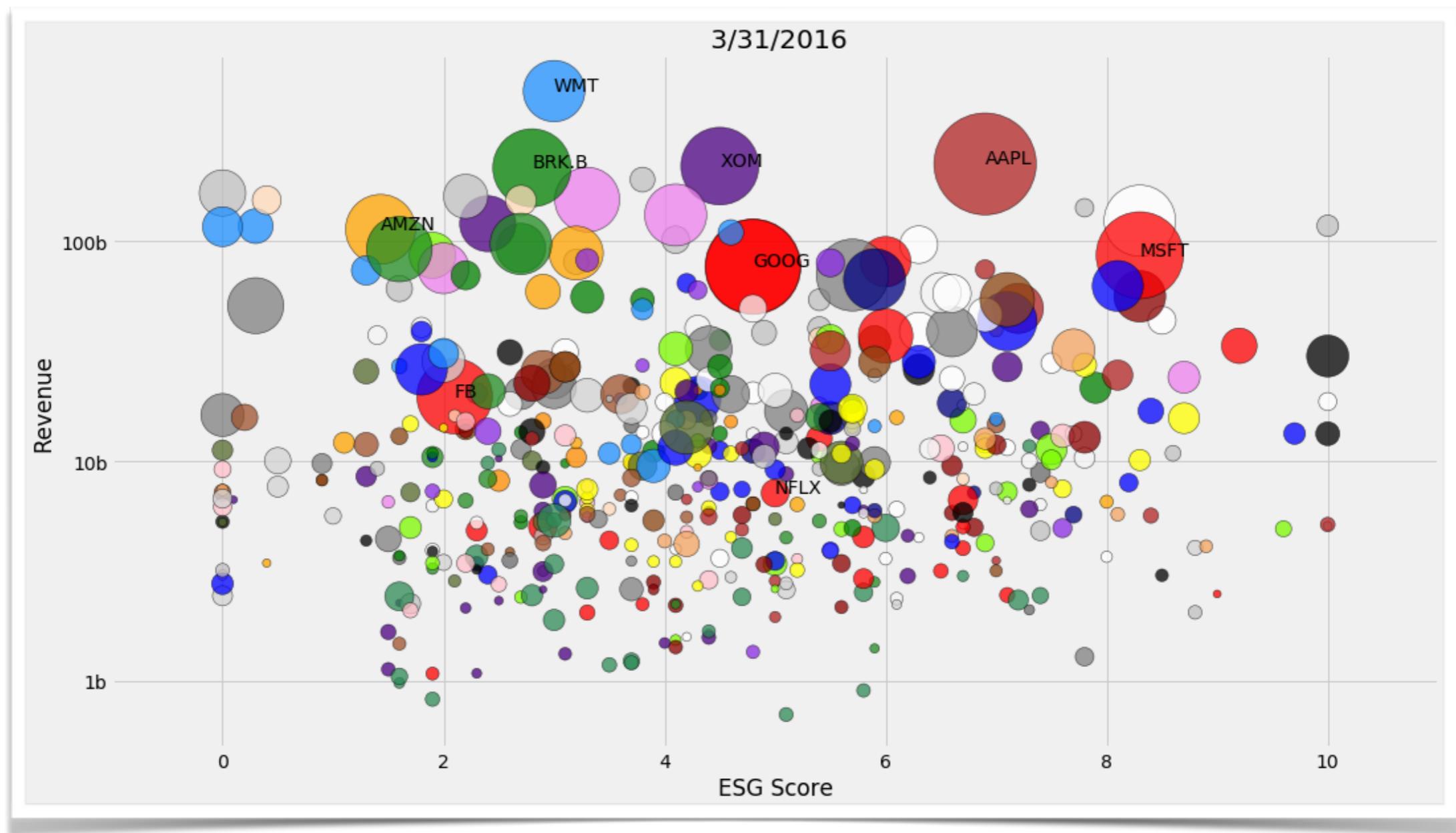


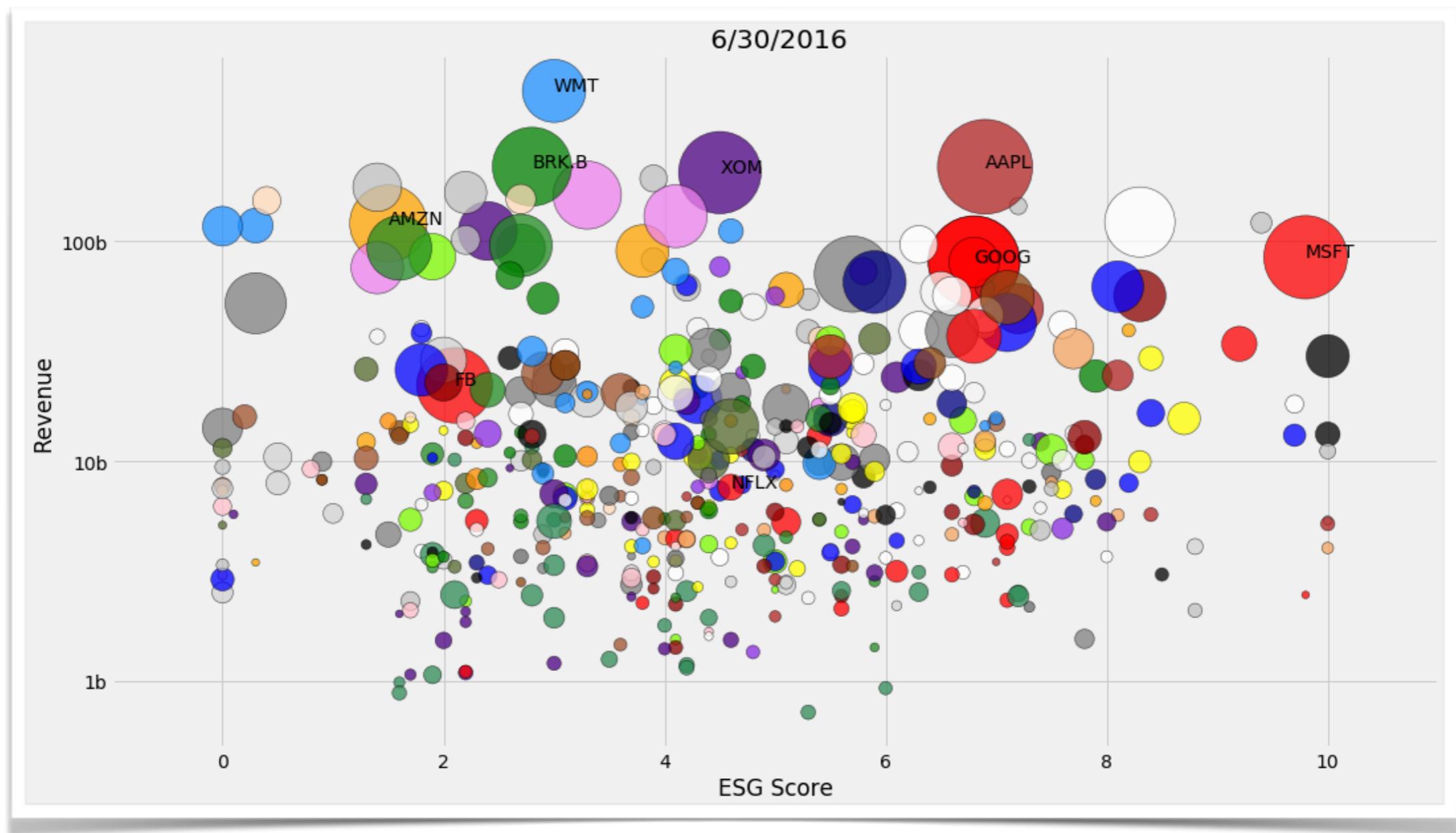


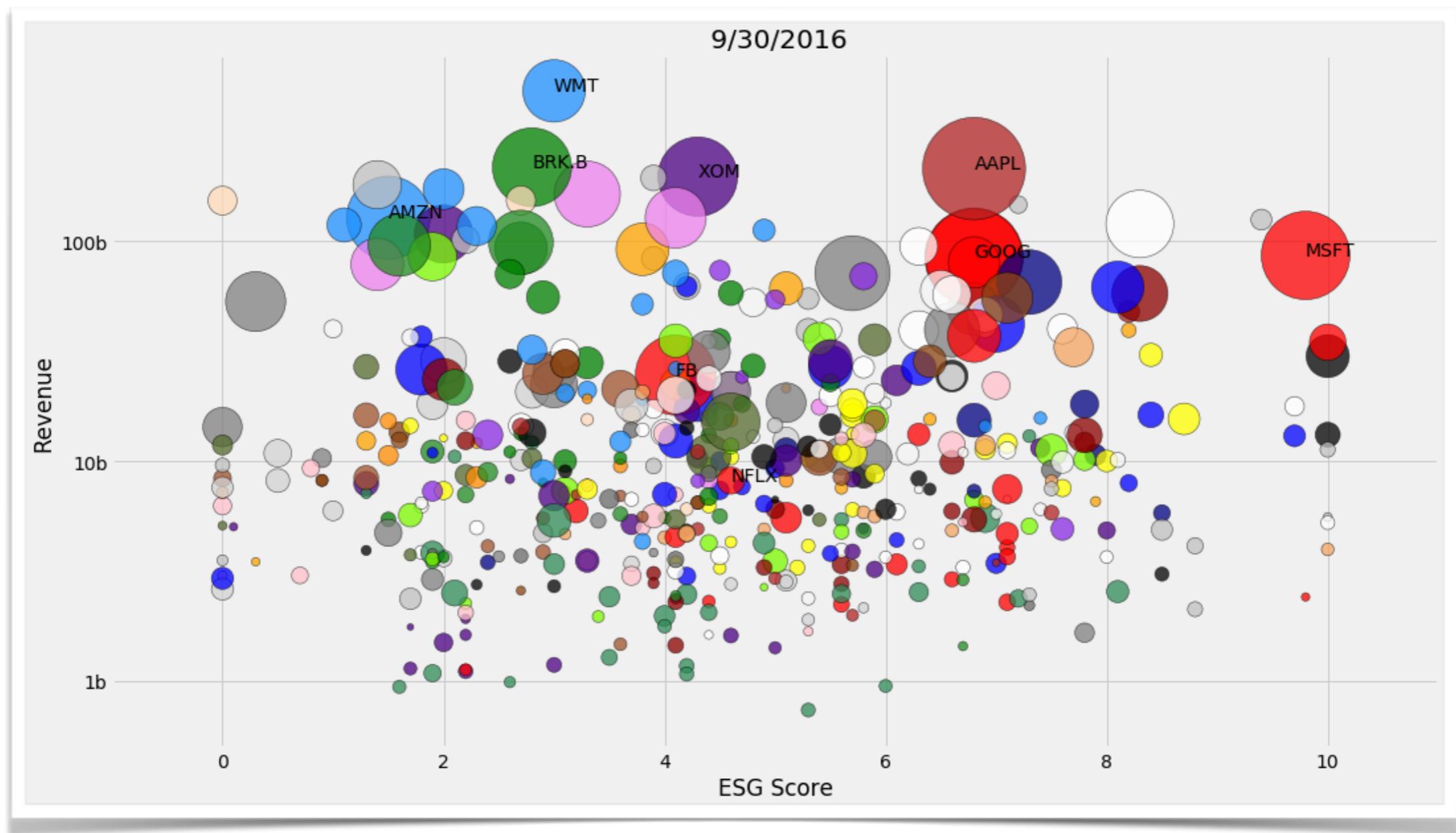


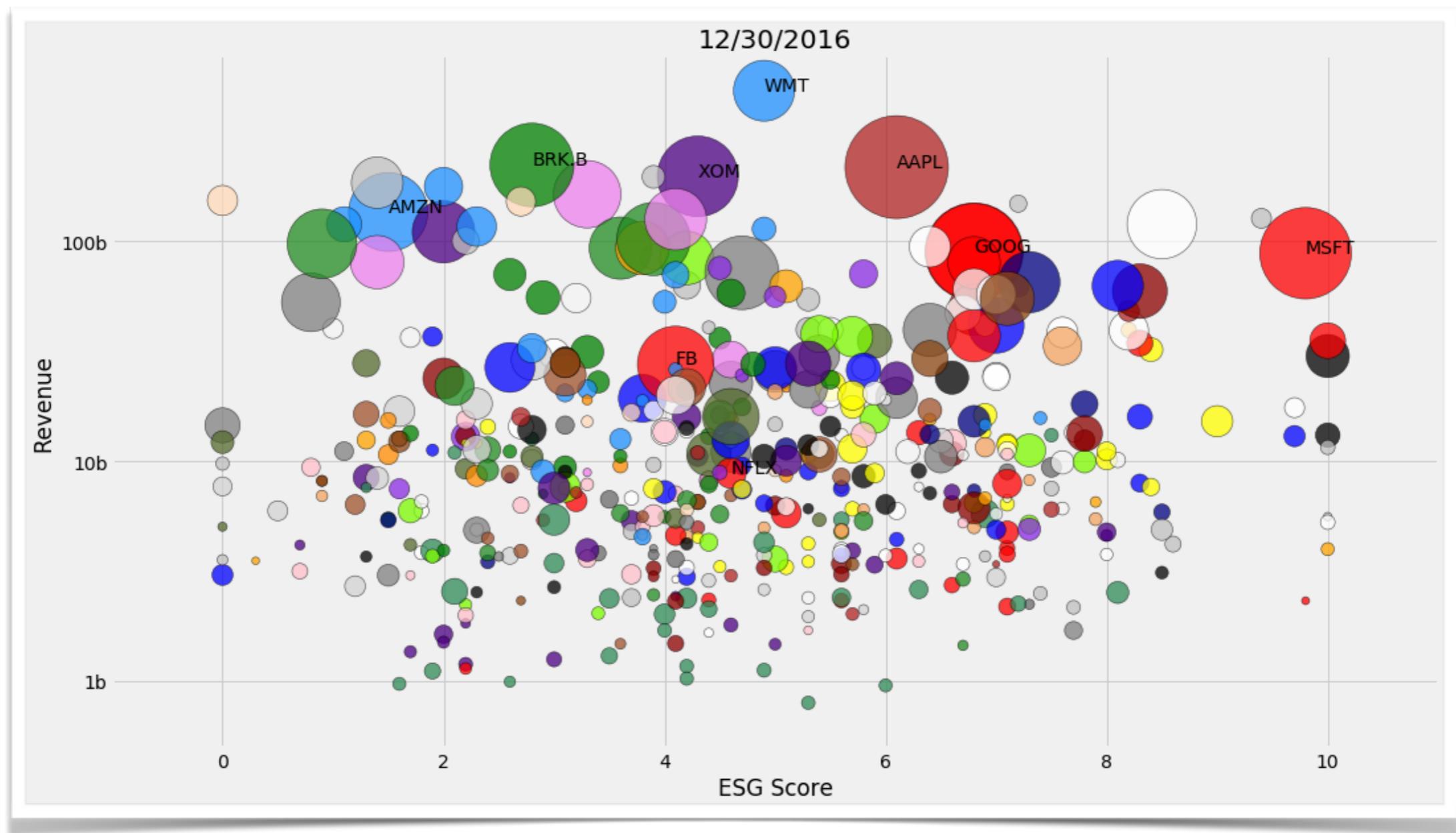


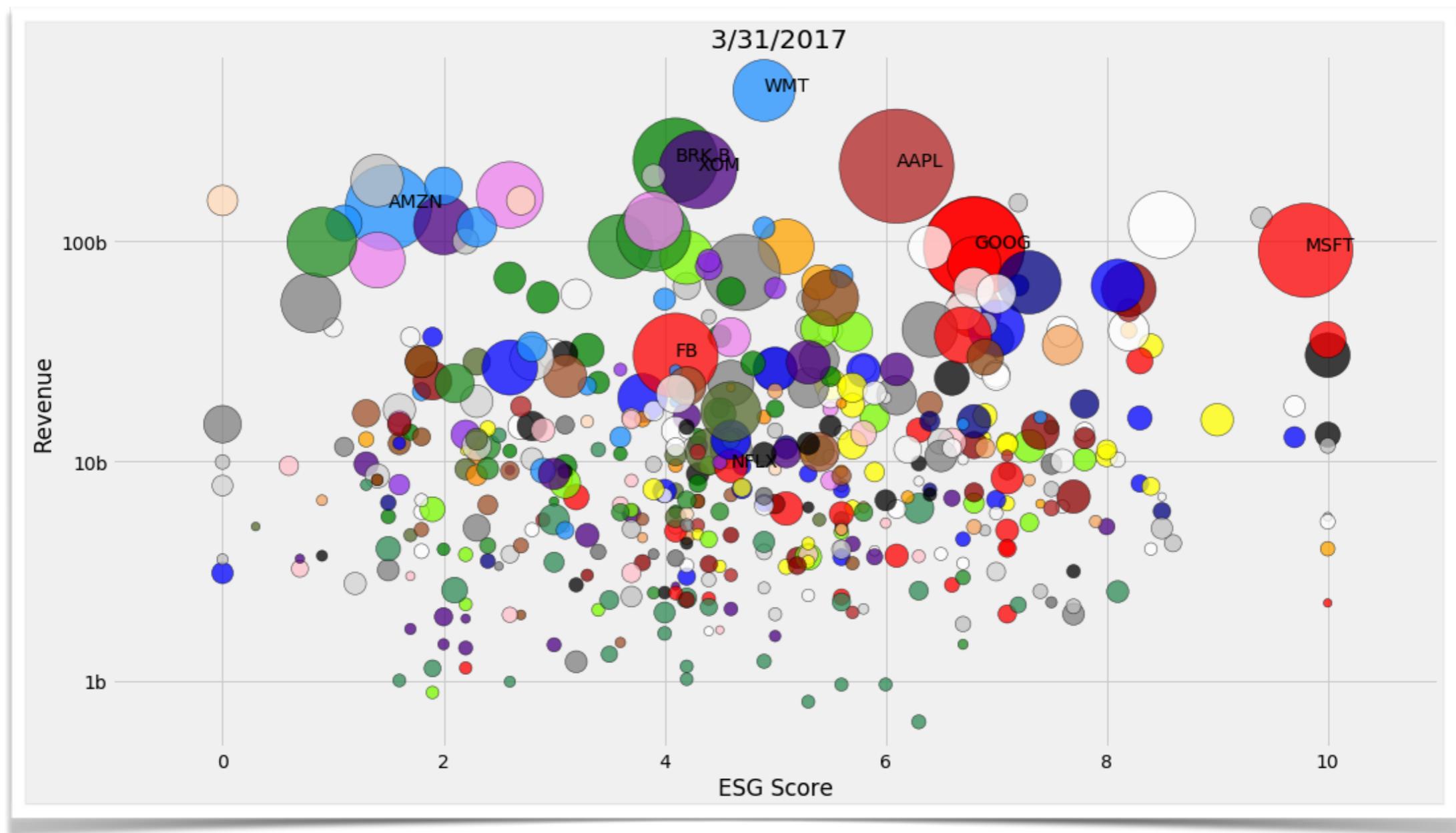


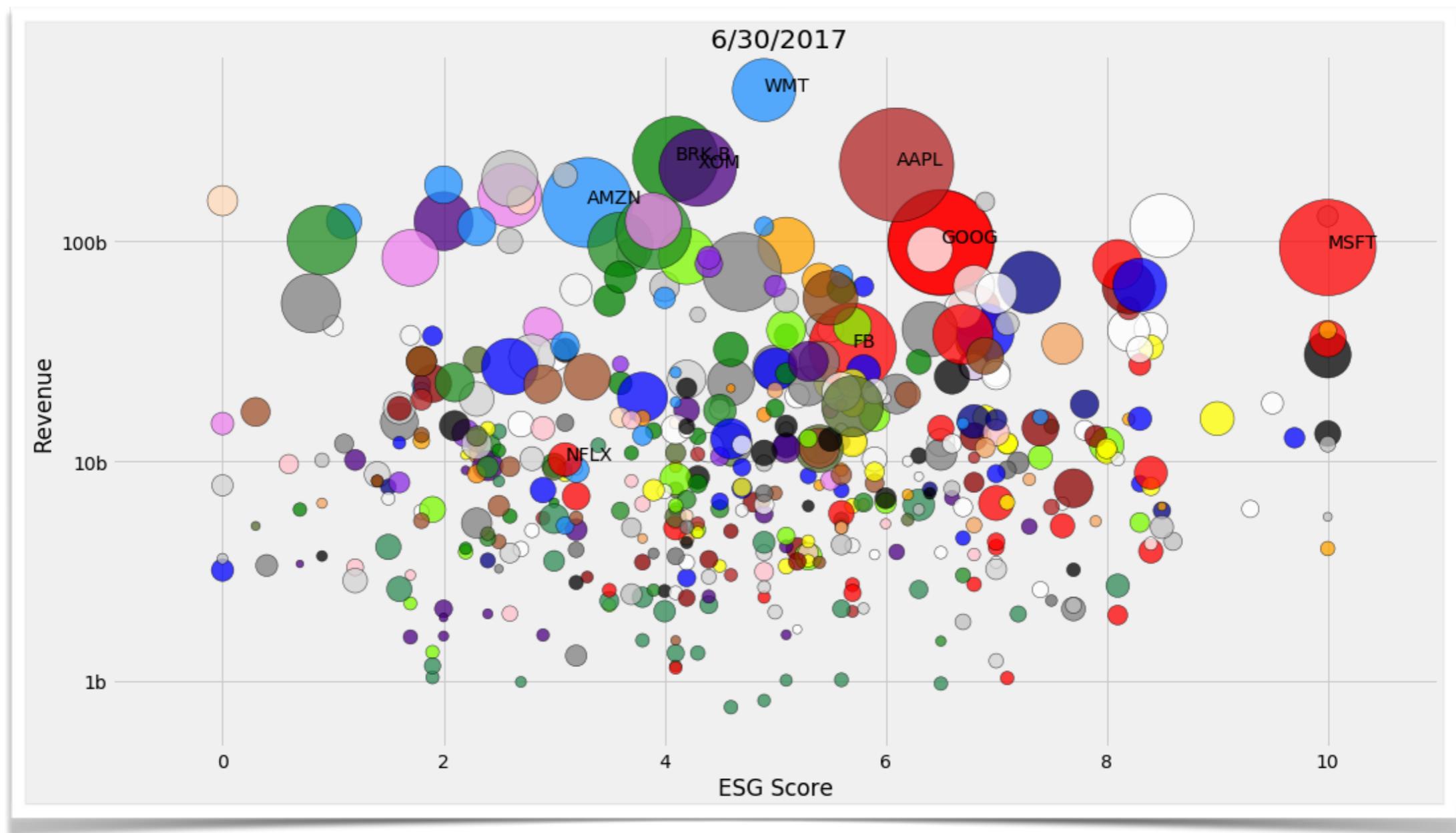


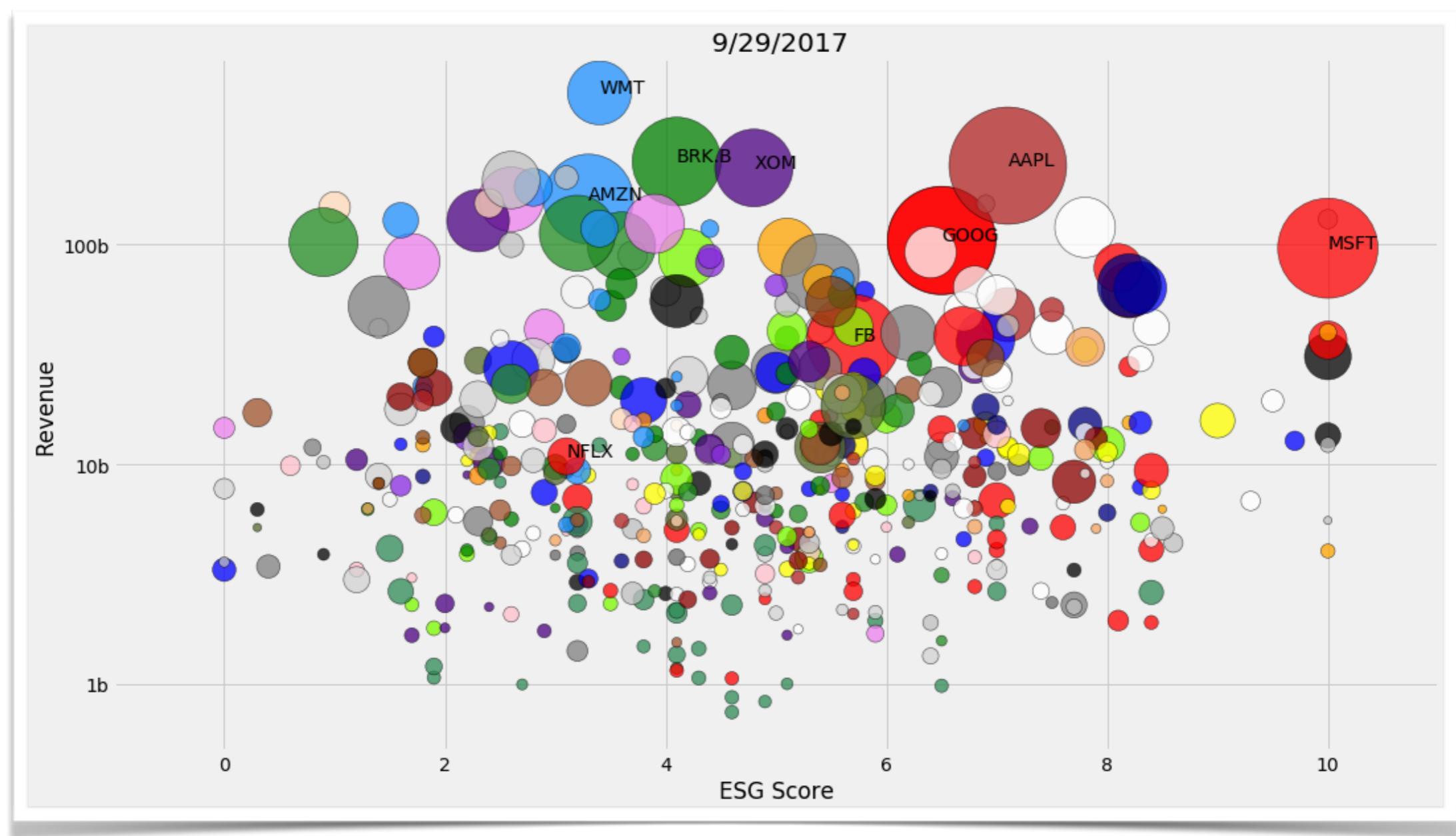


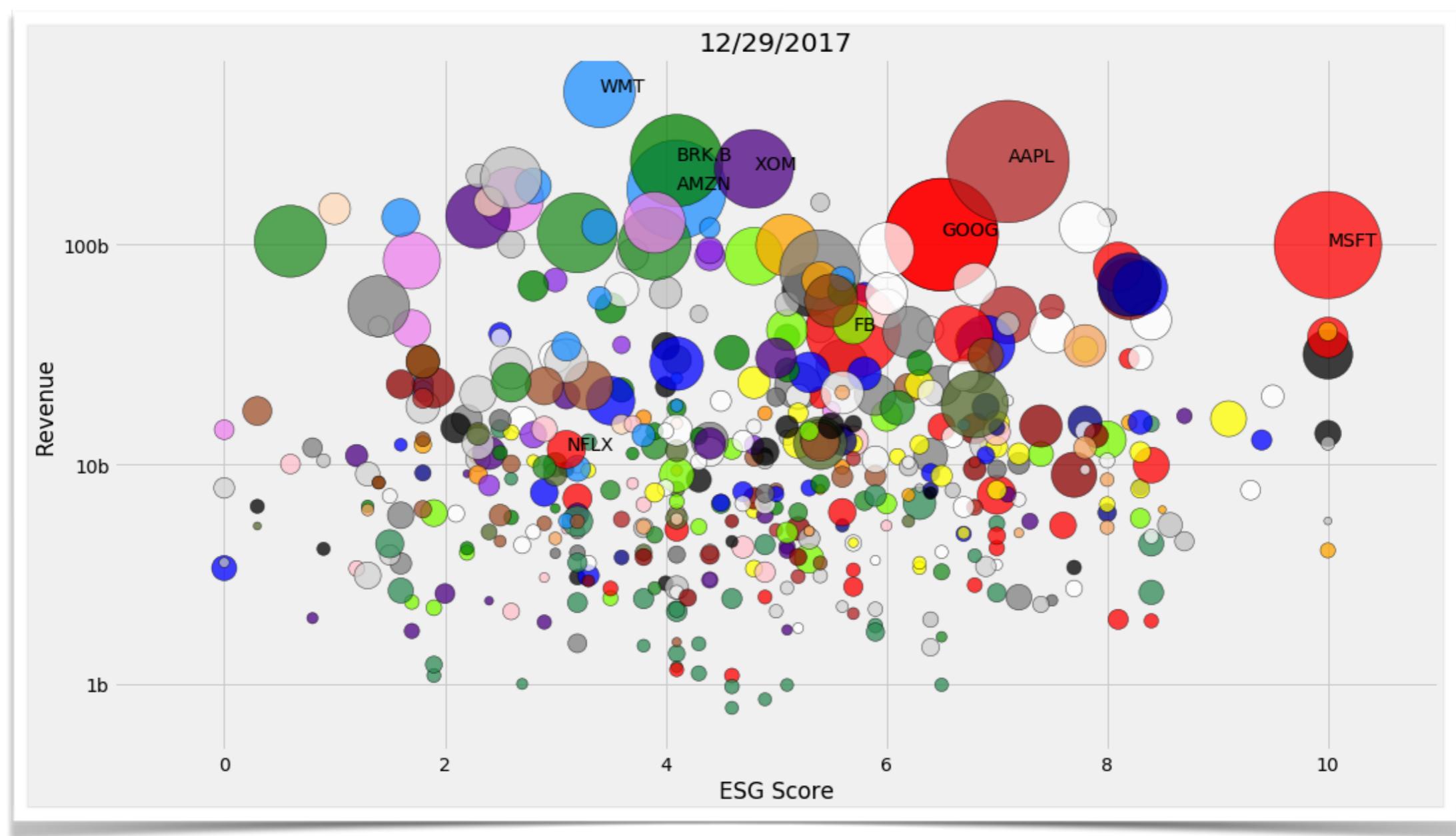


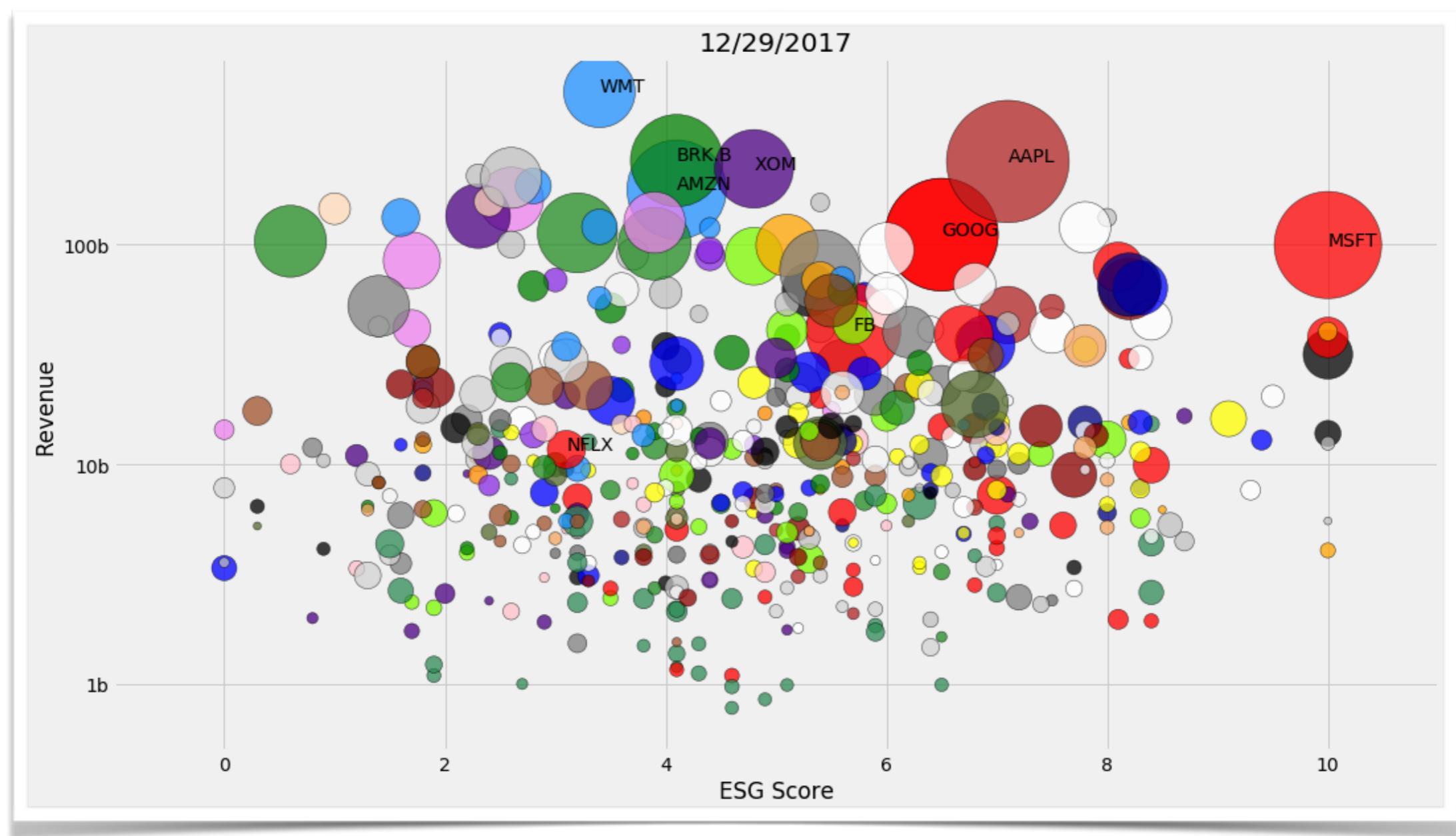


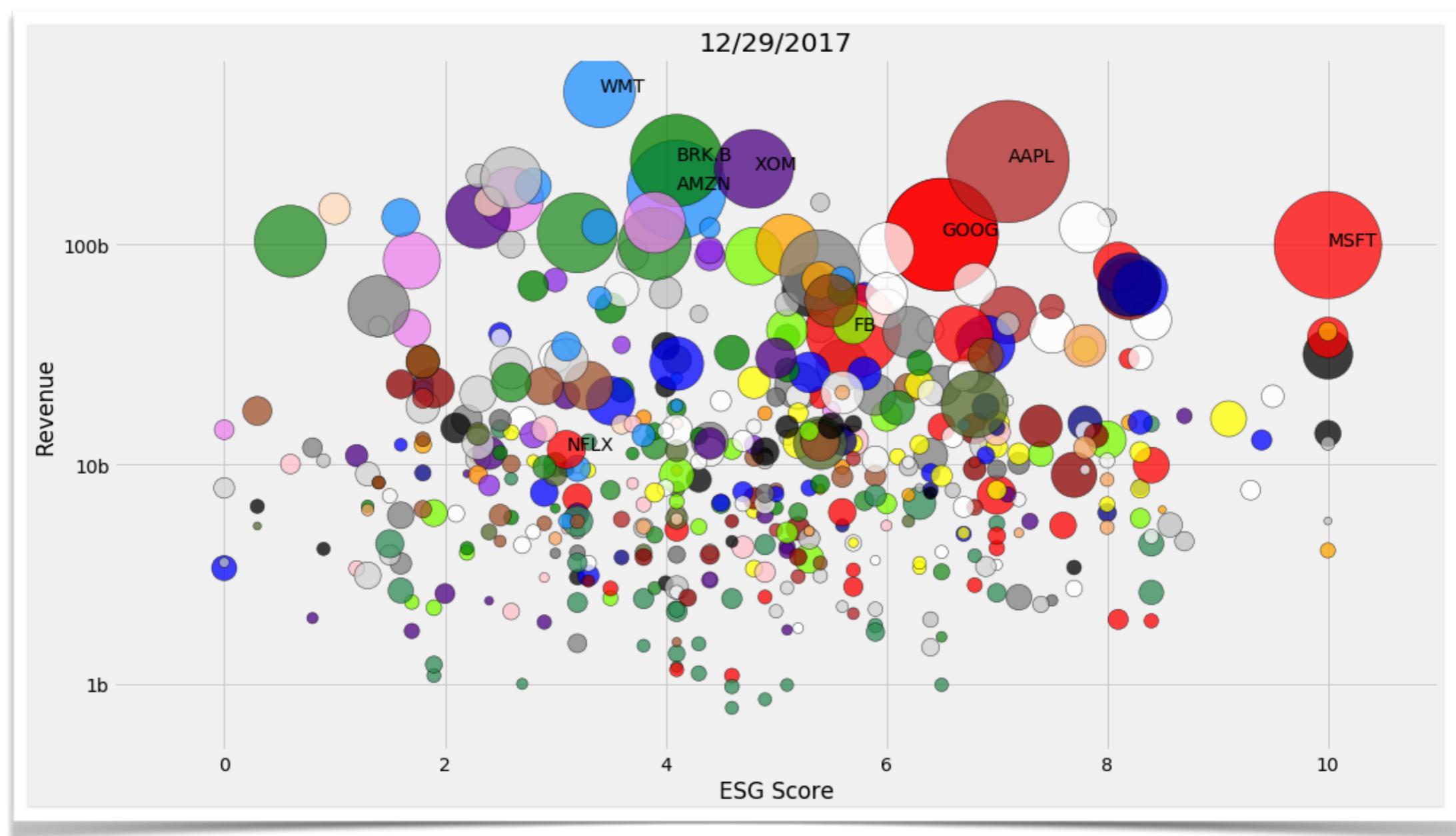


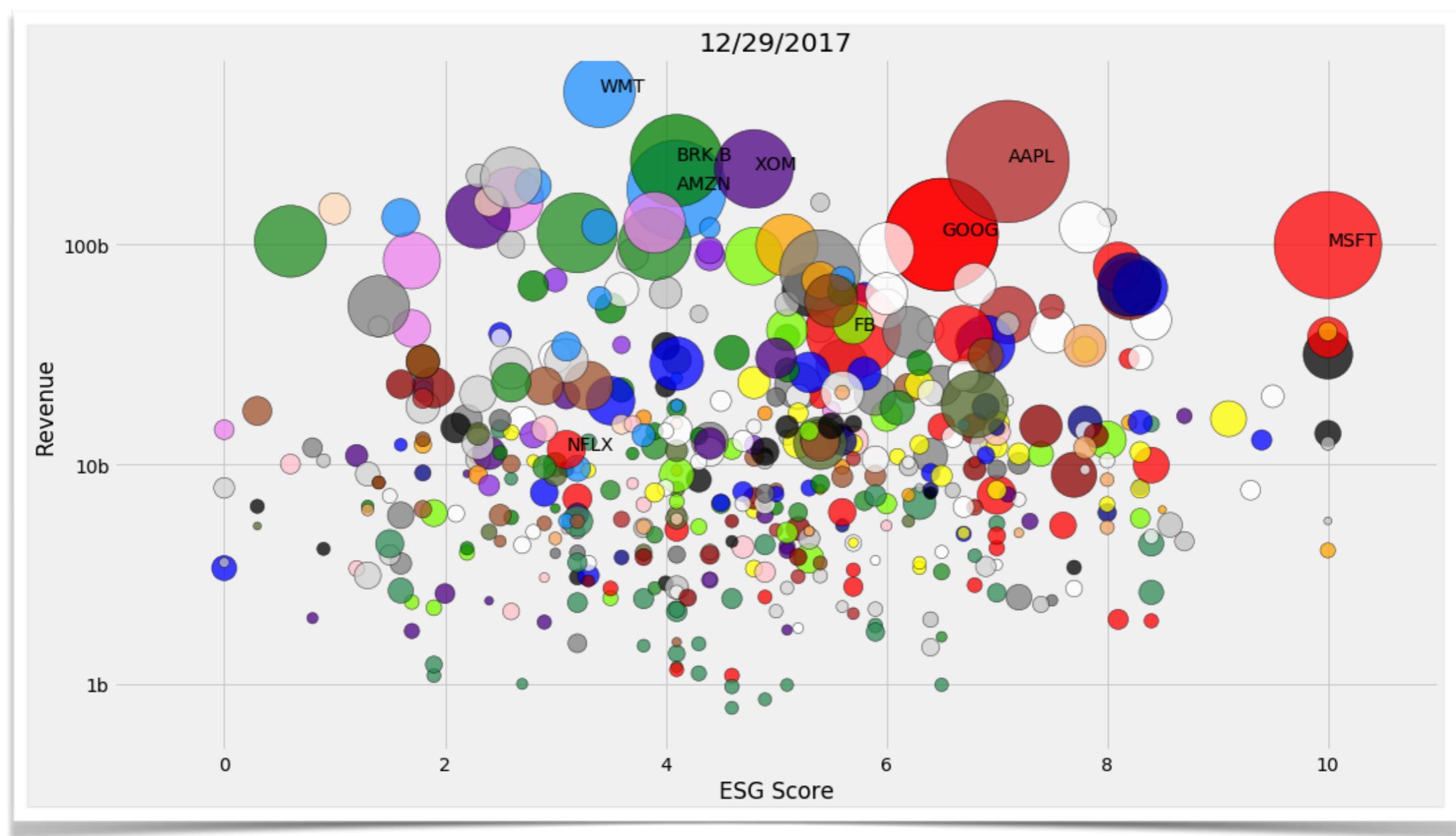


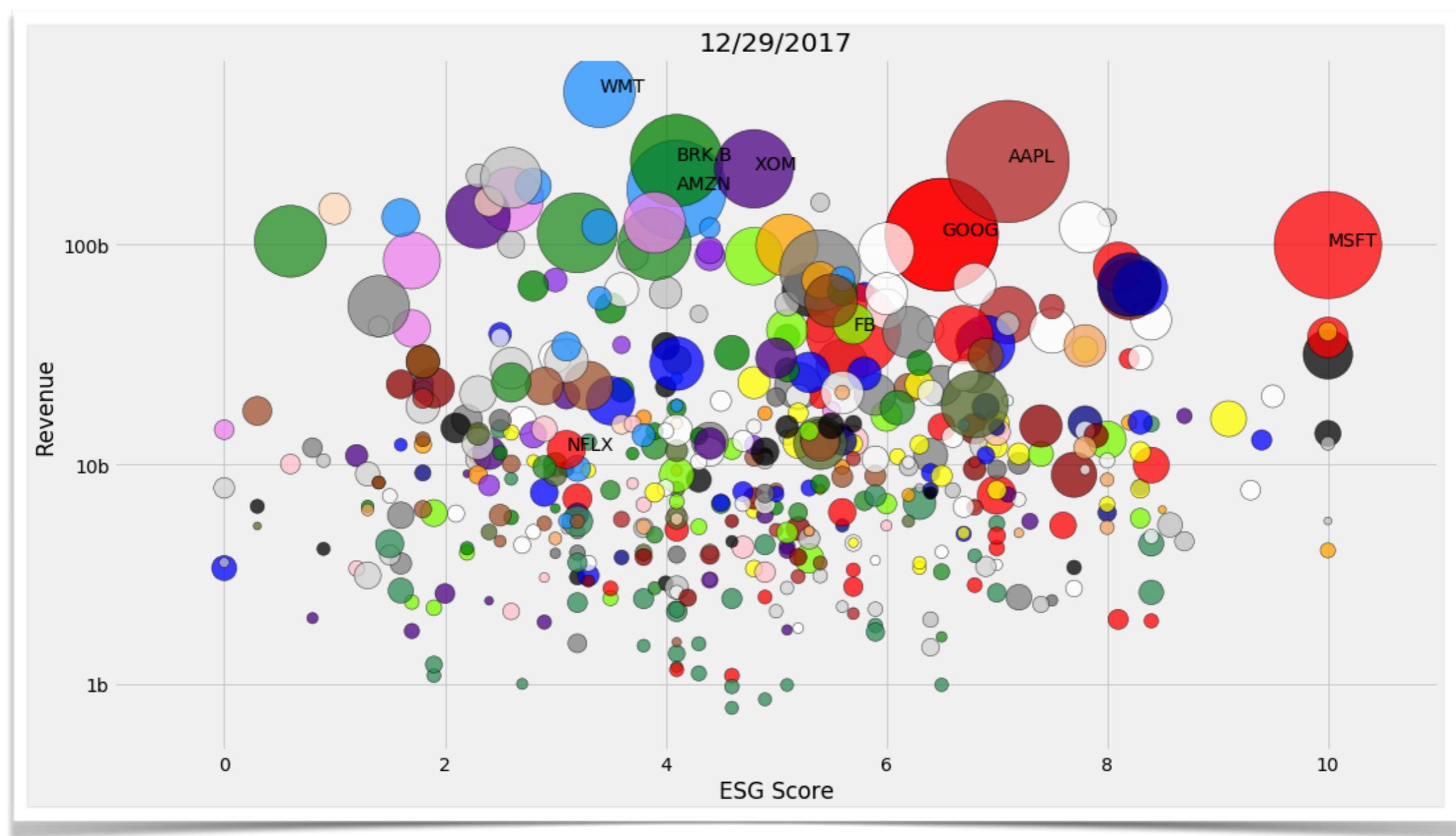




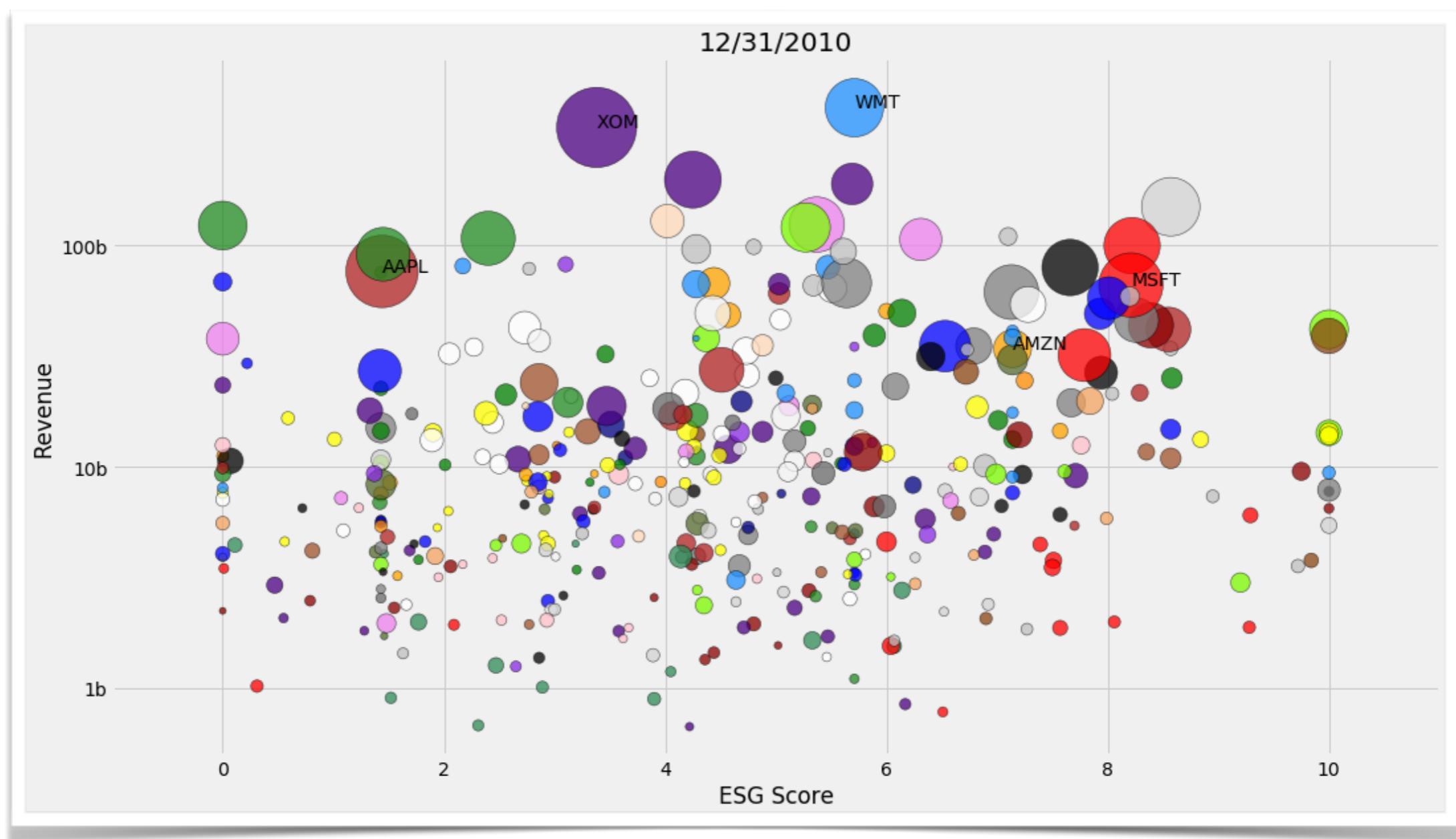


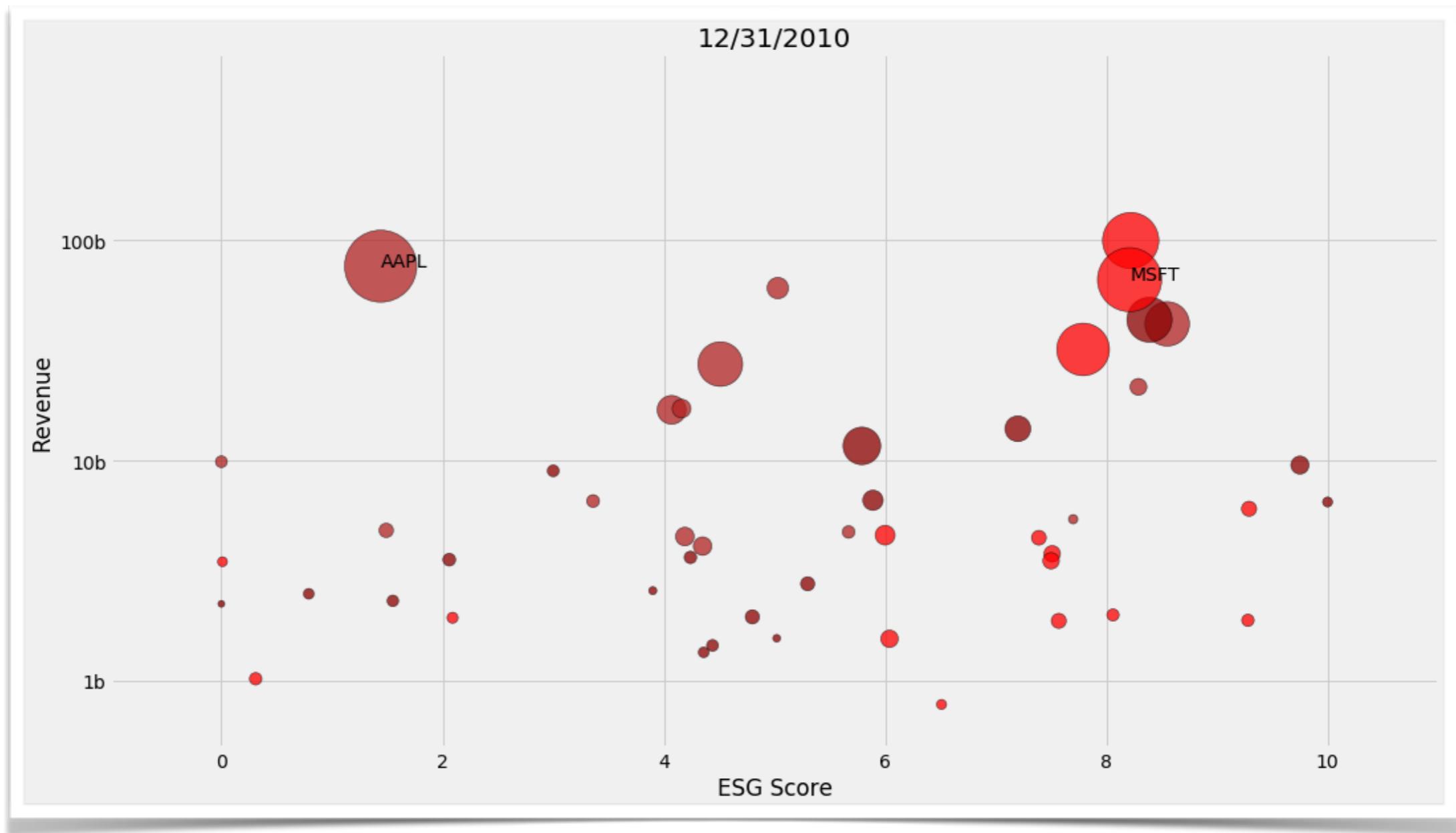




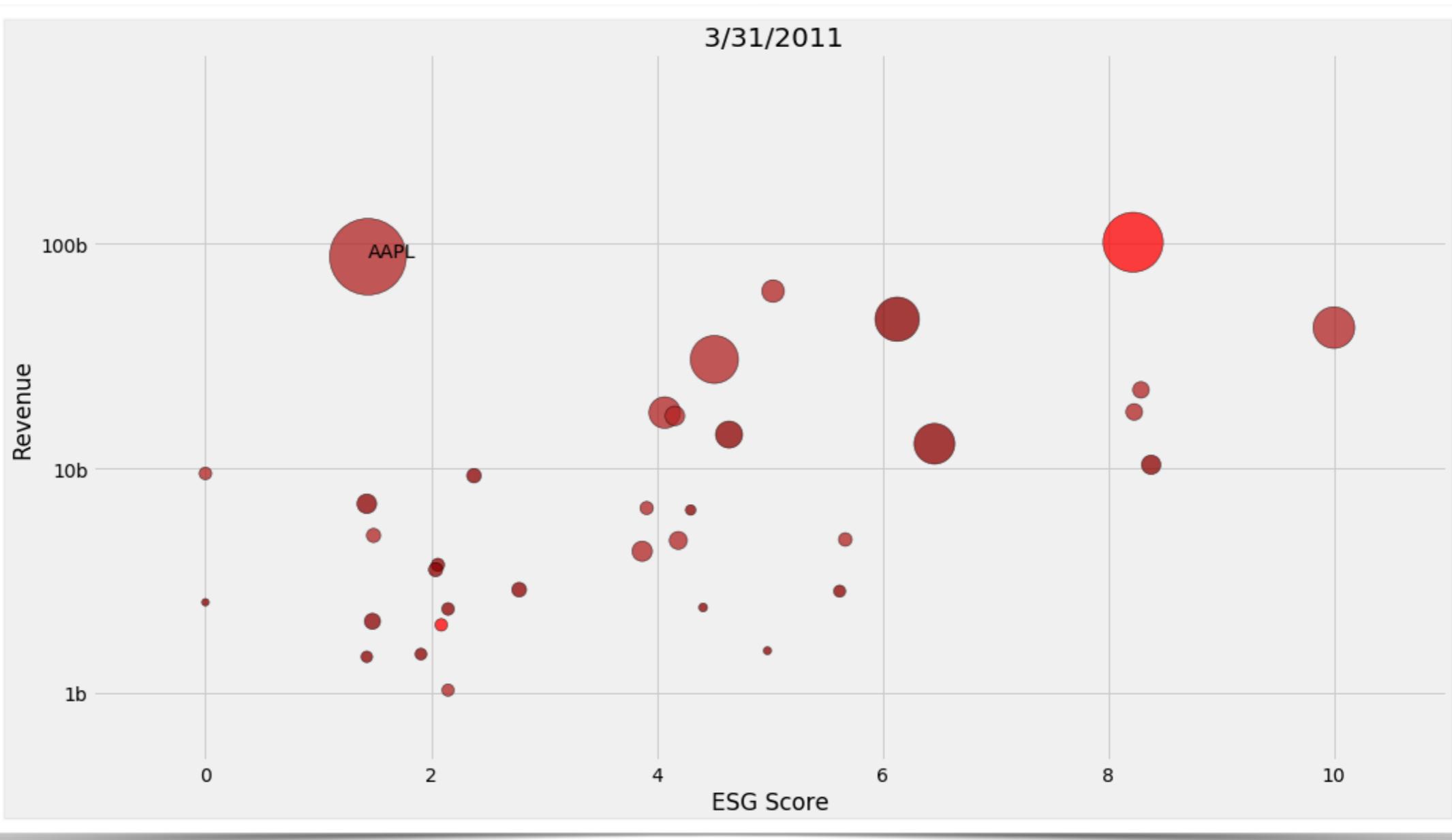


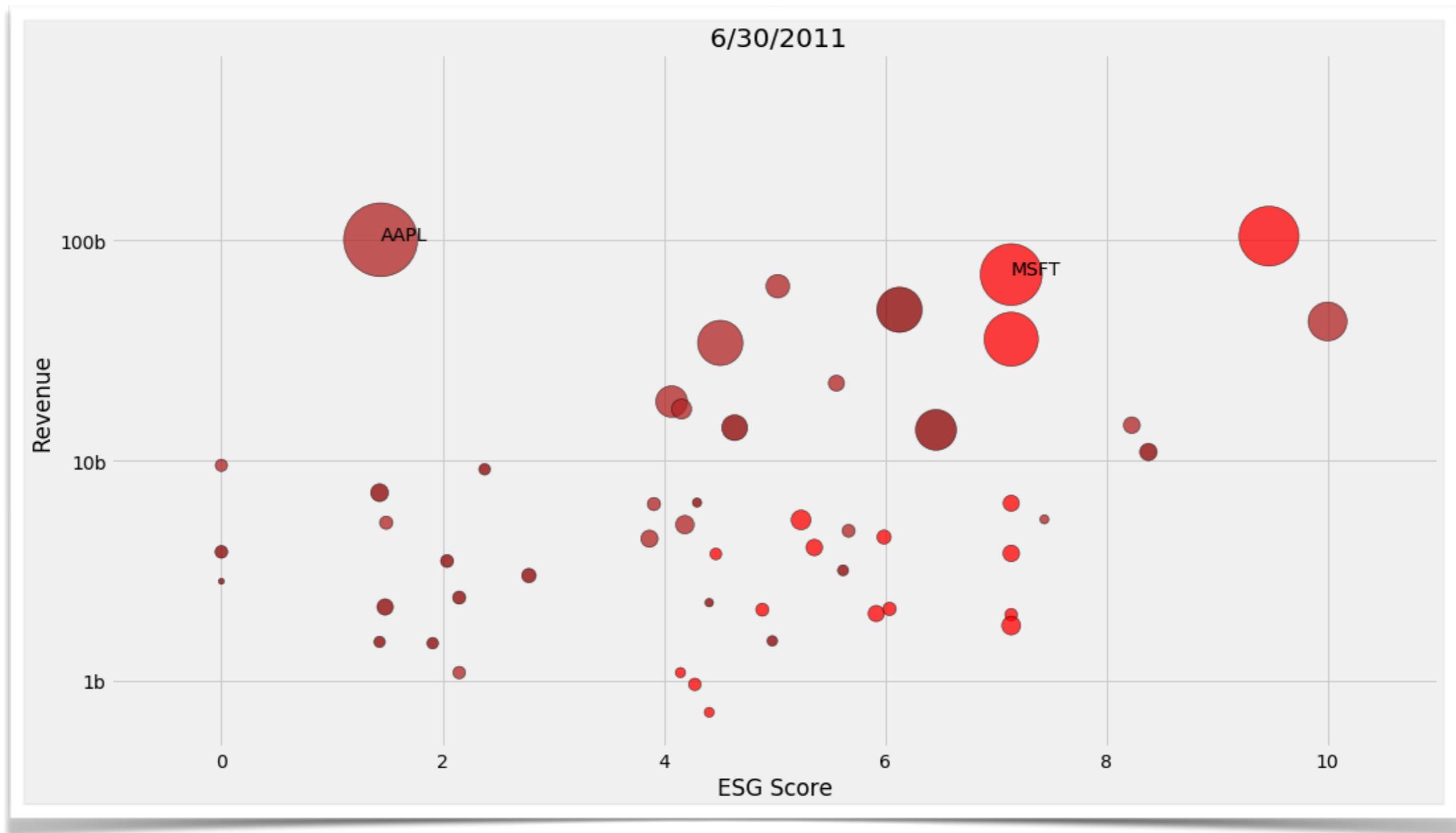
RBICS Color Mapping - Technology



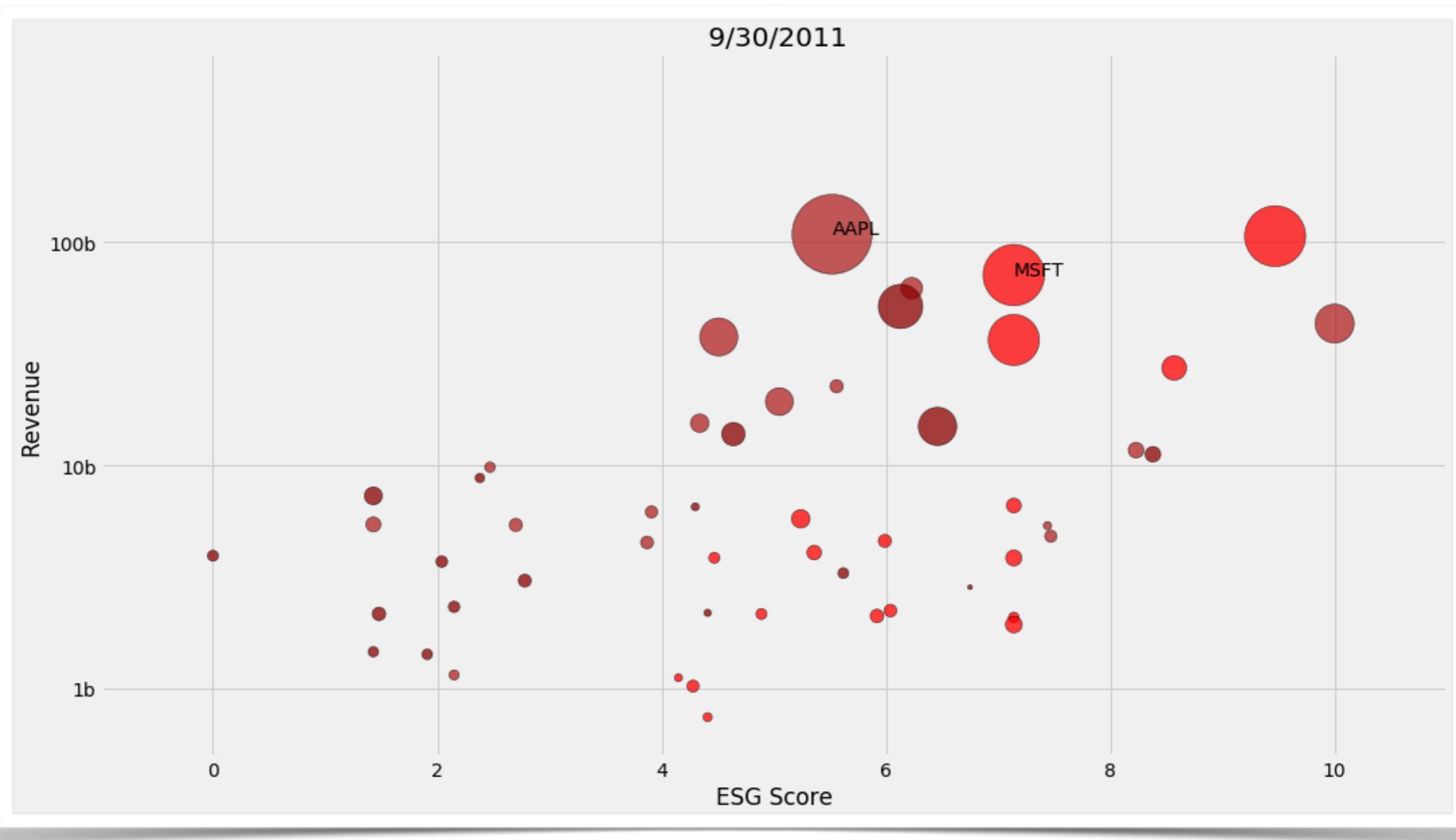


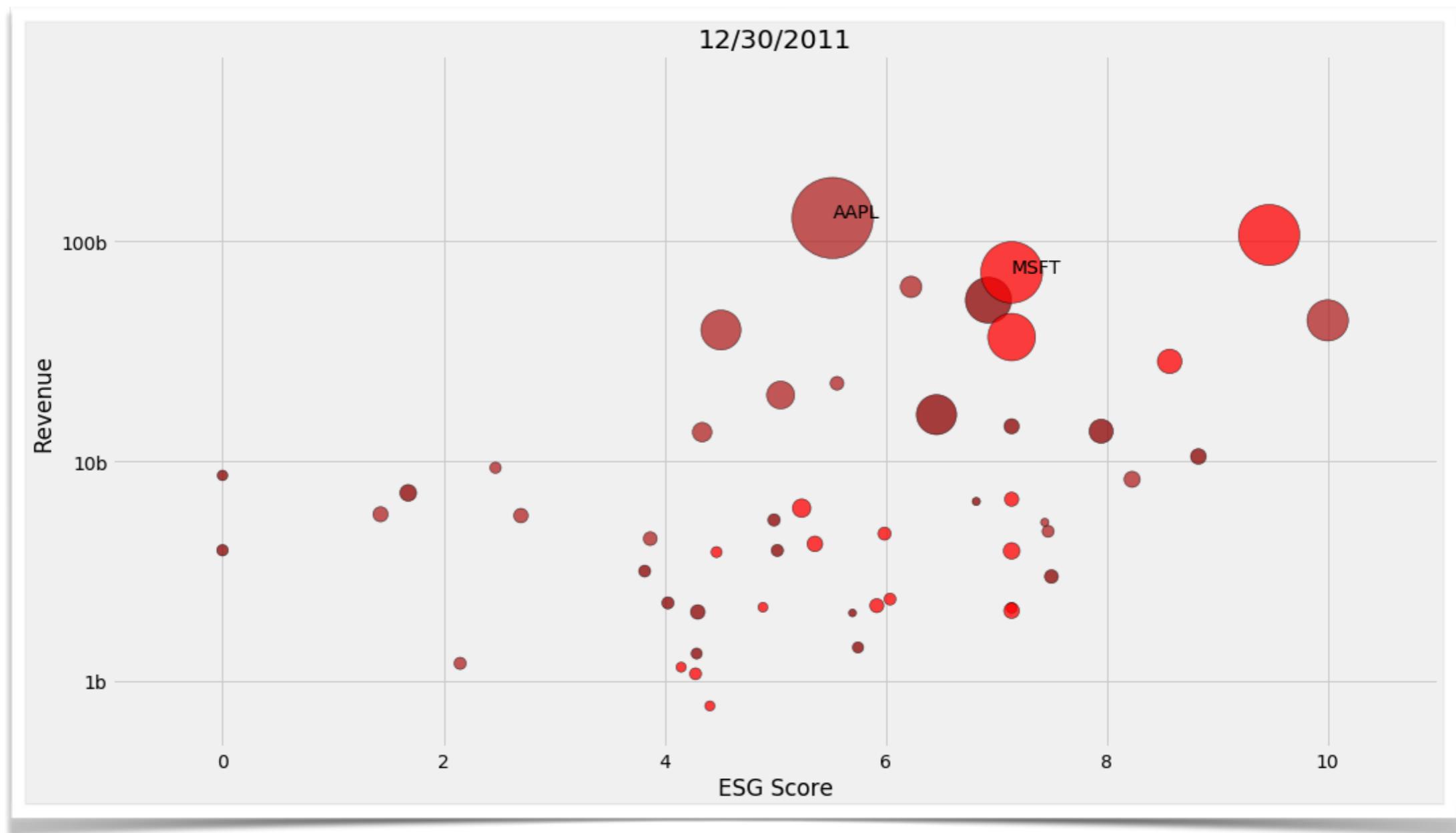
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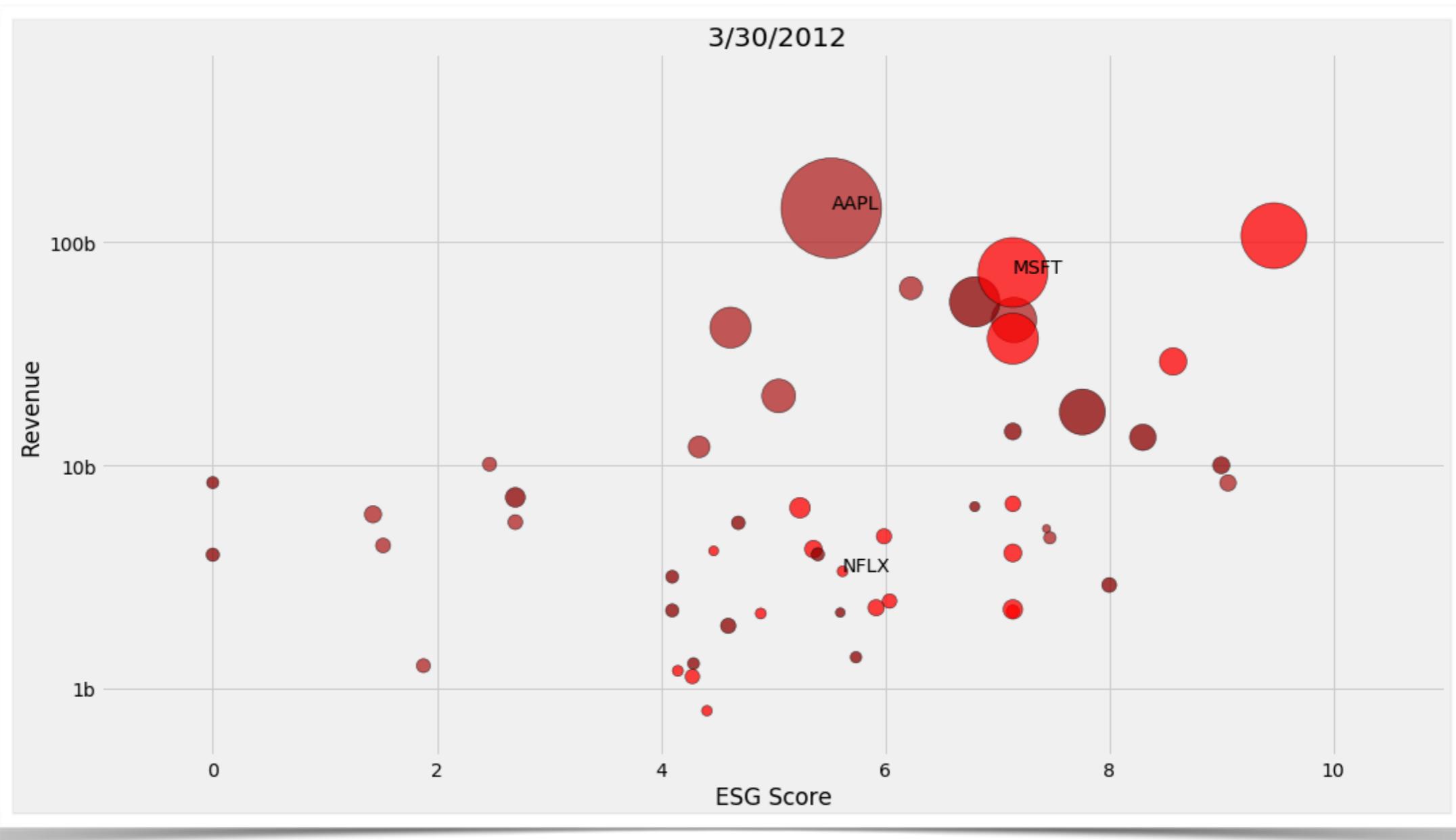


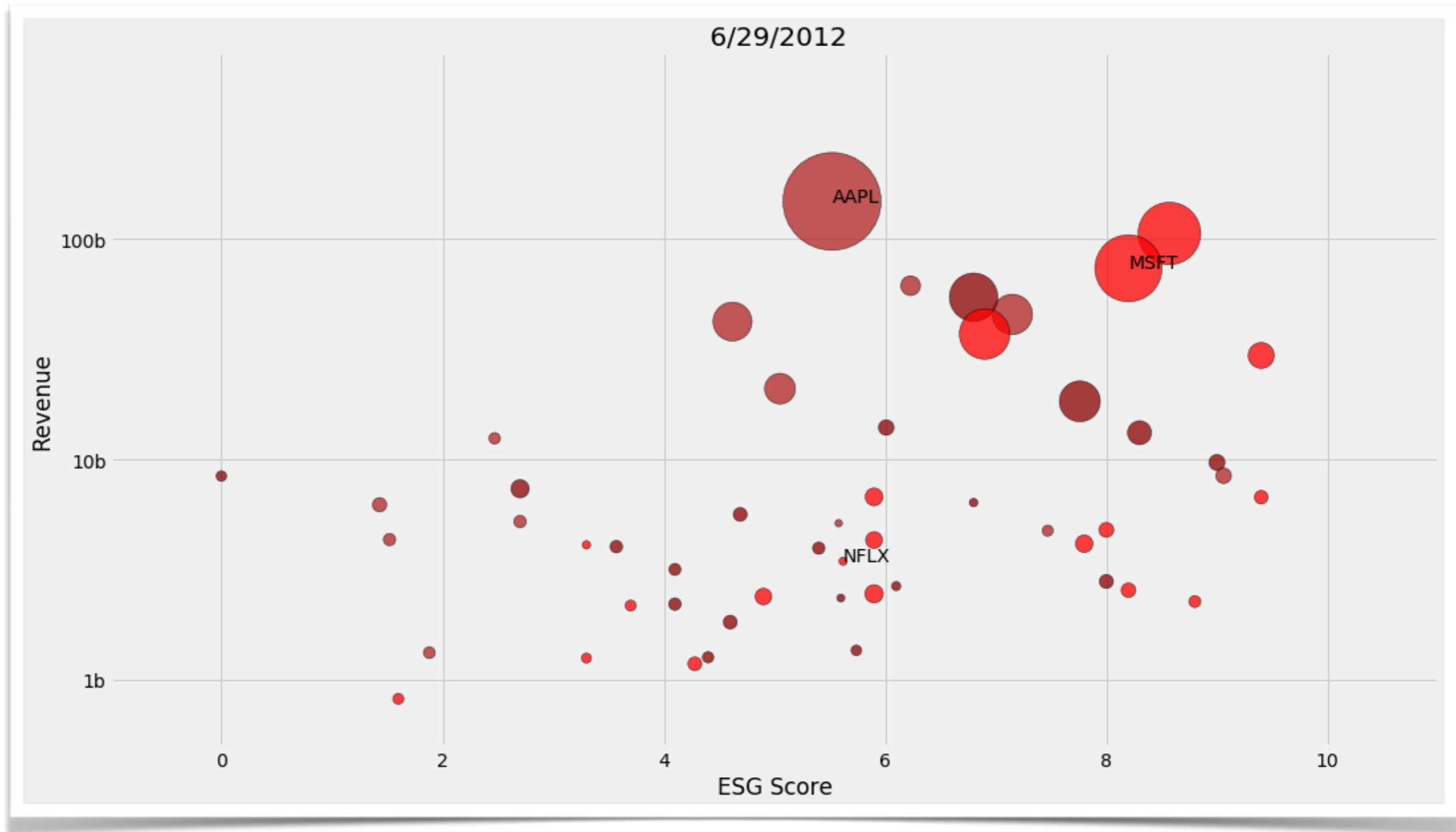
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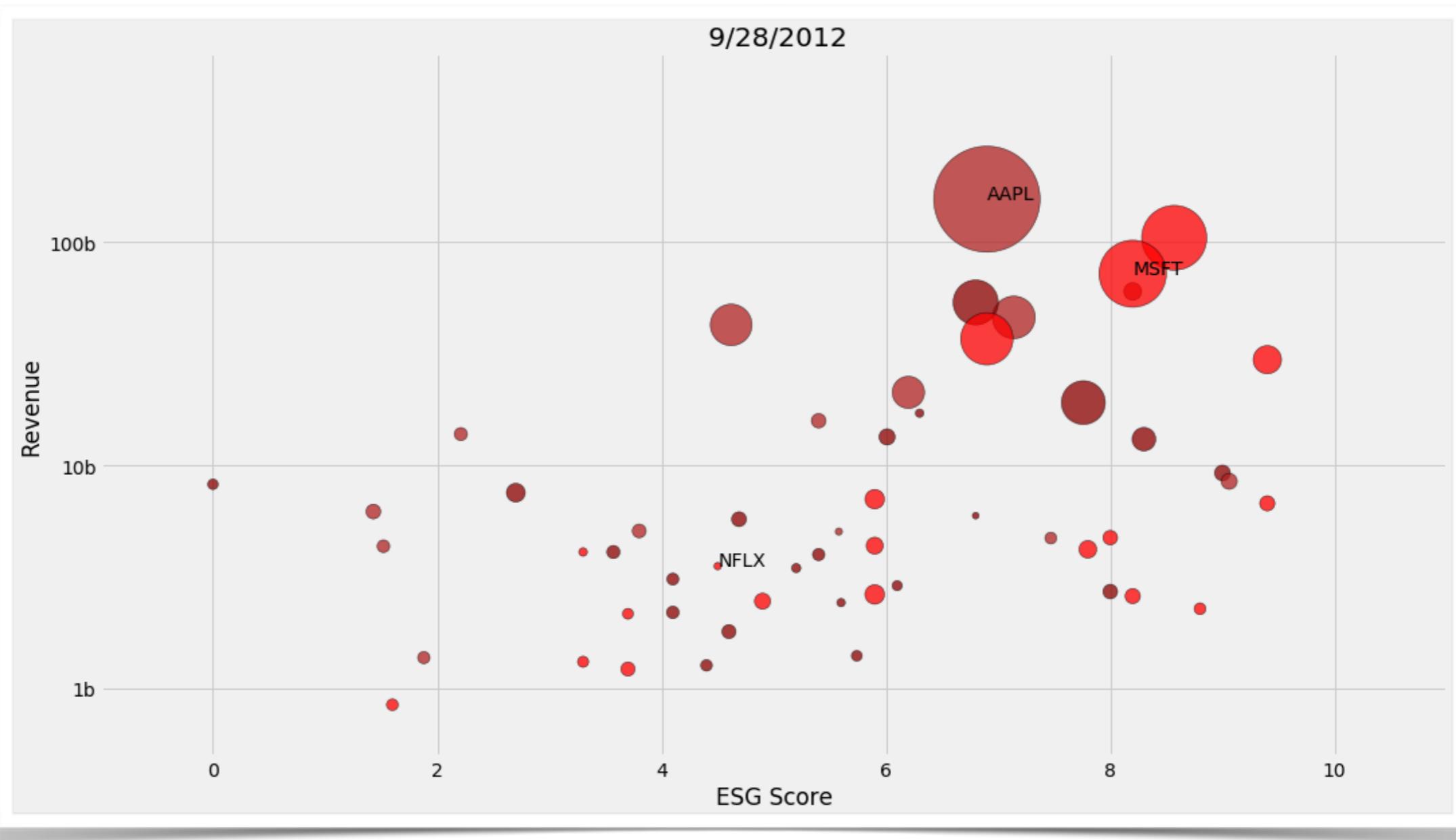


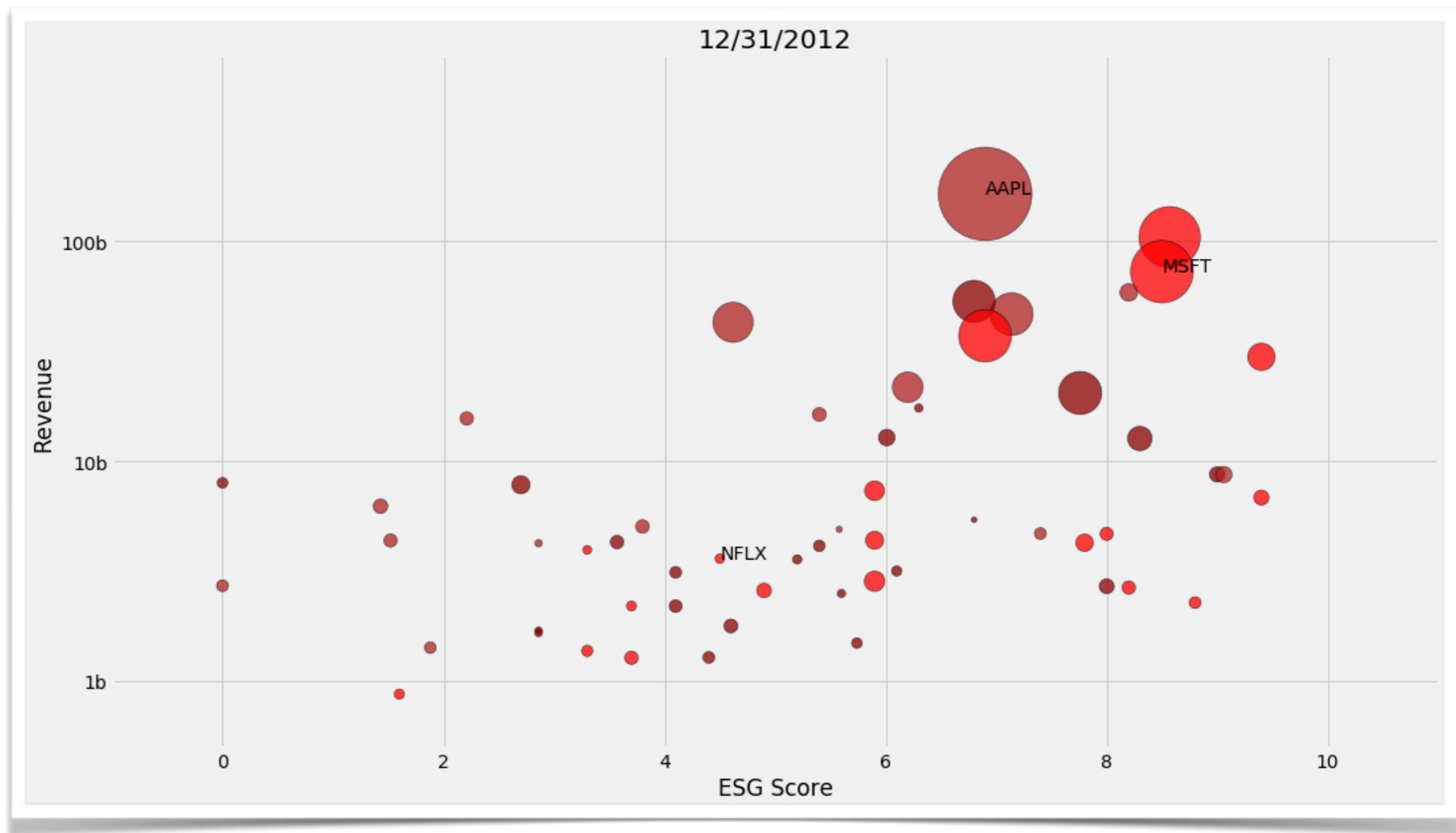
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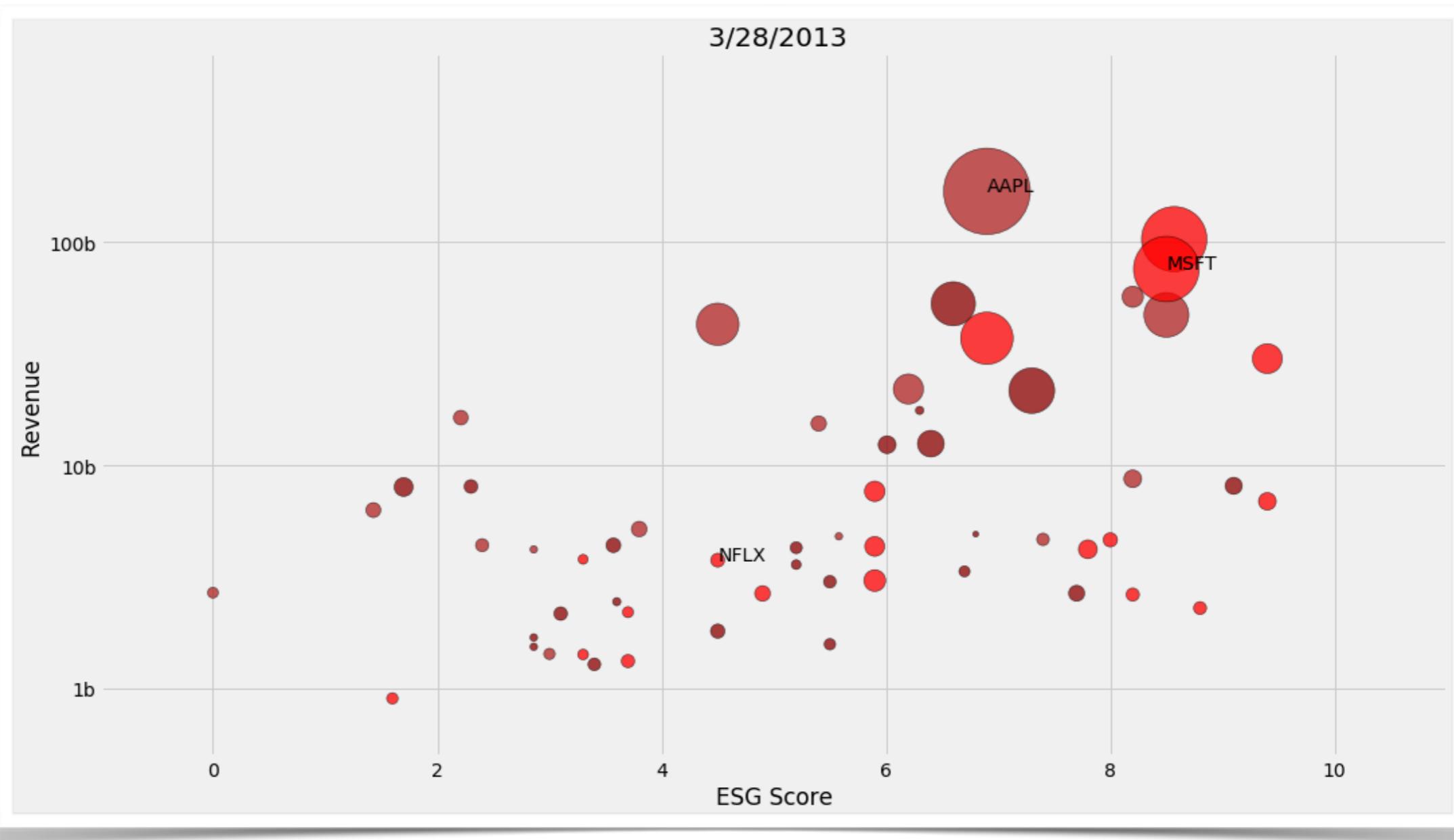


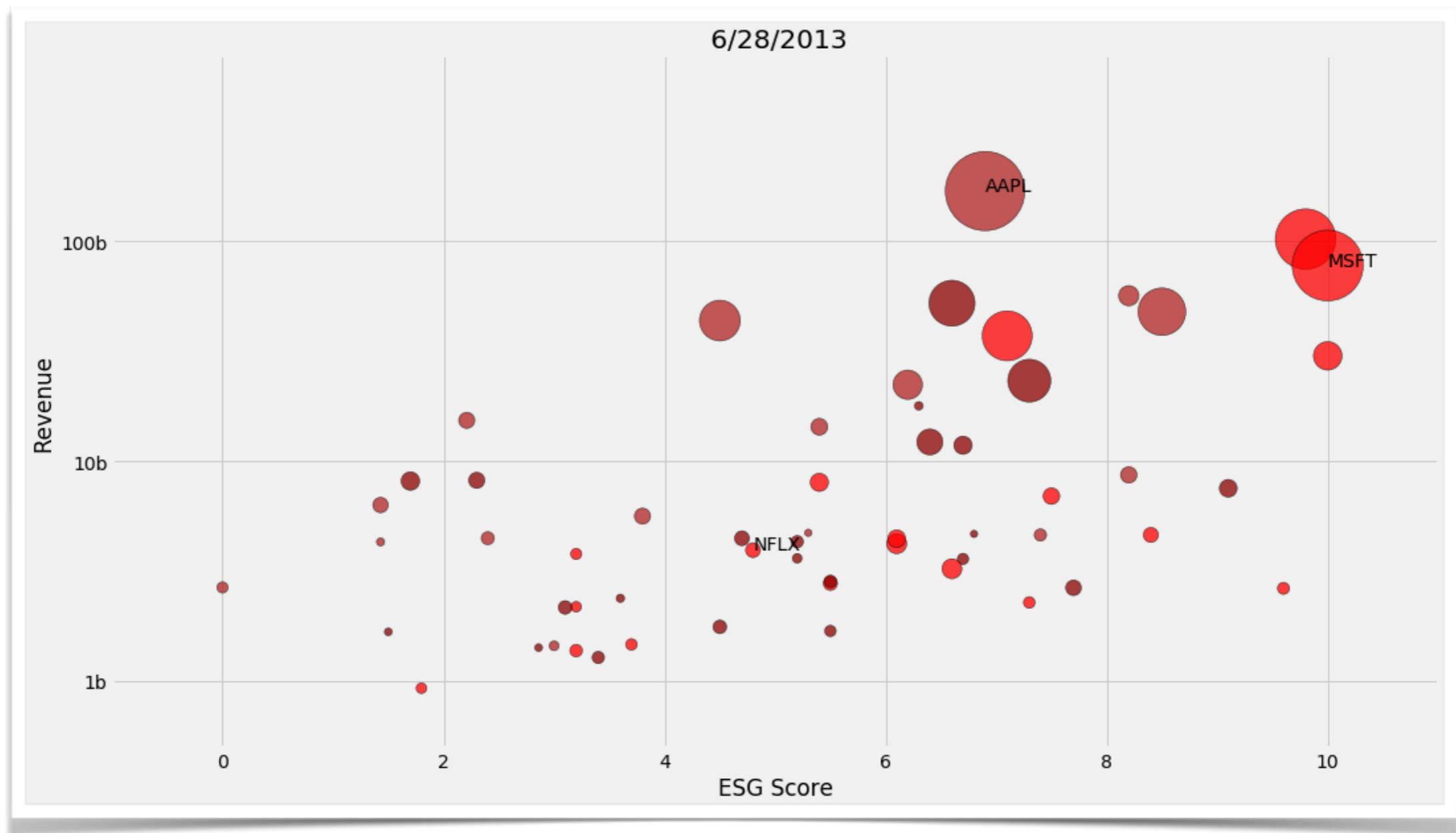
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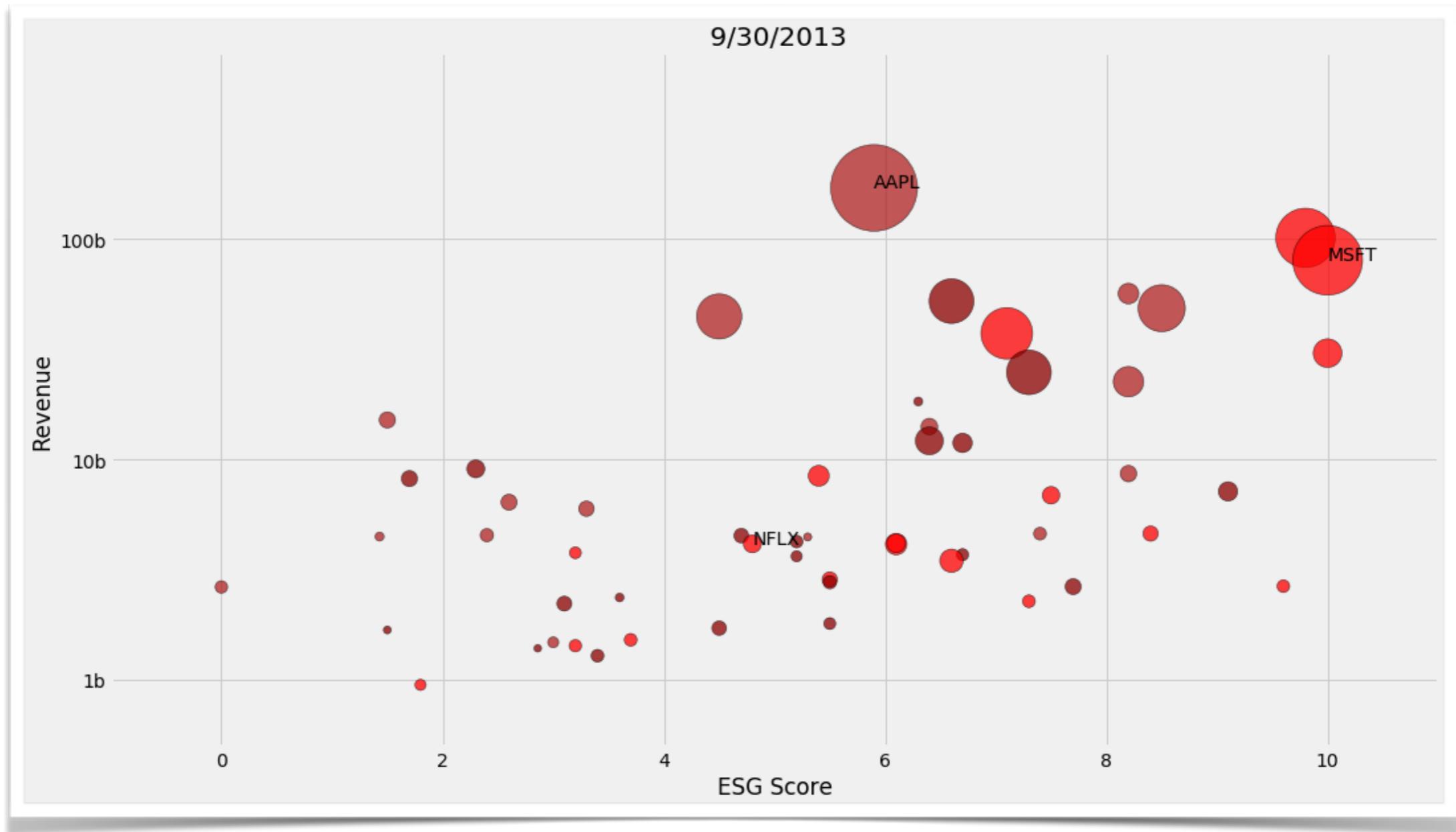


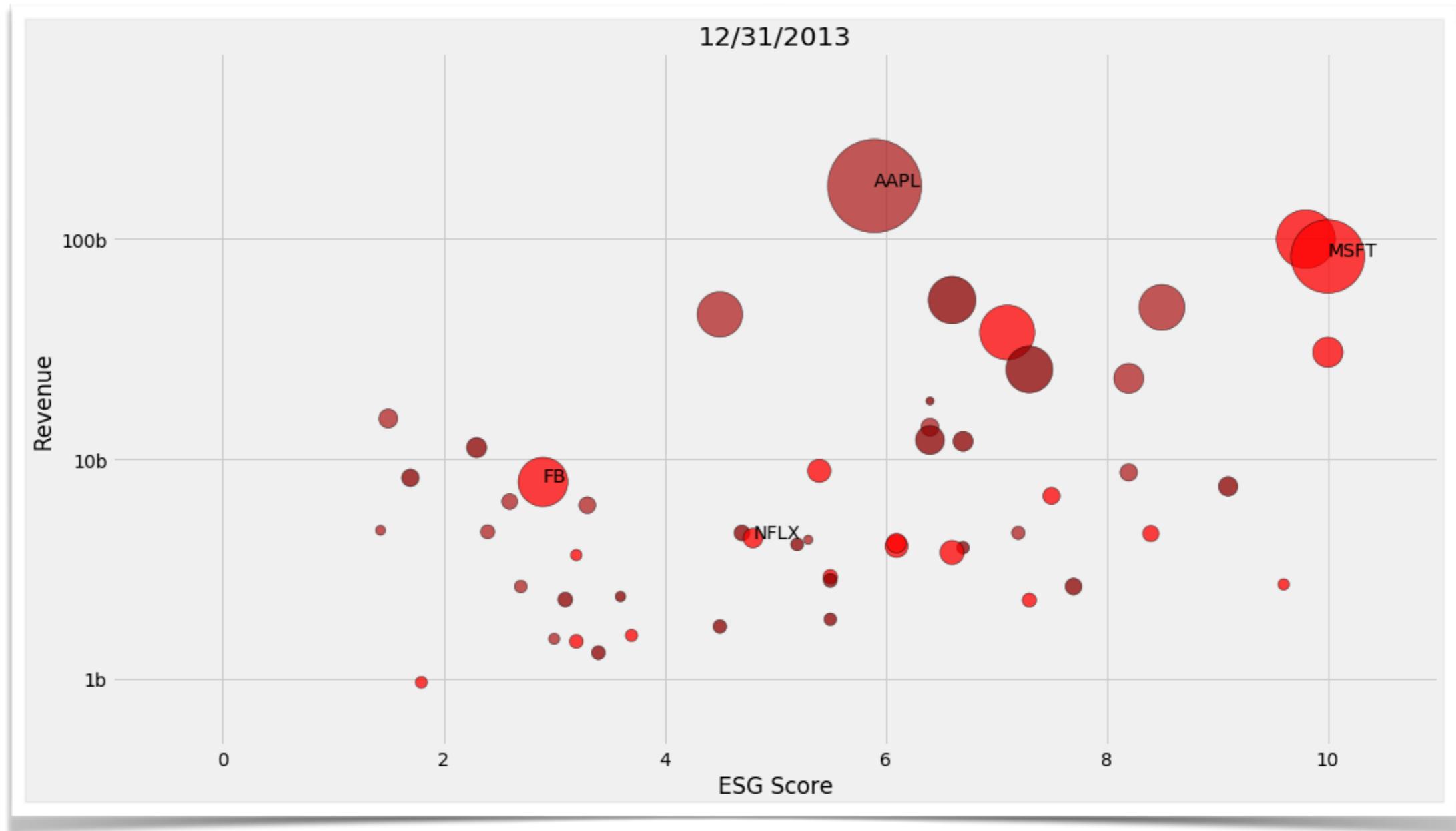


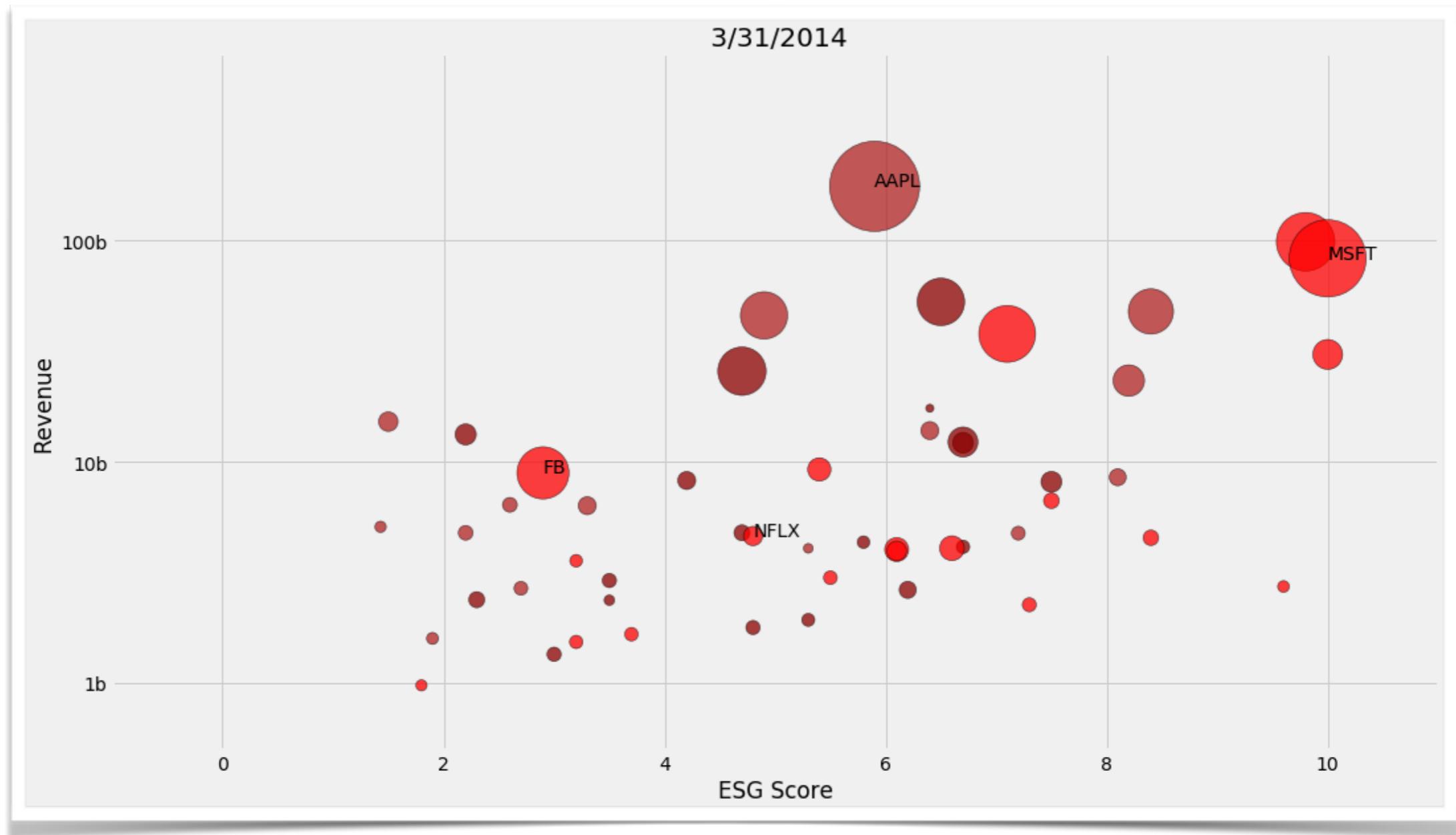
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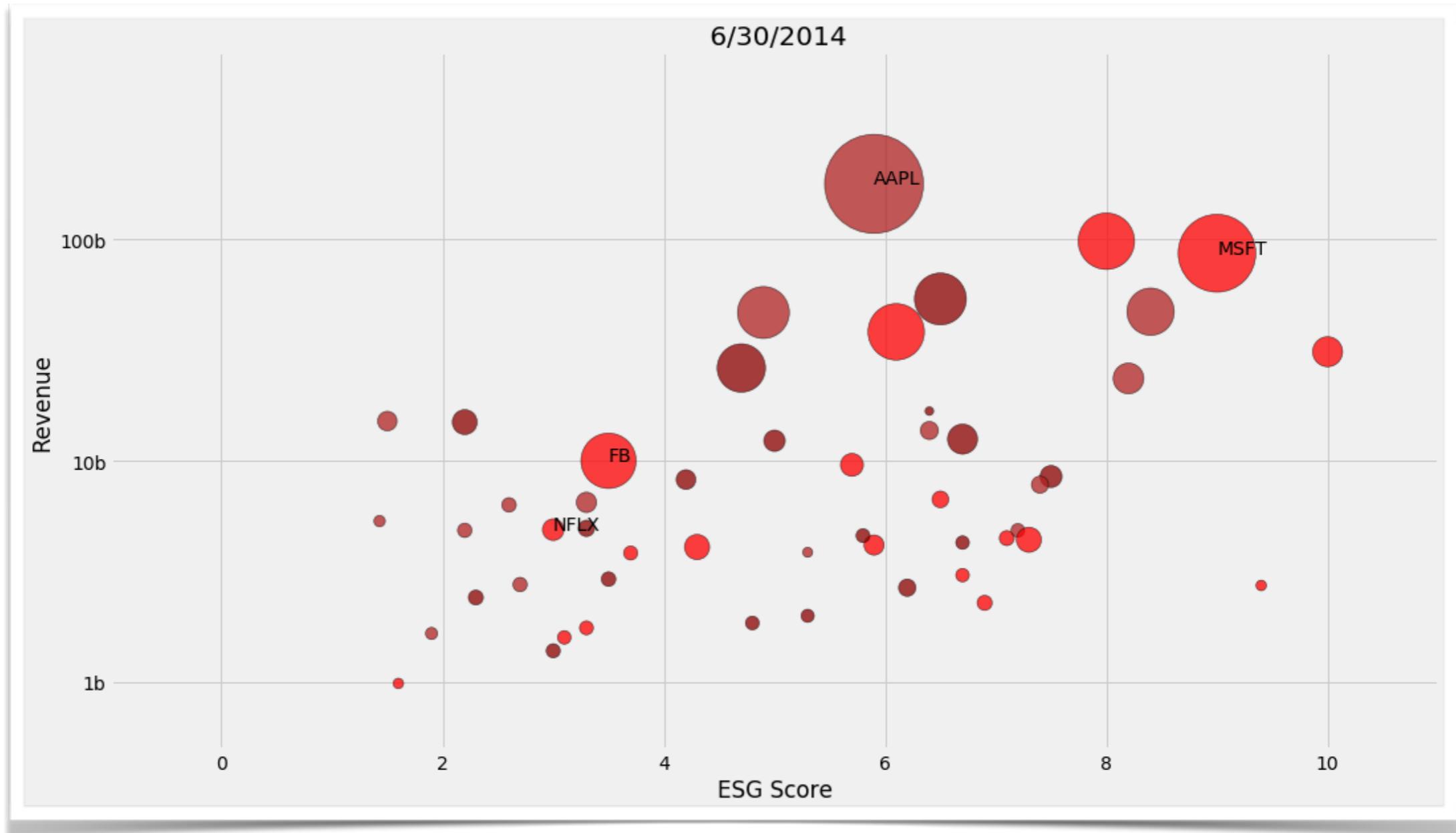


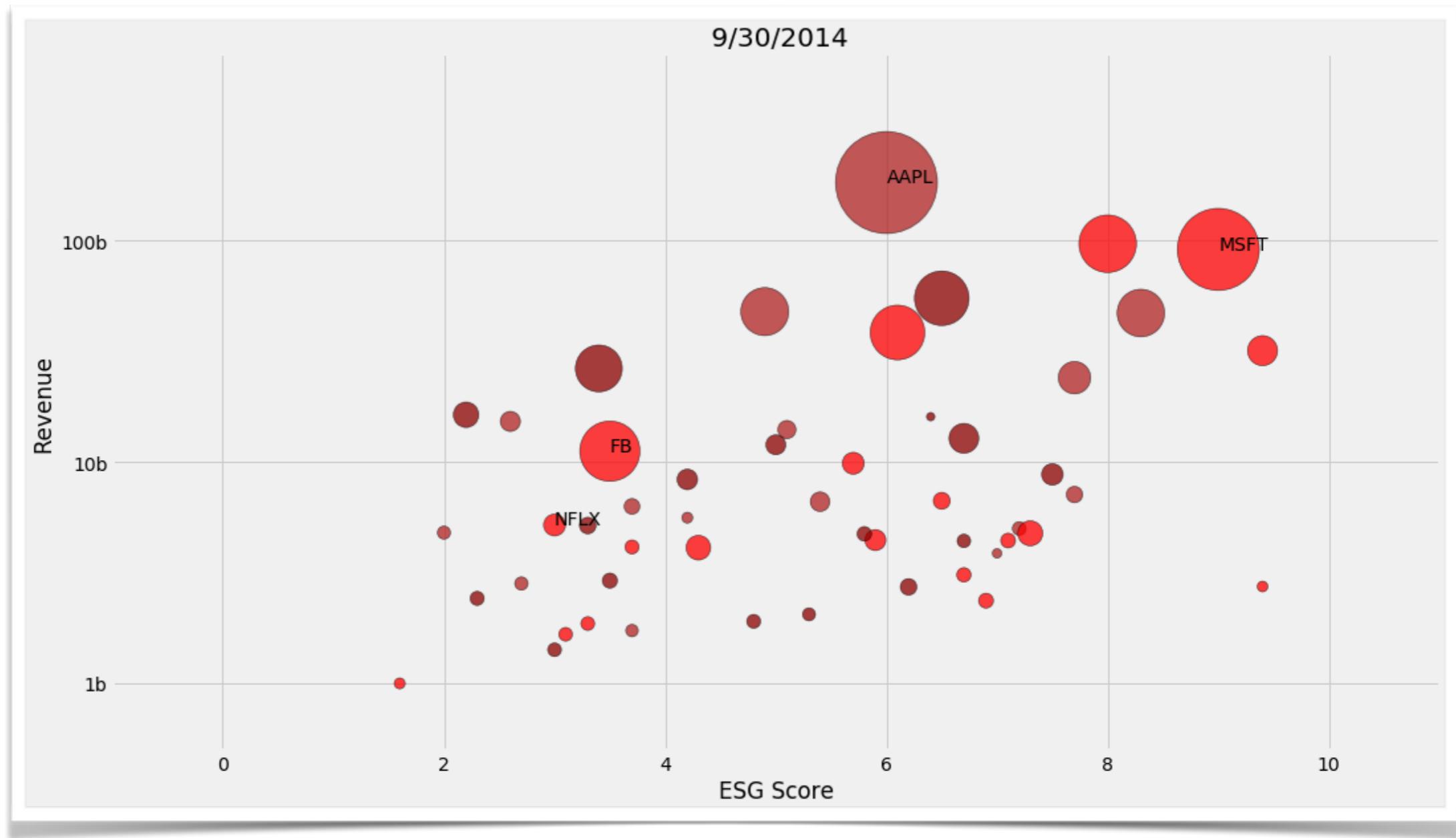


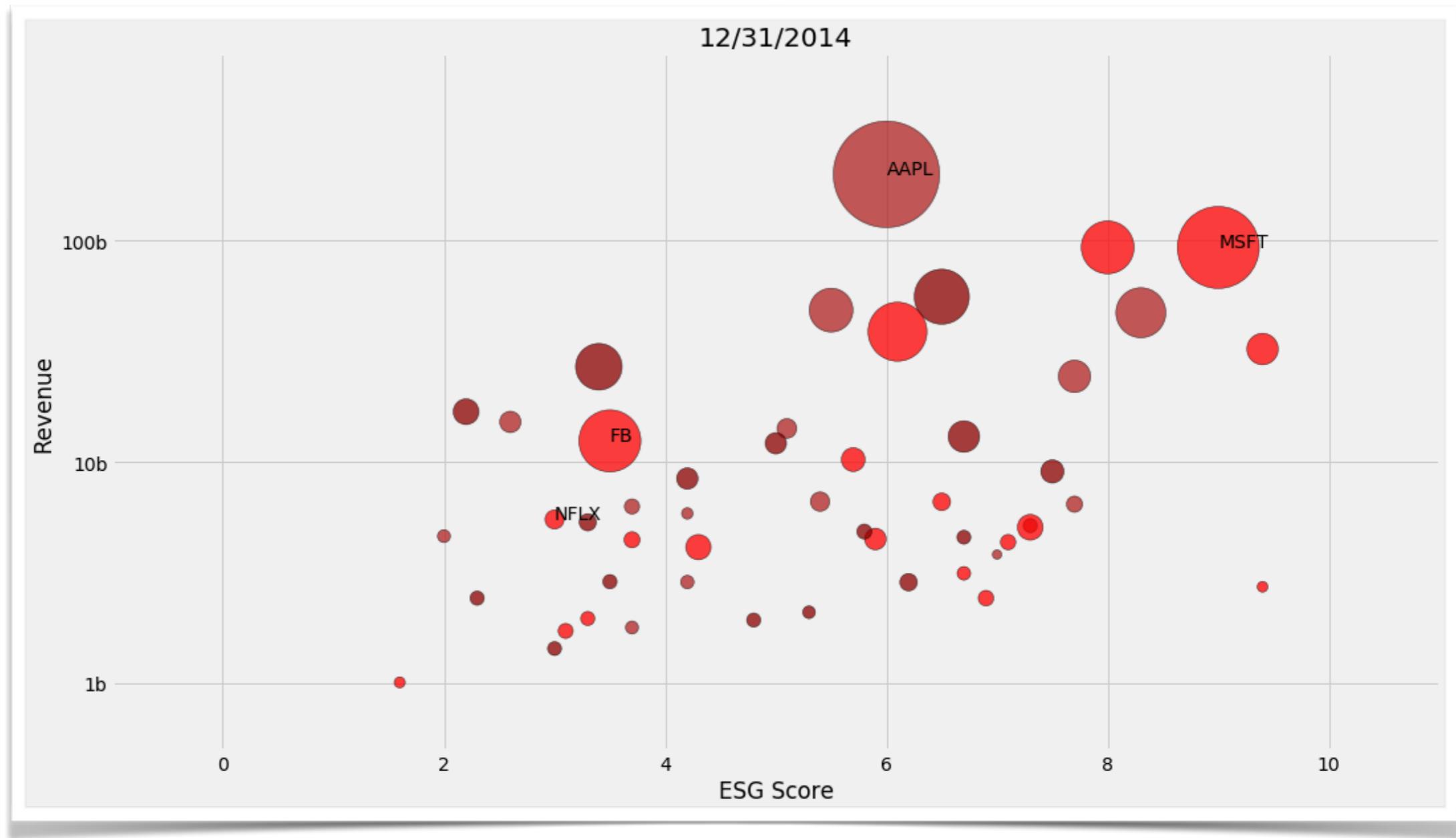


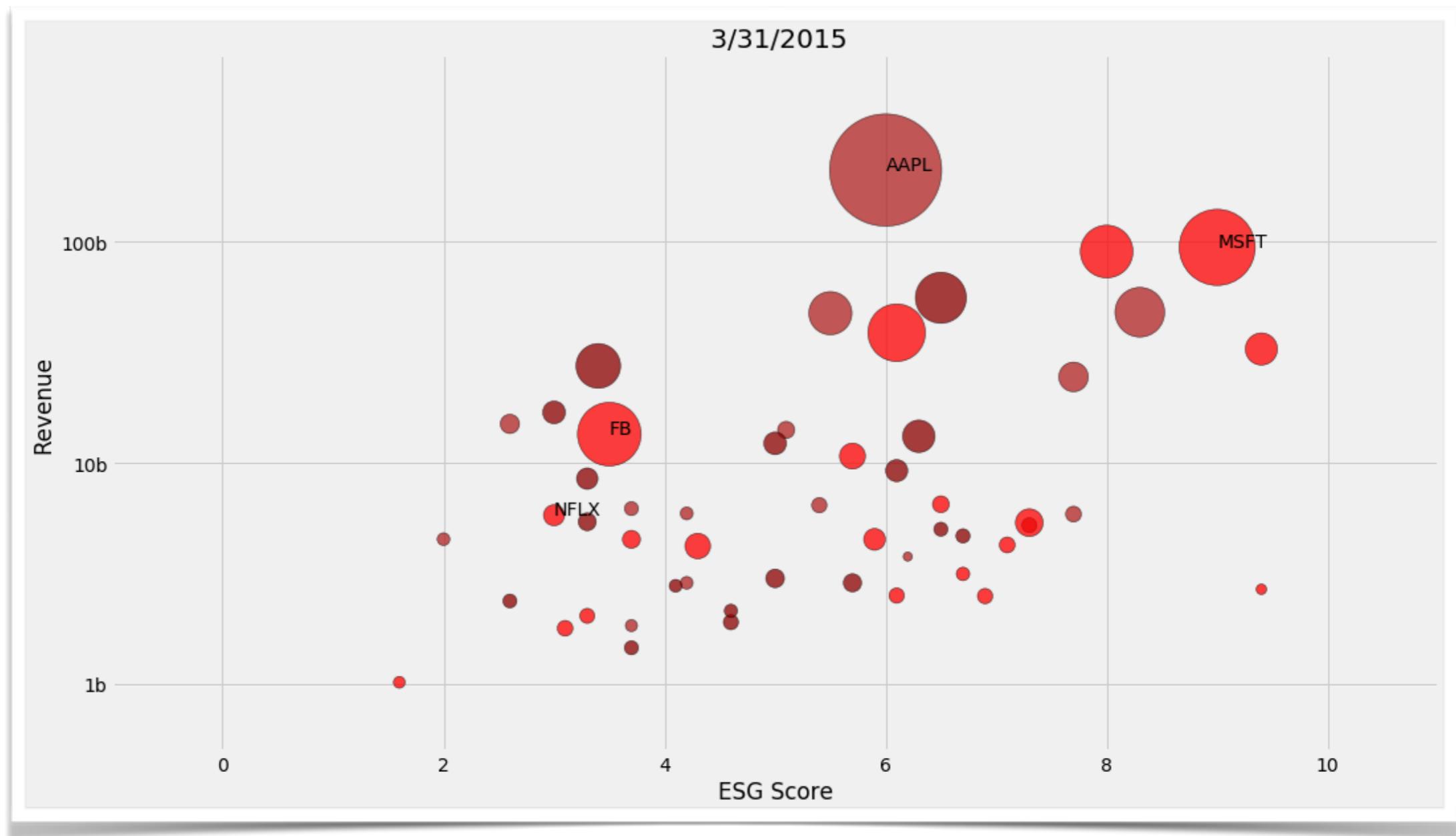


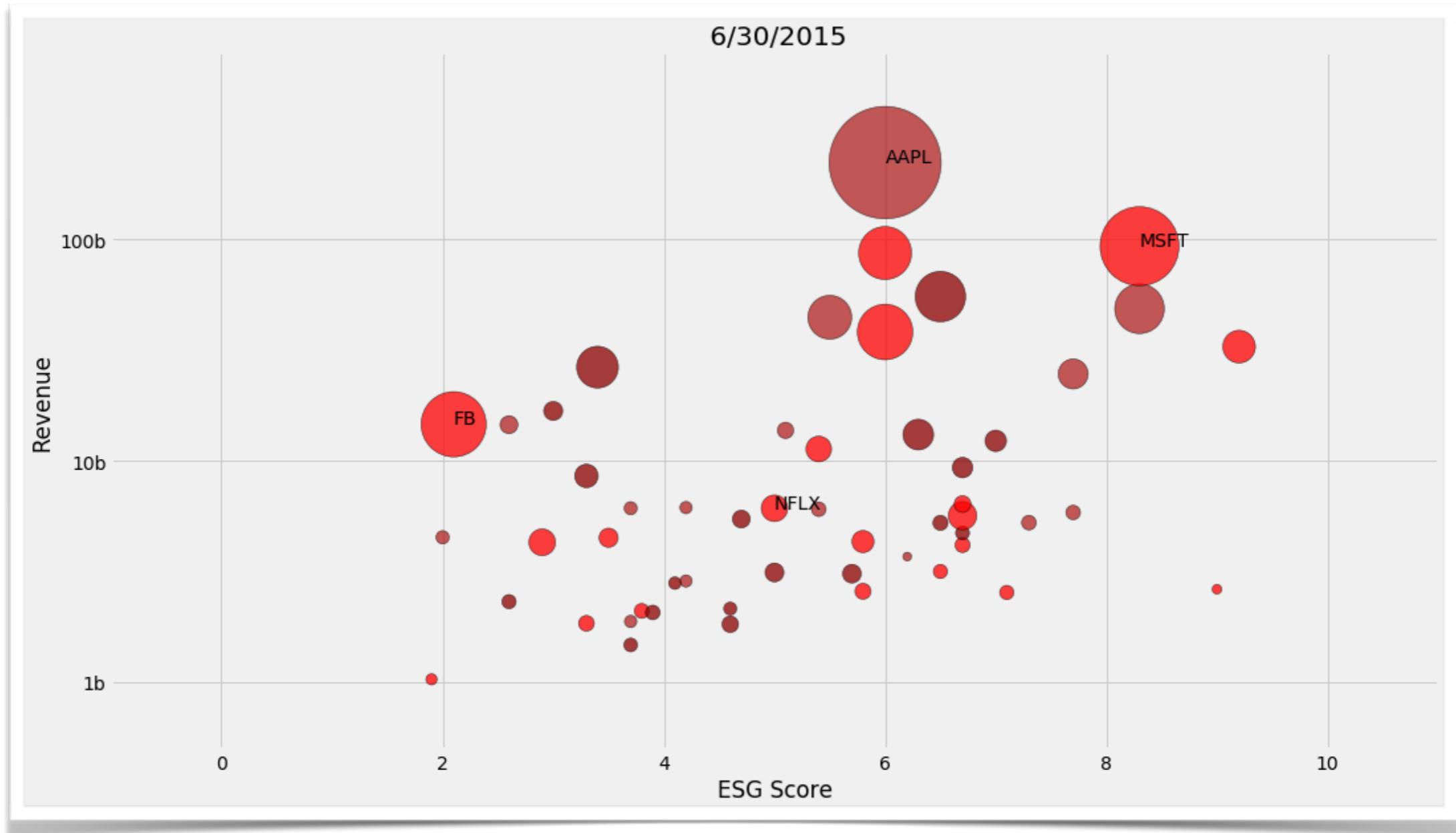


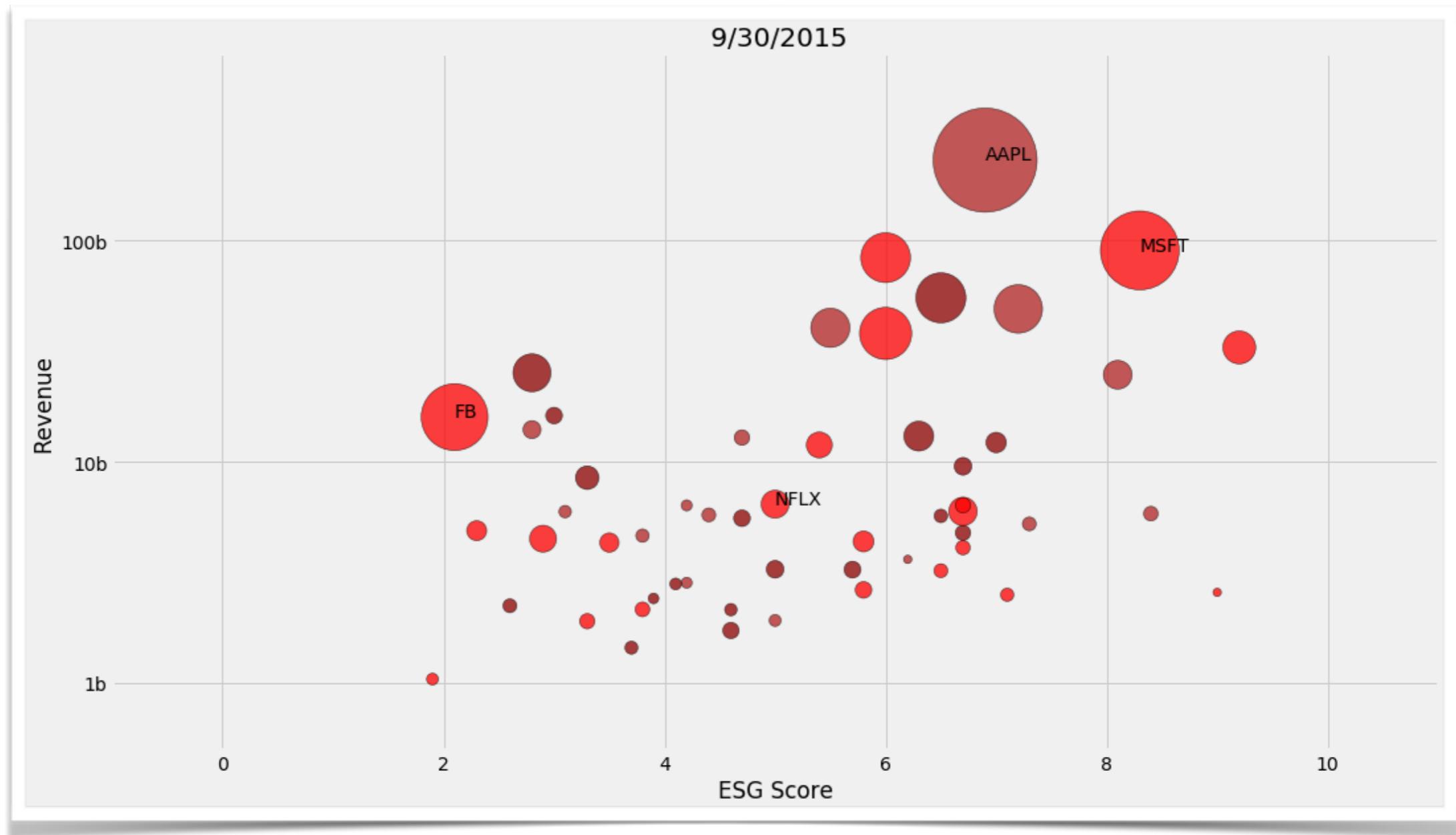


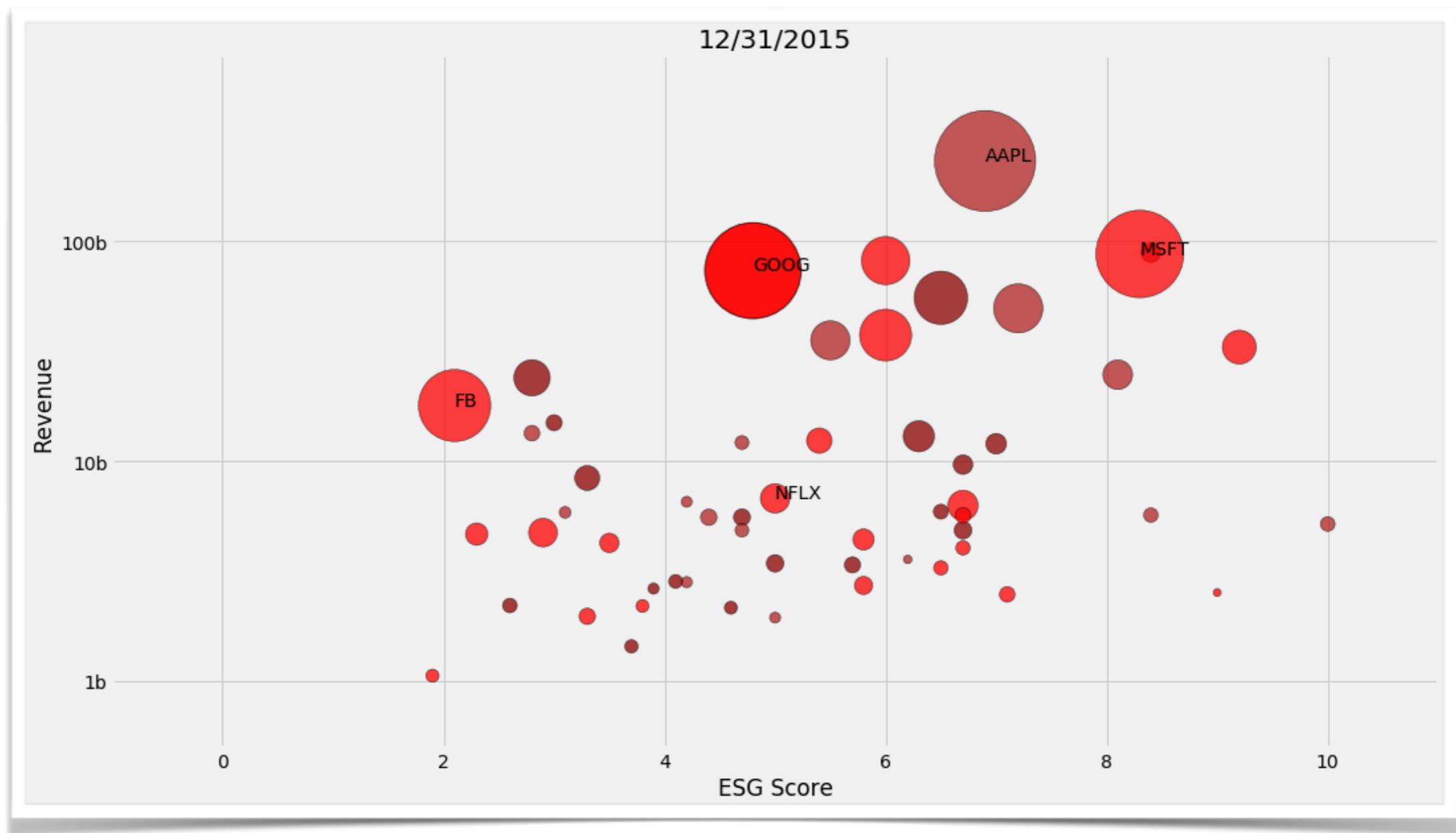


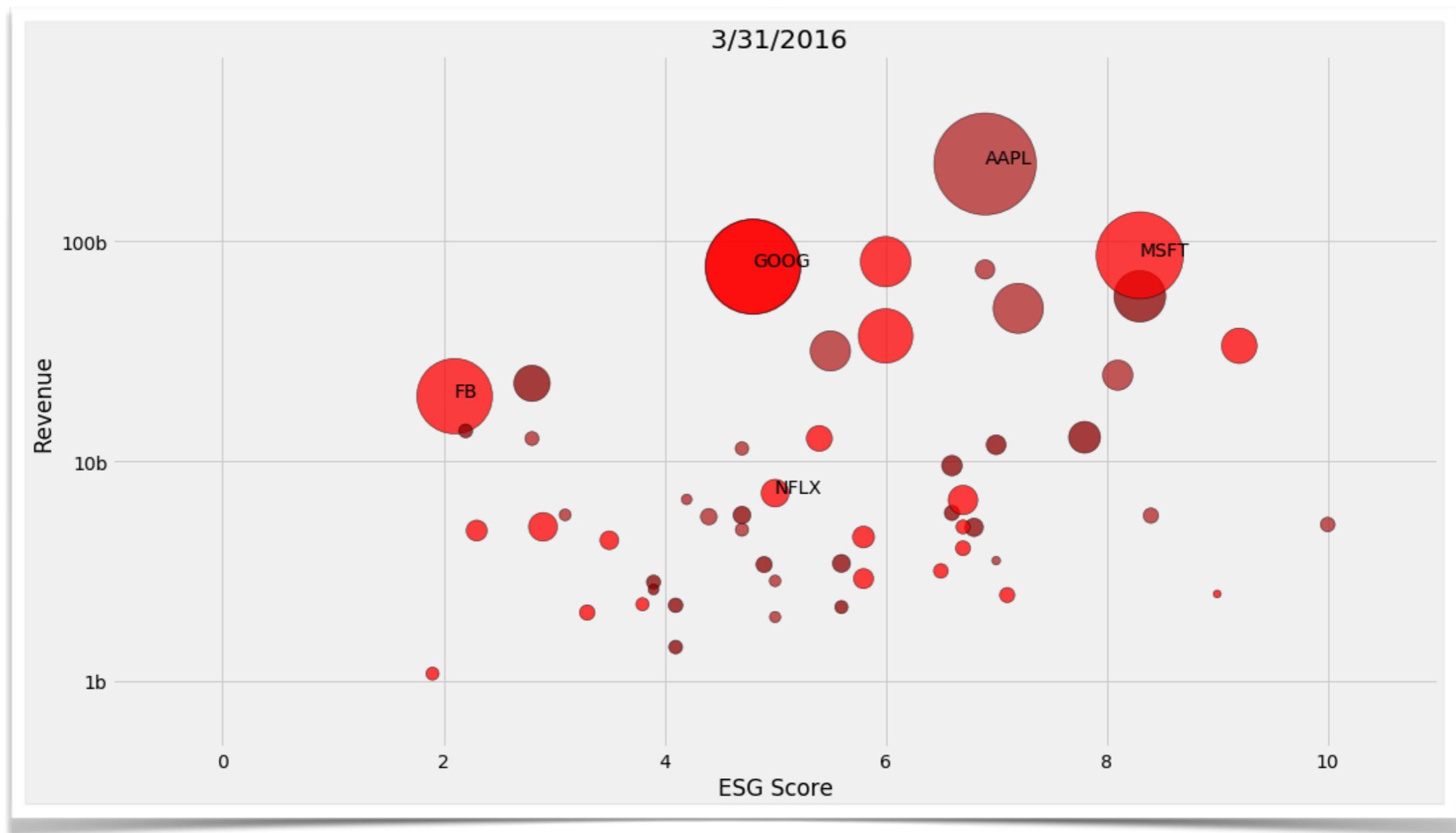


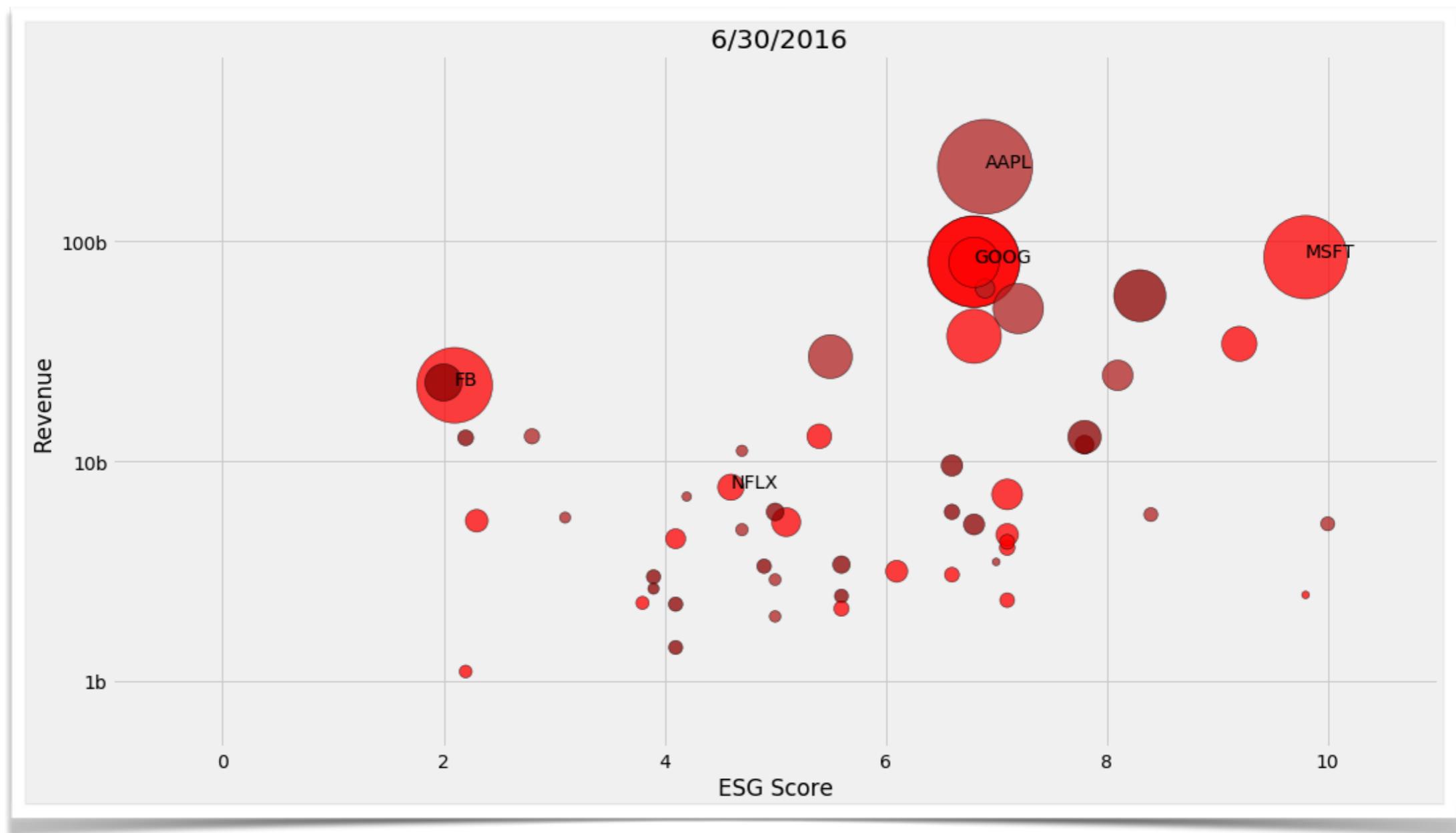


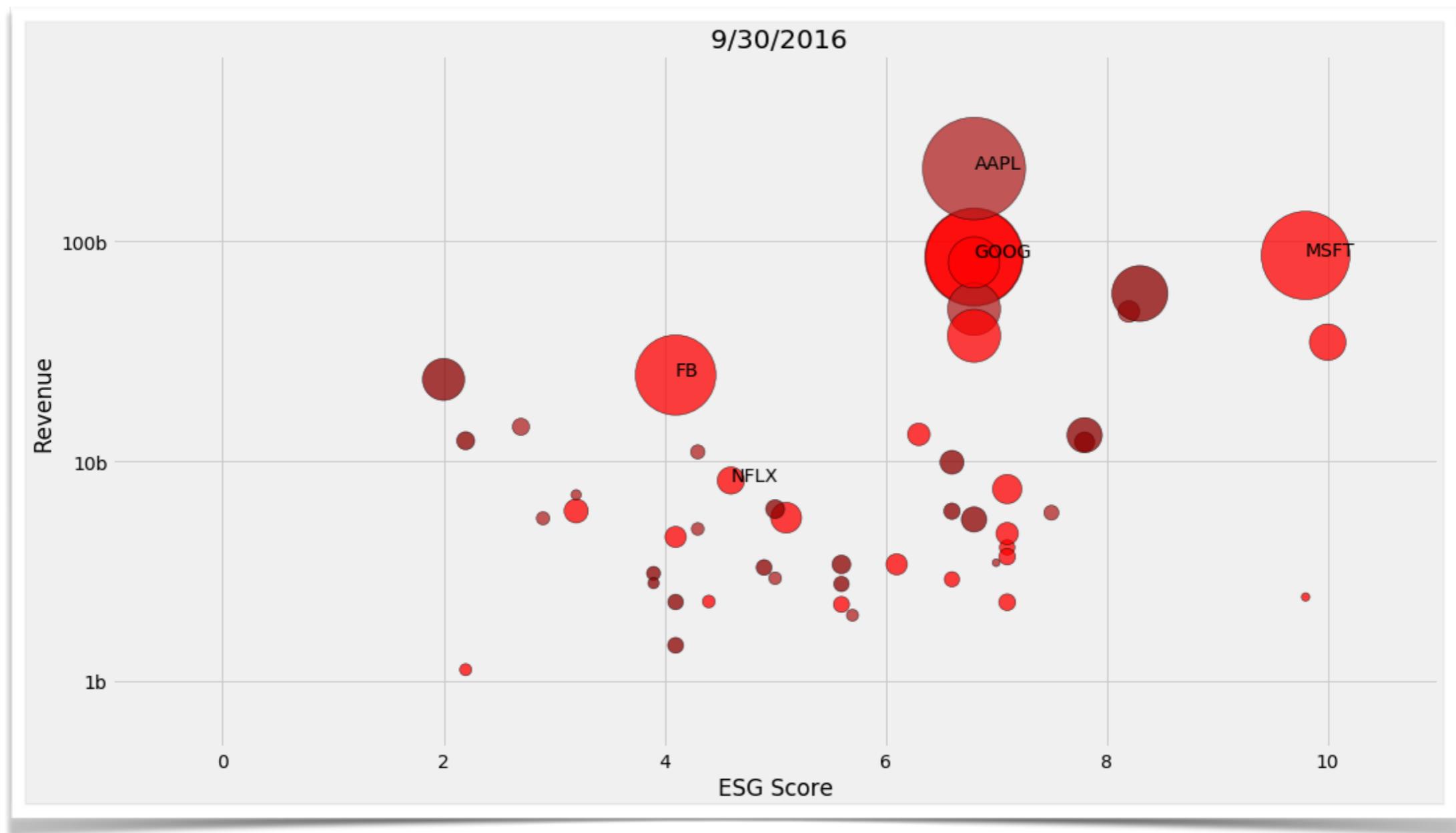


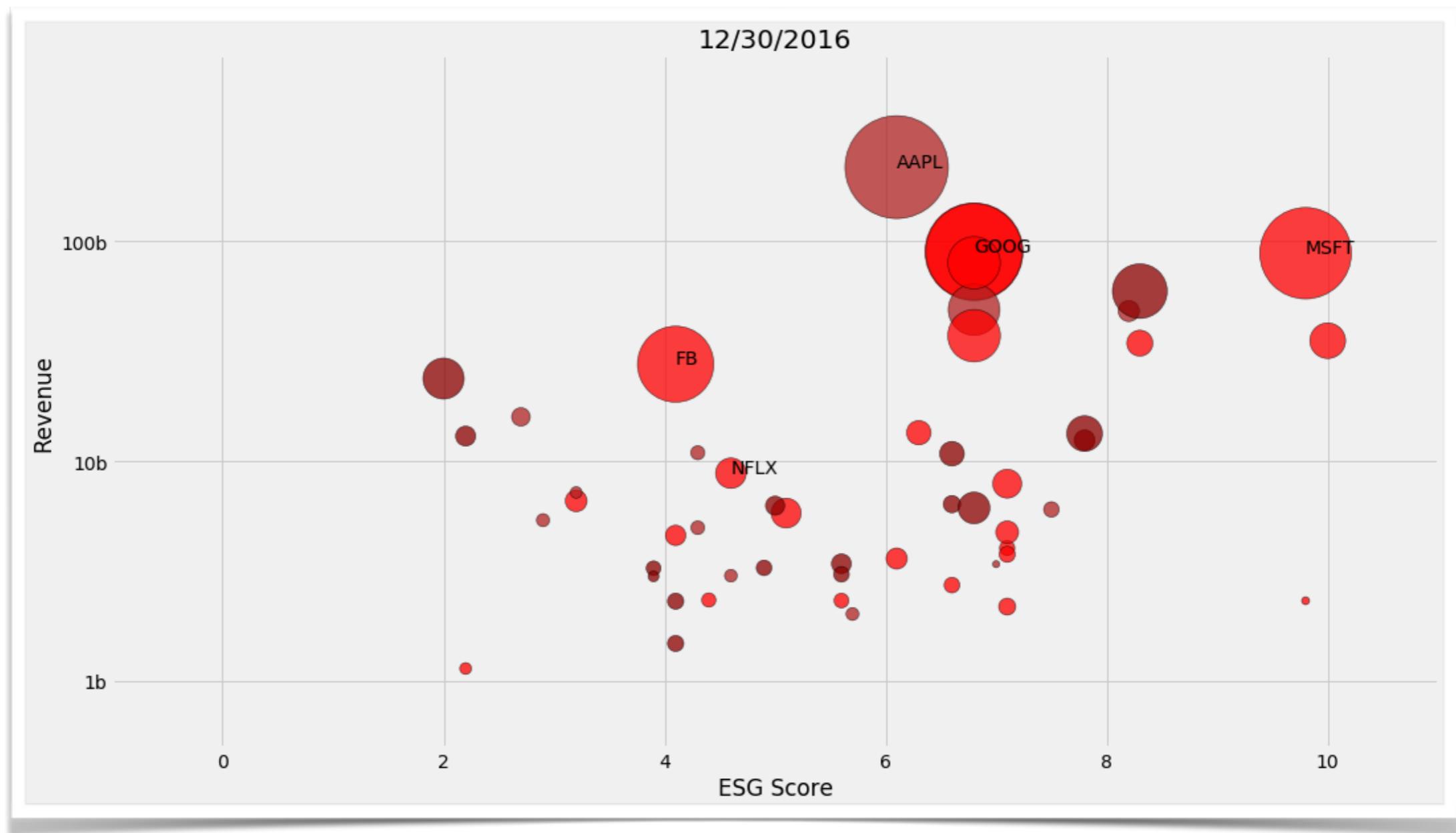


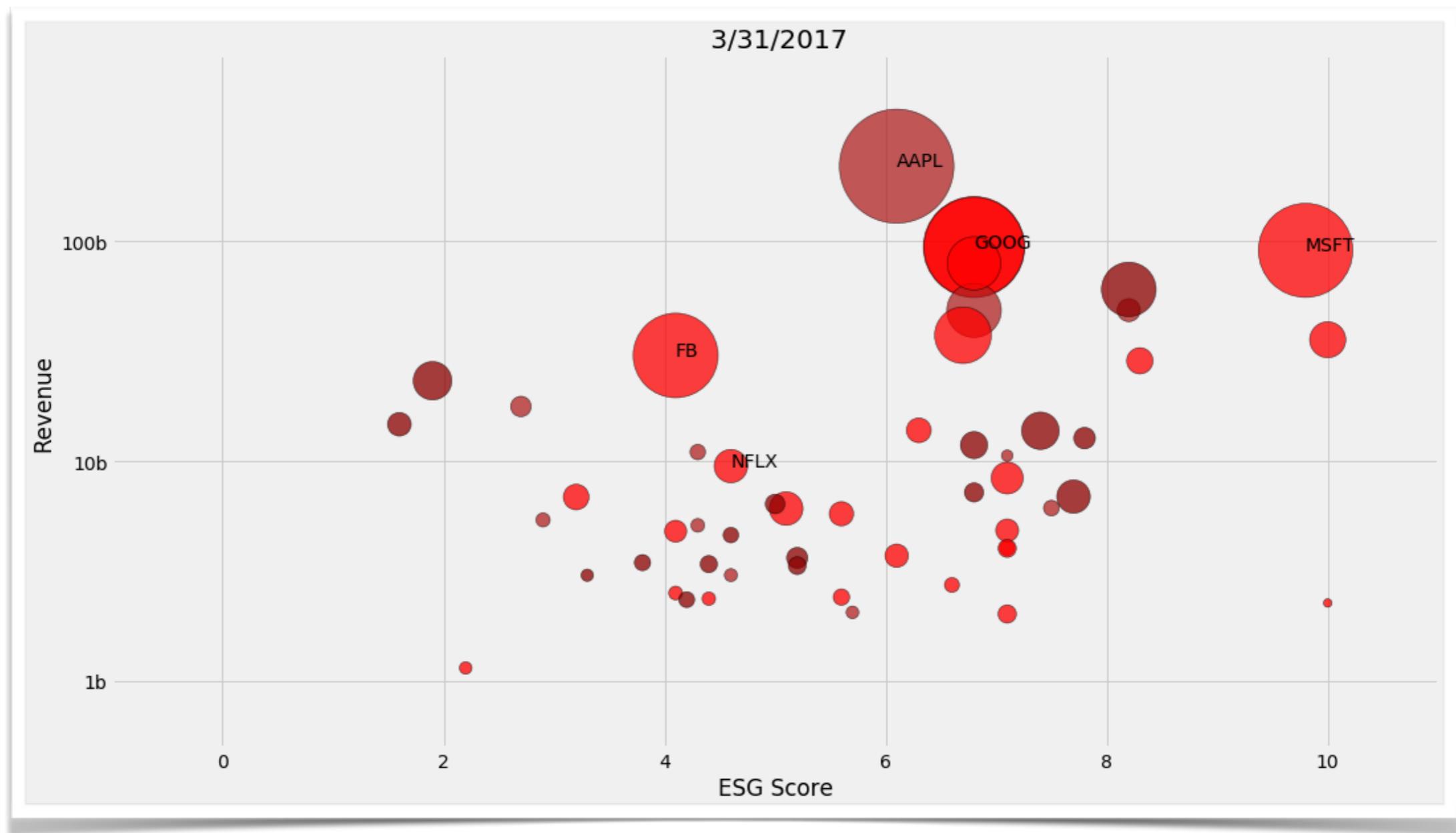


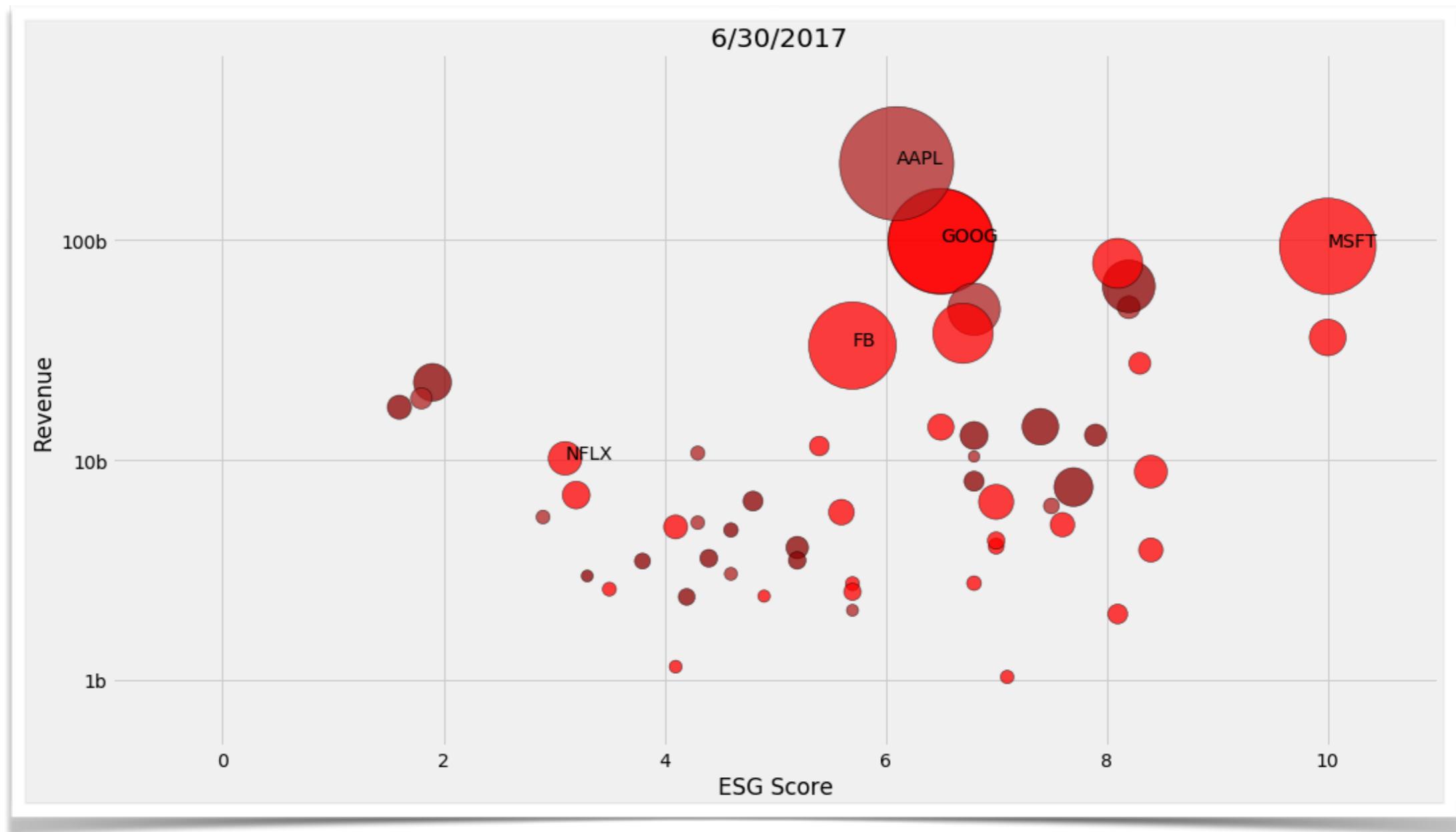


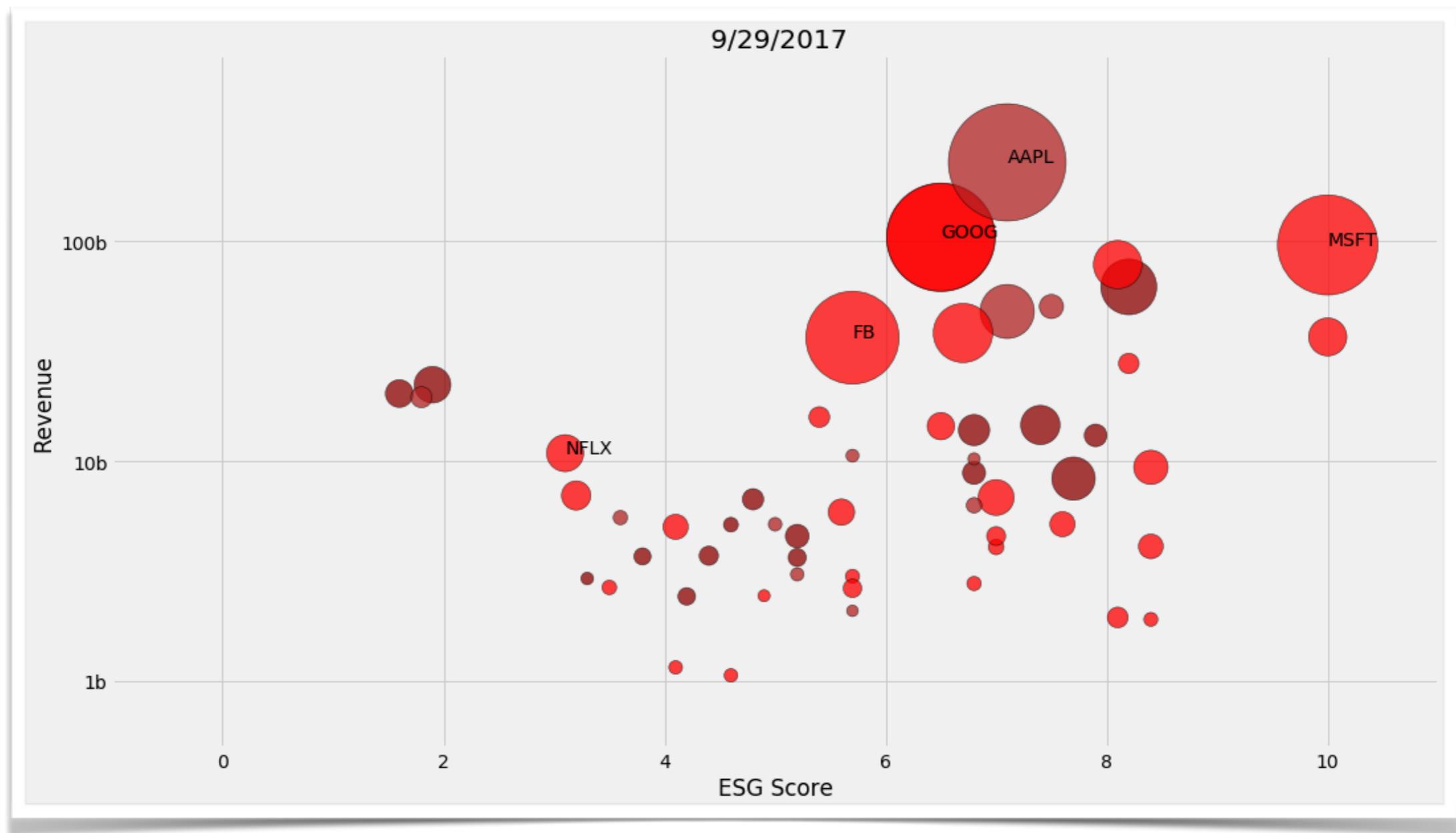


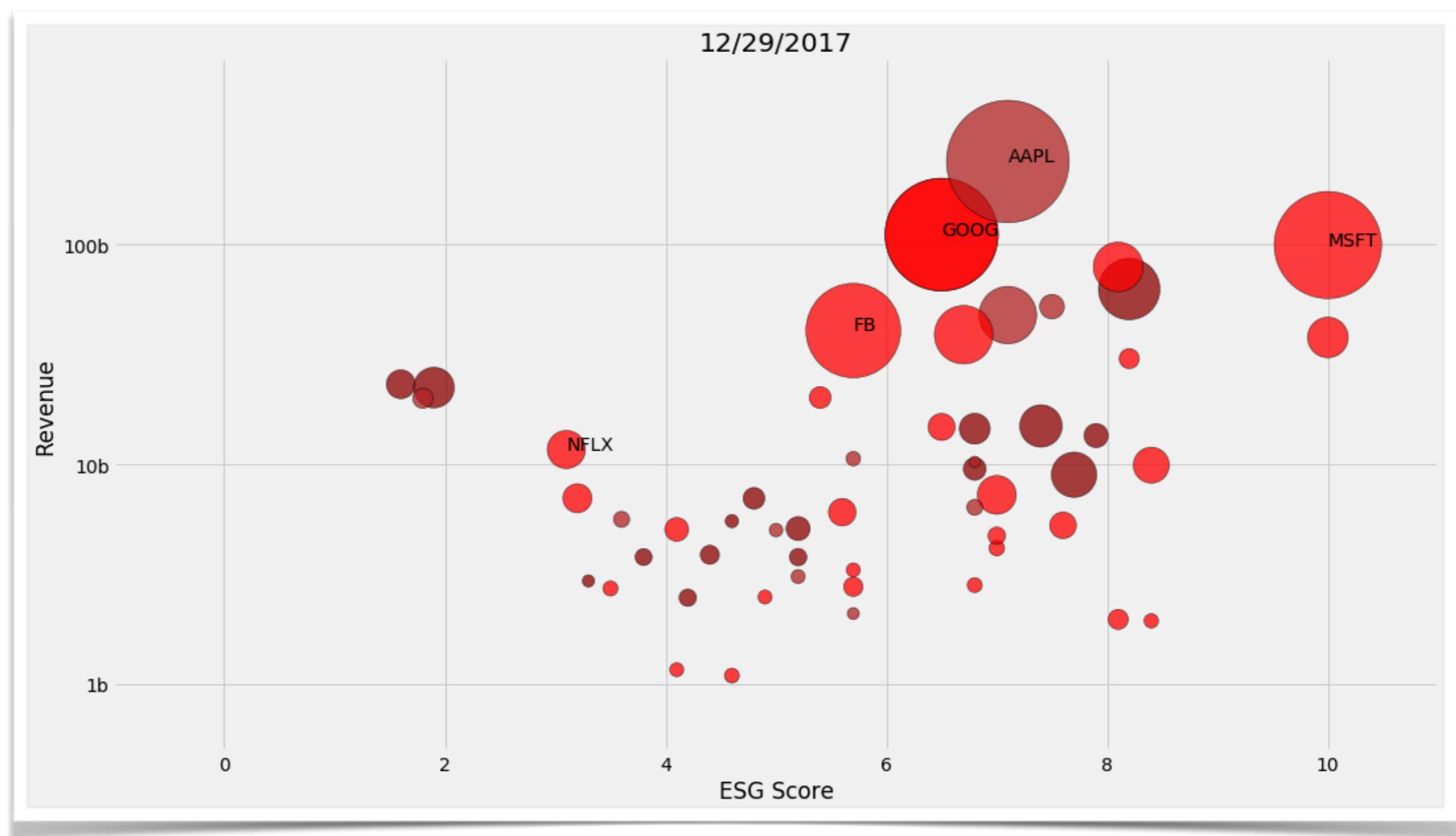


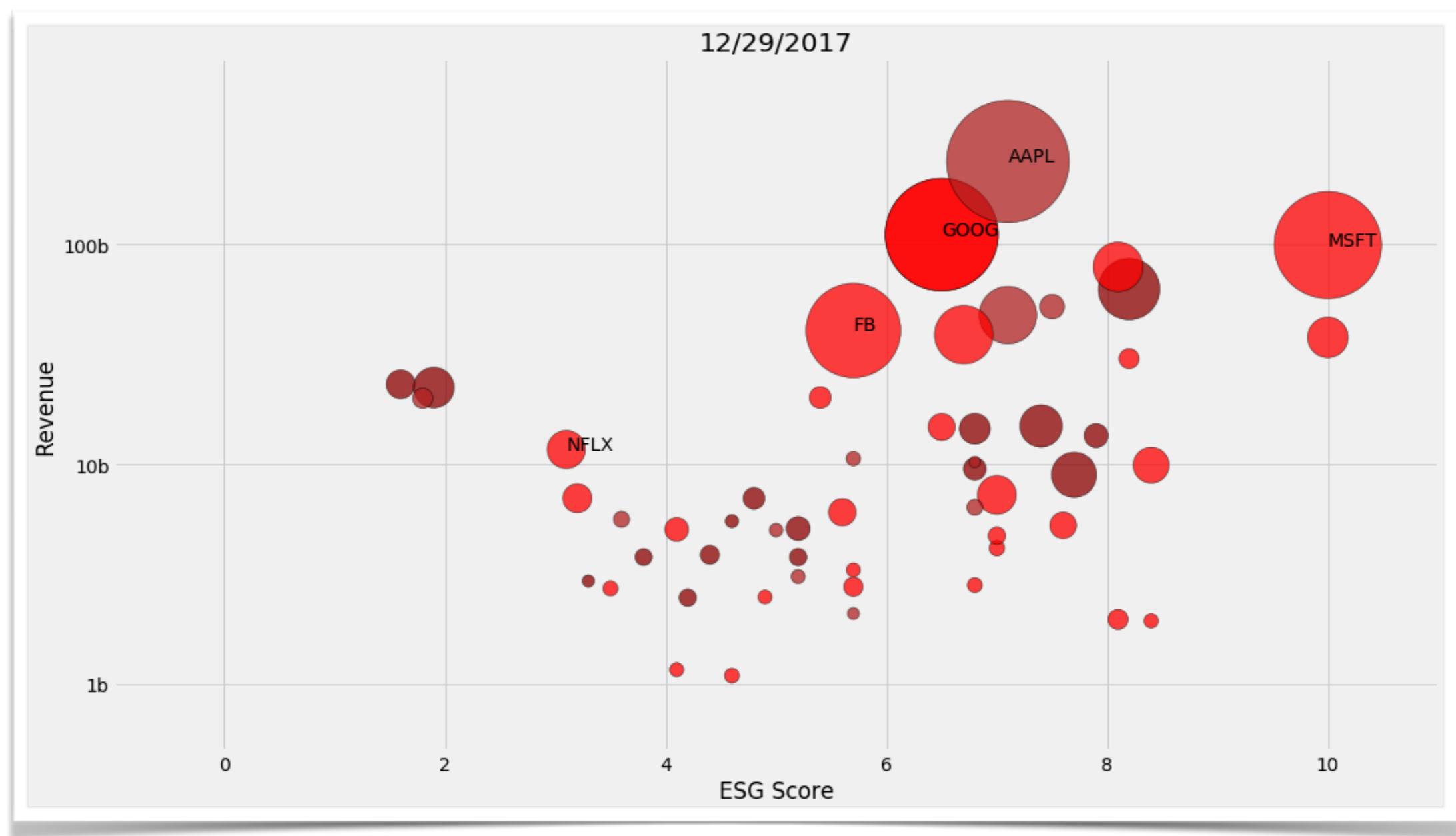


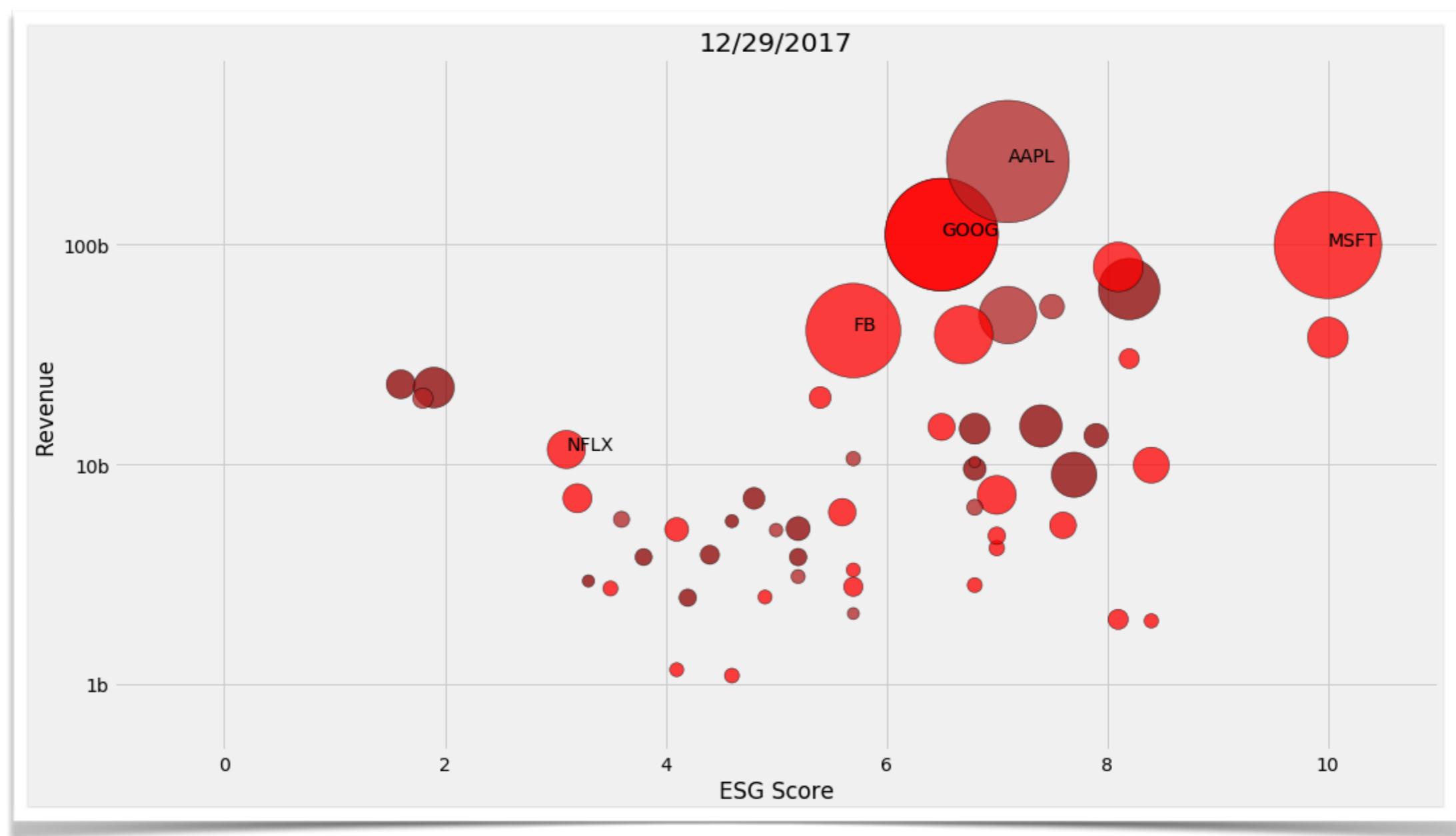


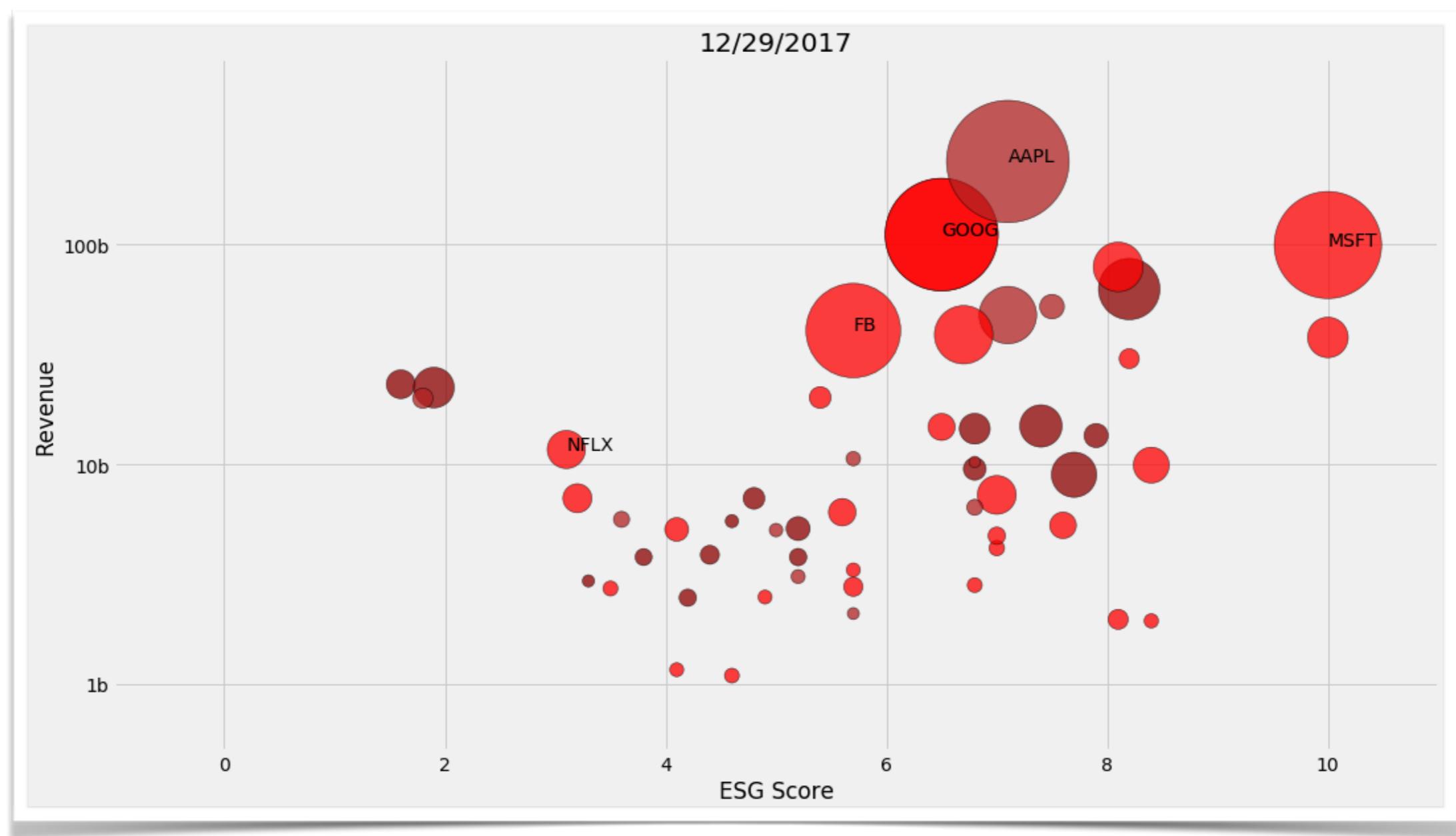


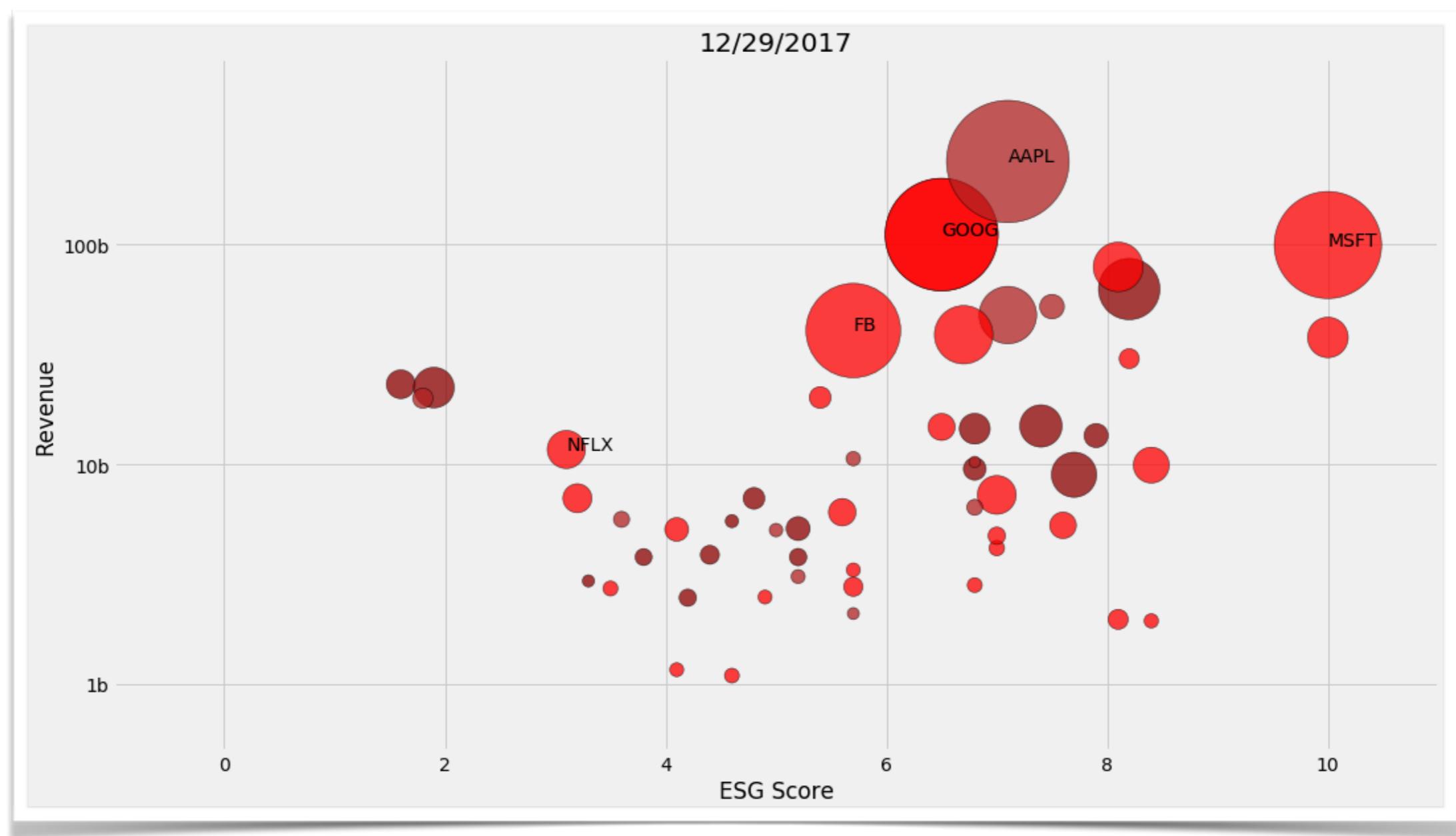




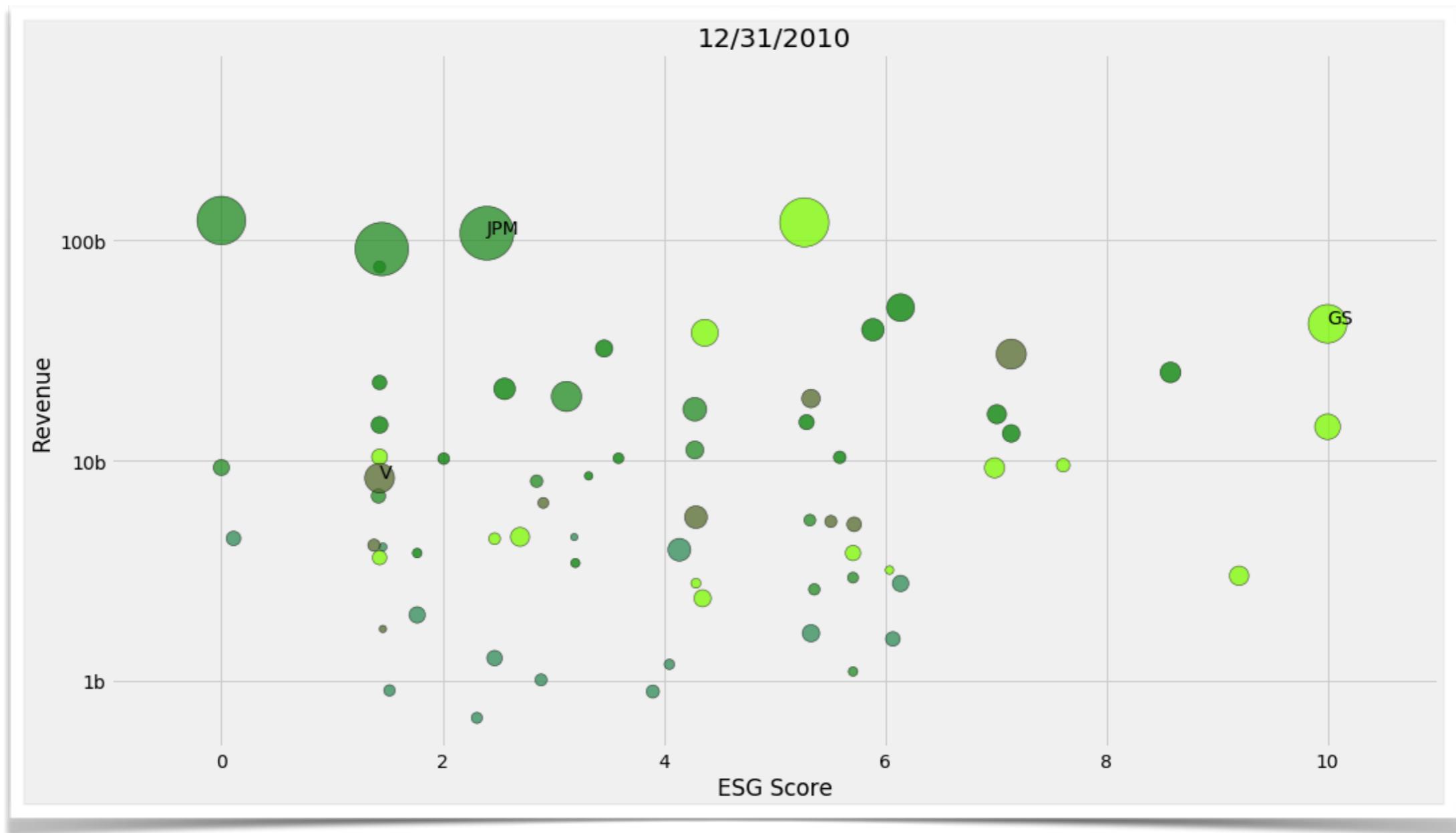




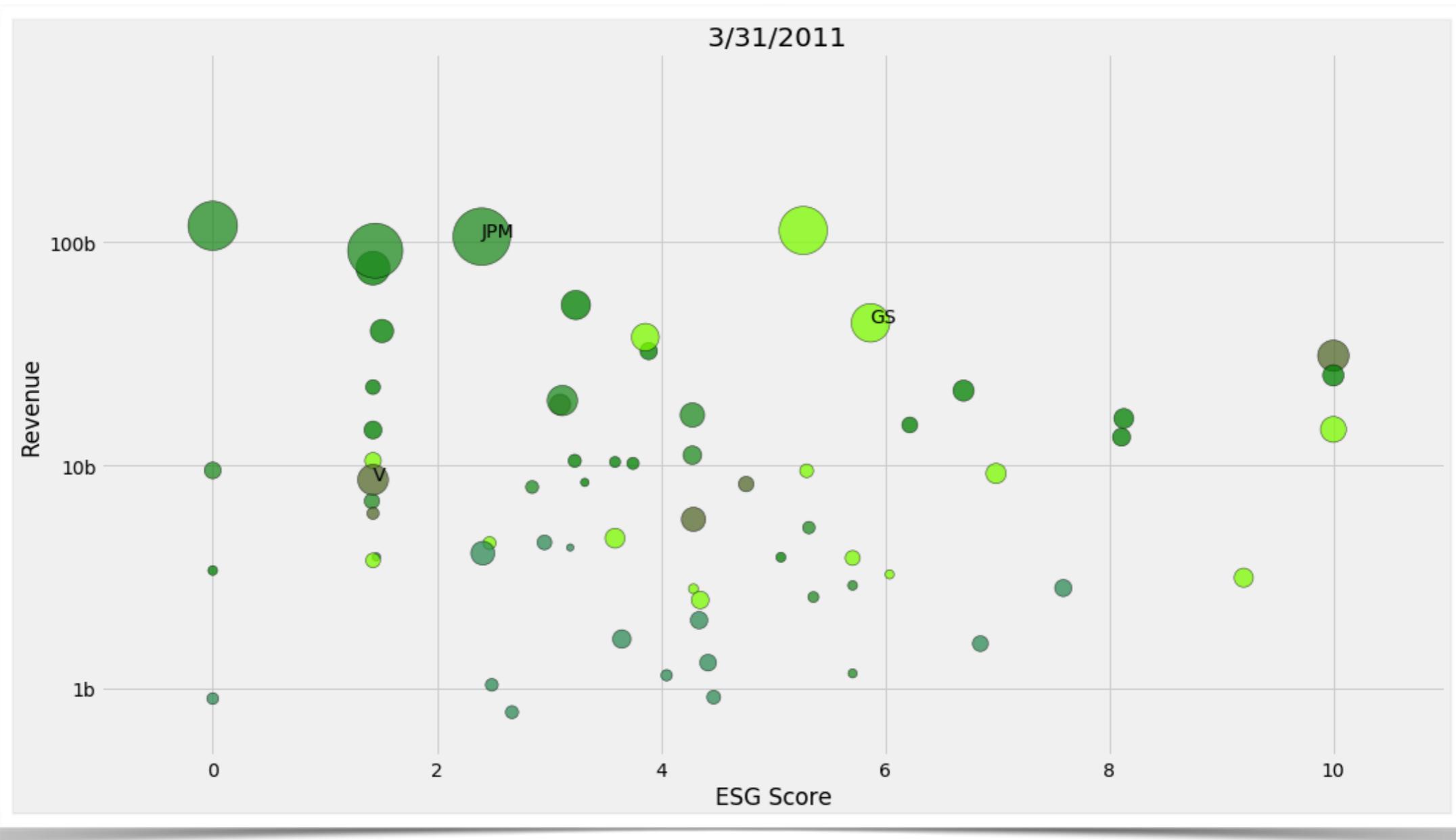


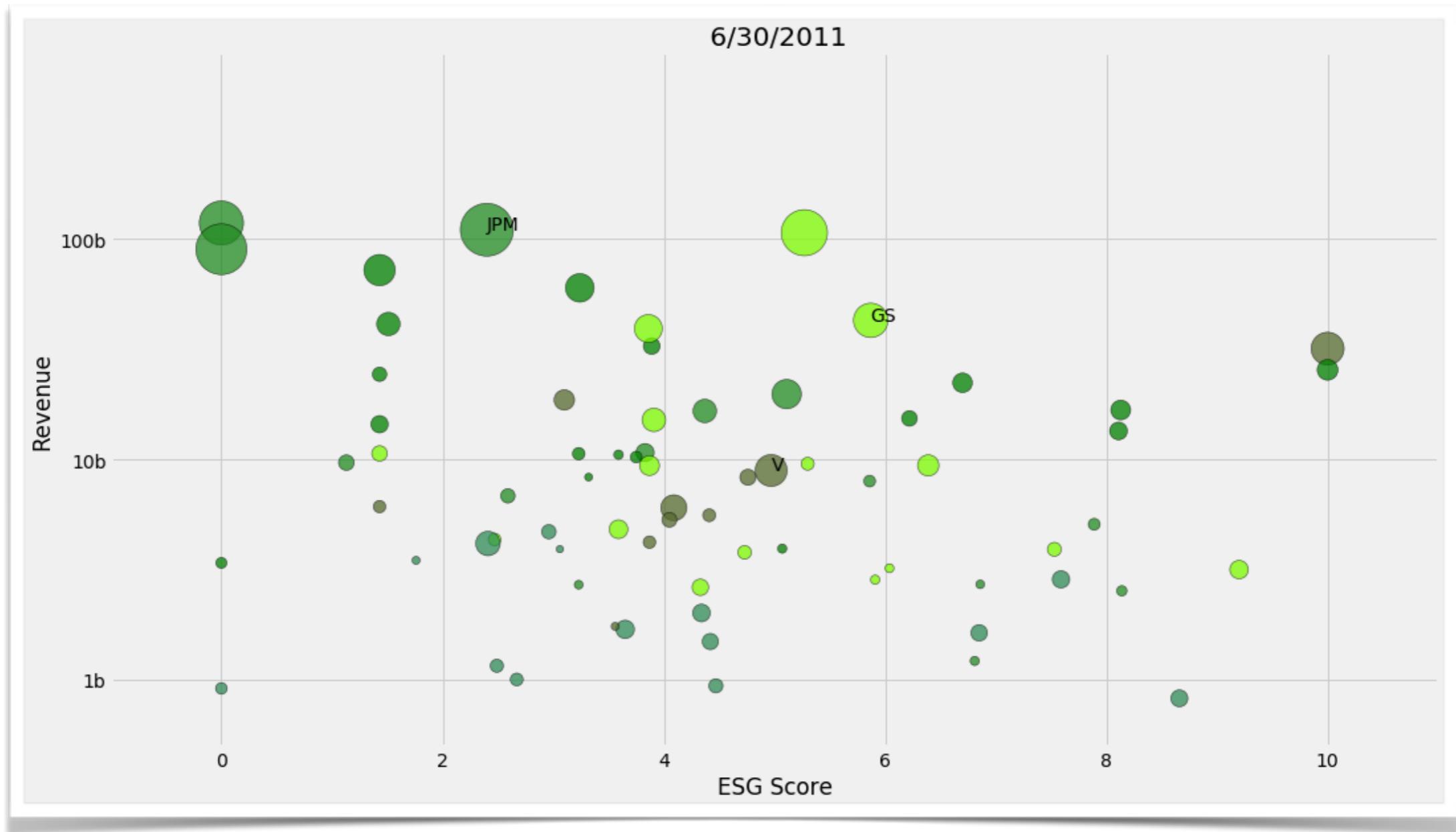


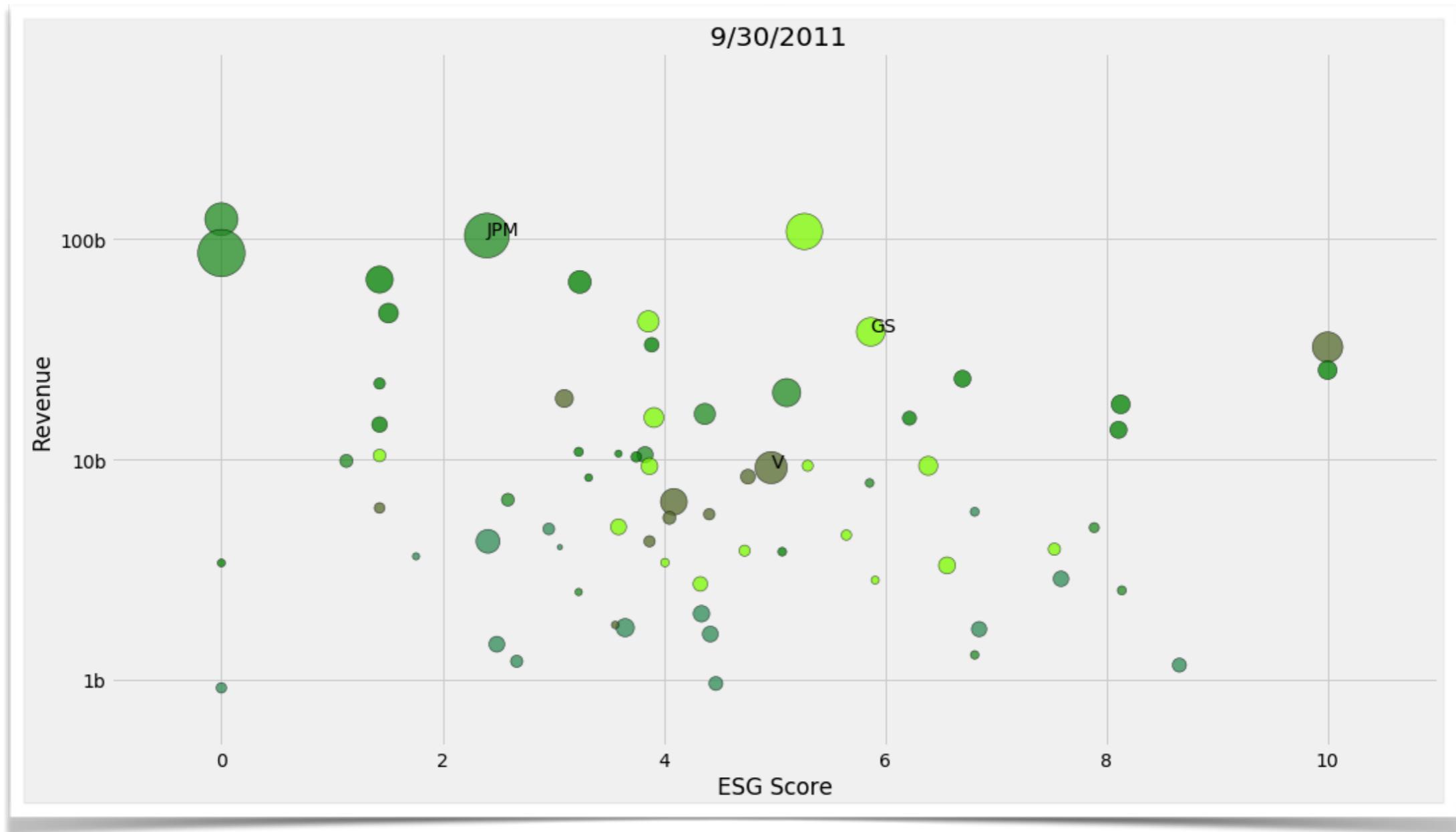
RBICS Color Mapping - Finance

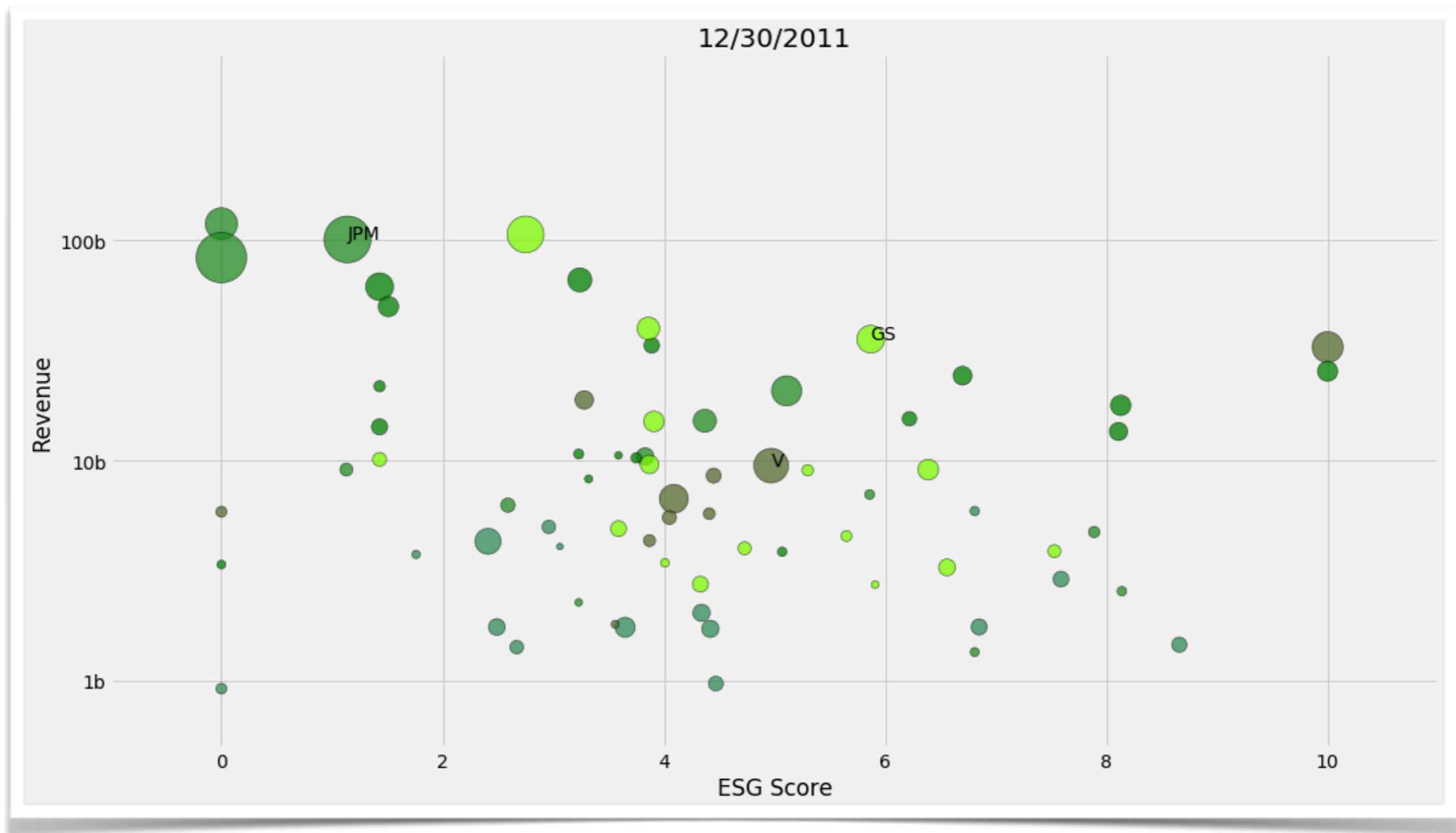


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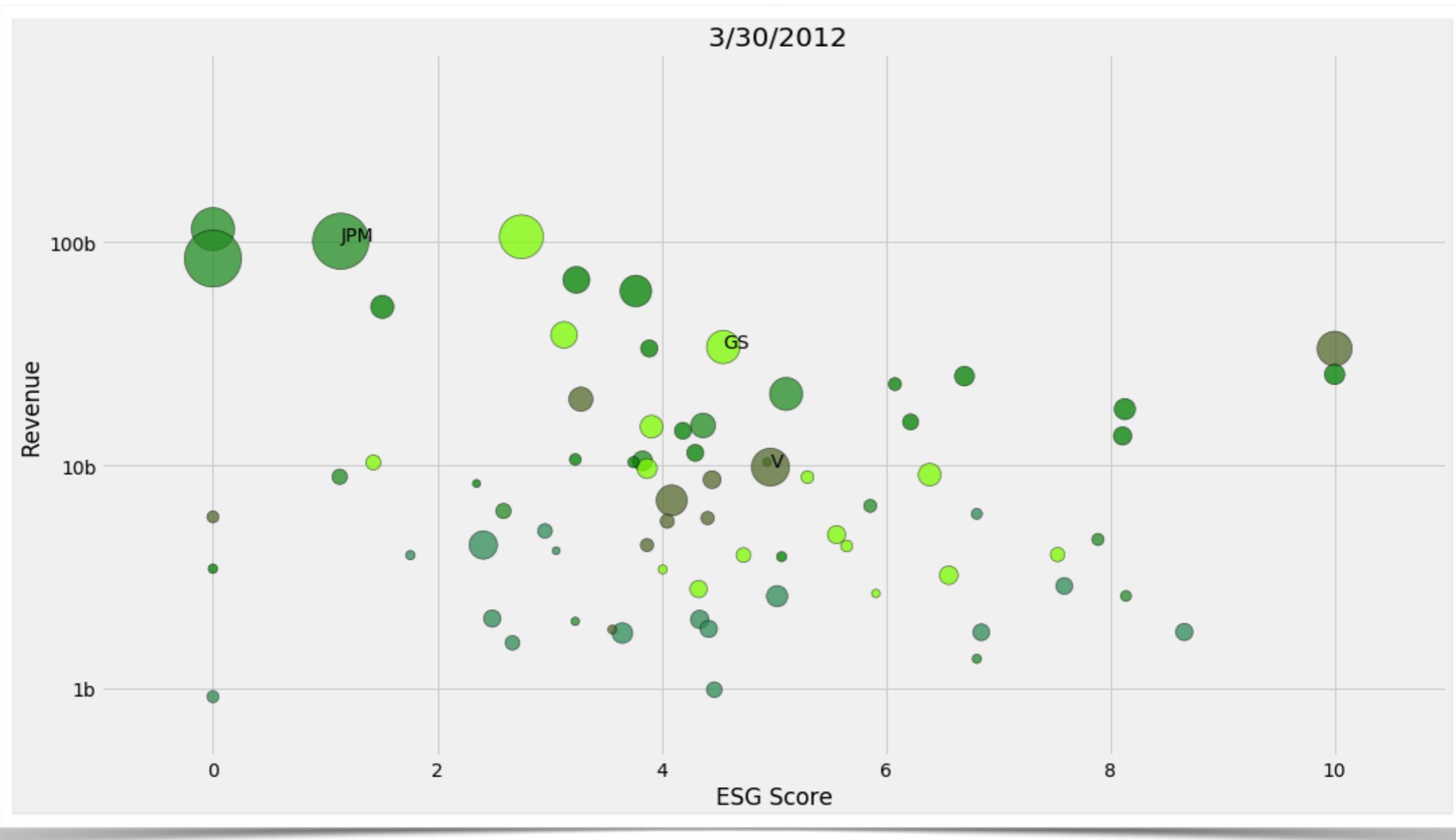




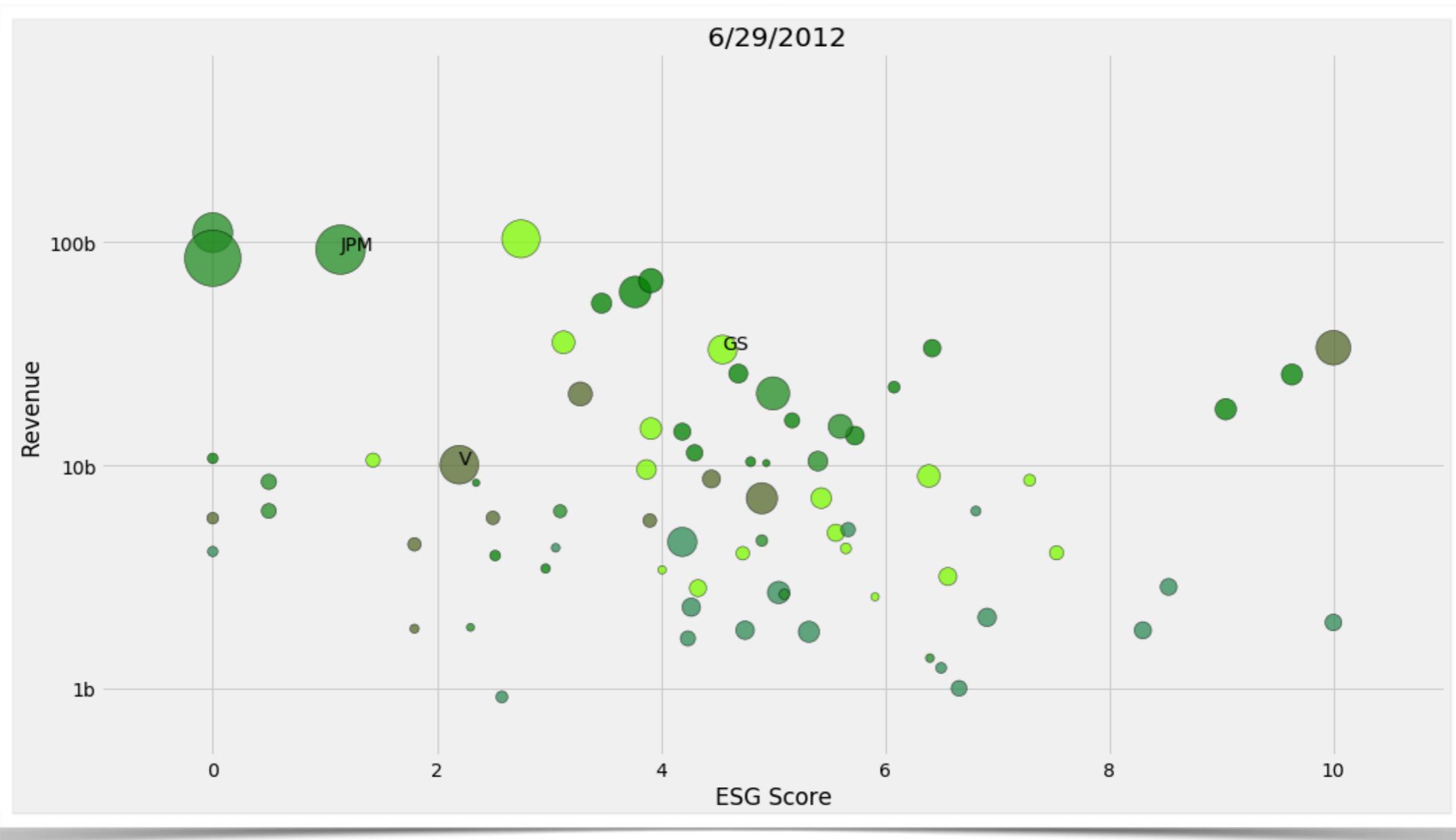




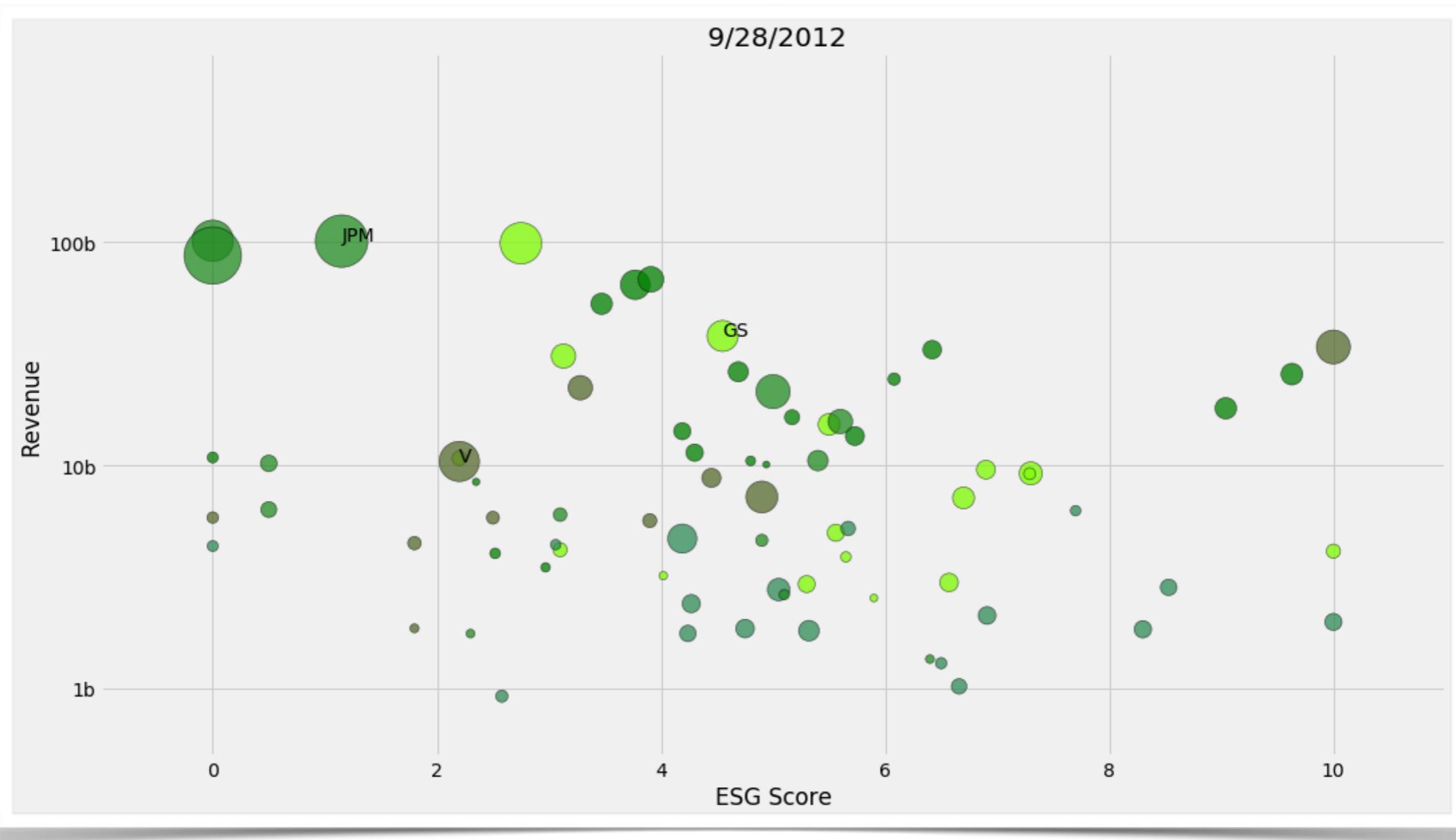
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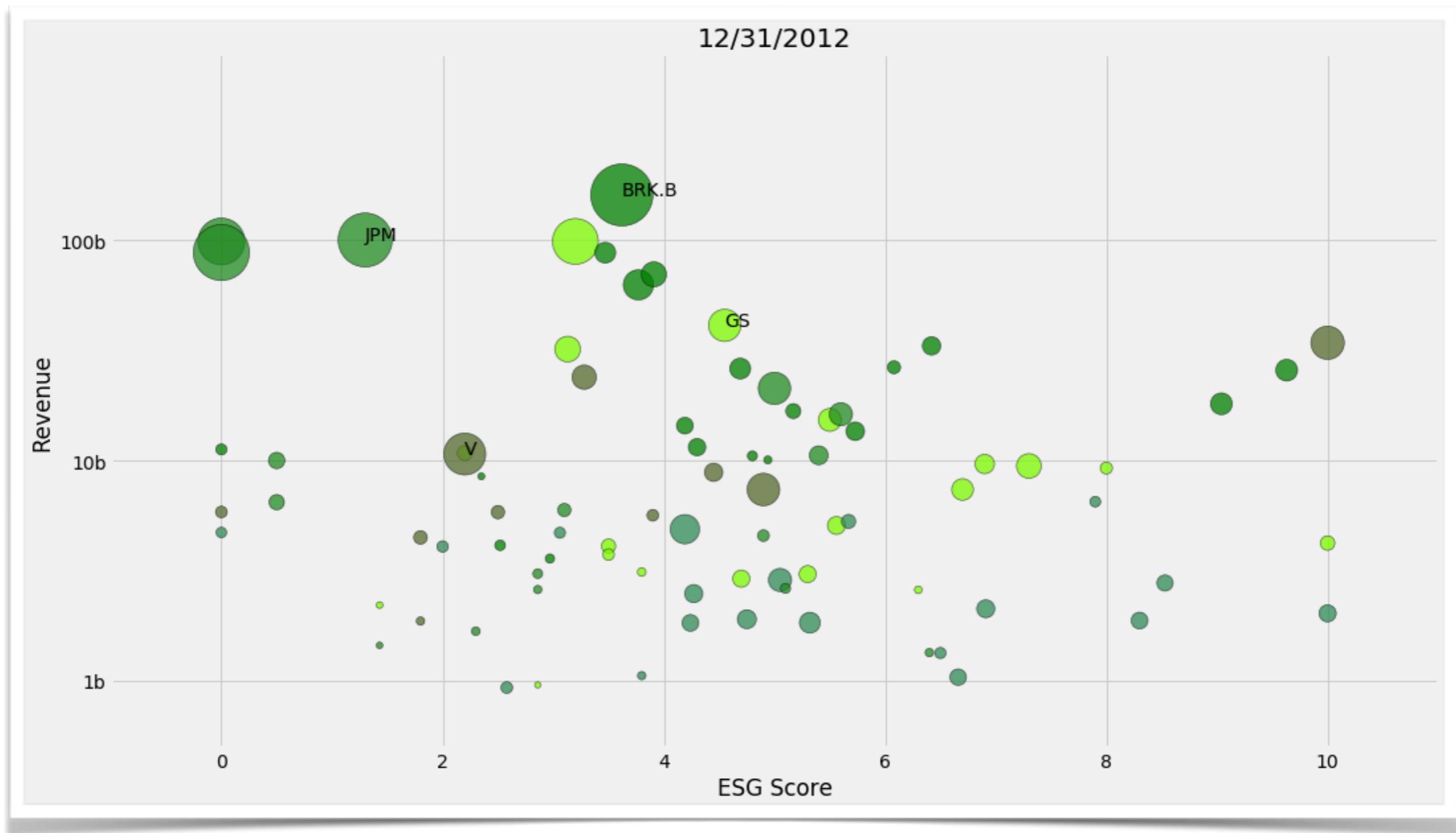


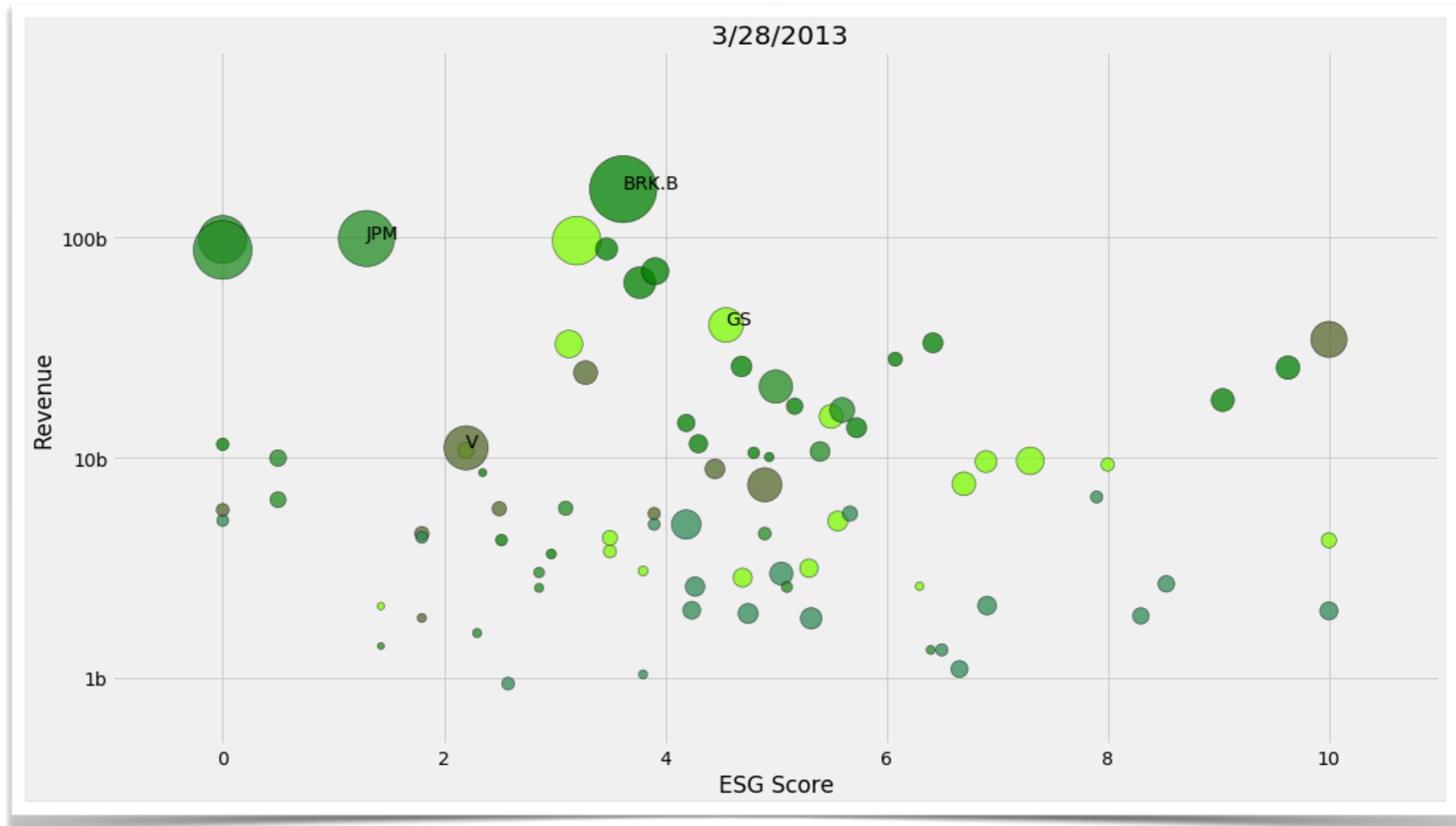
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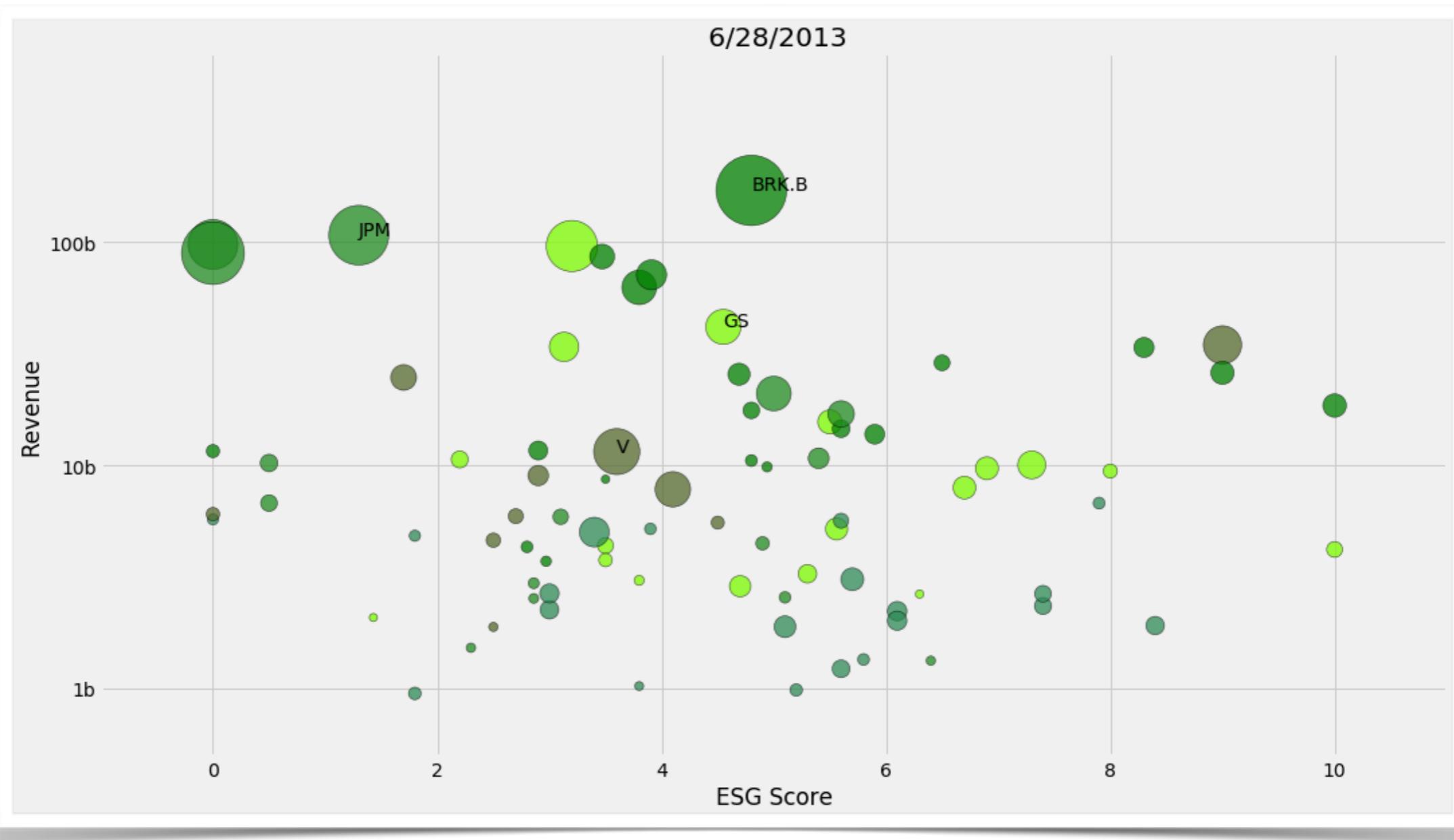
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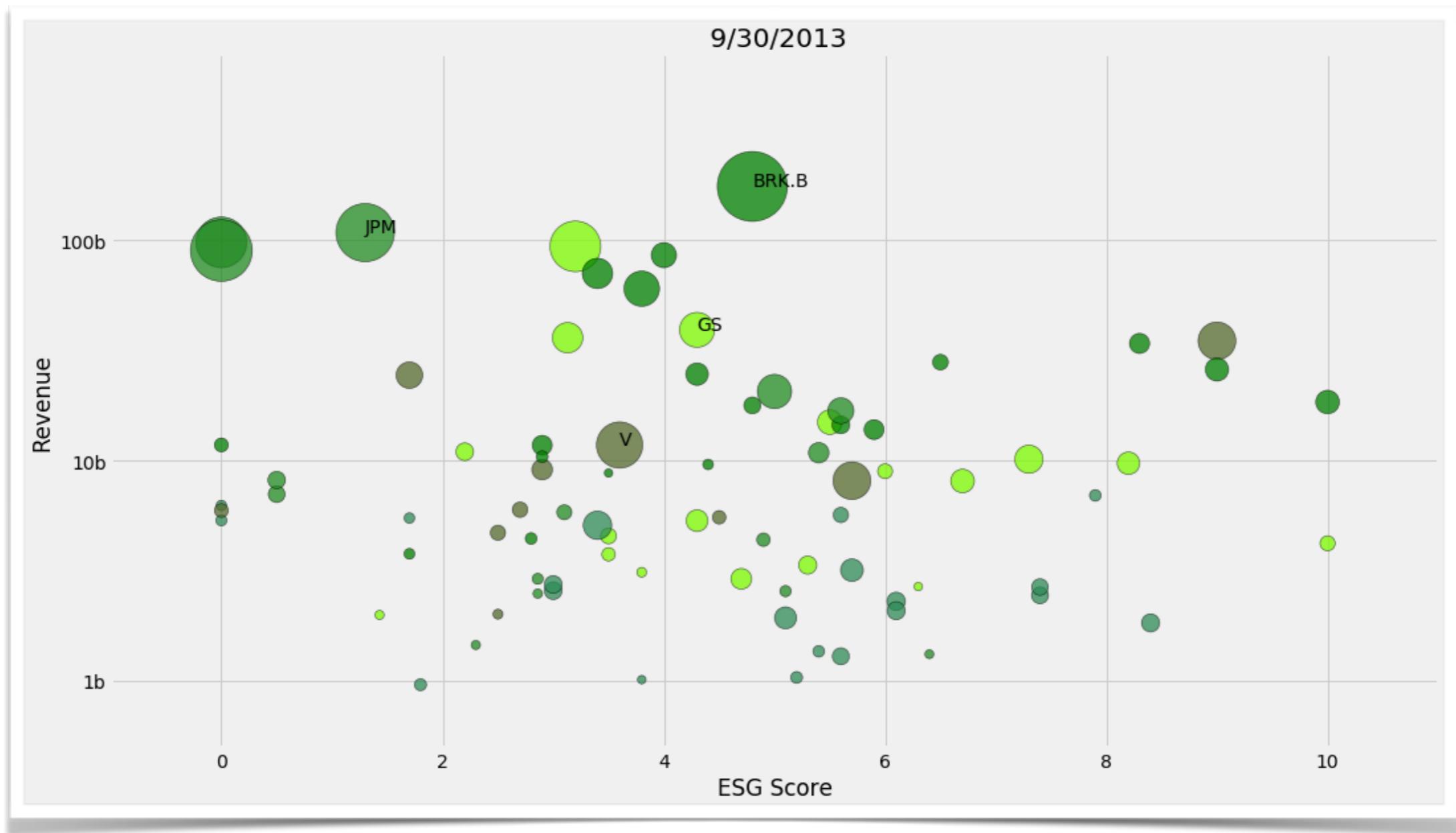


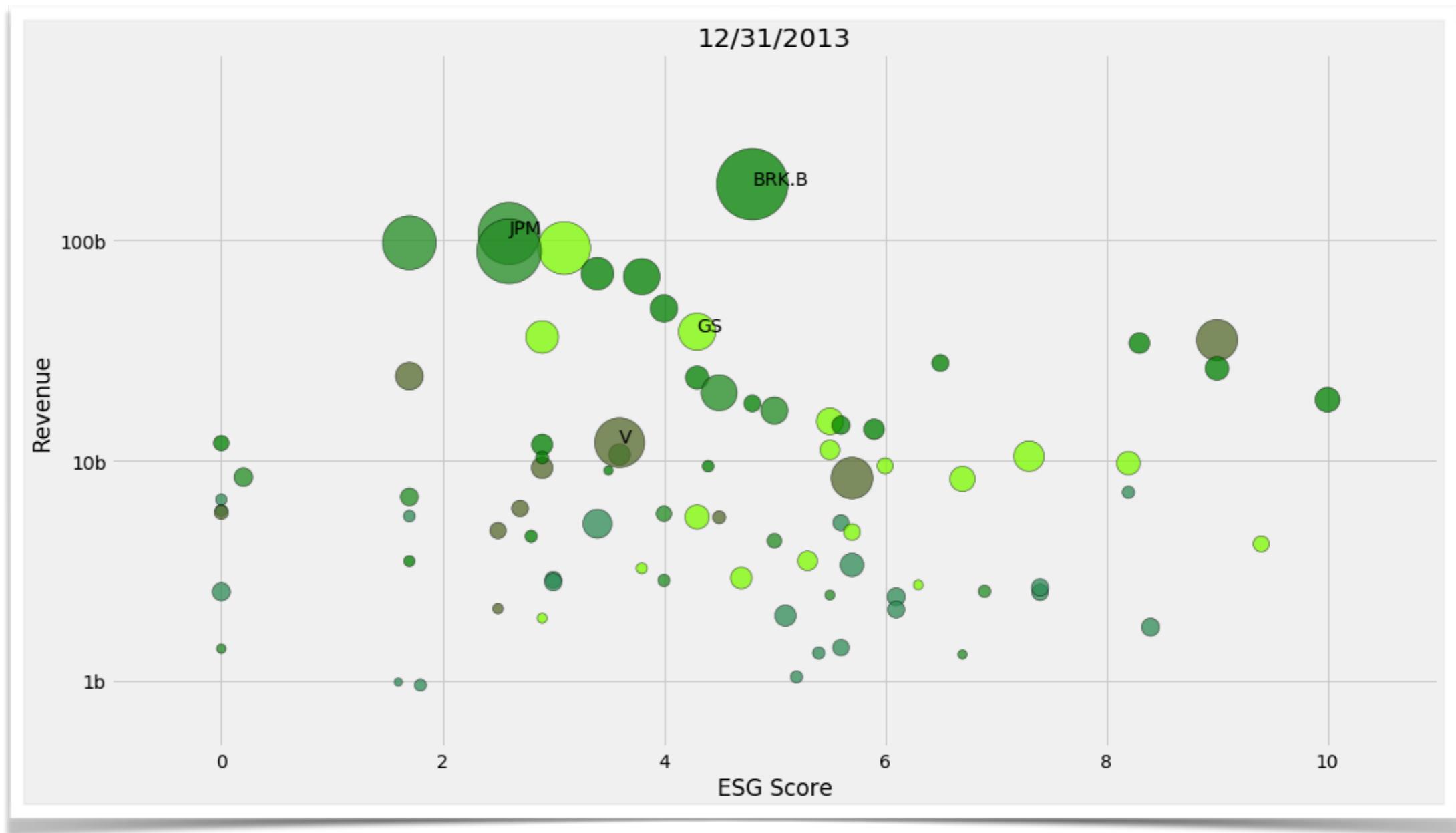


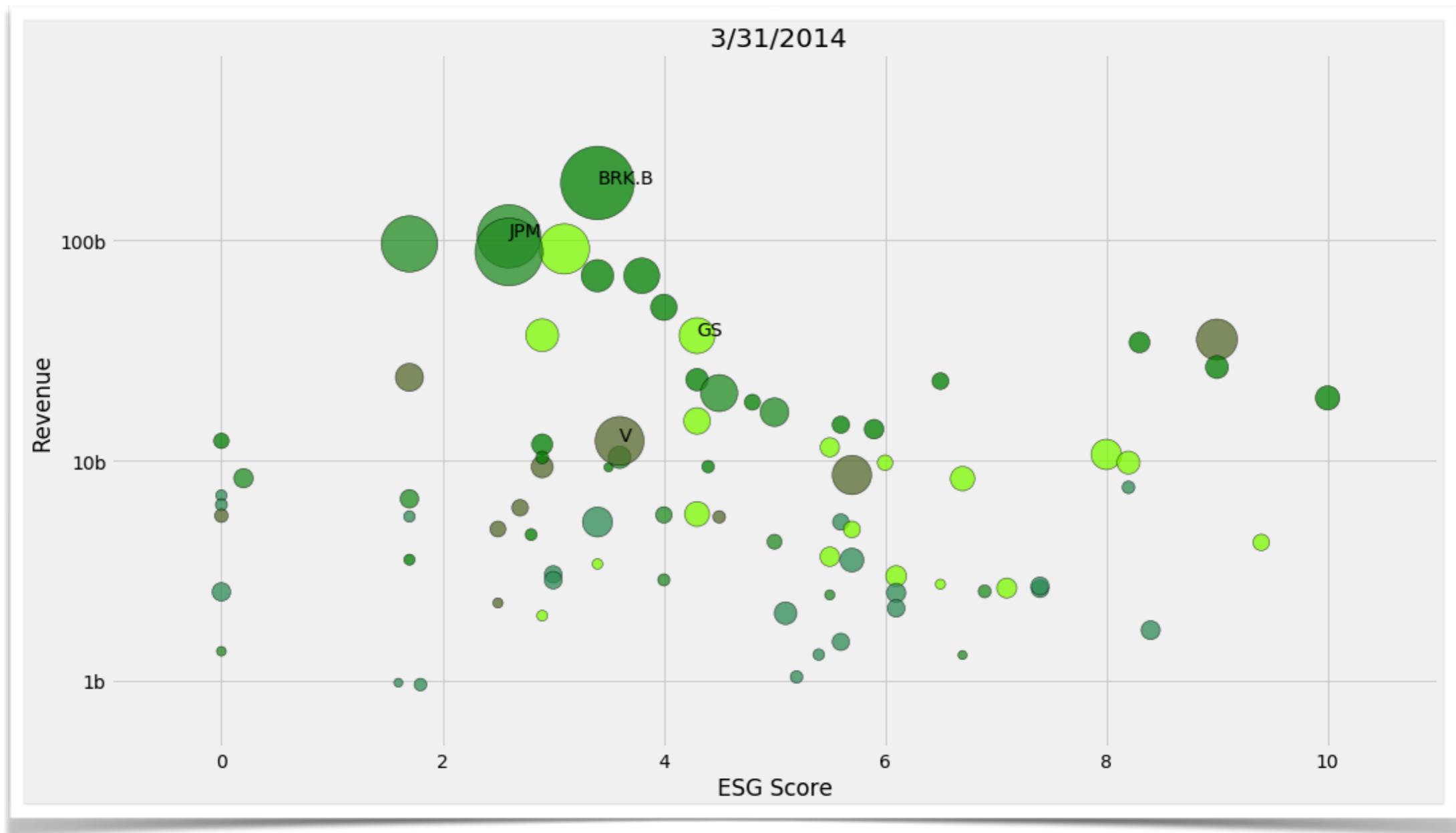


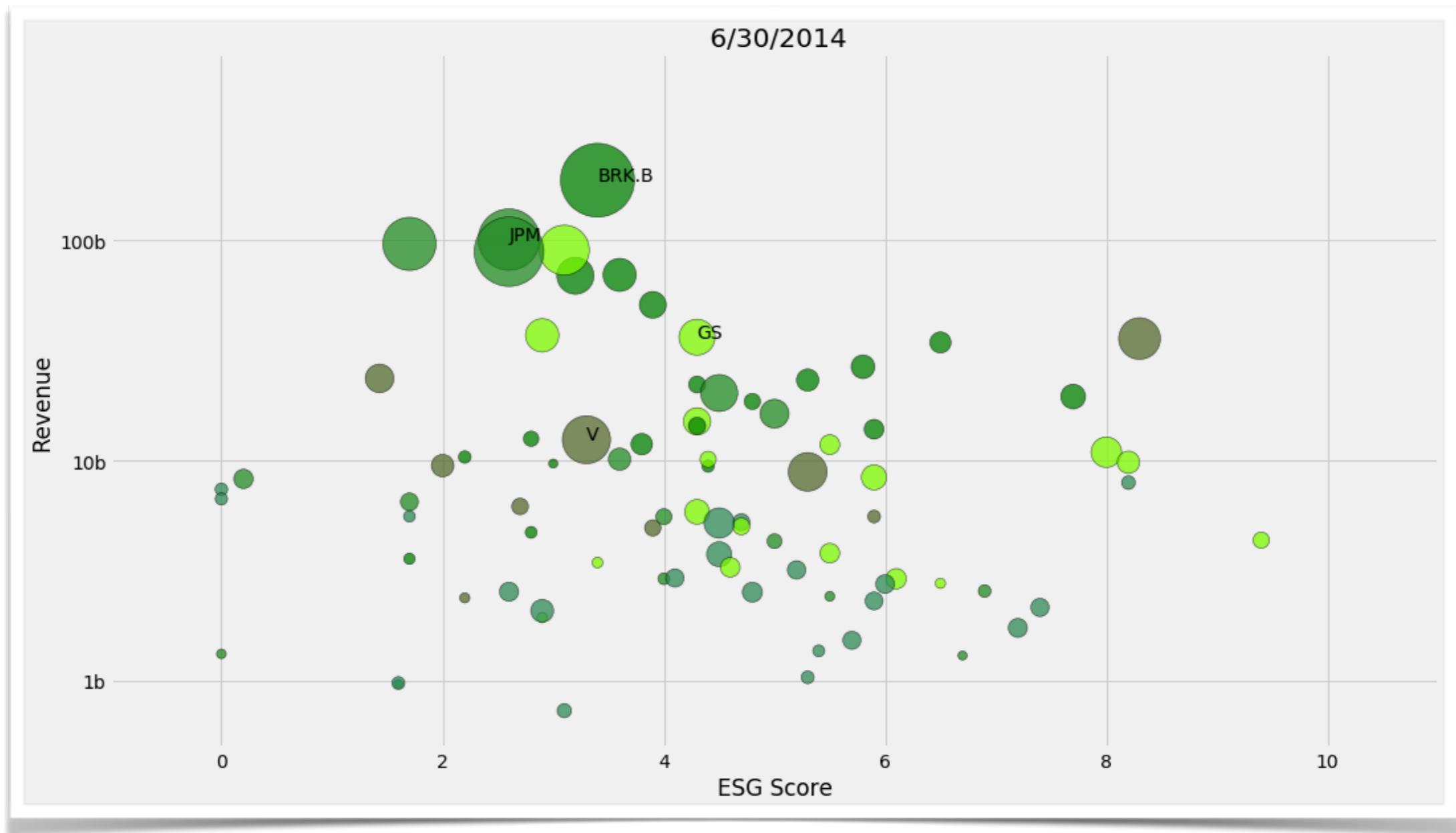
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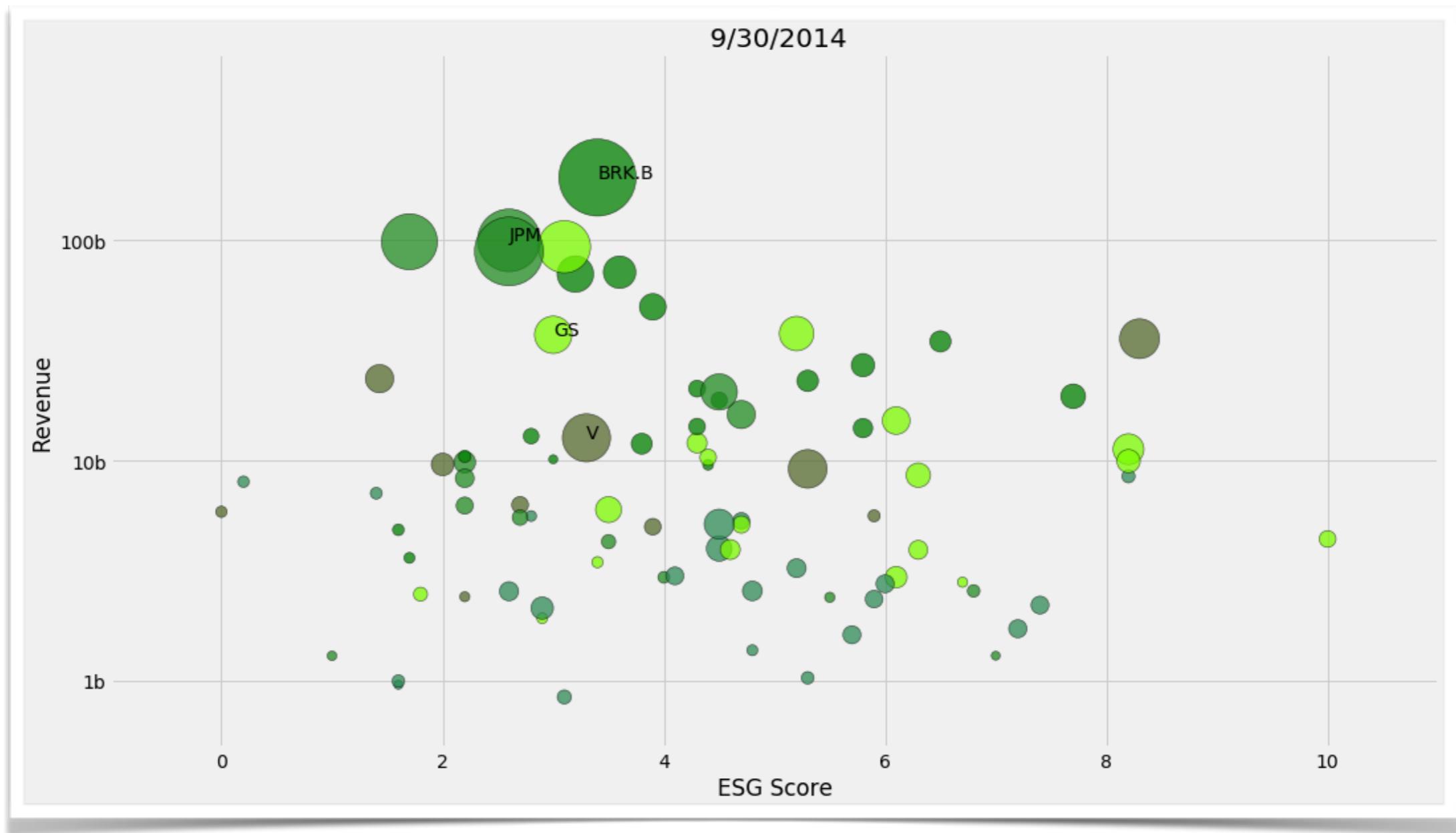


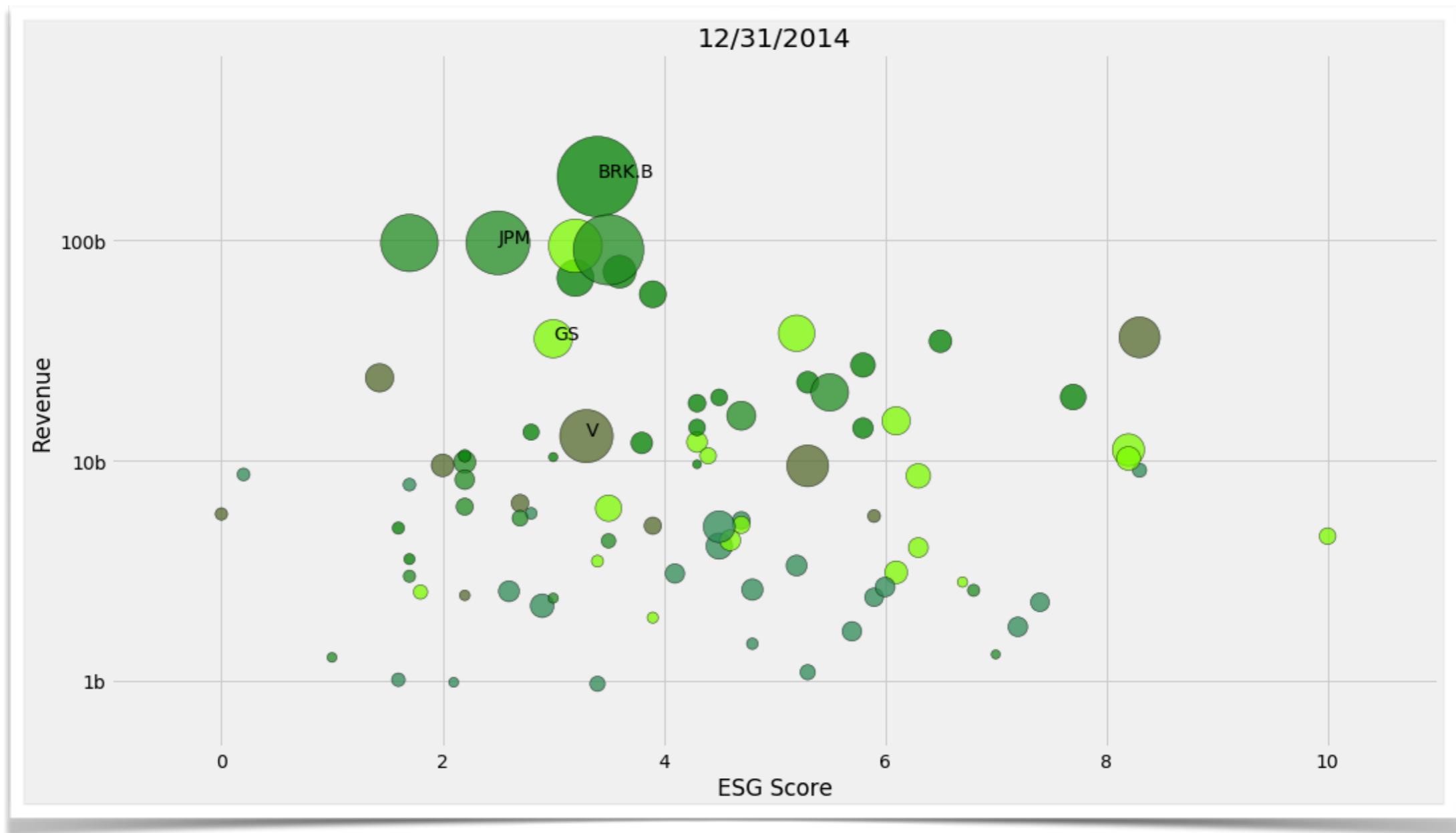


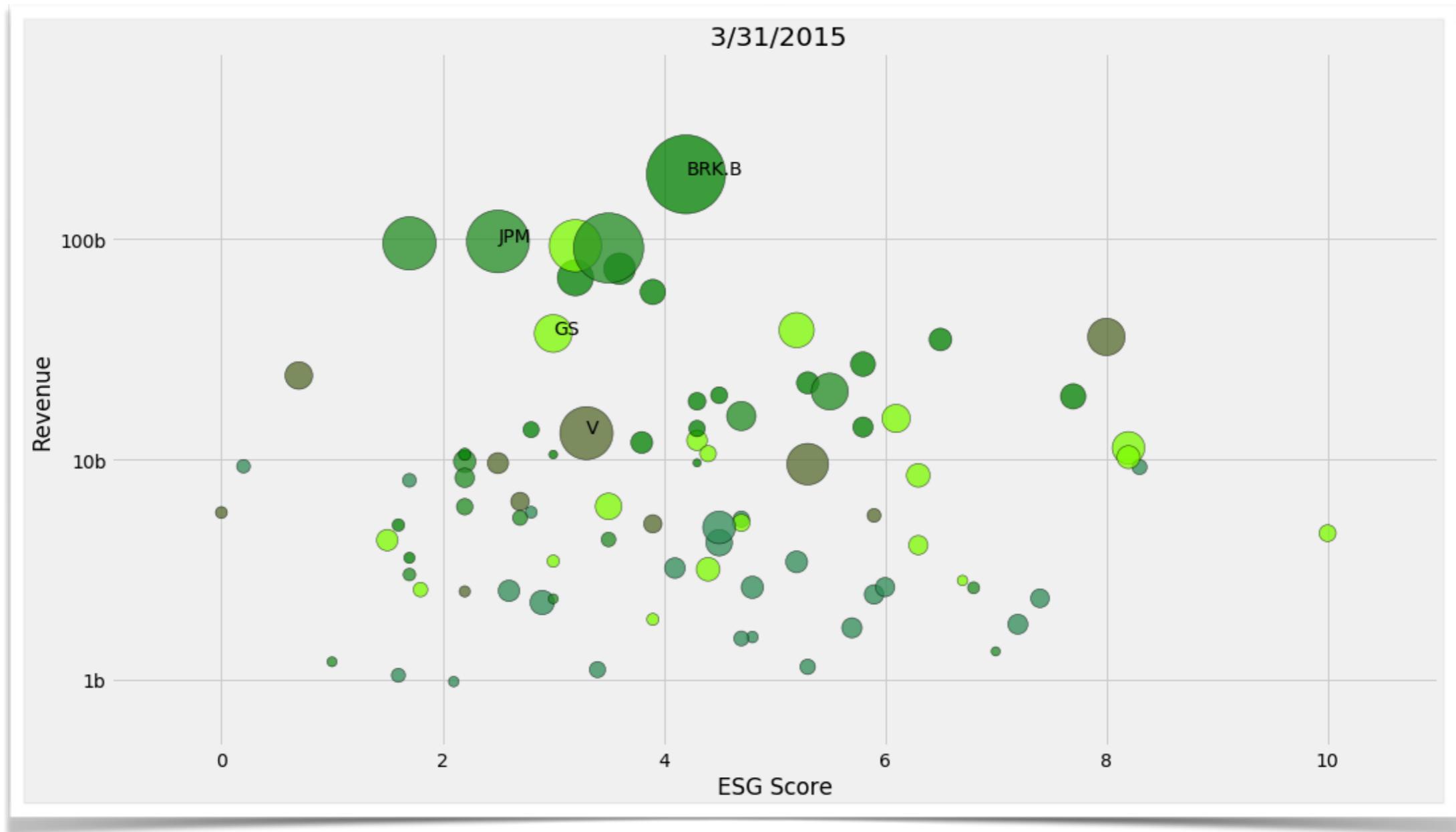


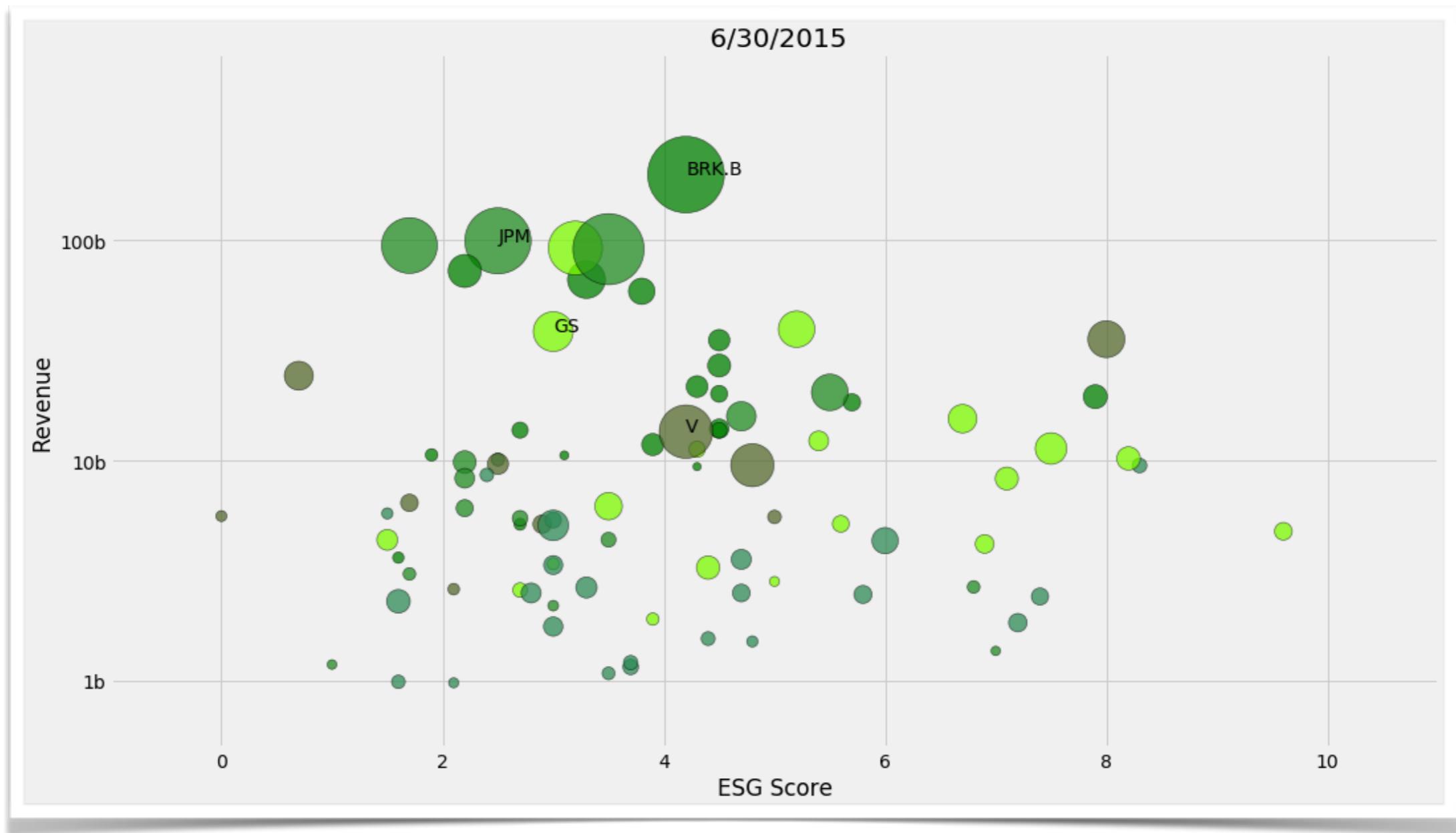


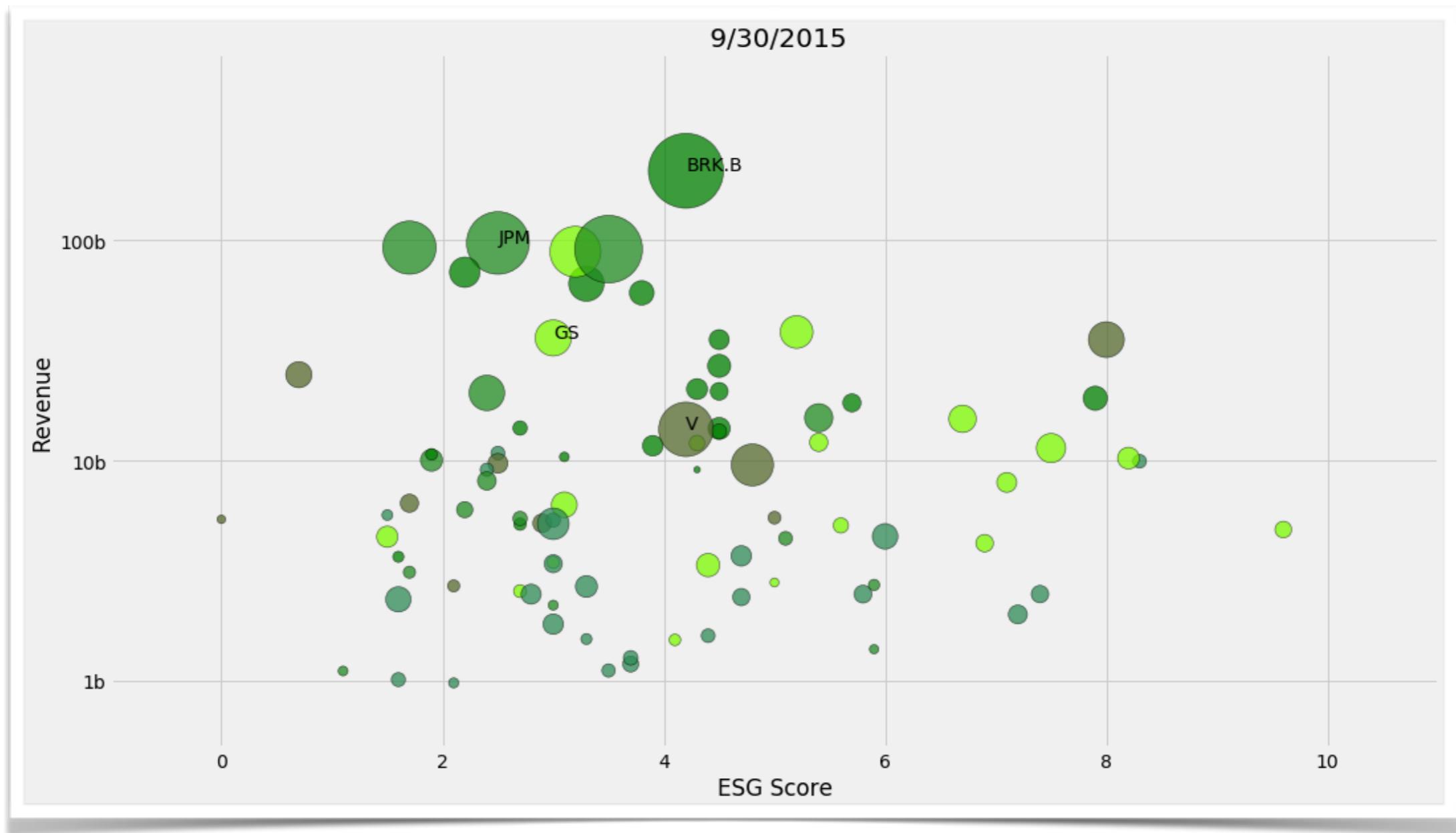


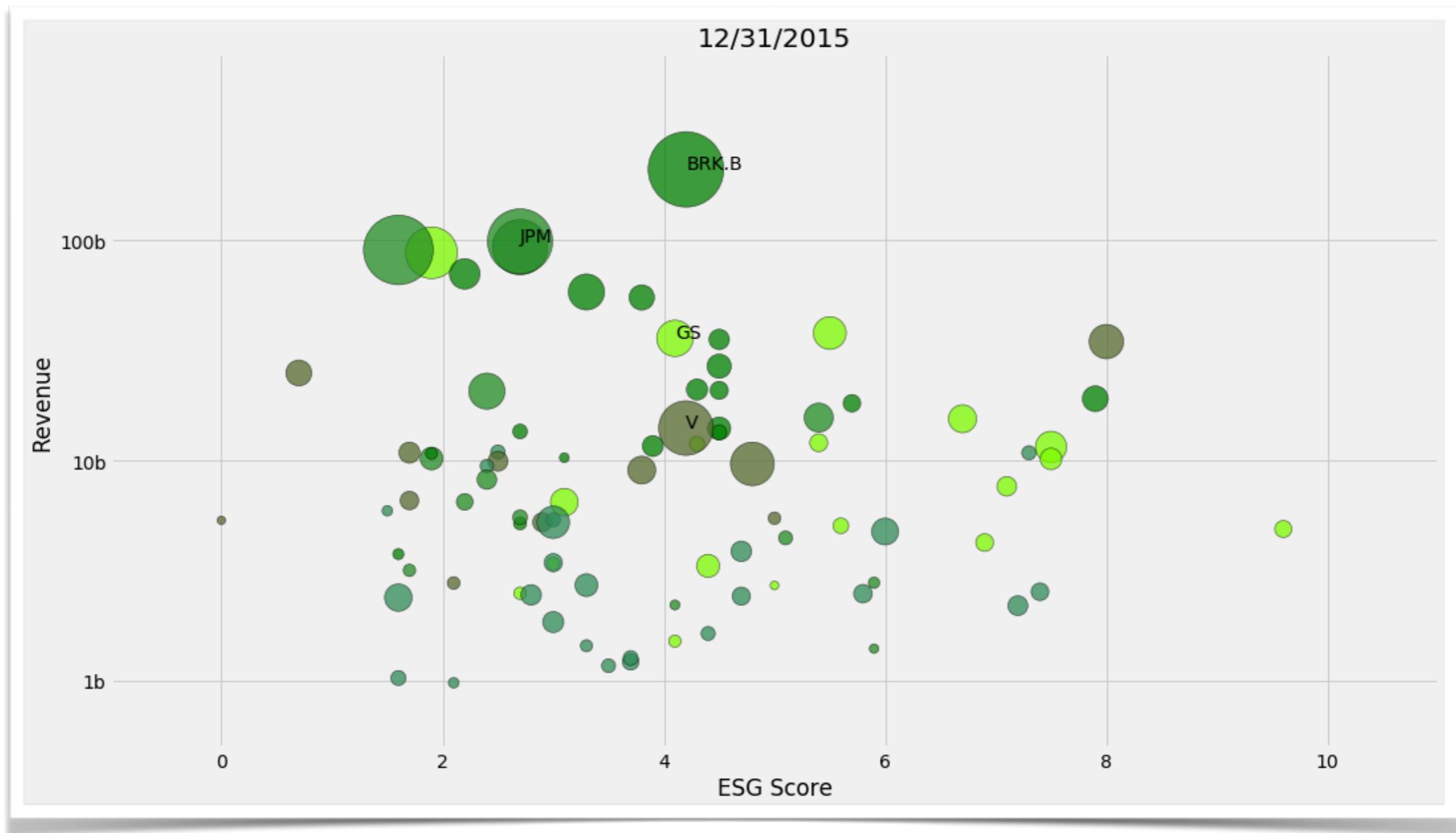


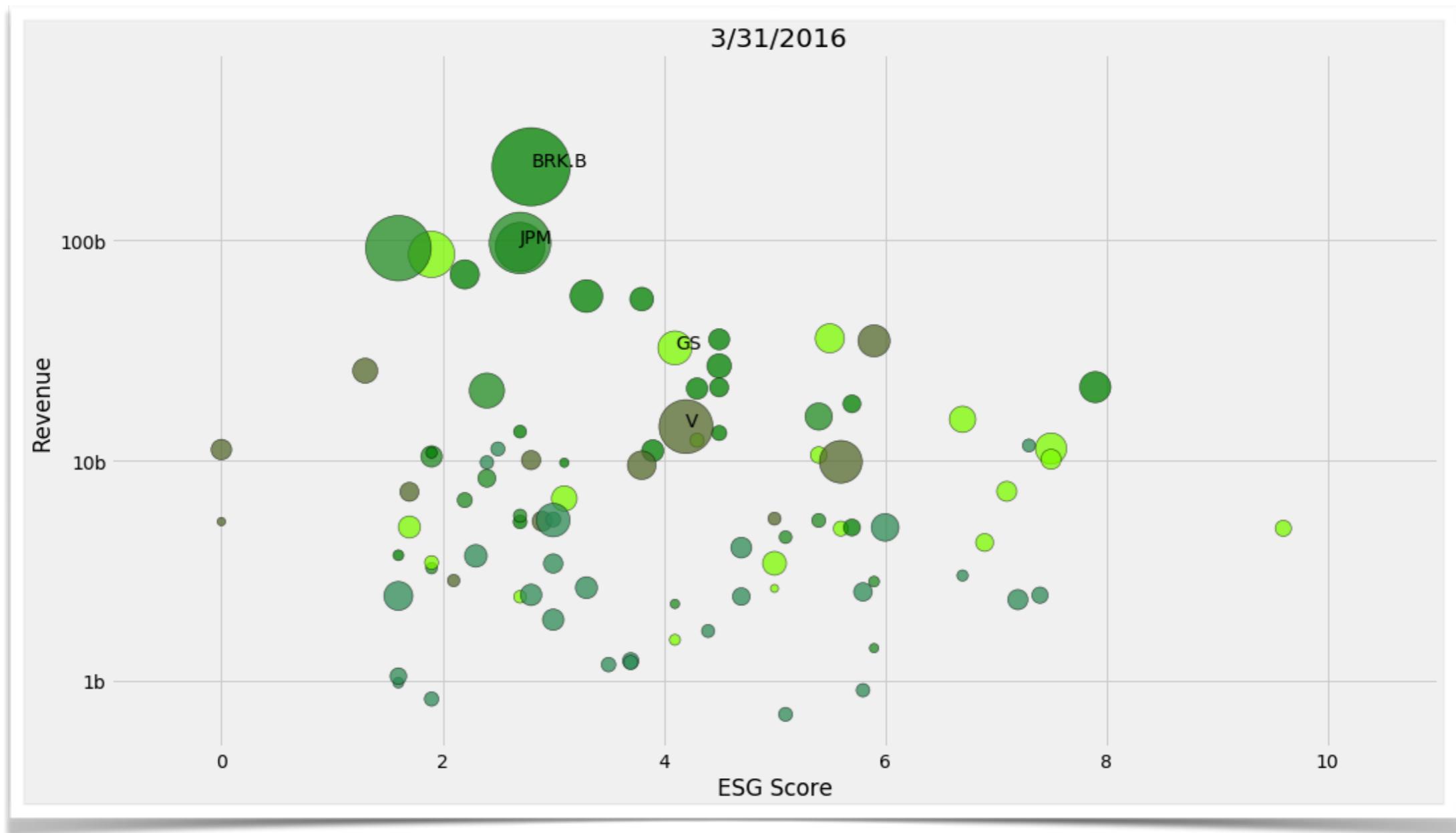


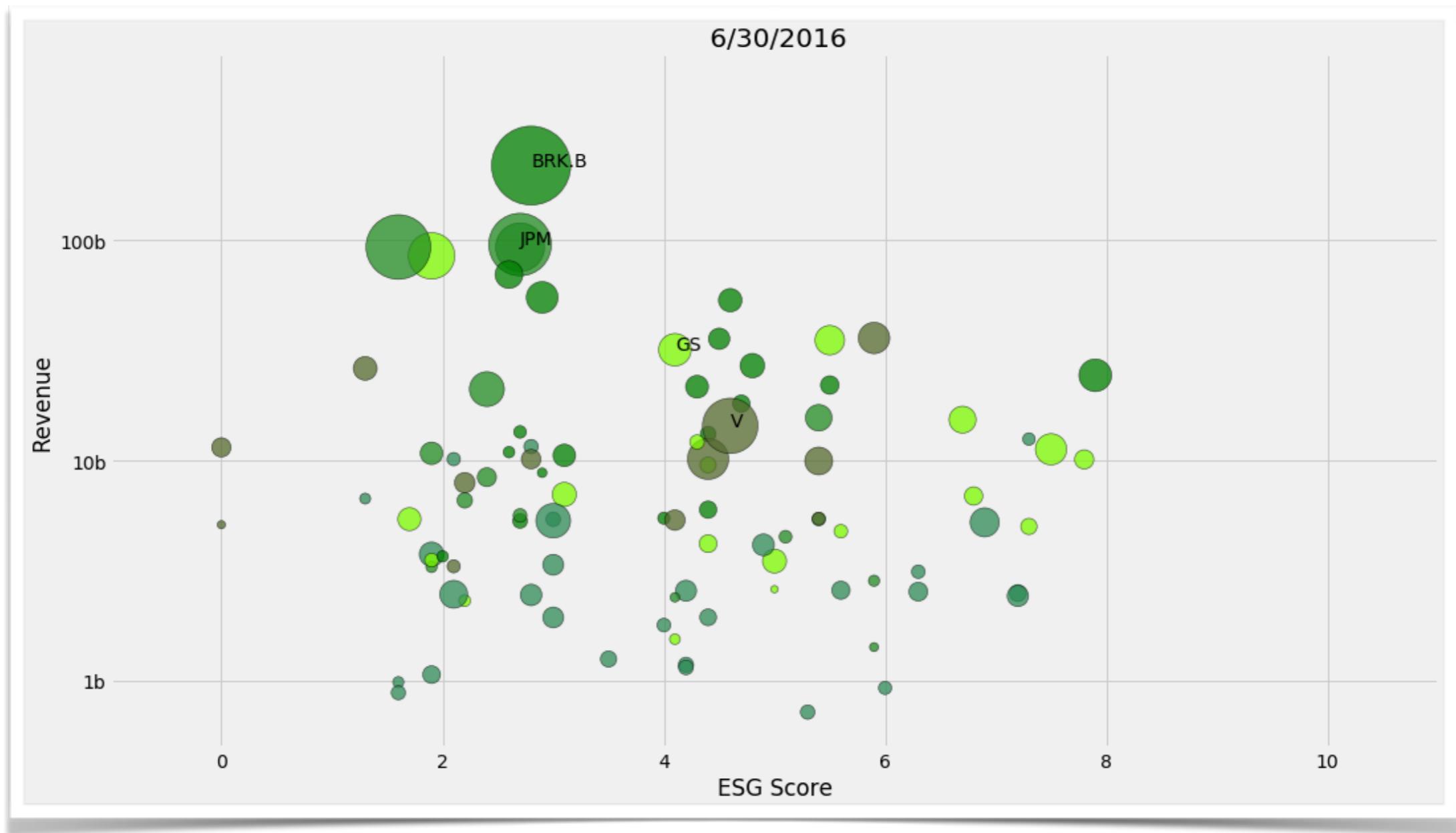


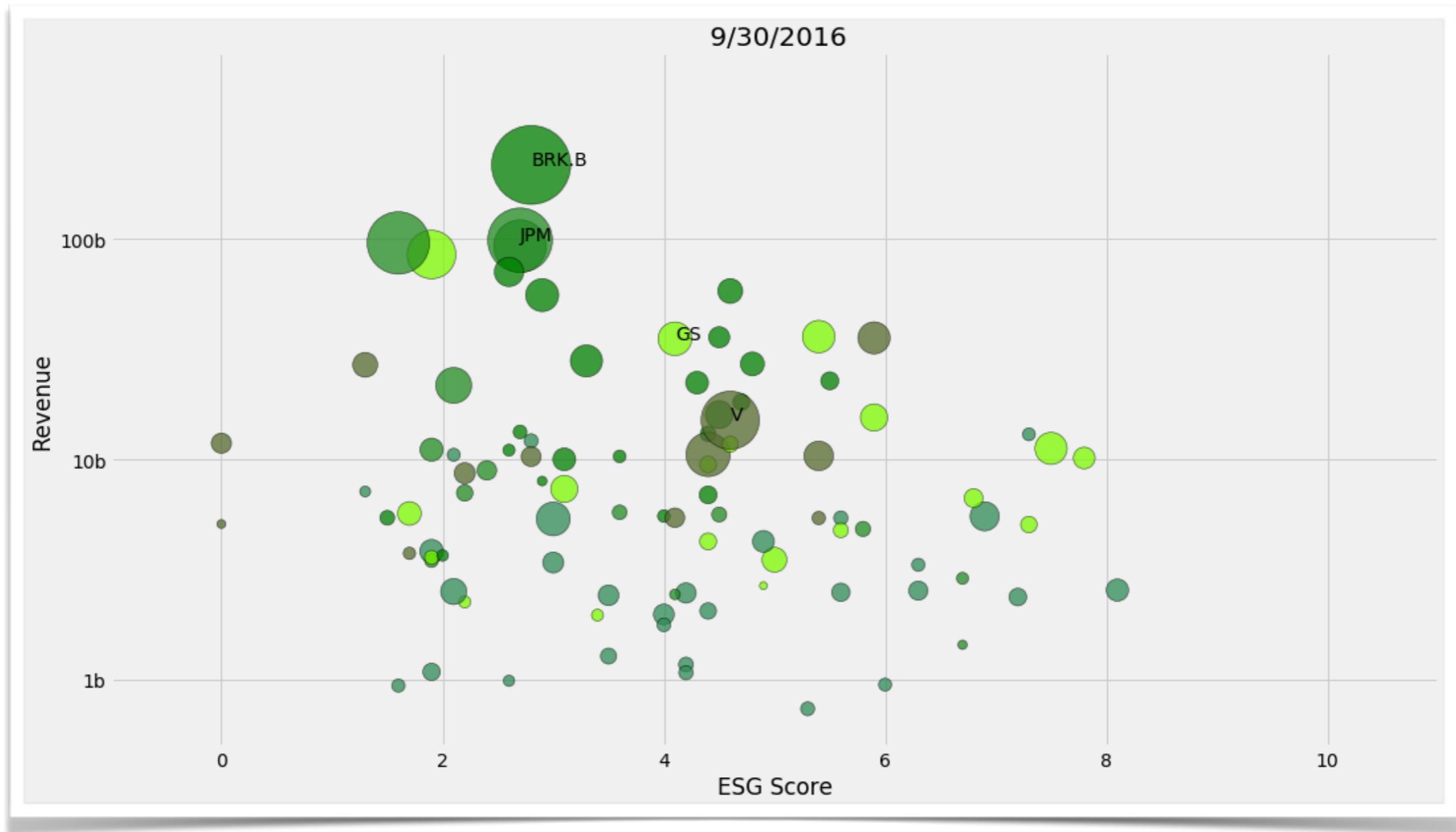


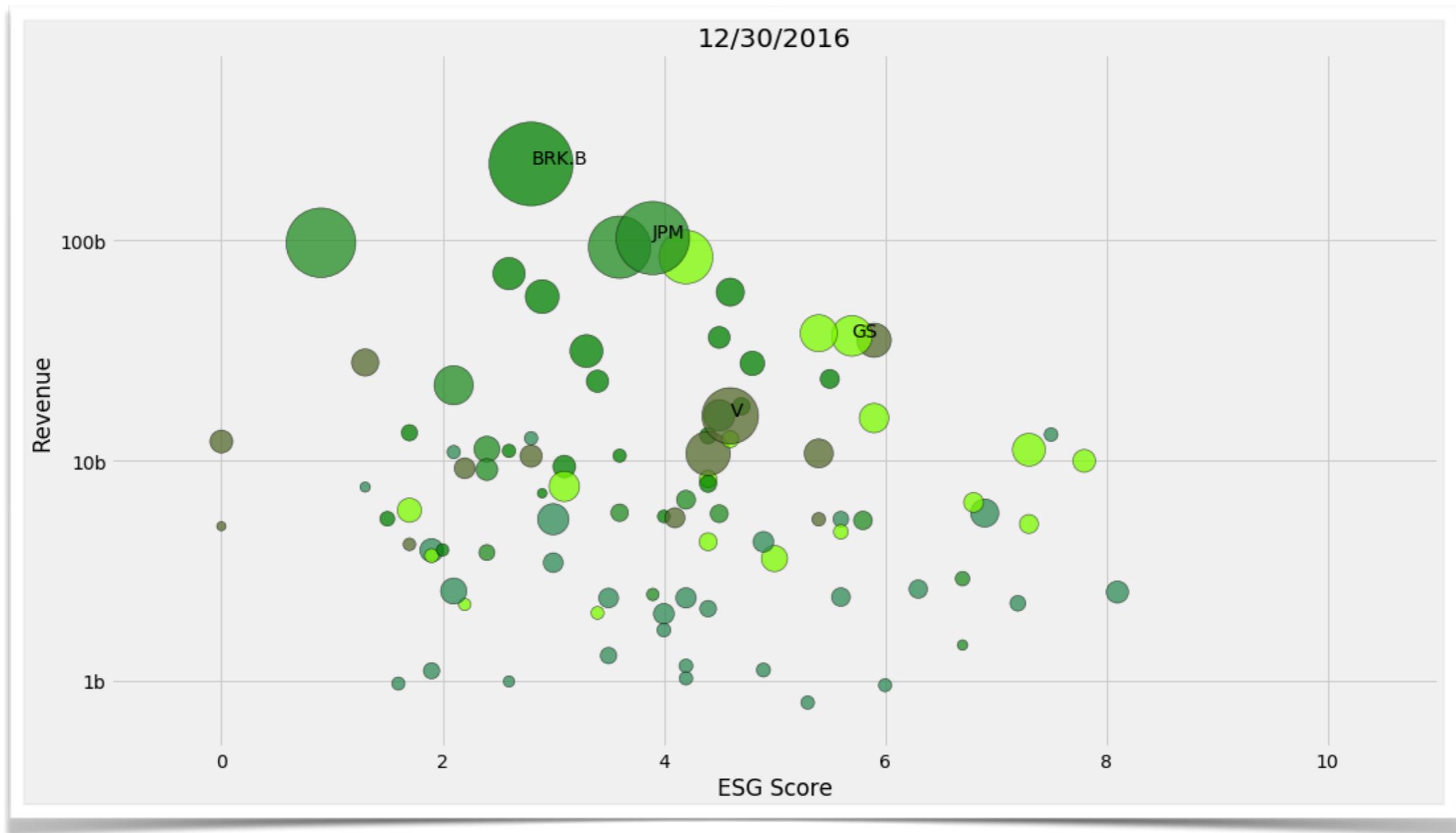


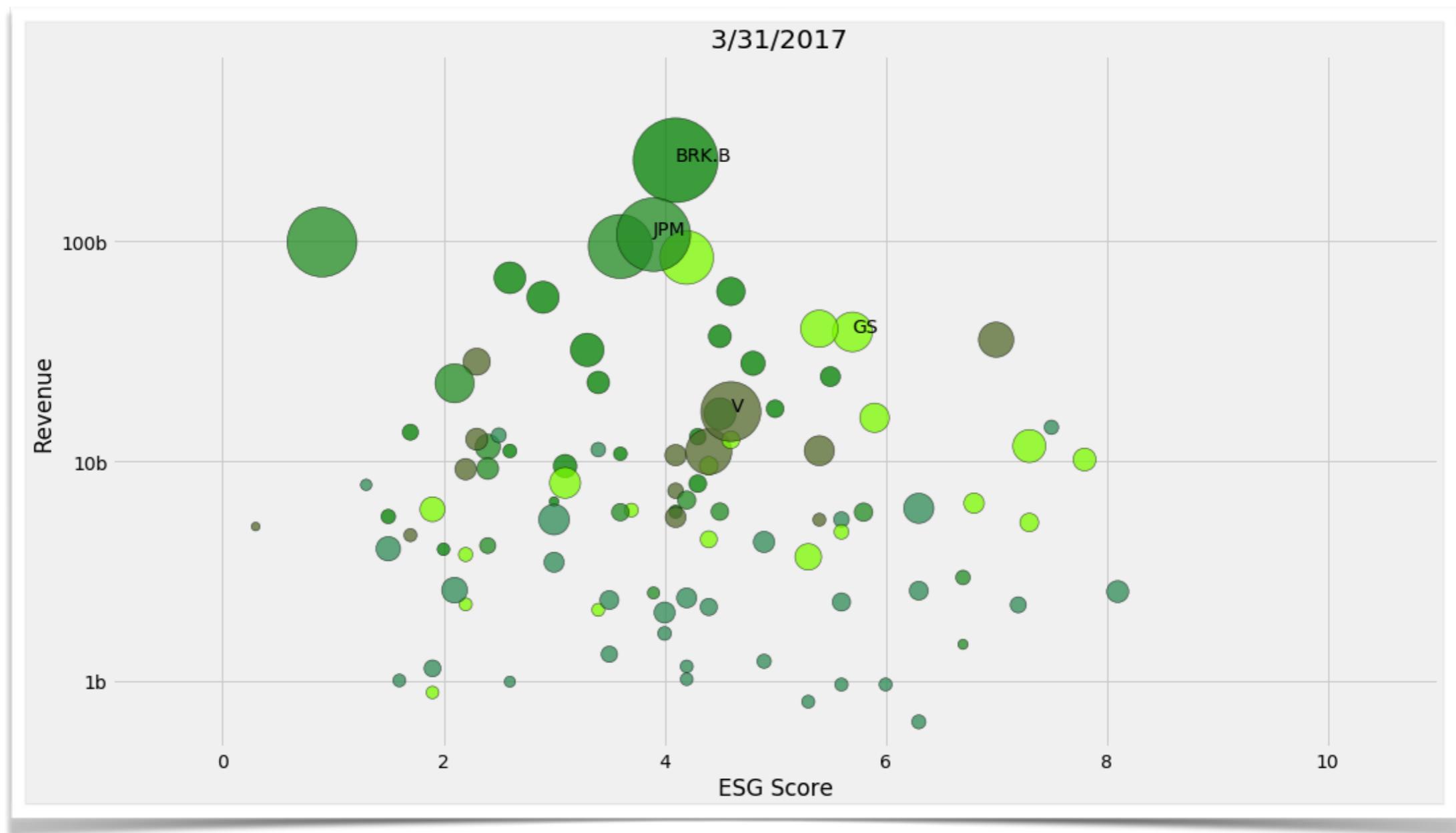


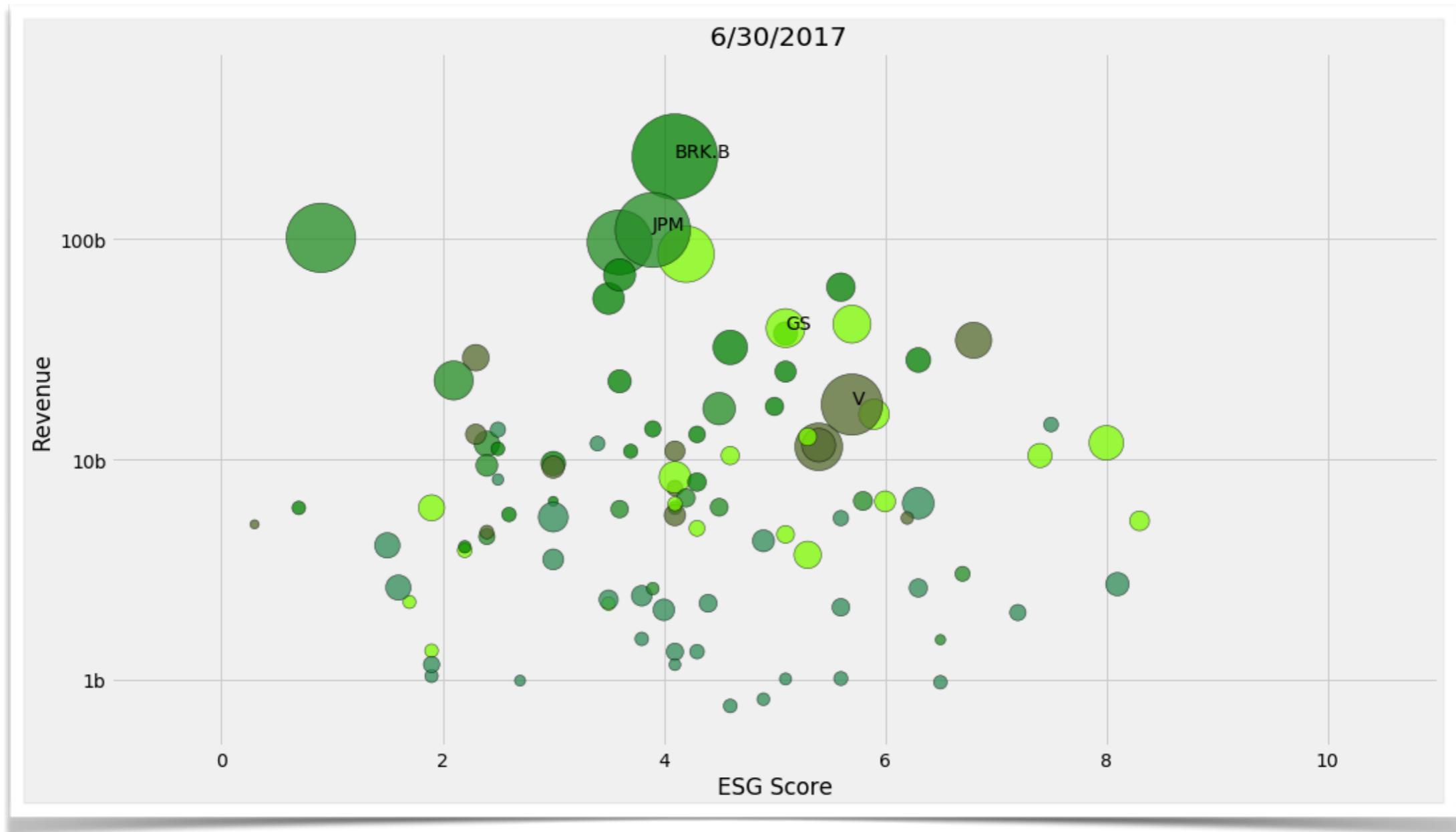


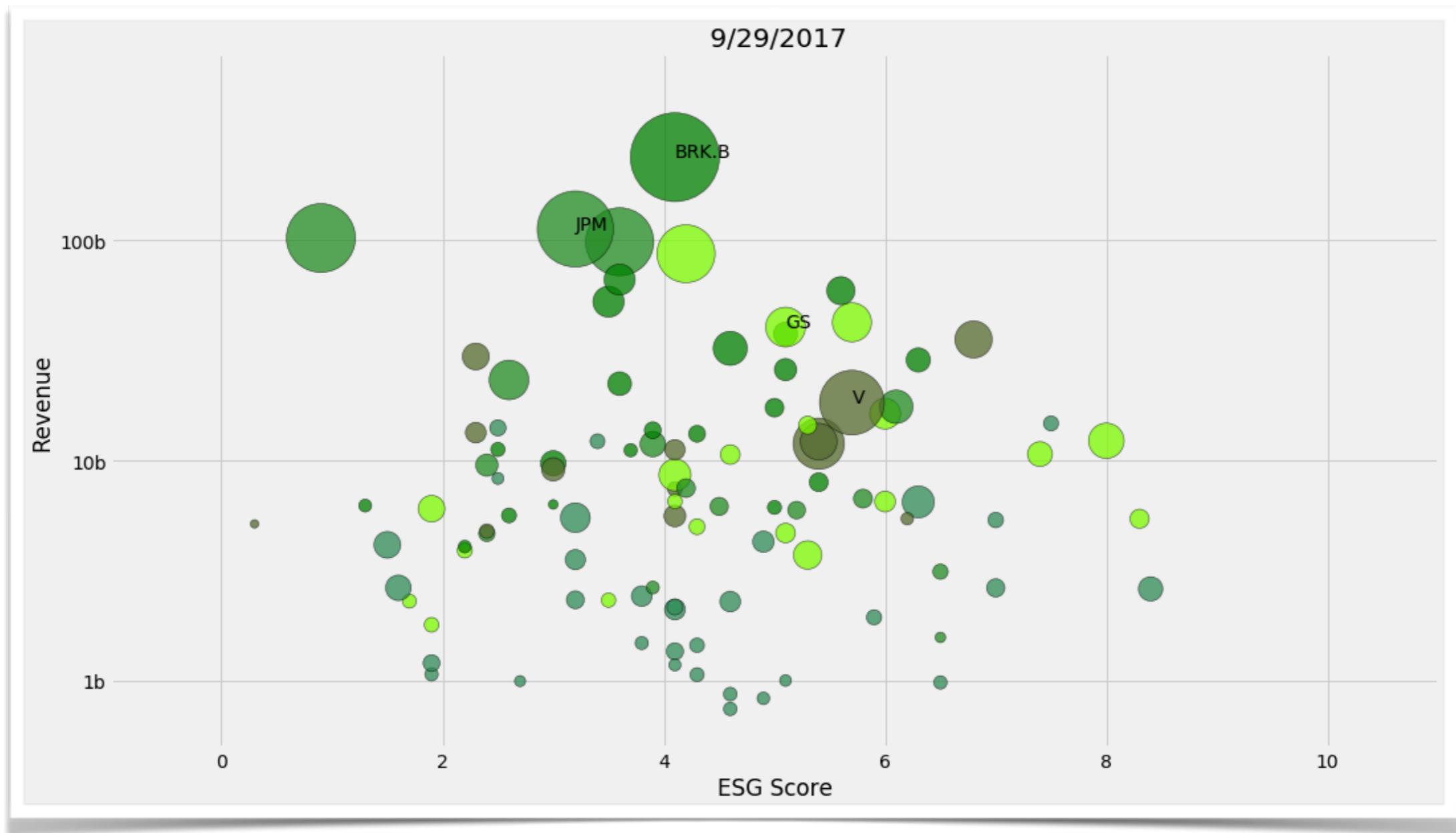


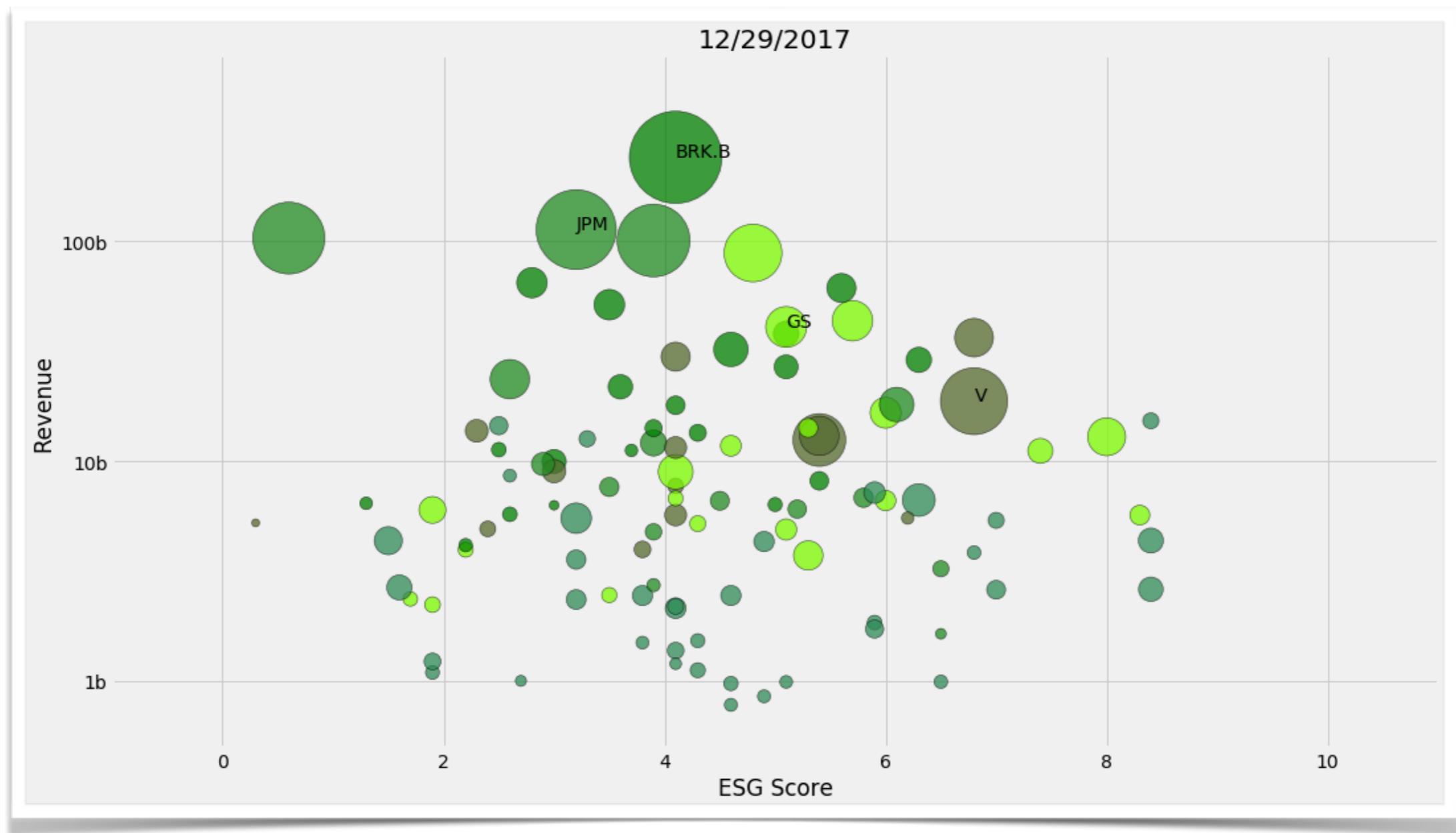


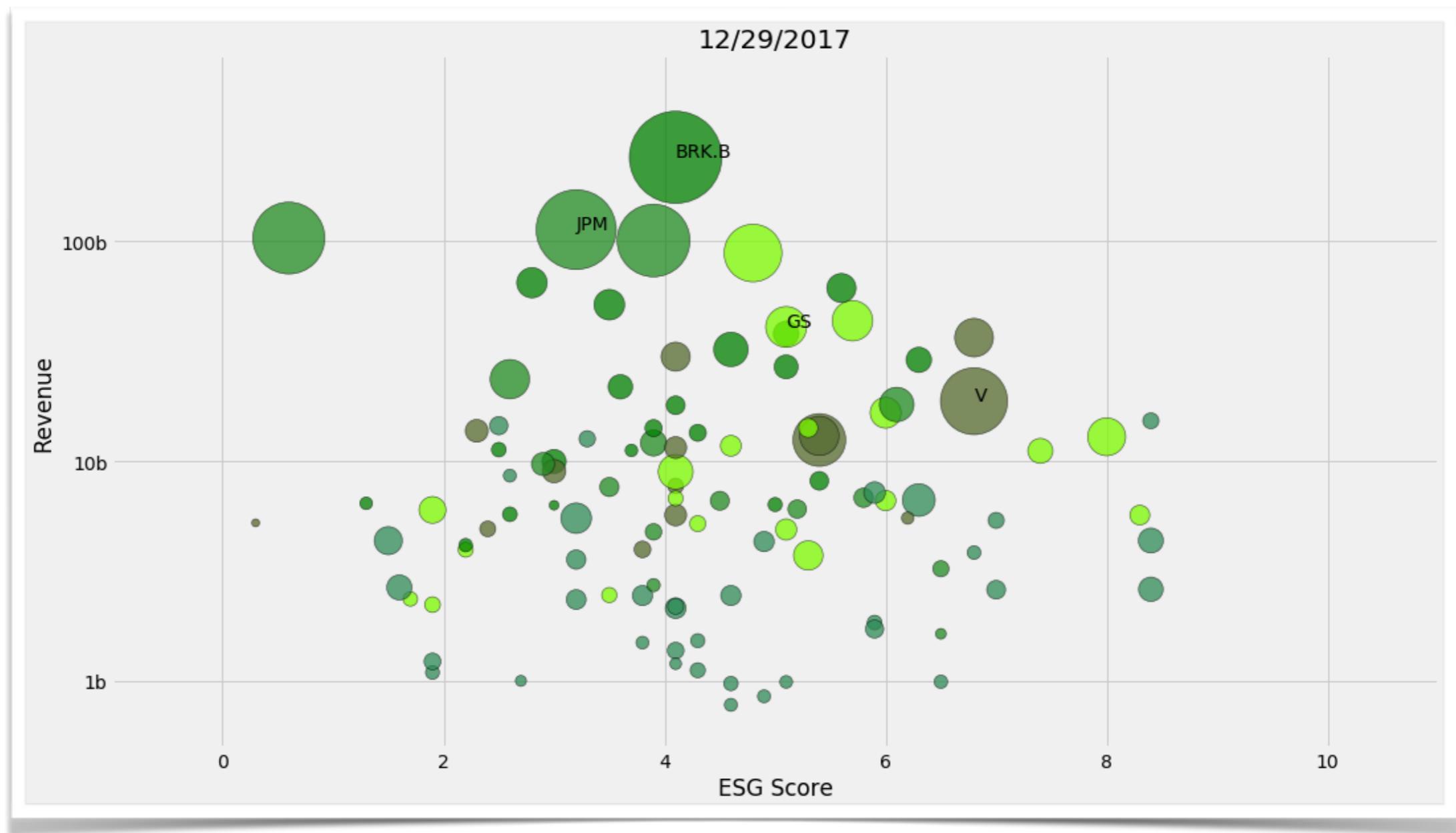


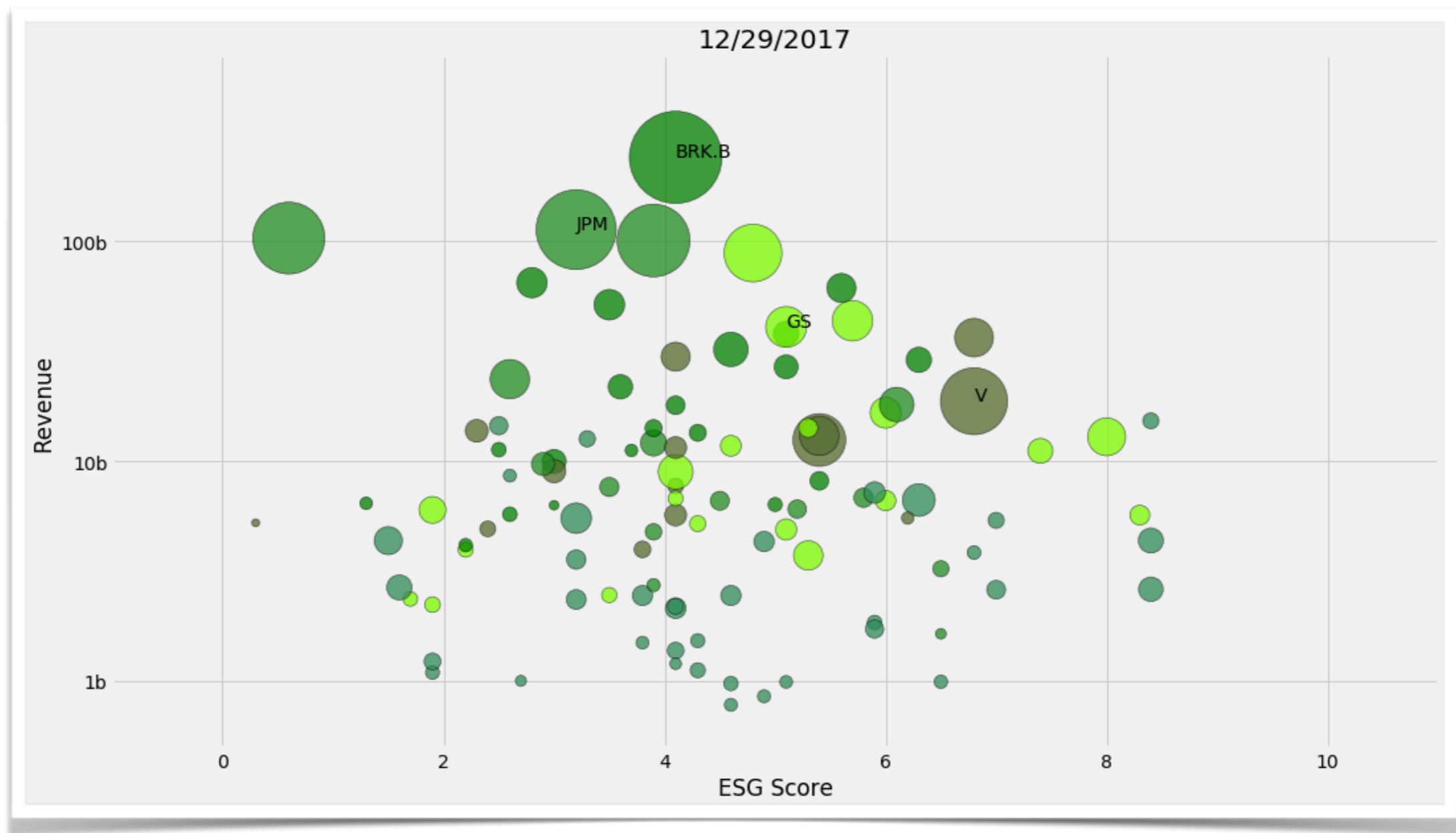


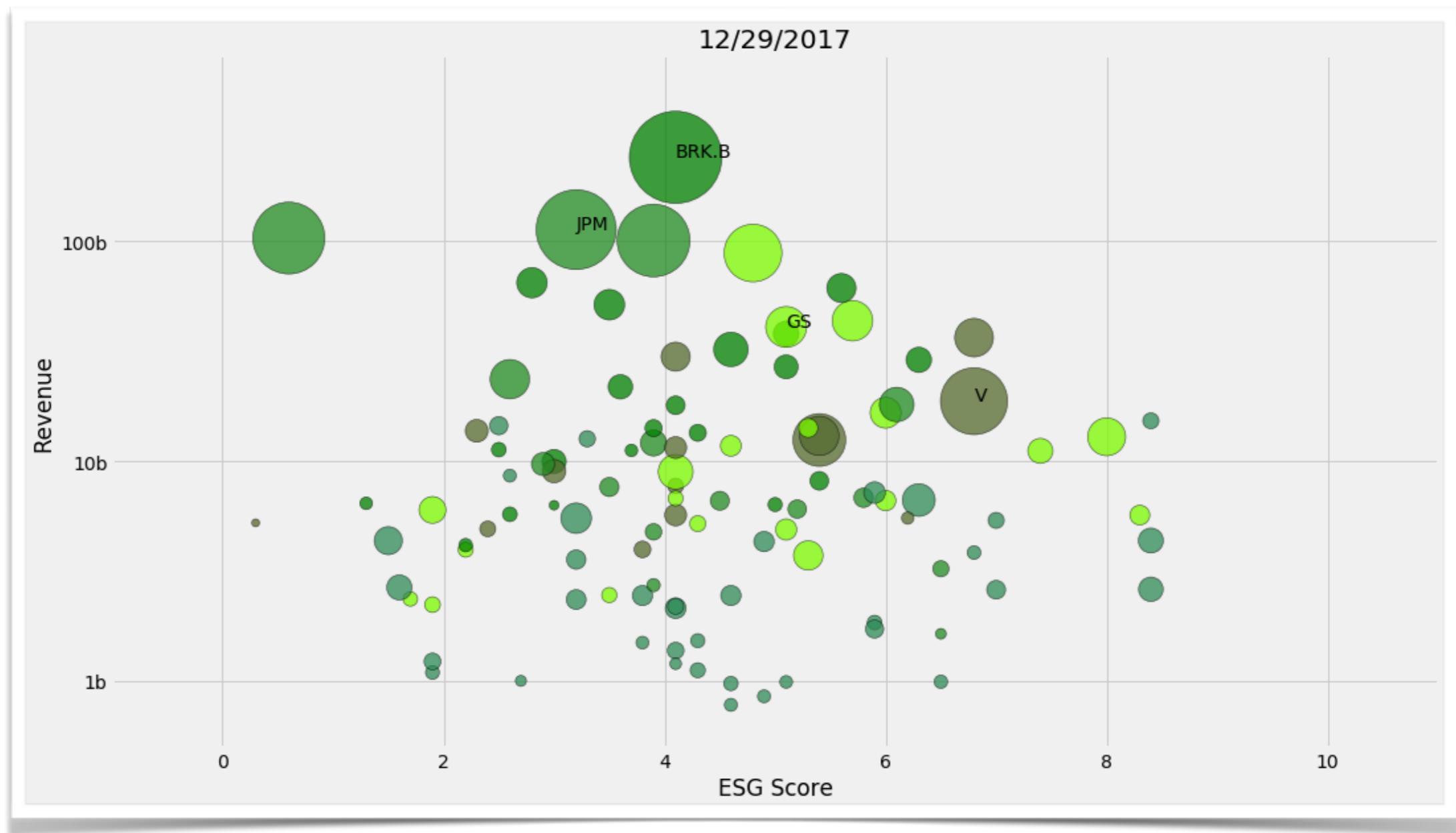


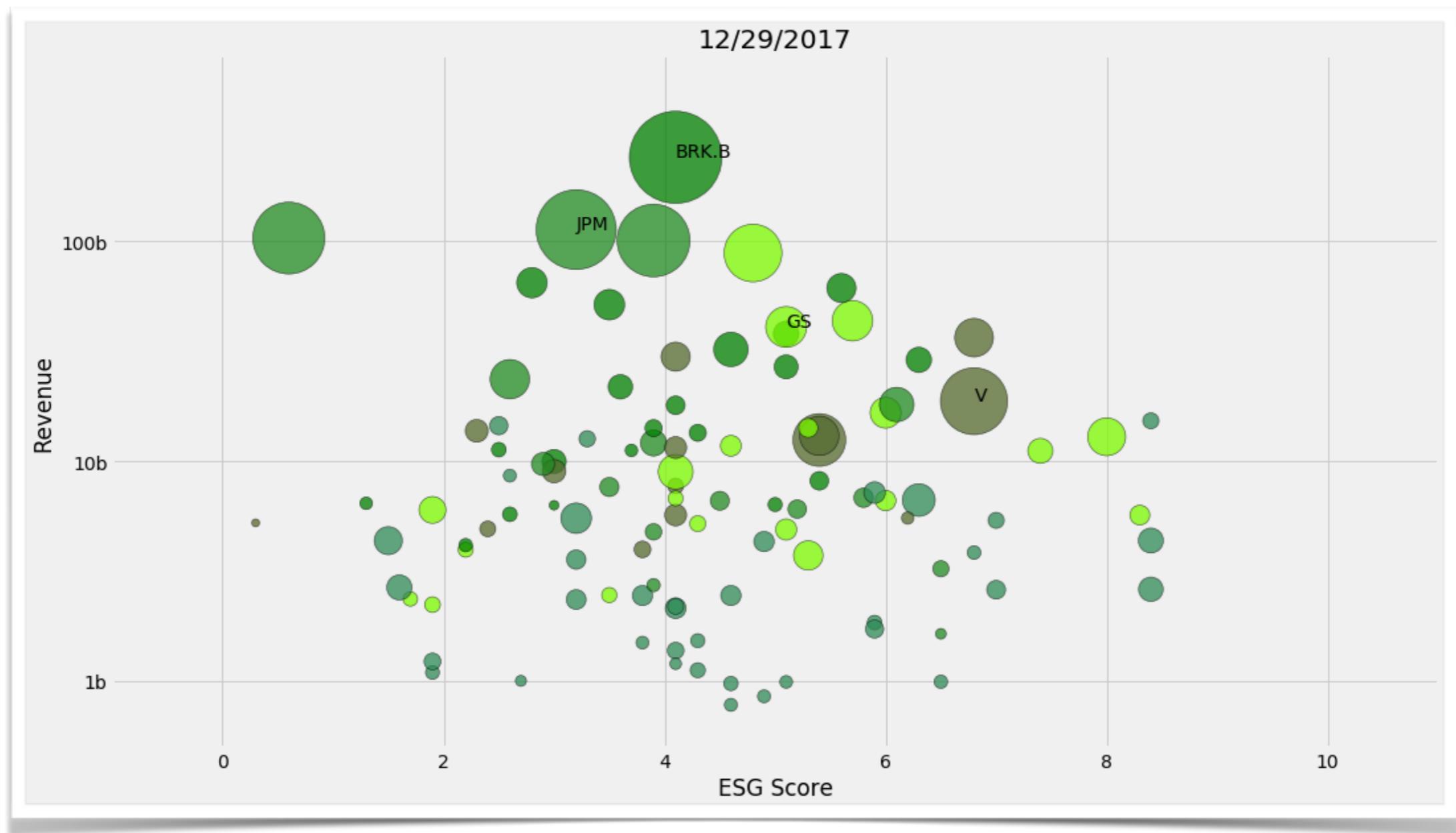


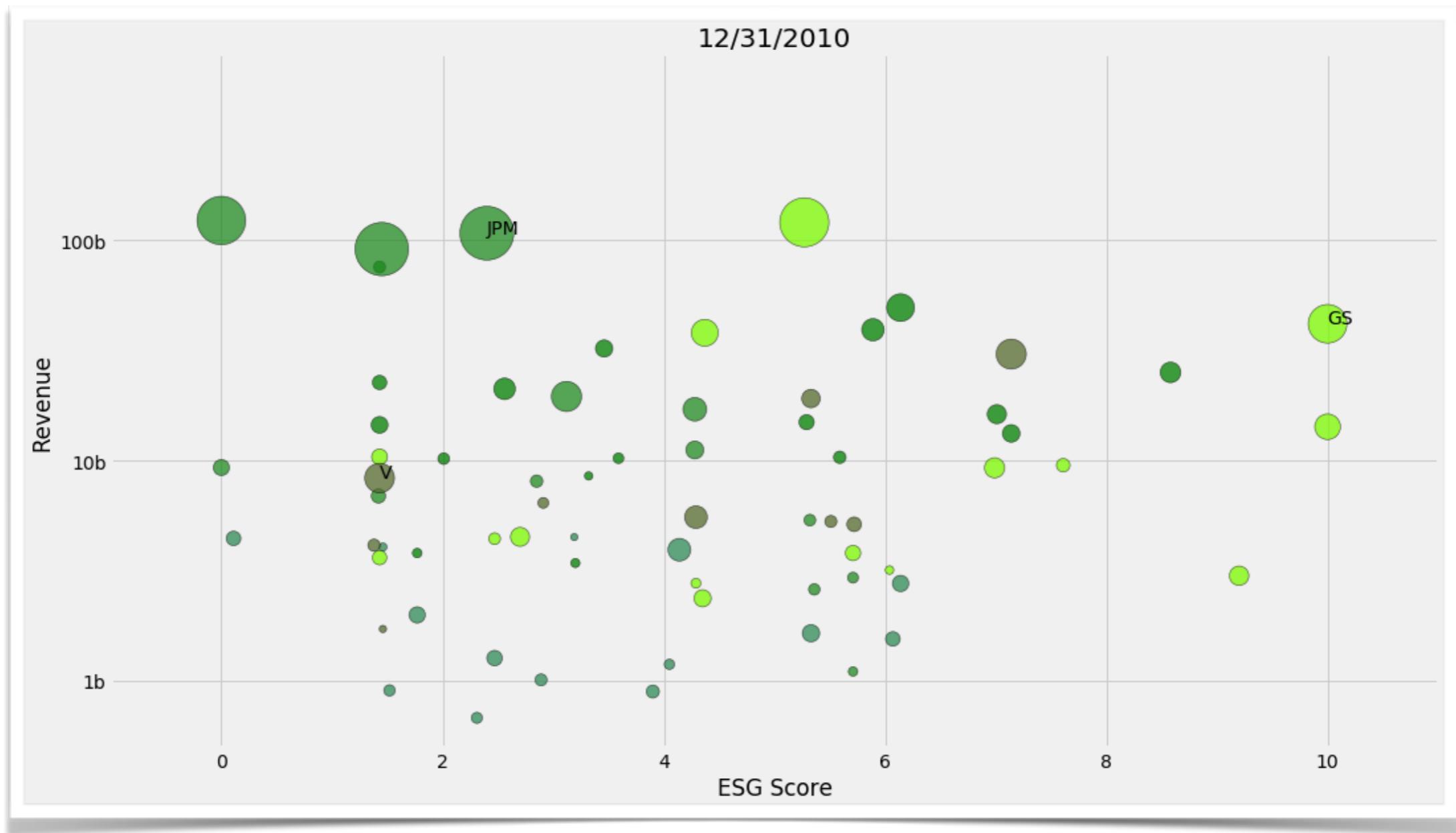




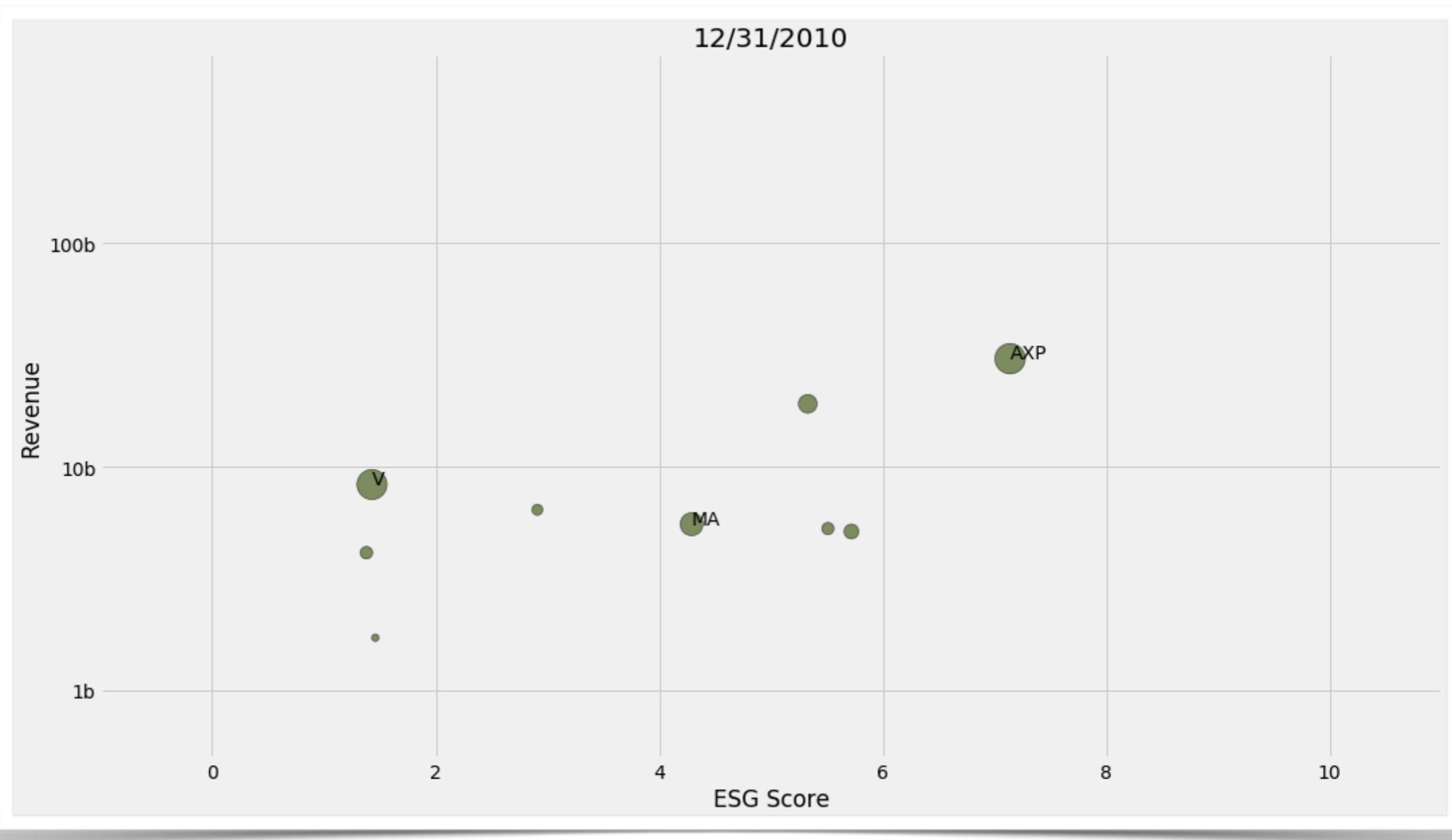




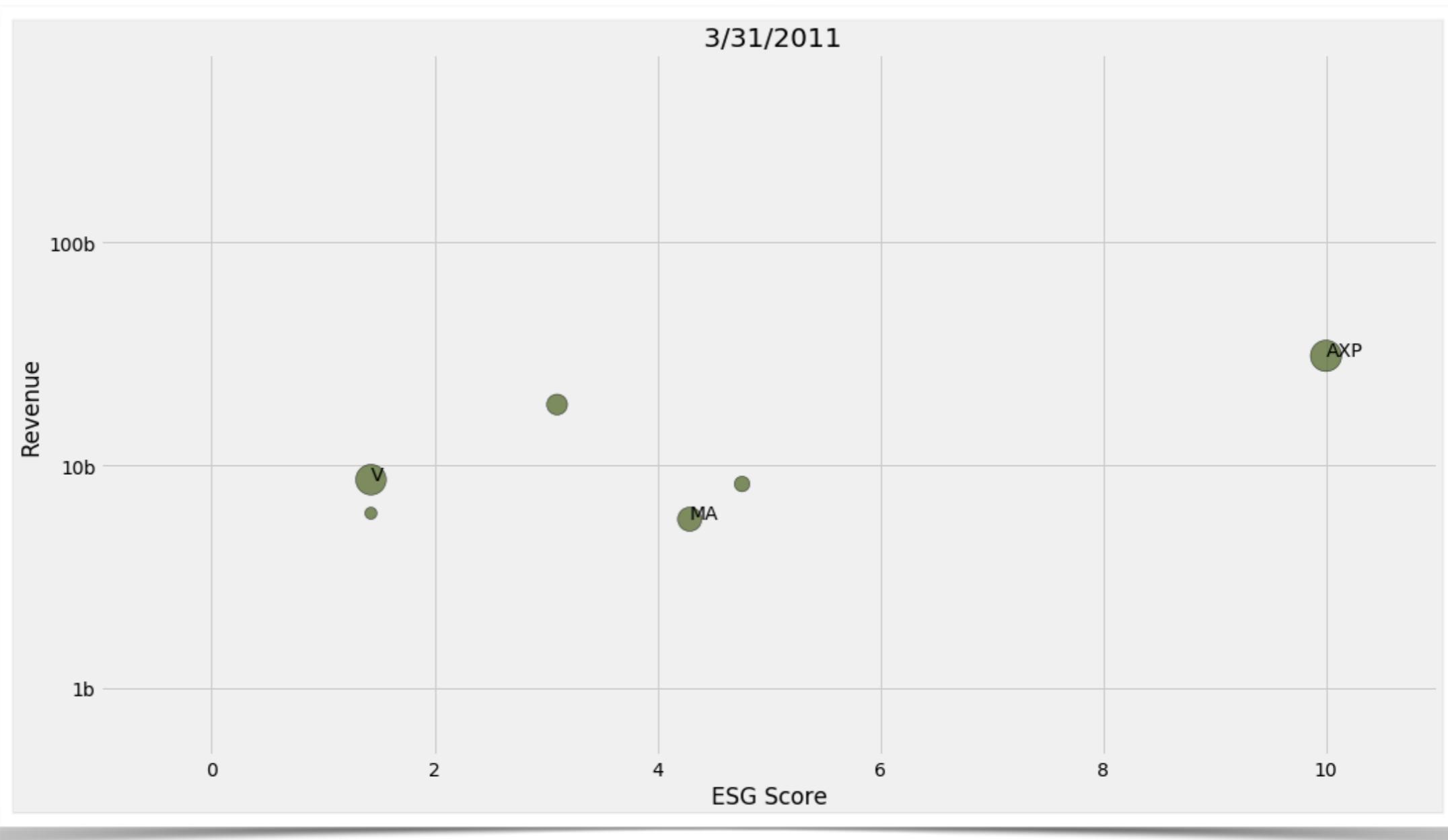


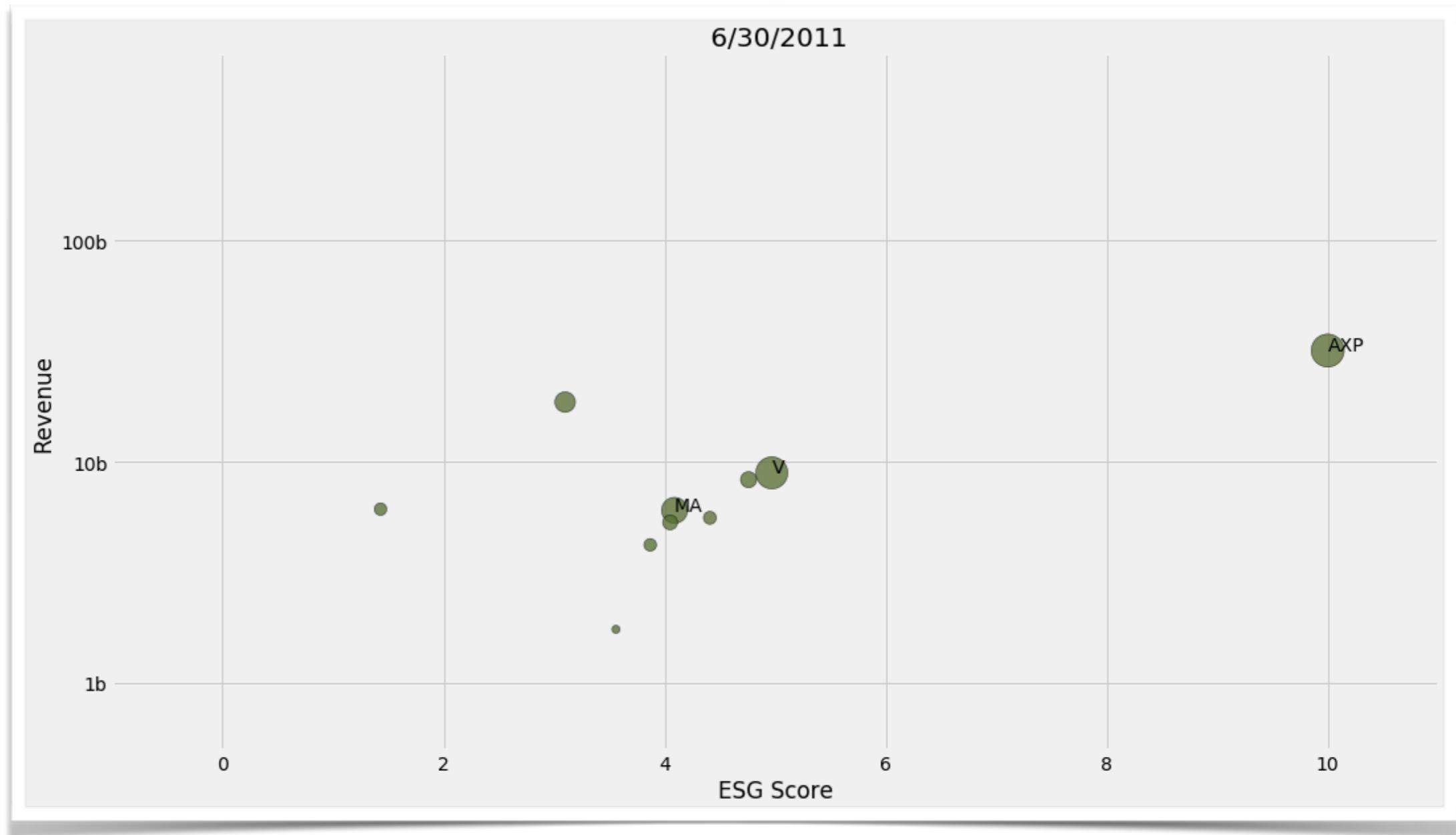


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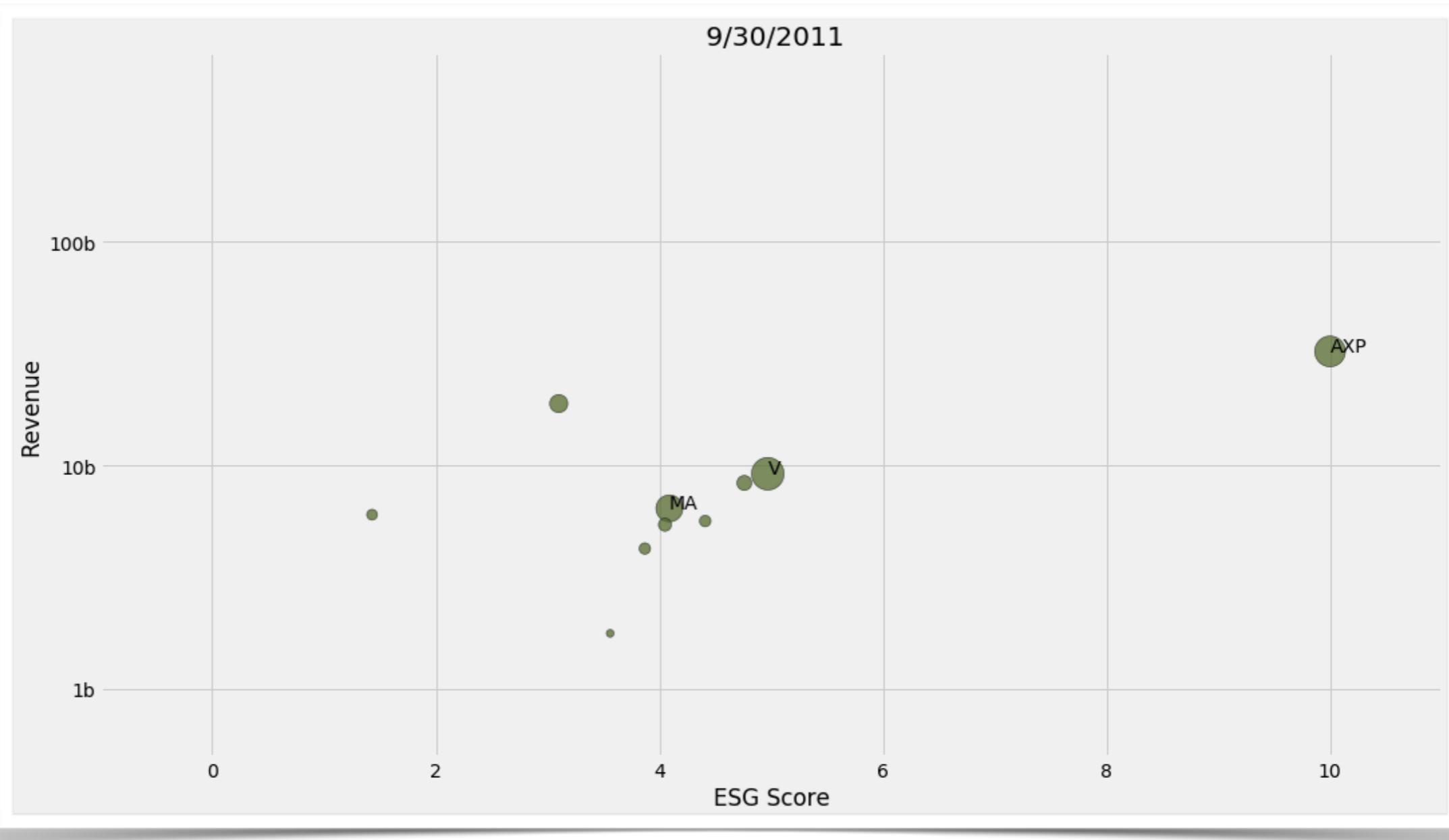


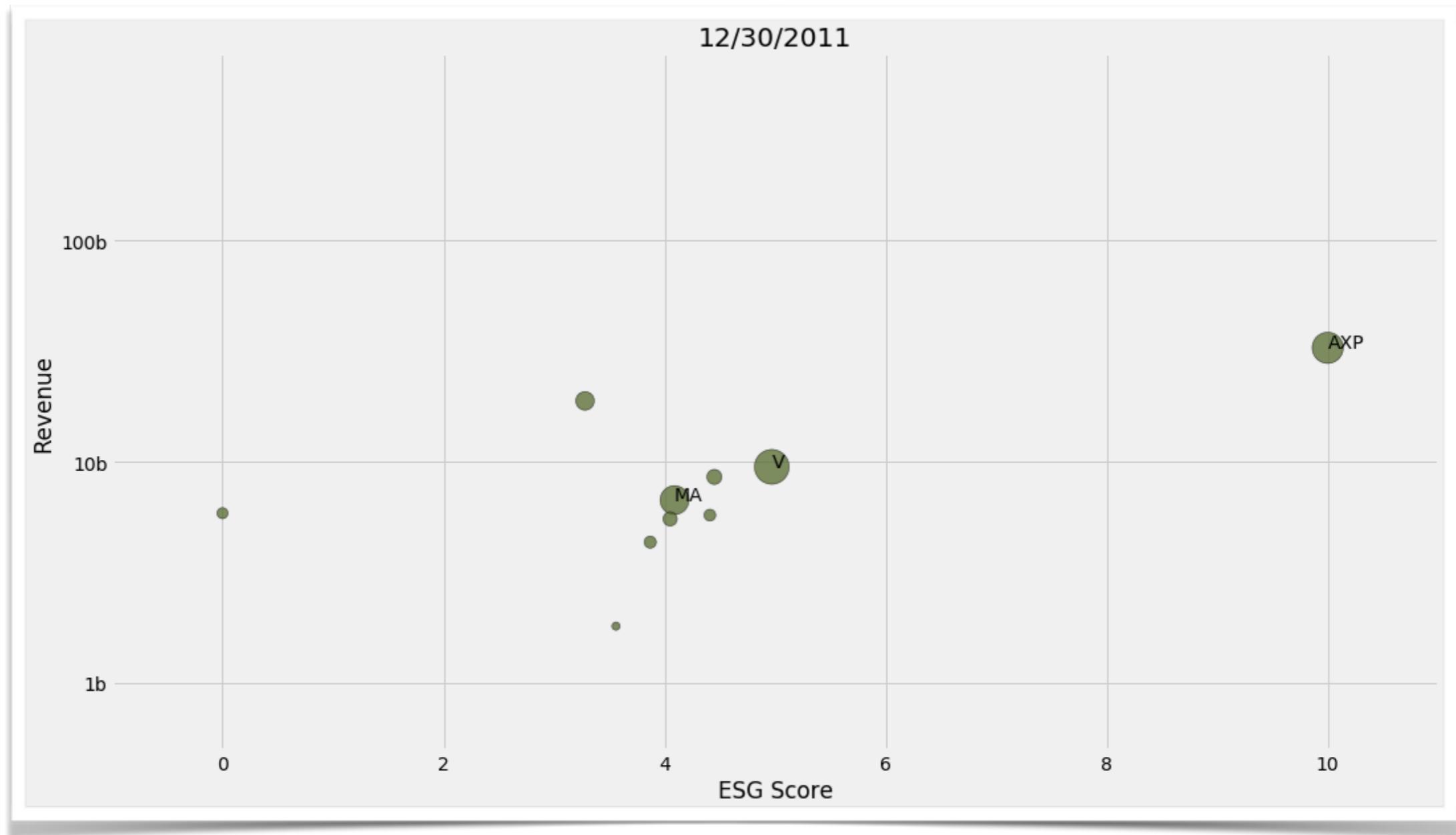
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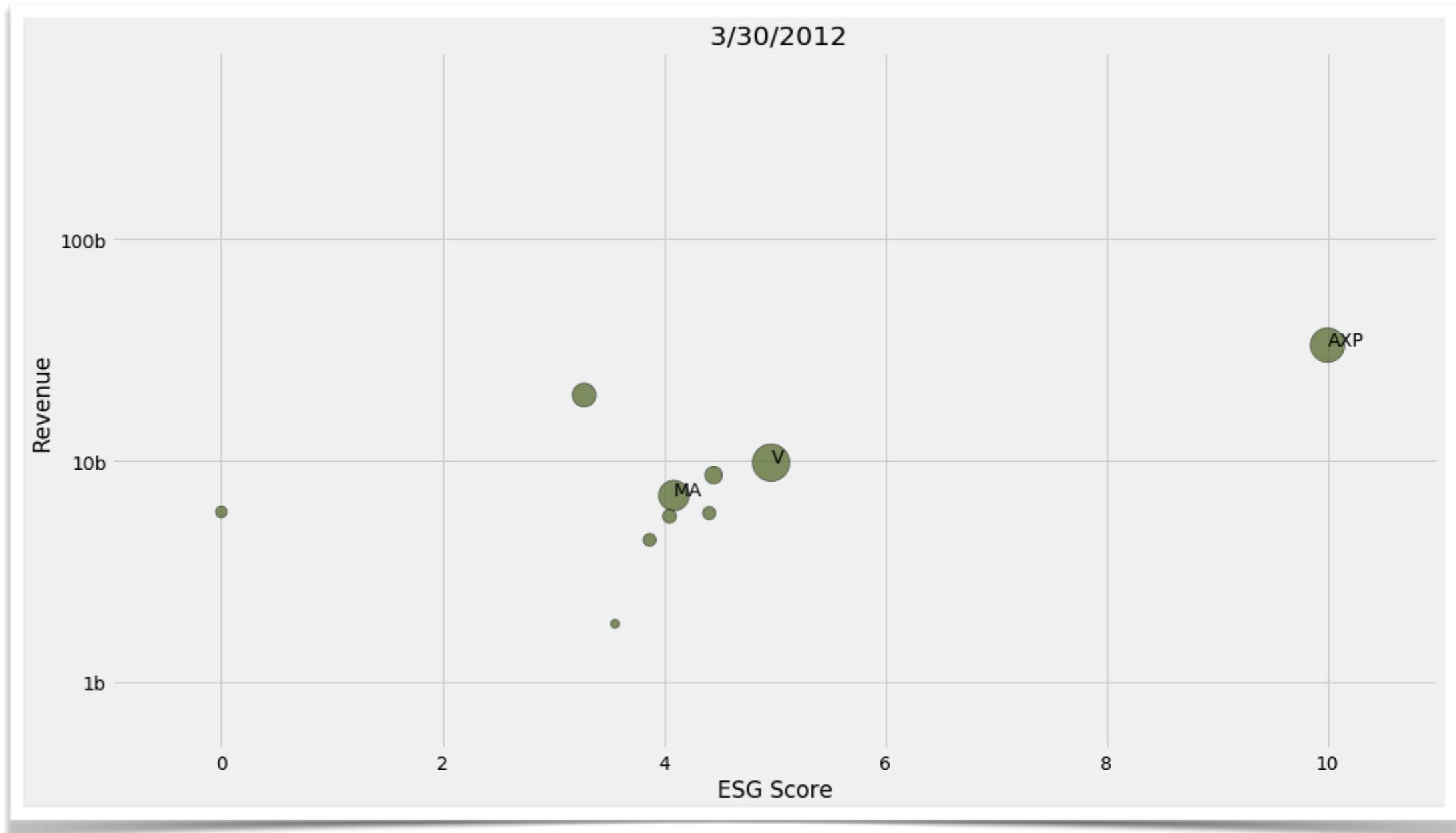




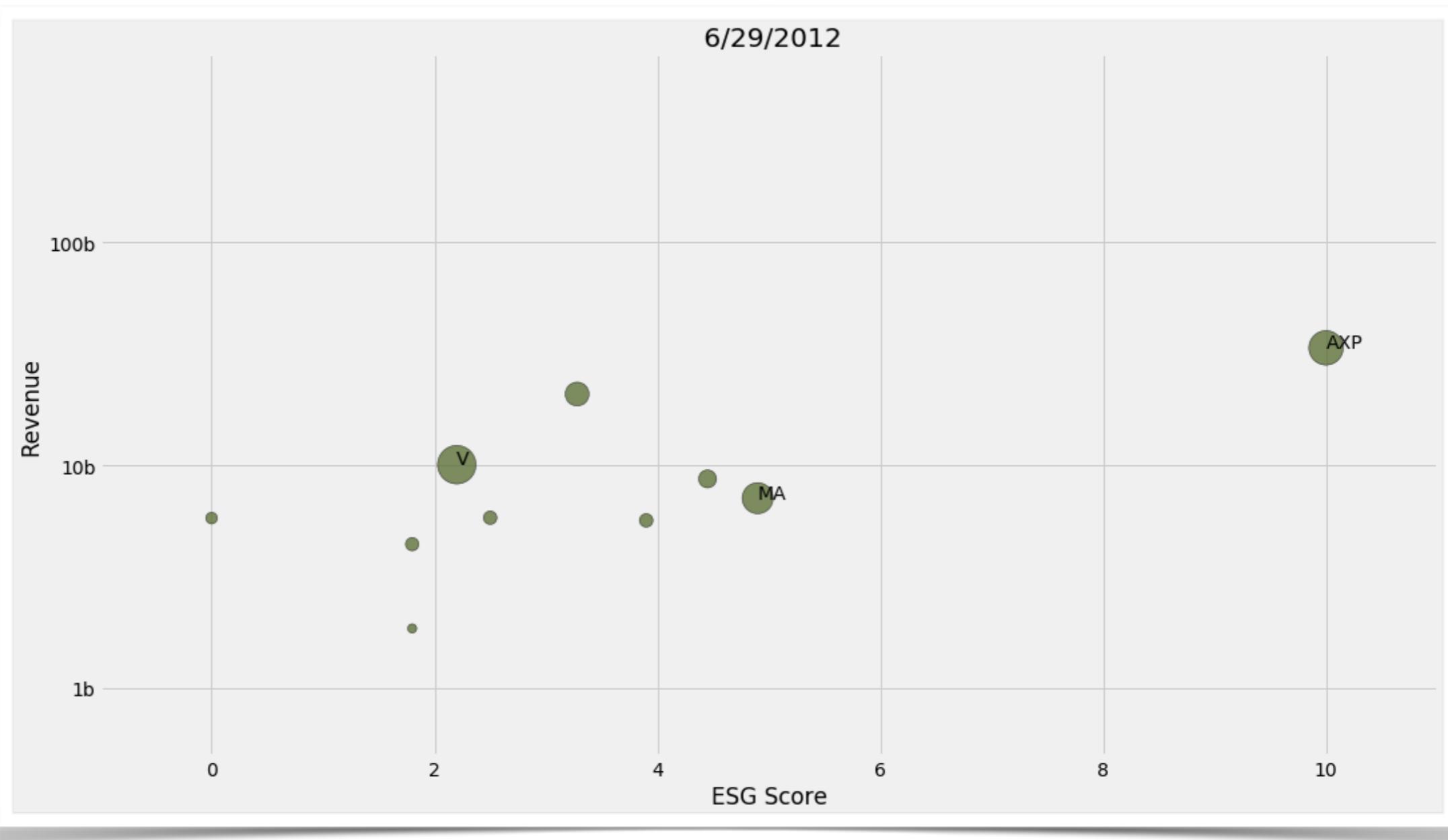
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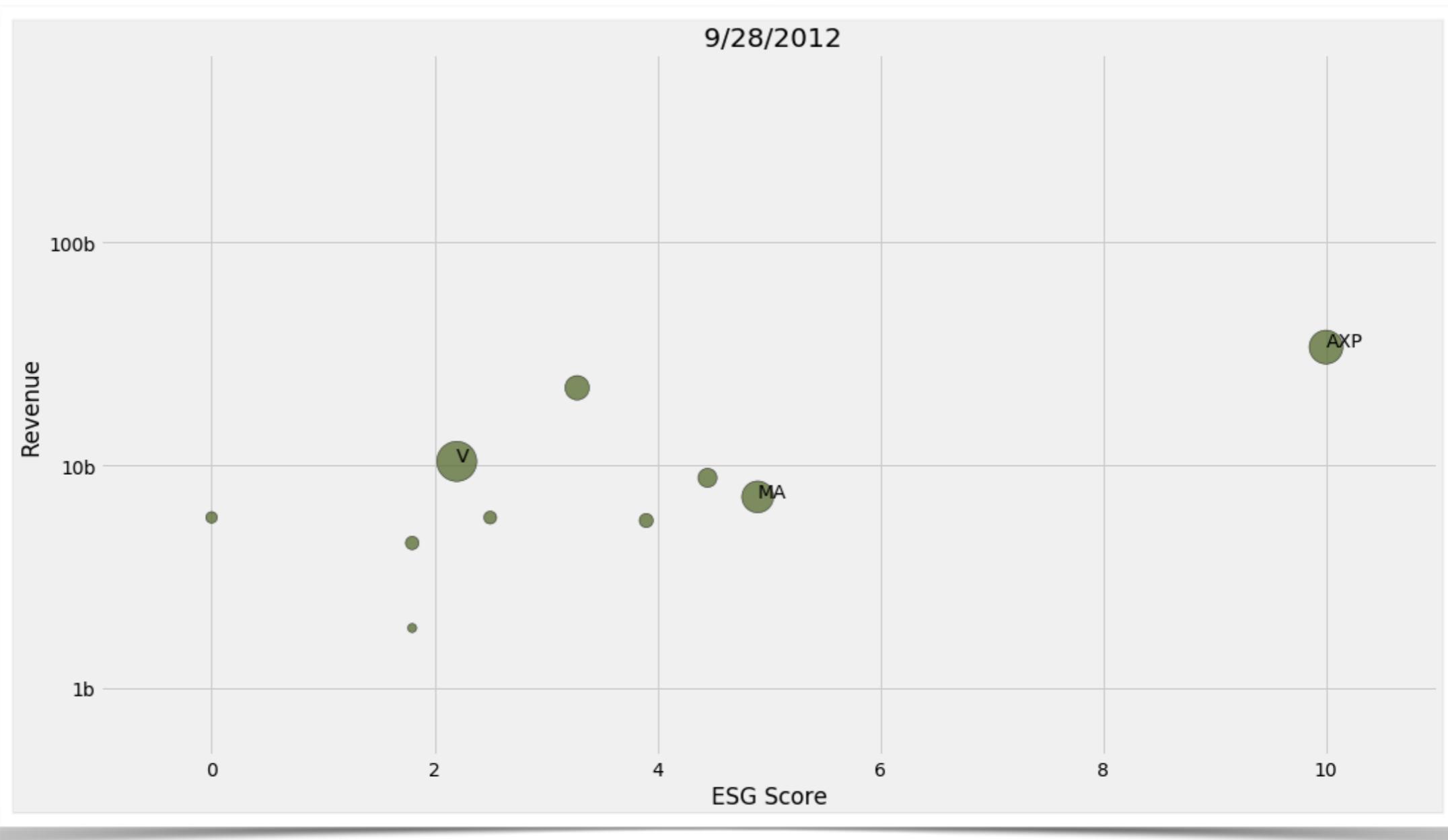


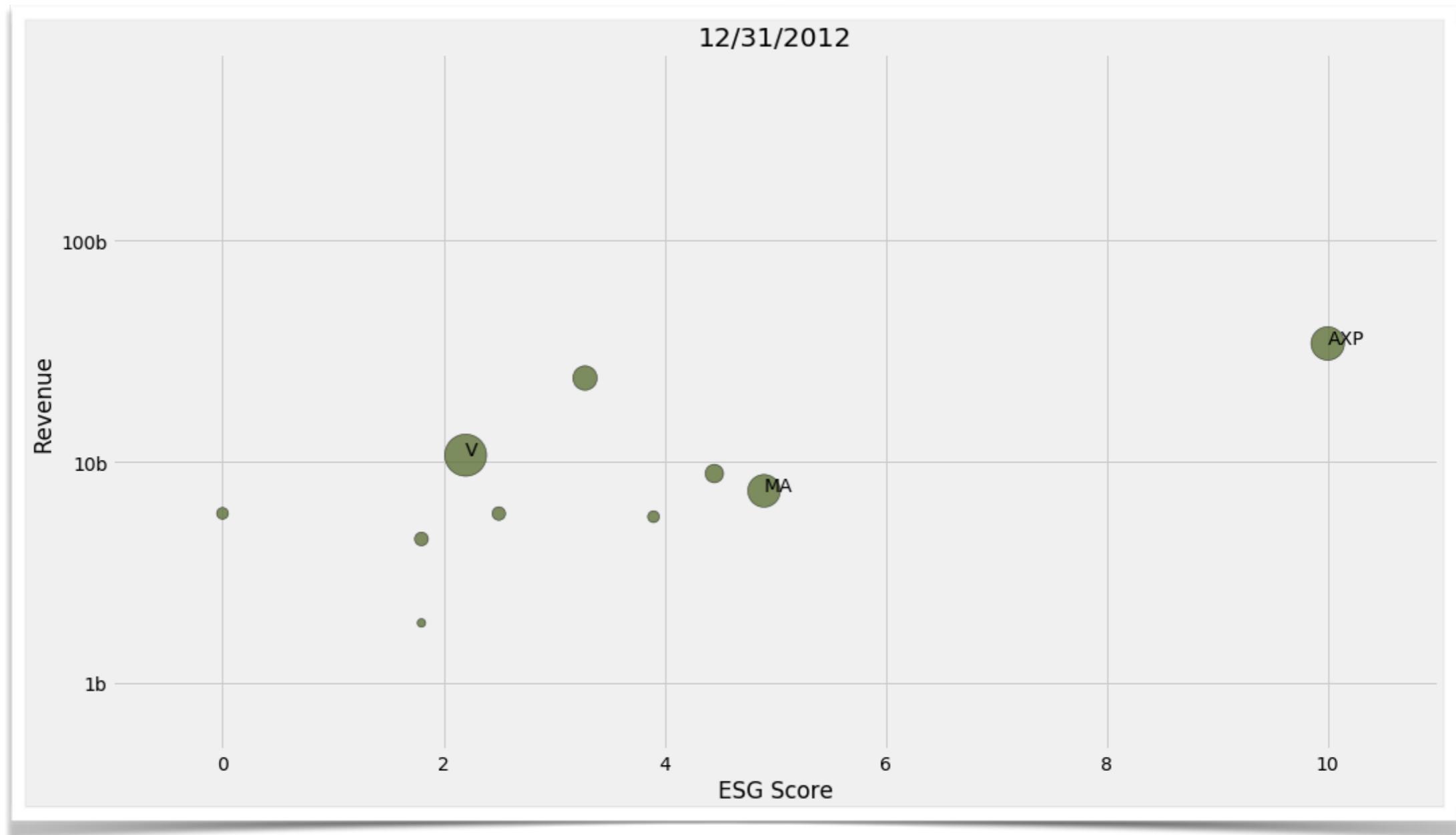


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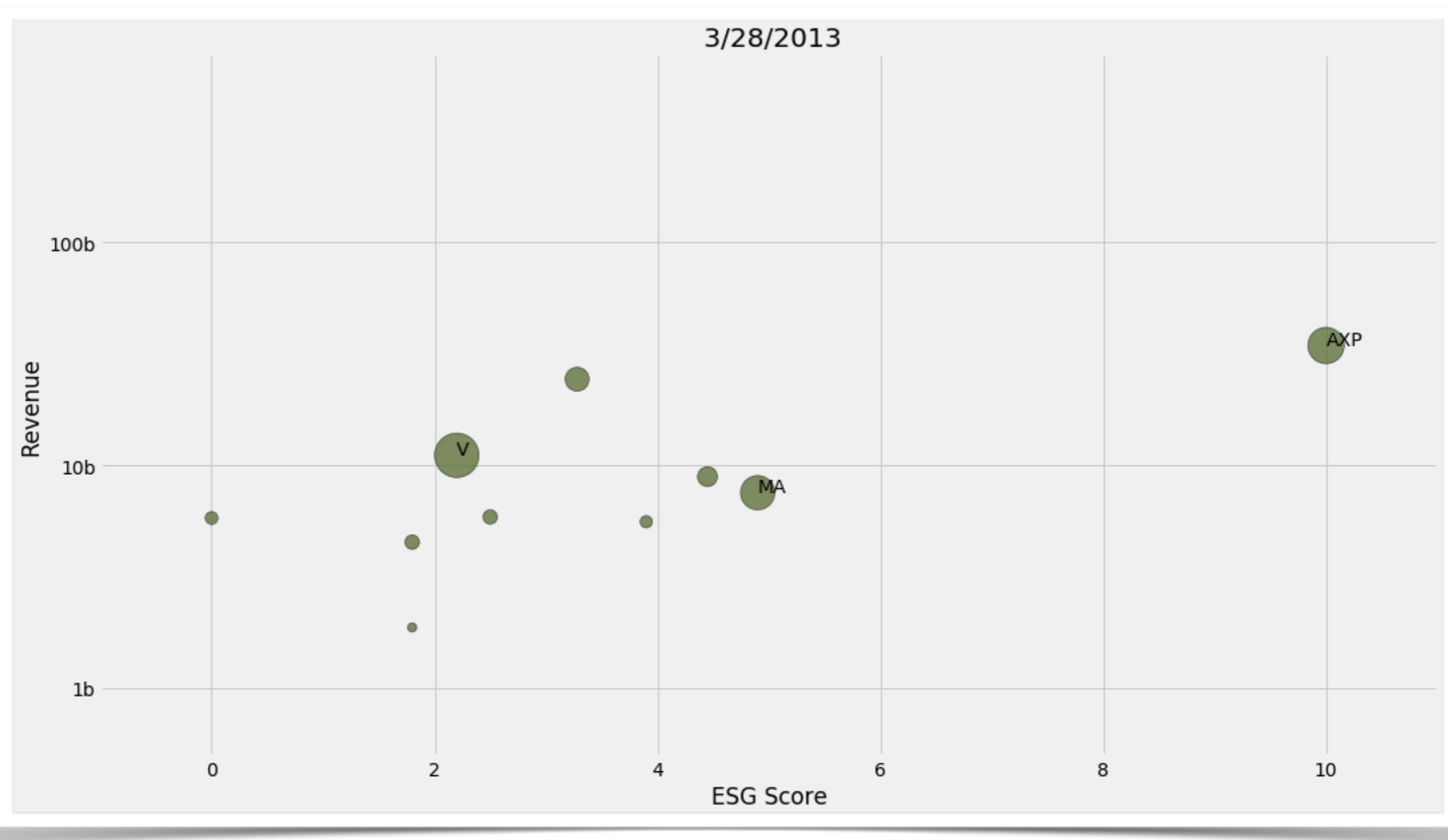


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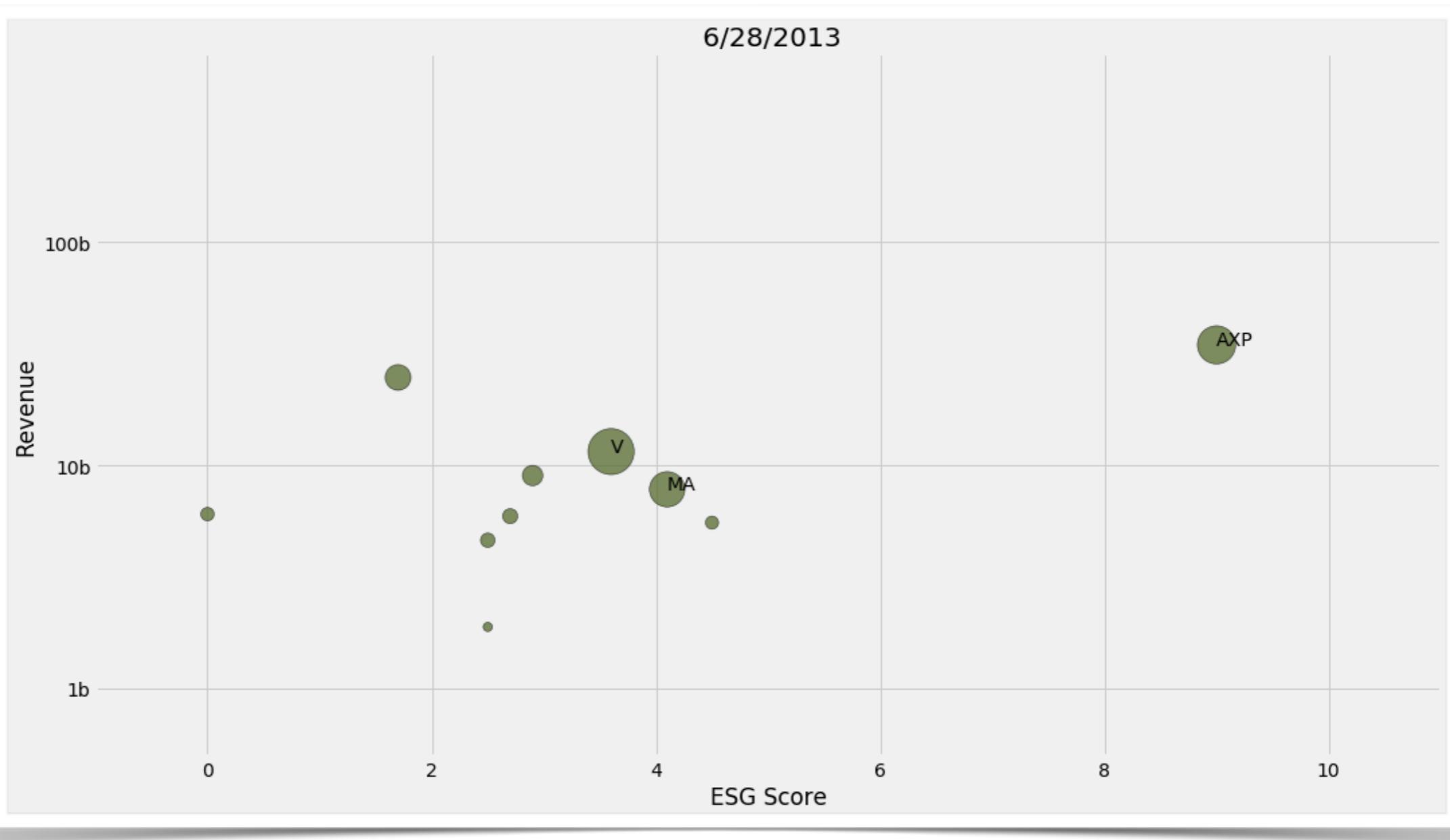




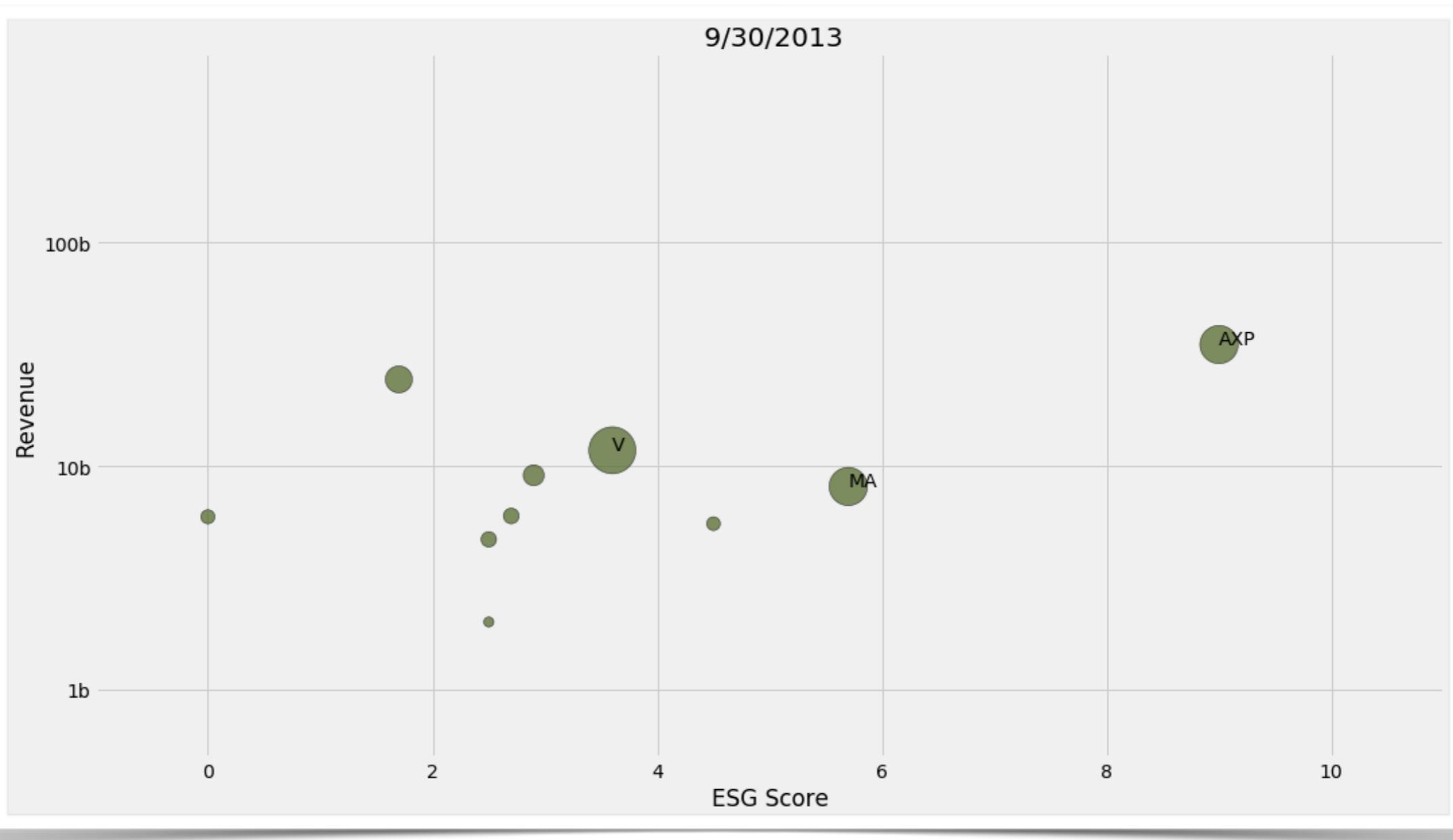
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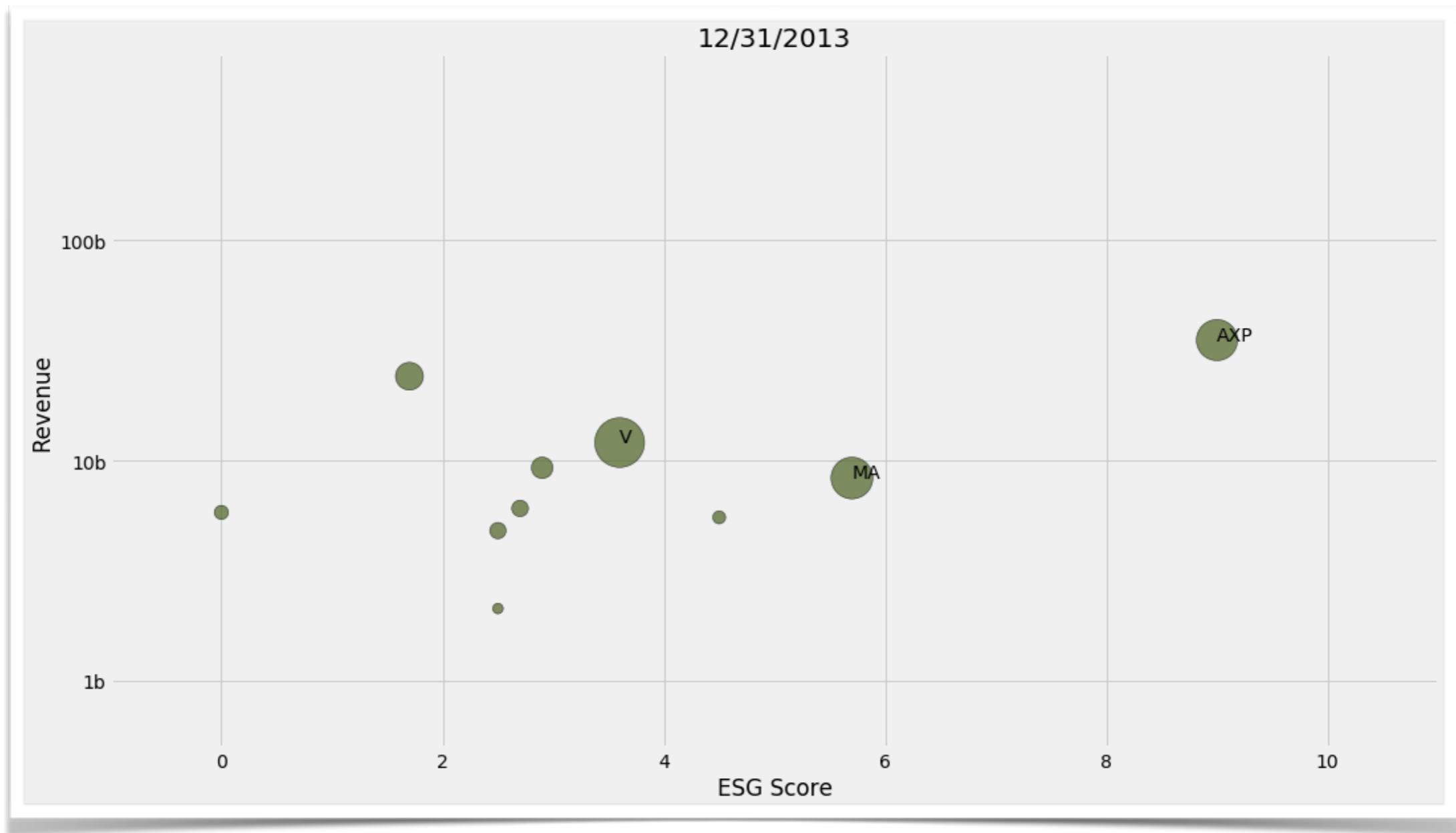


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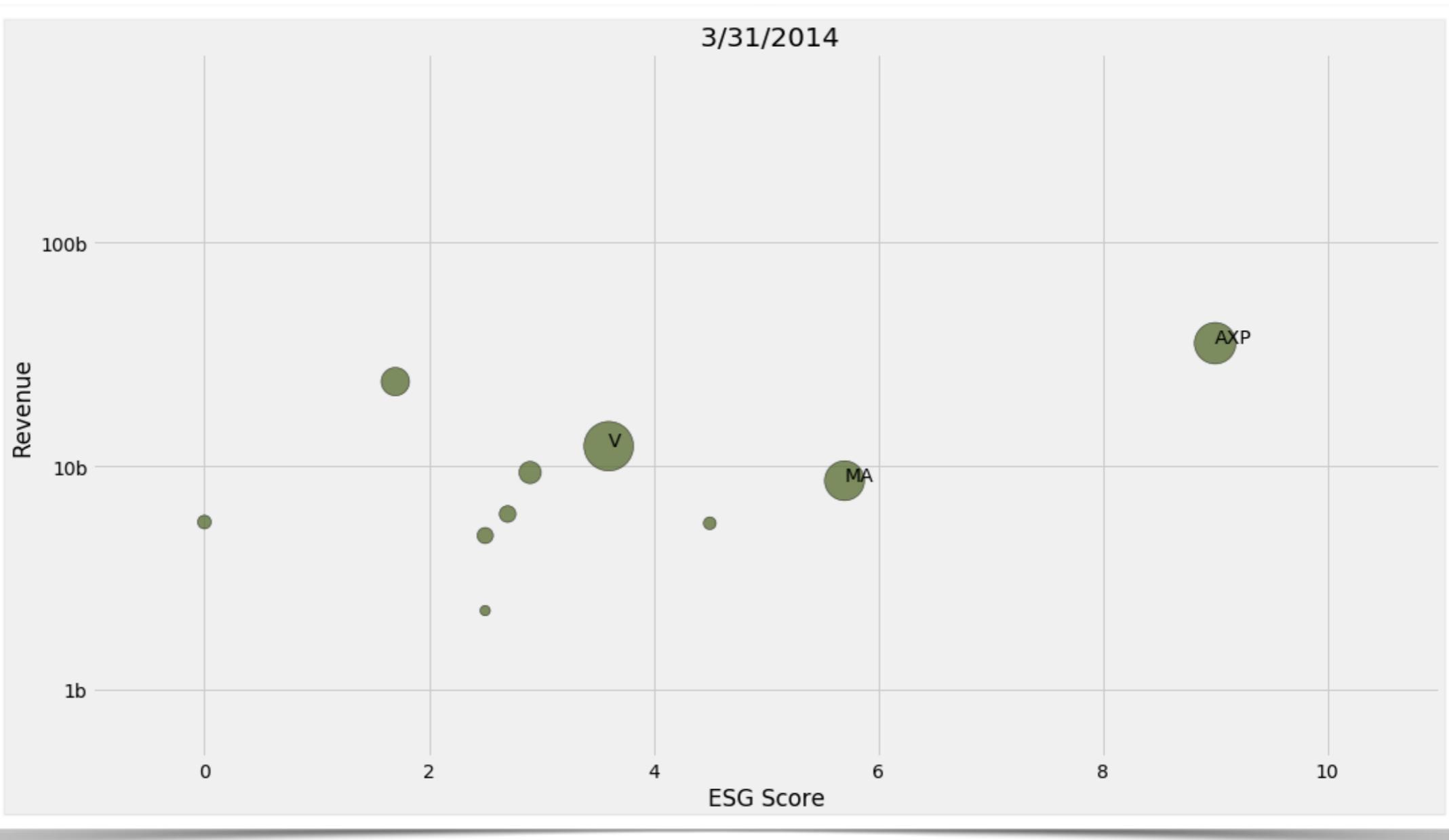


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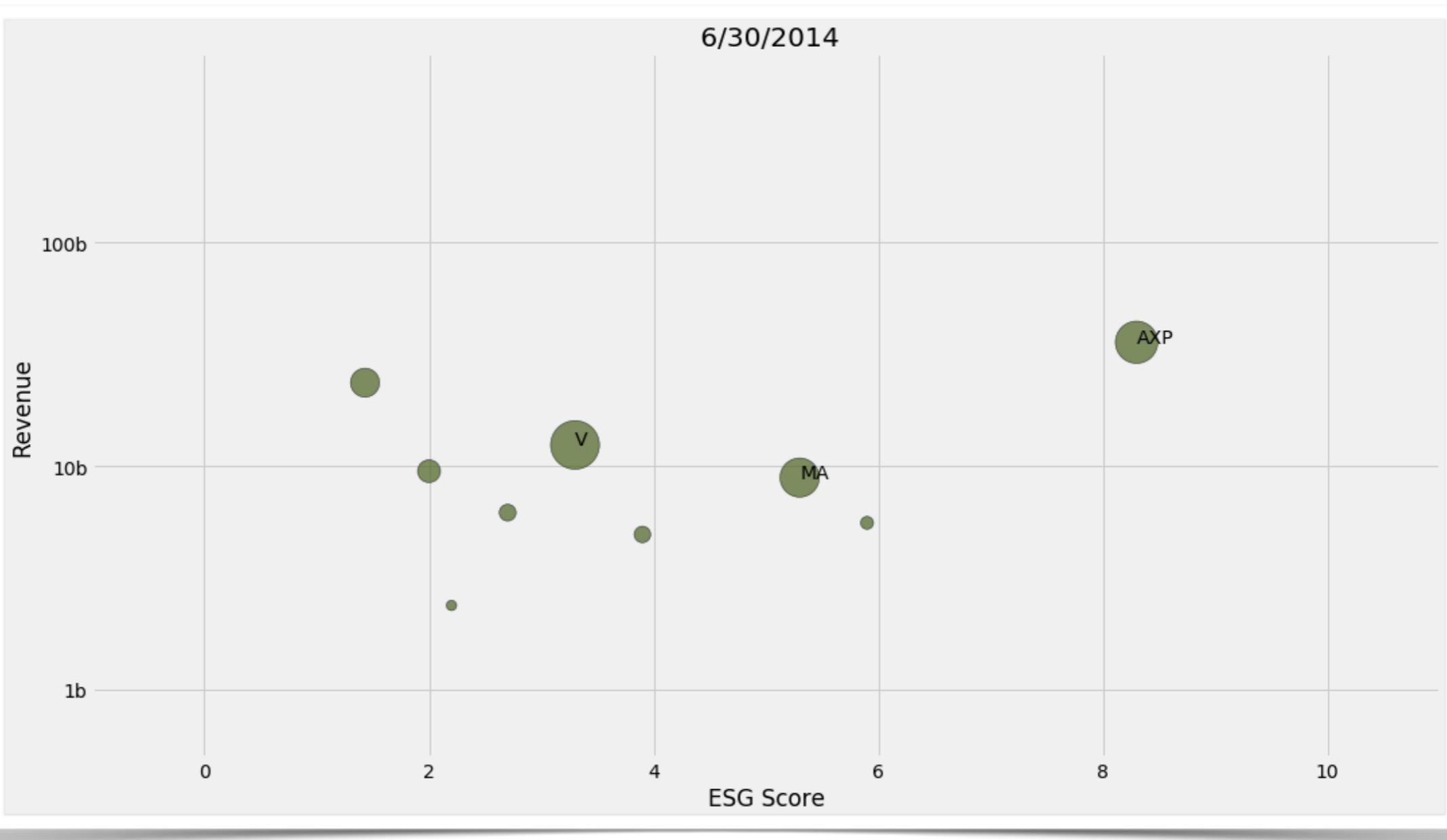




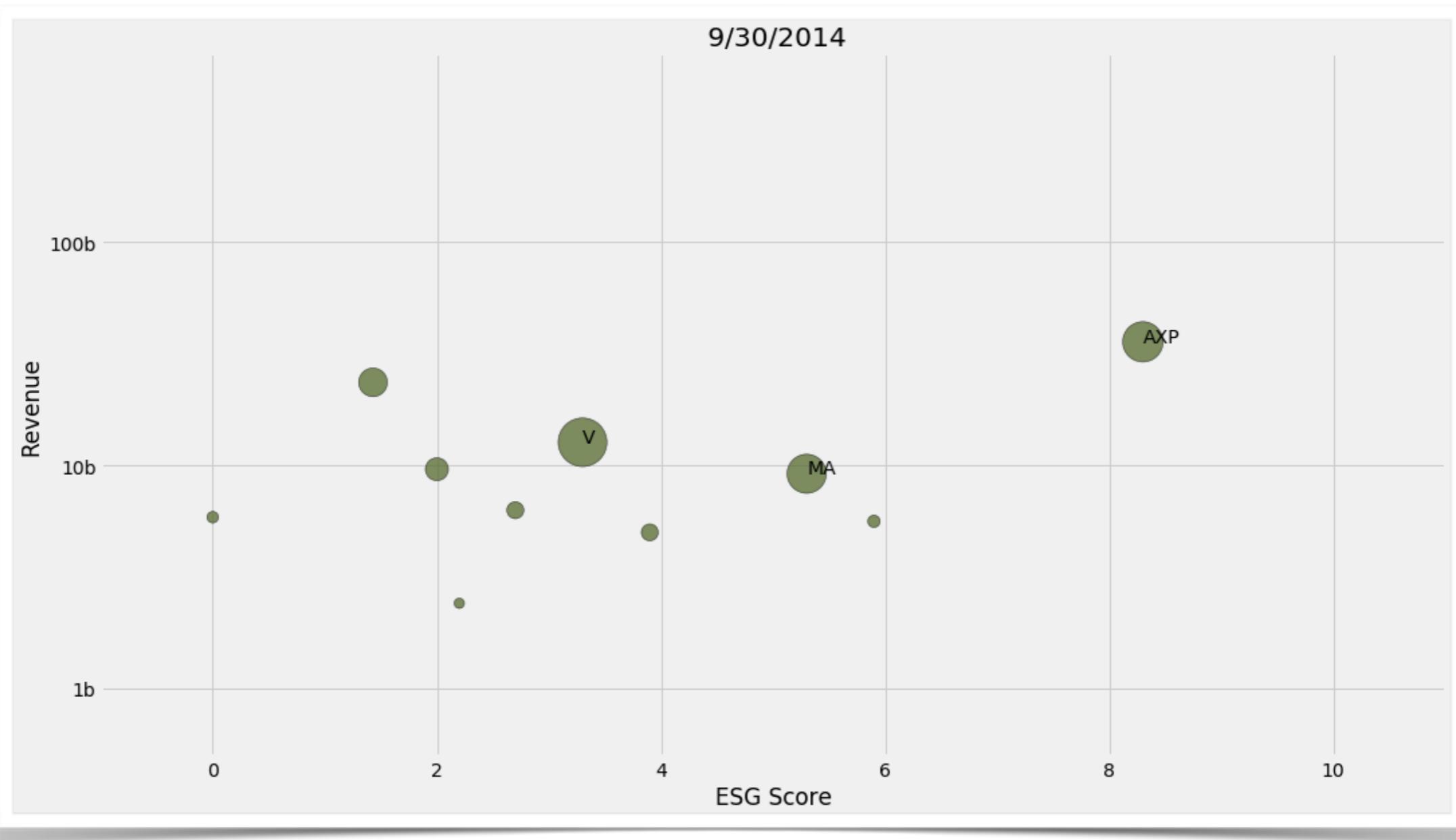
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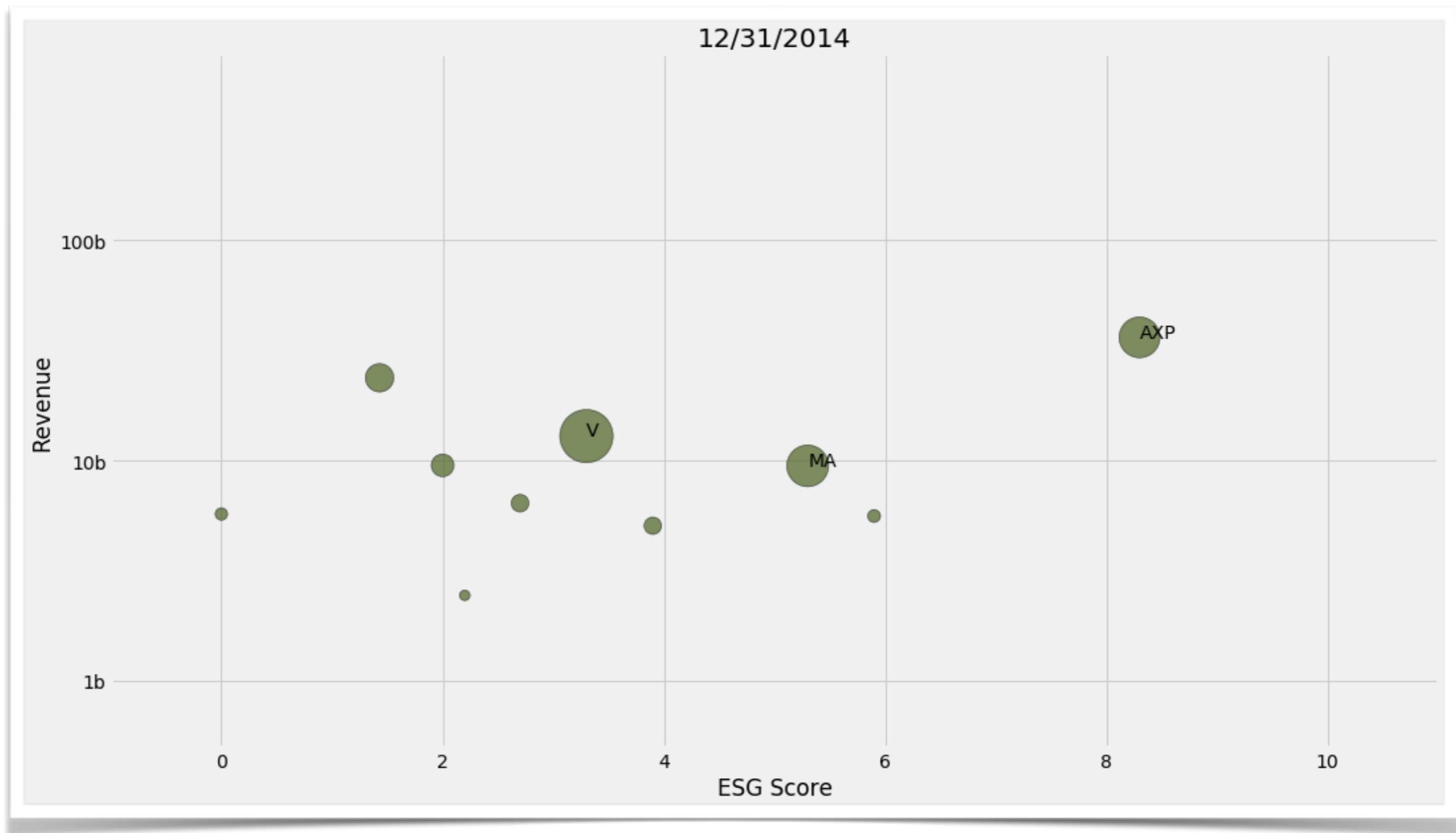


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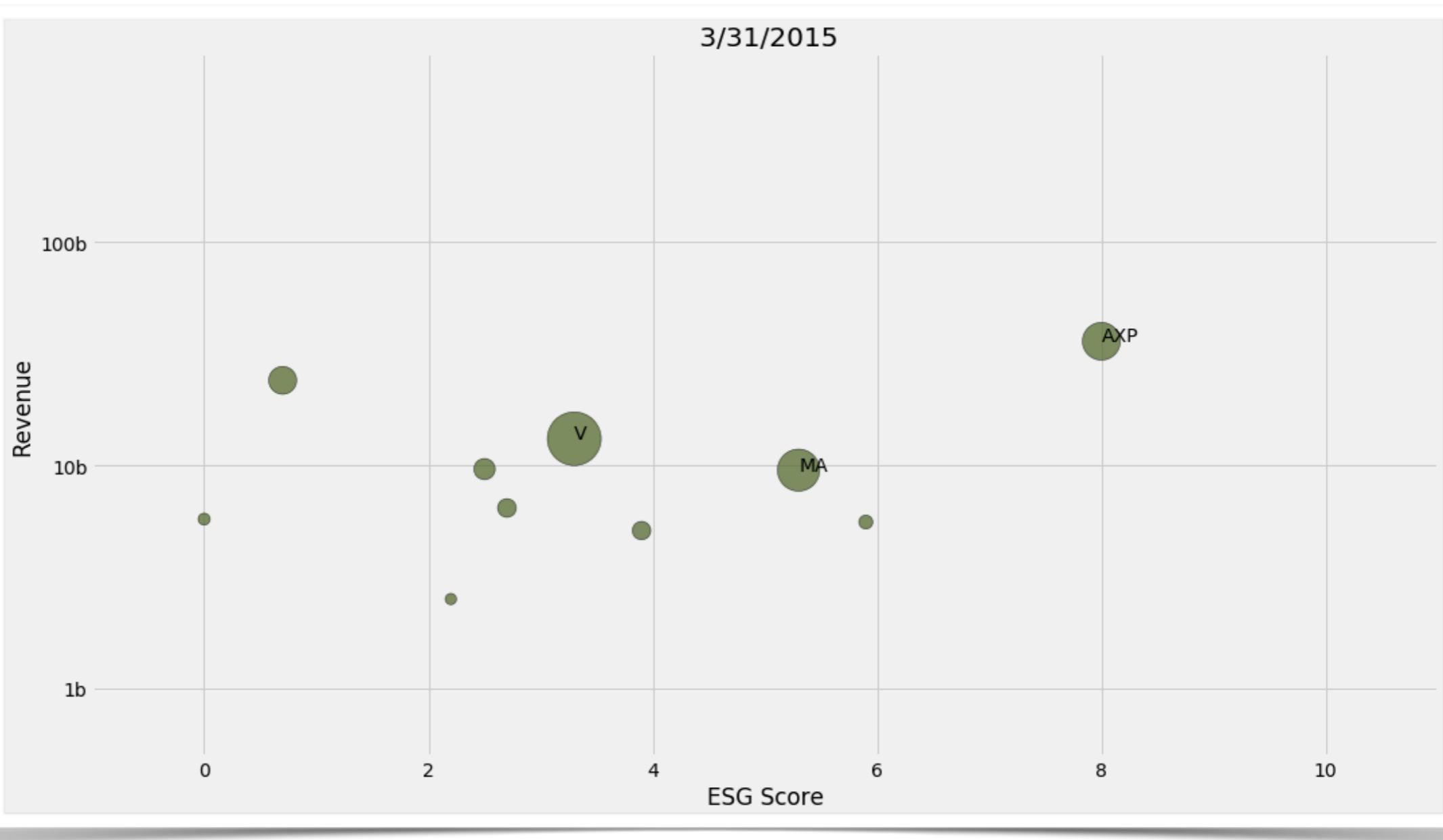


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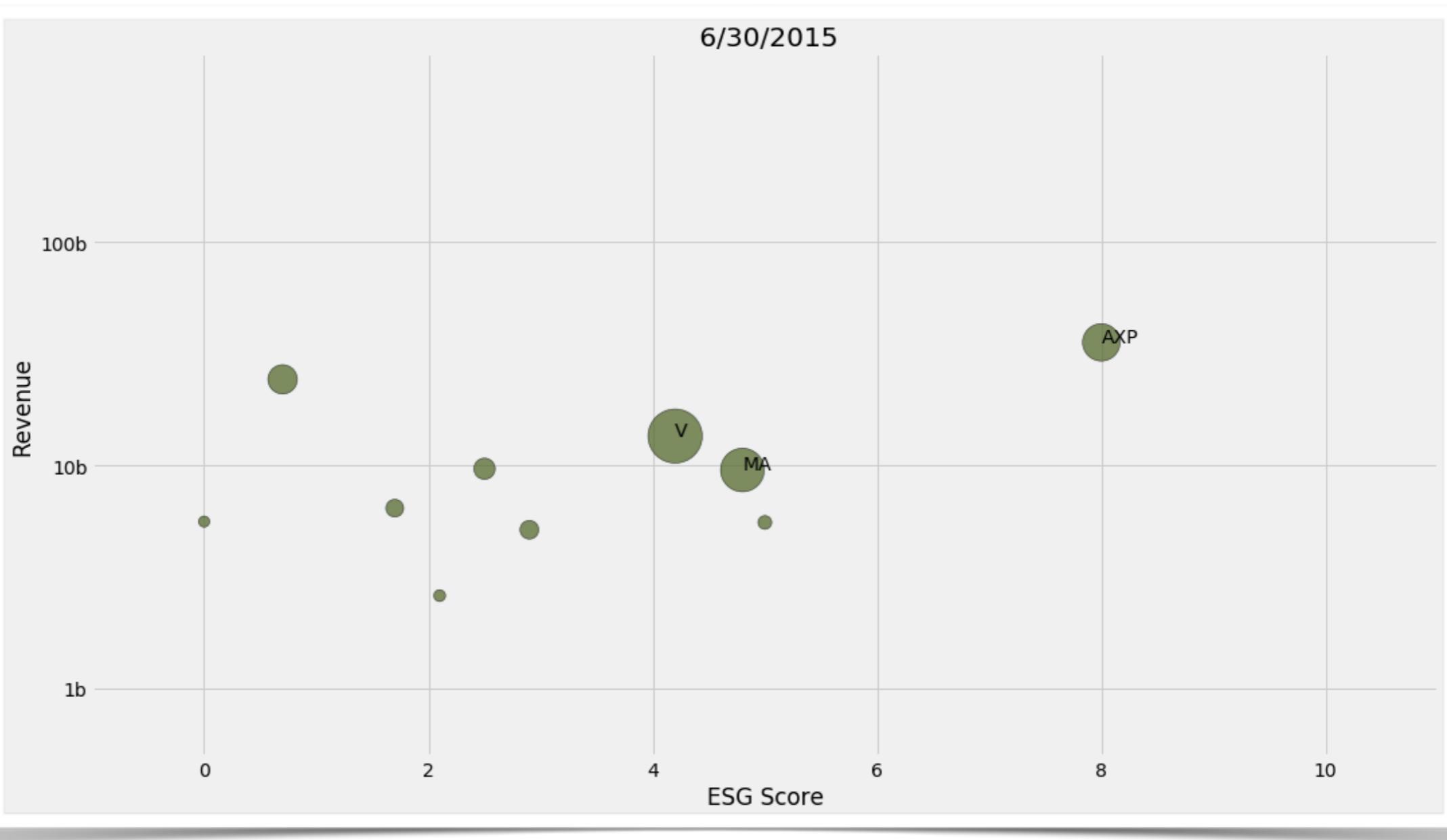




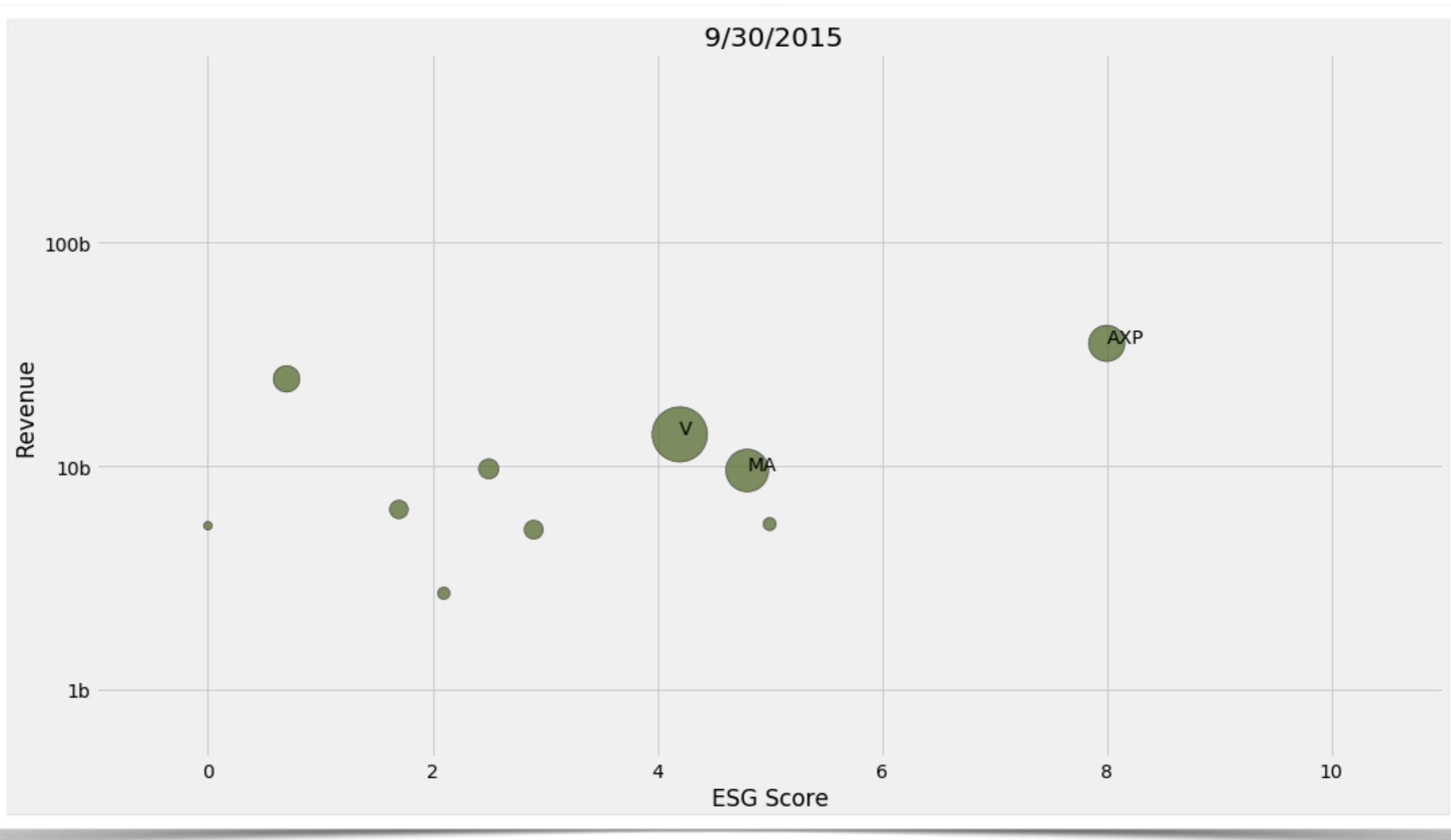
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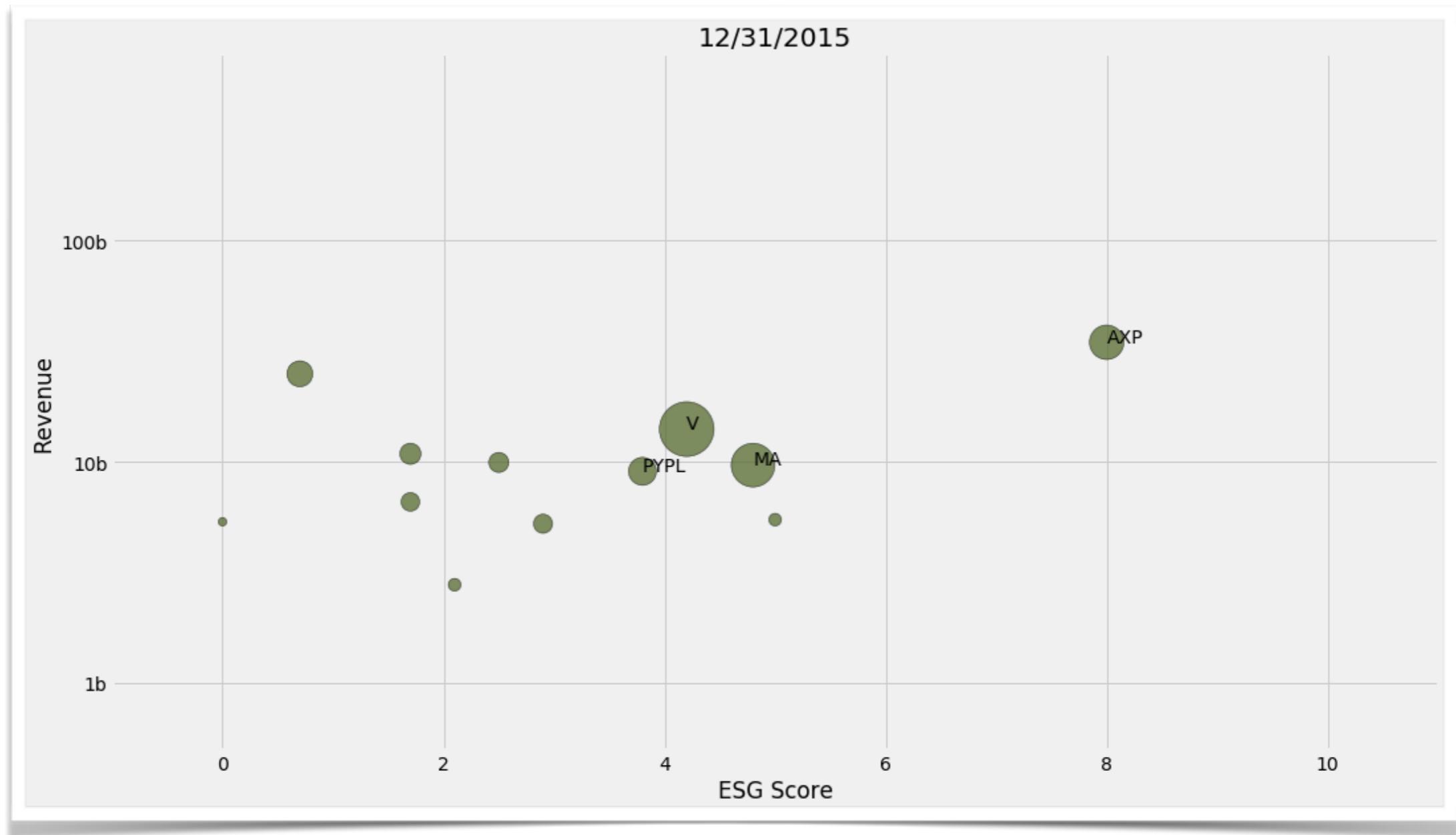


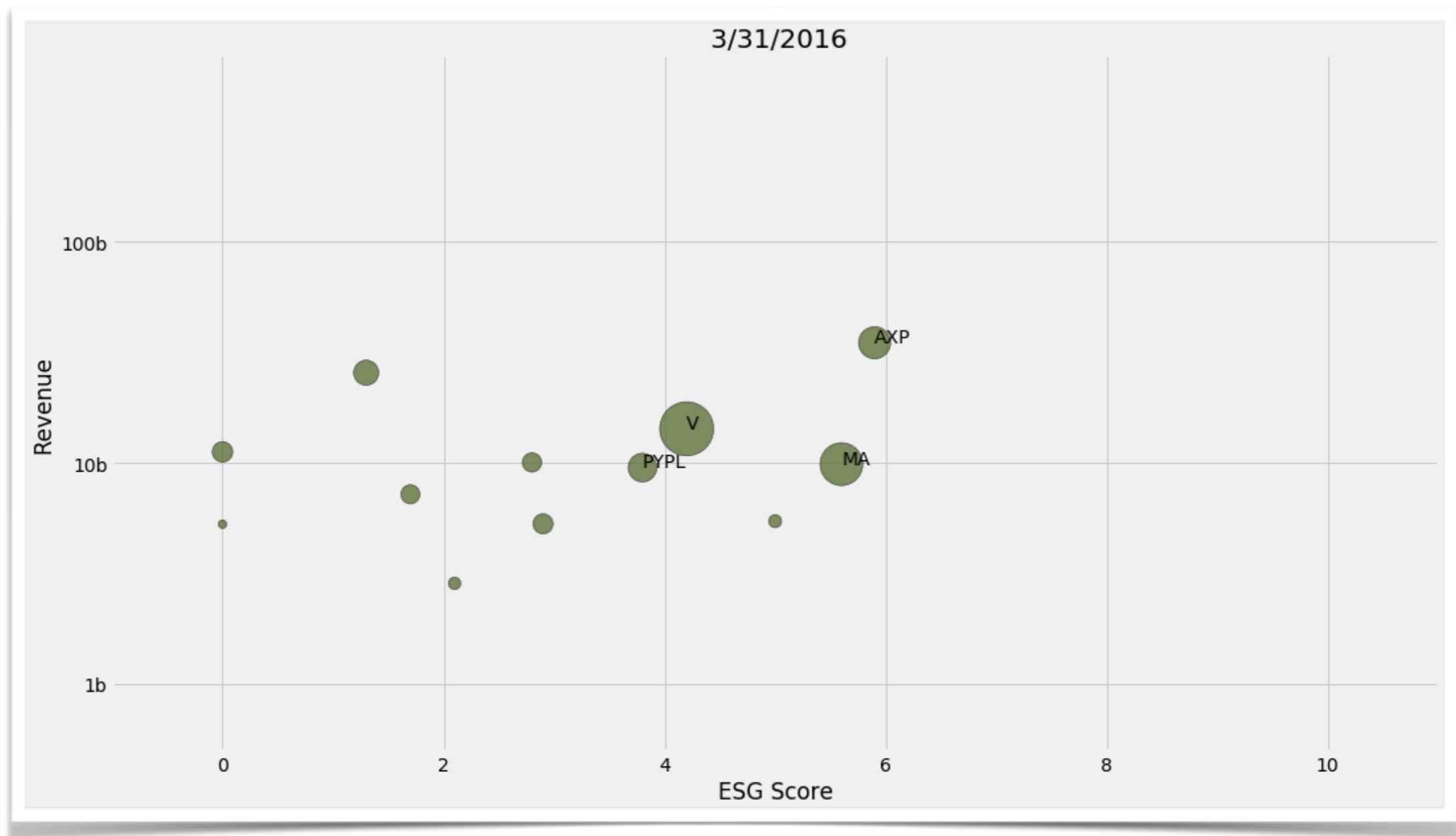
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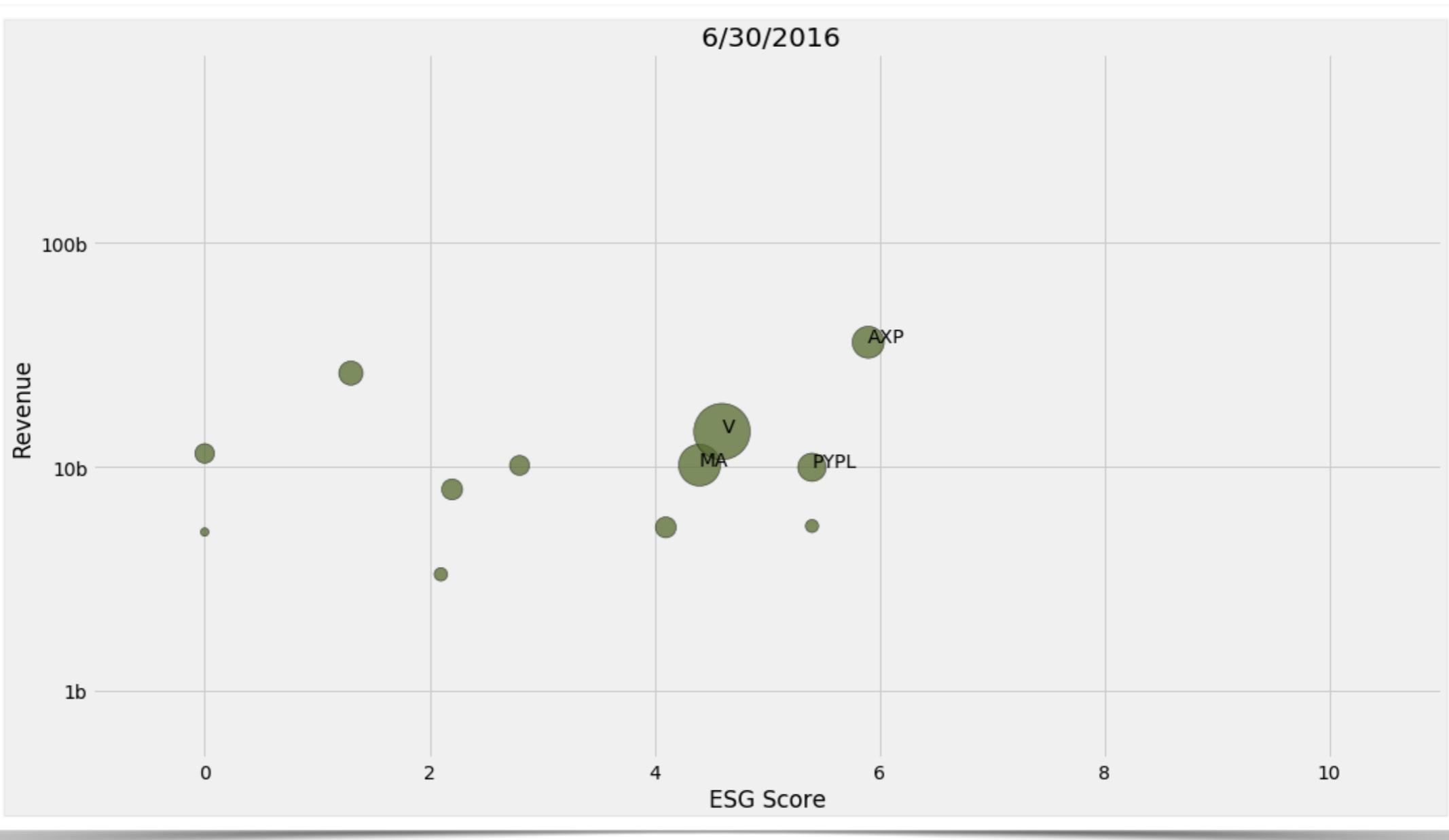
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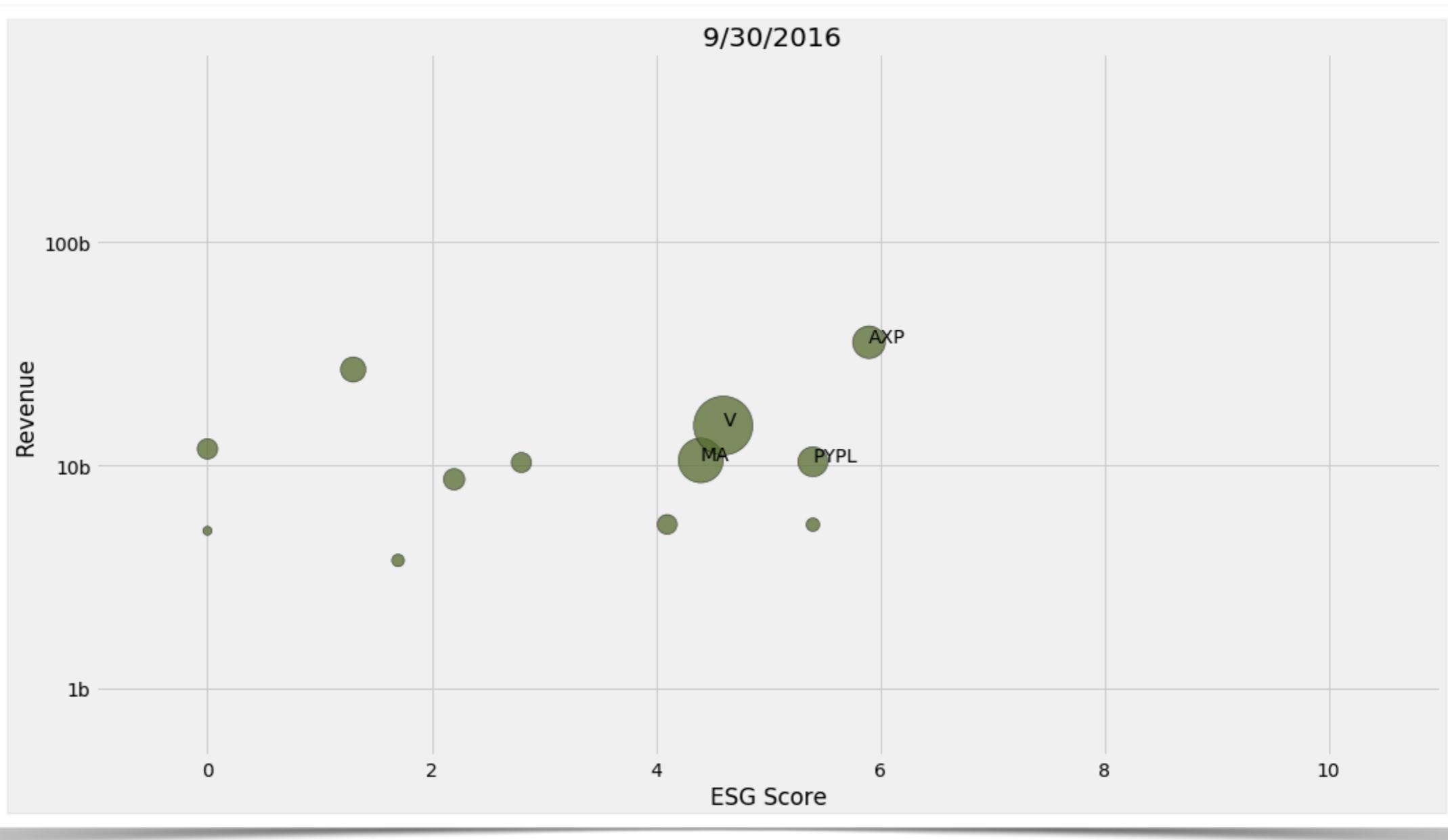




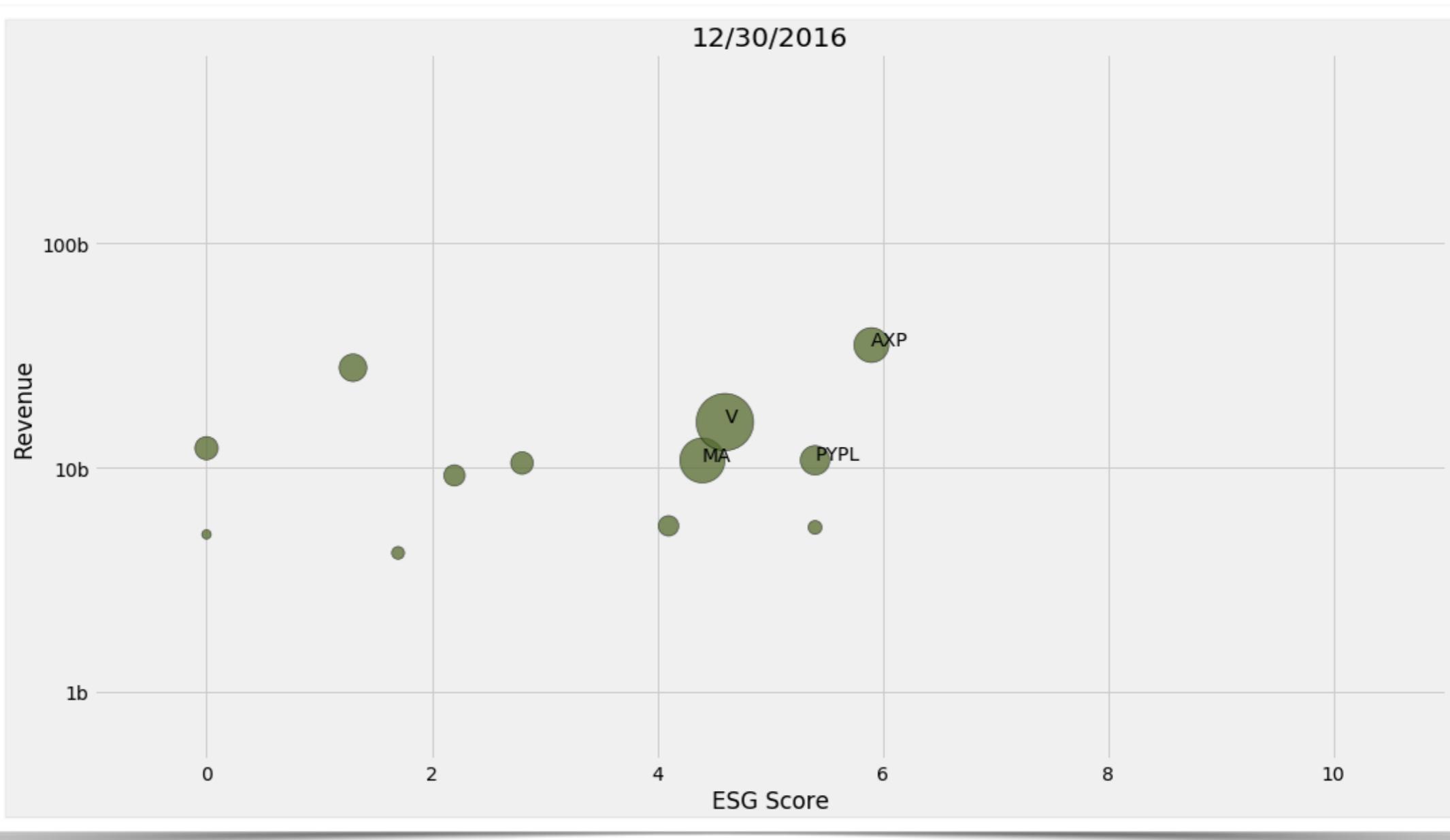
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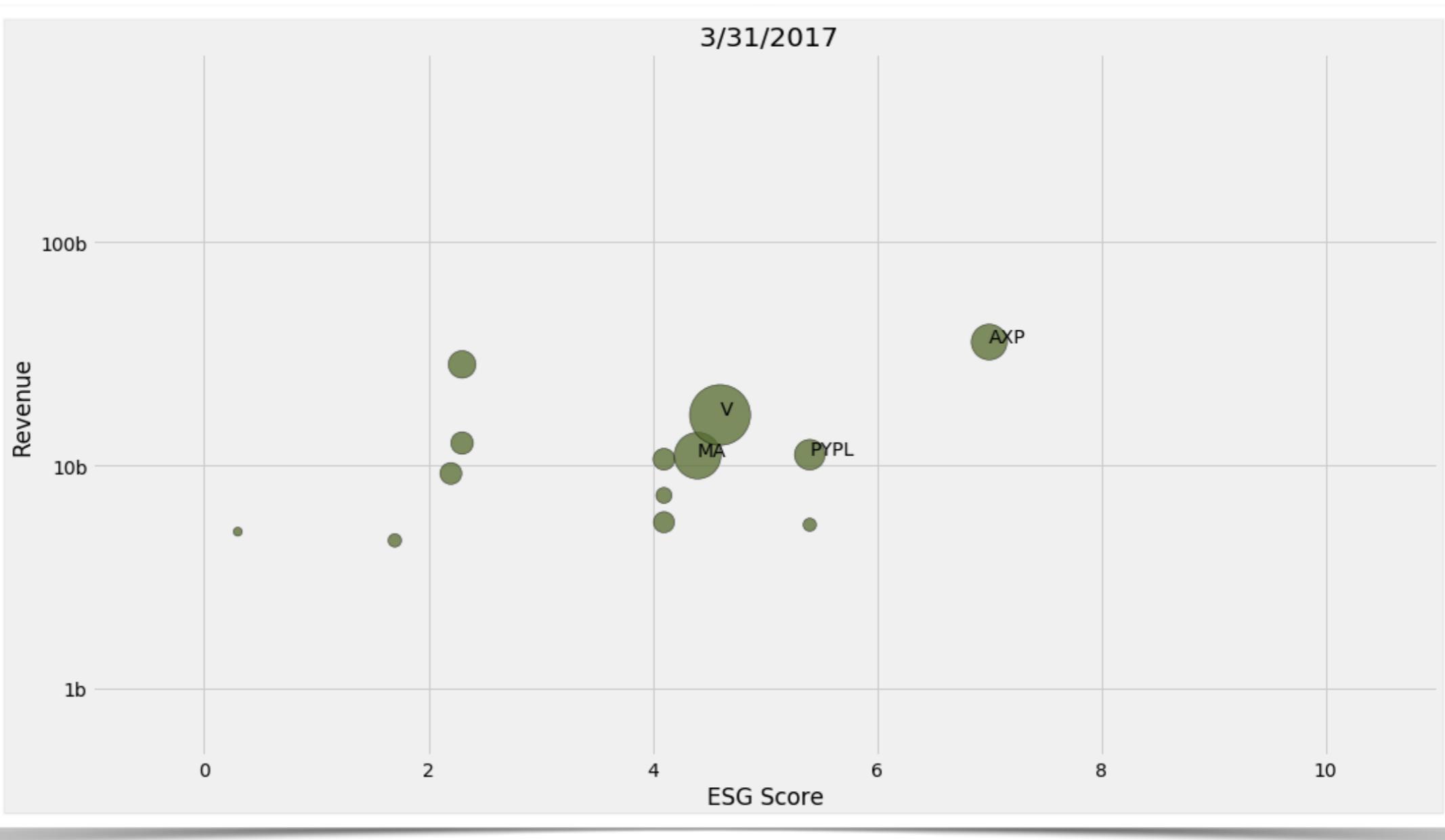
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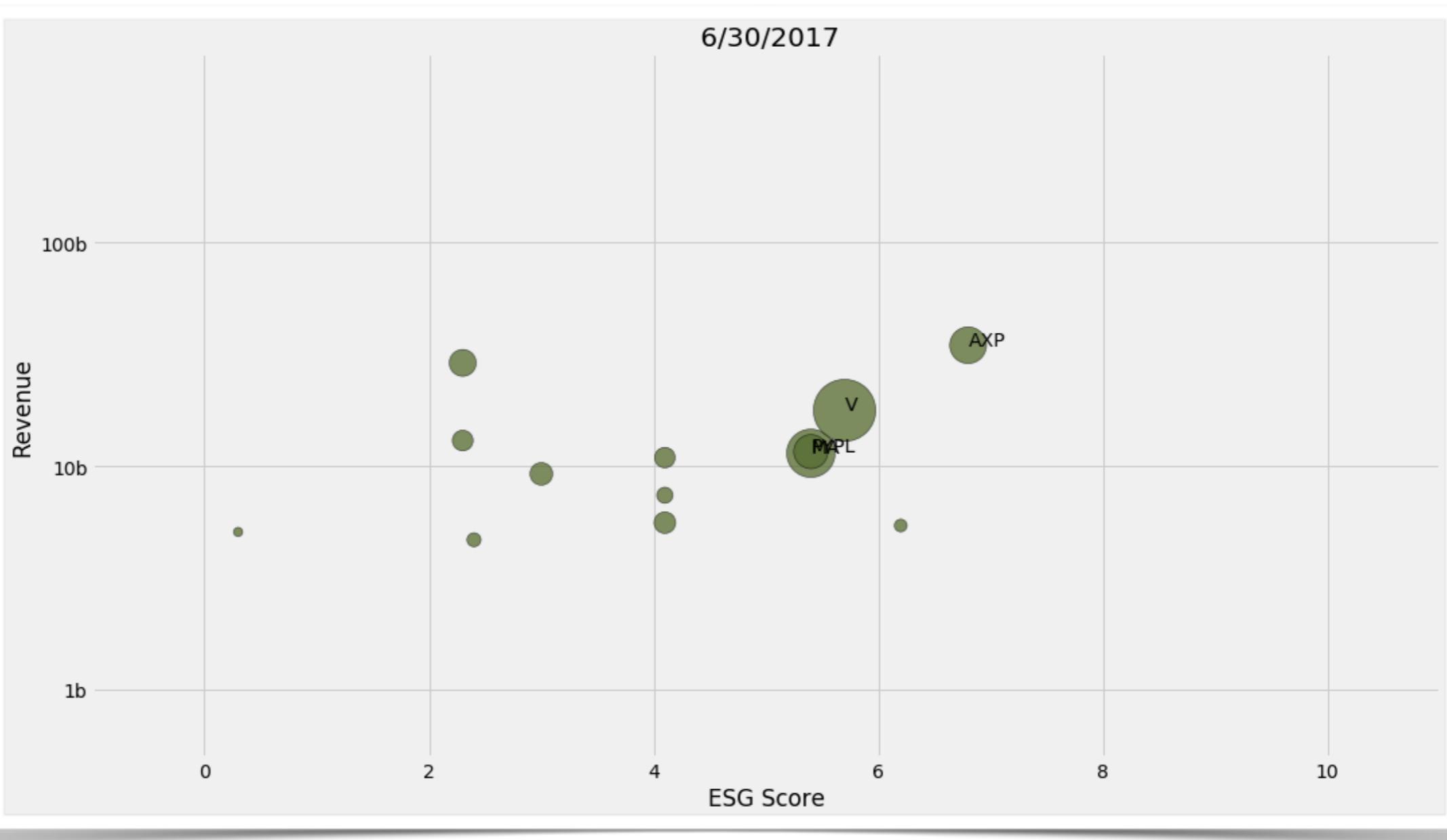
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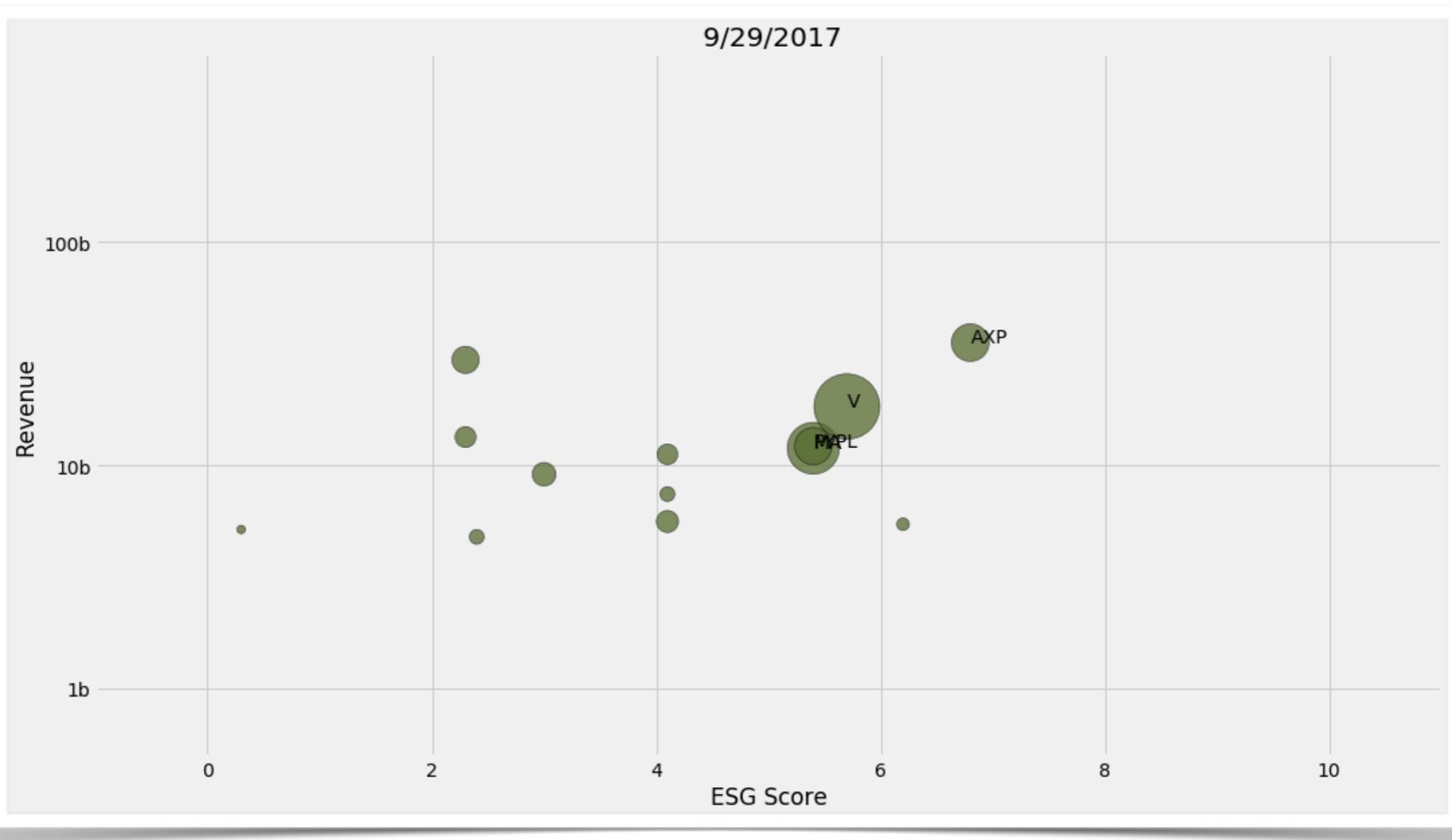
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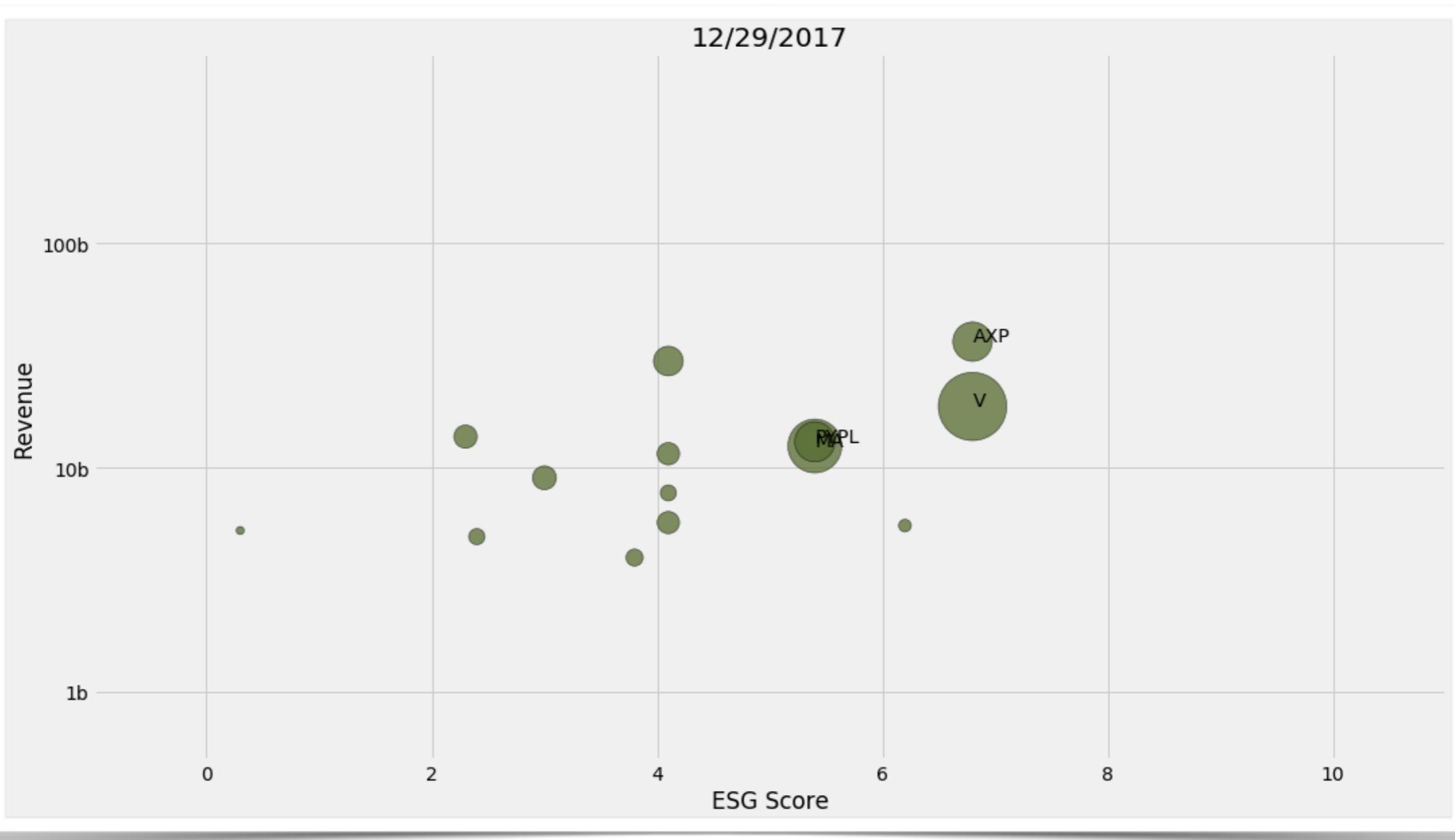
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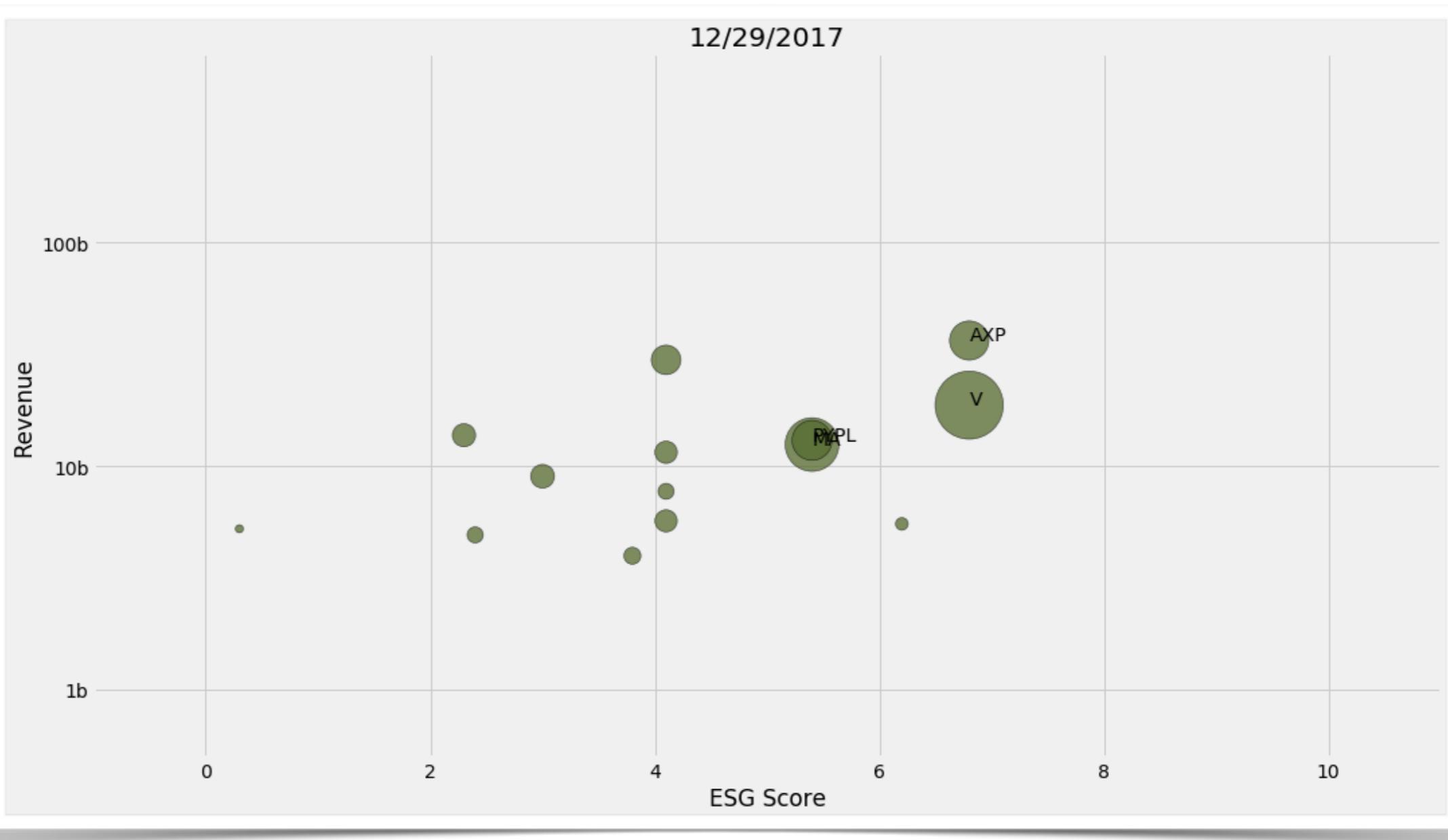
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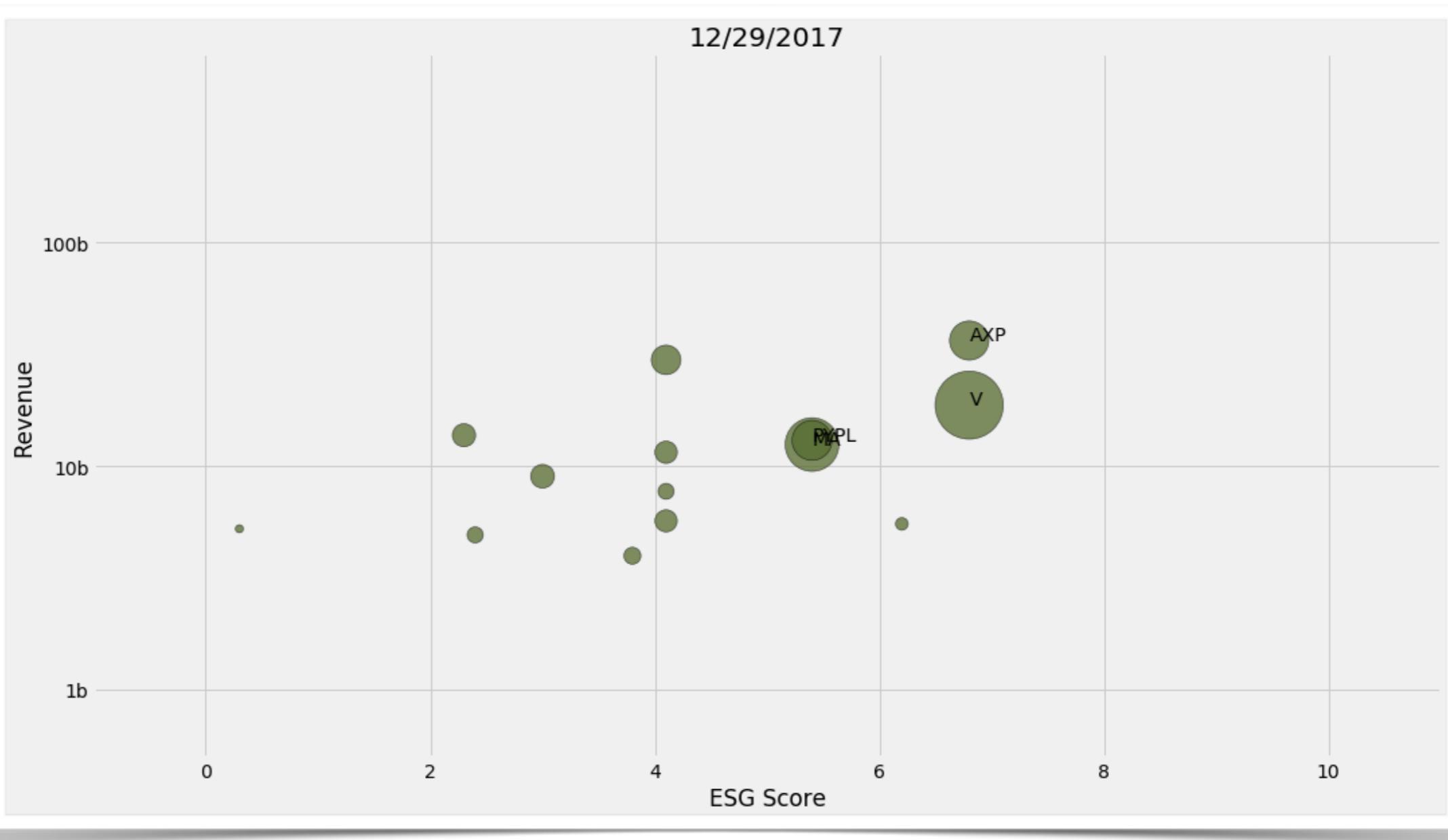
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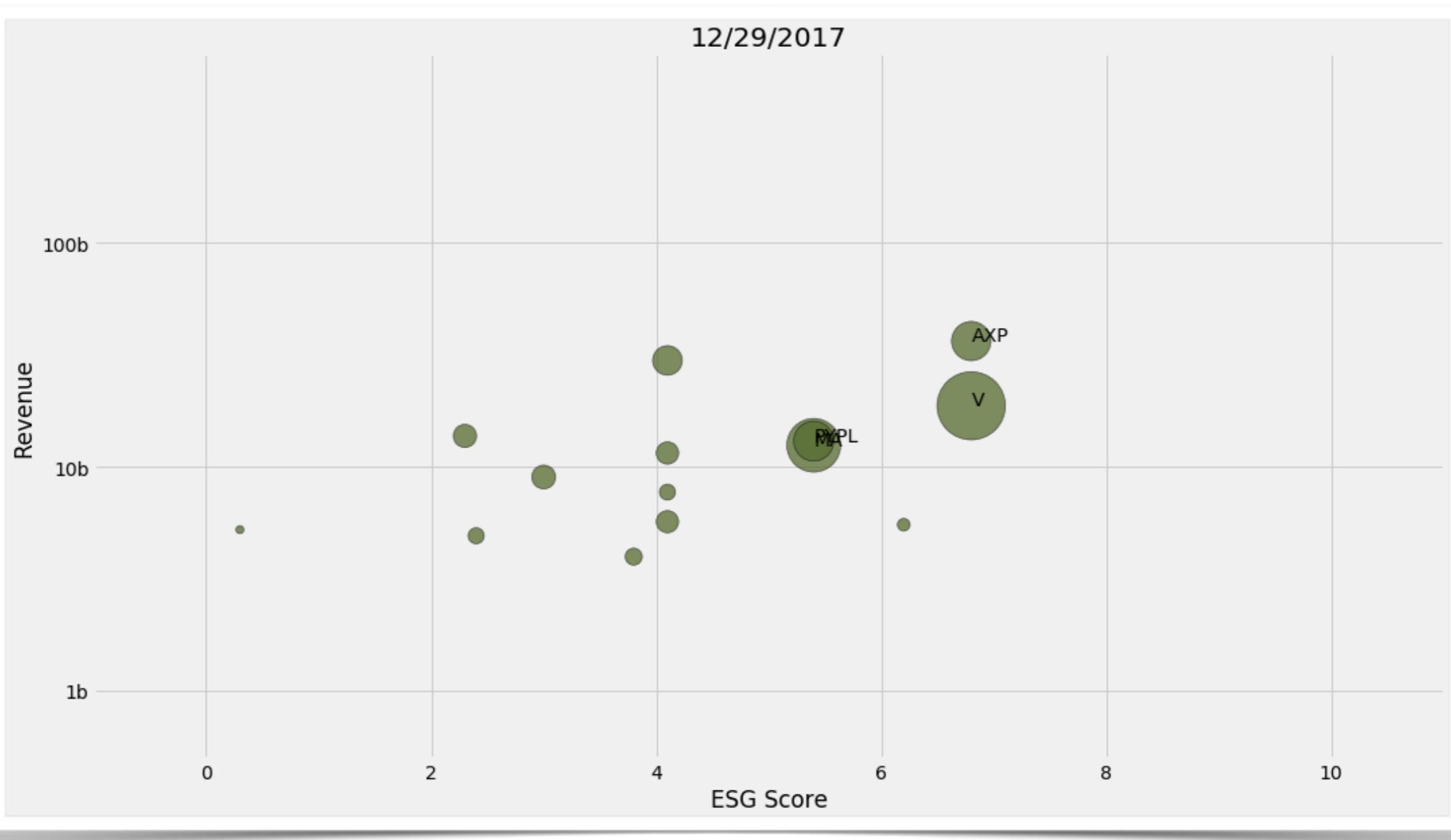
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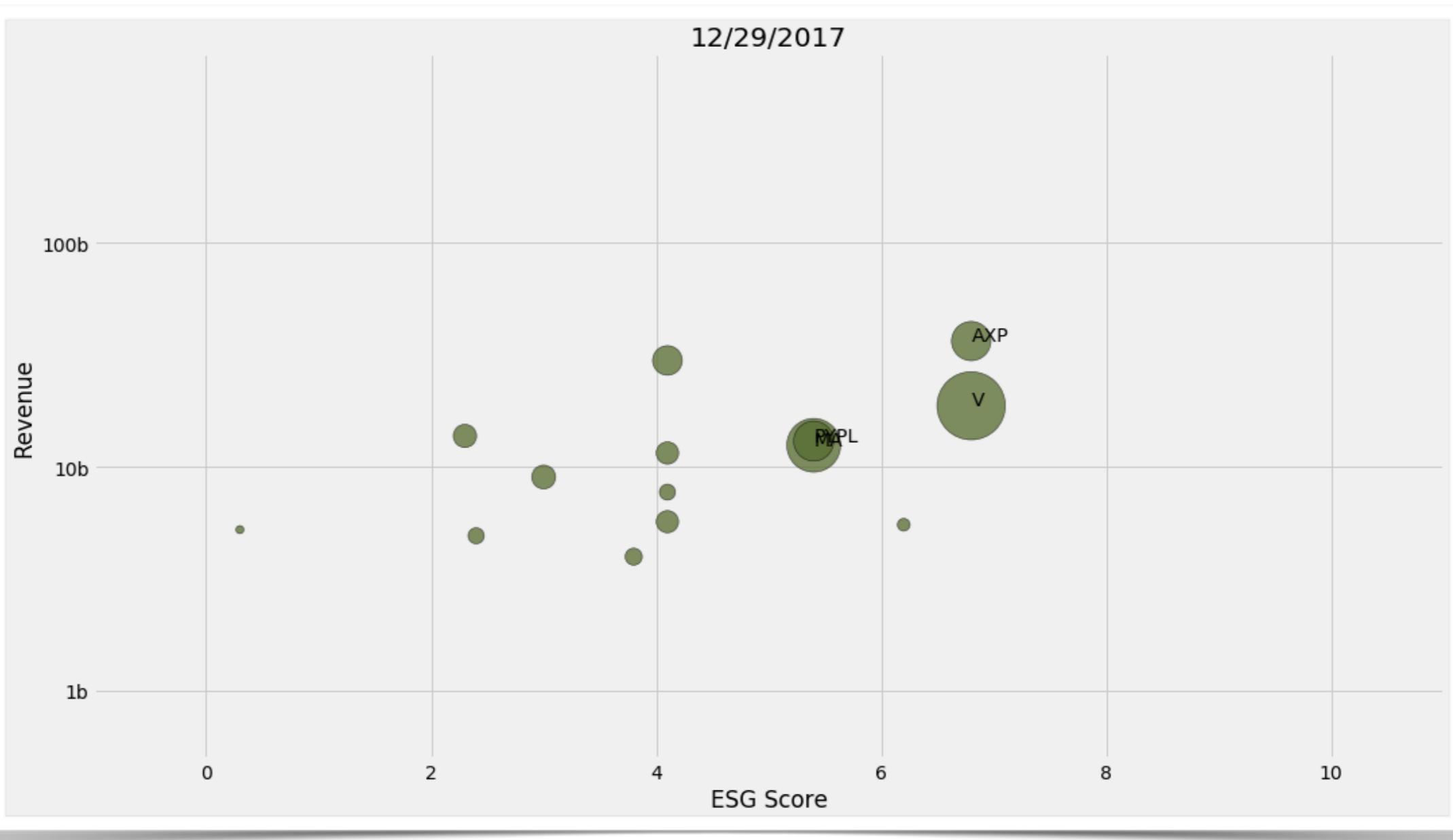
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Review

Macro-Level

Some changes detected to the relationship between ESG Scores and Revenue - but overall weak

RBICS Sector Classification

Slicing the data across RBICS sectors revealed pockets of correlation between Revenue, Market Cap, and ESG Scores

Insights

In the last seven years, it is clear that there is a trend for companies to increase their practices in corporate social governance, albeit the trend is stronger in specific RBICS Economy and Sector classifications. While it's still early days, the trends in pockets of industries are encouraging to see.

A Word on Scatter Plots

Advantage

Easily interpretable story of the relationships between 5 separate variables (Revenue, ESG, Market Value, RBICS, and Time)

Disadvantage

Number of observations is limited

External relationships are not represented

There are better visualization tools (Tableau, Spotfire, D3.js)

The point is there's more you can do with this data...

Inspire & Educate

“Keep it Simple, Stupid” Extract Data with **FACTSET**

80-20 Rule

Data Scientists spend the majority of their time cleaning and preparing data for analysis

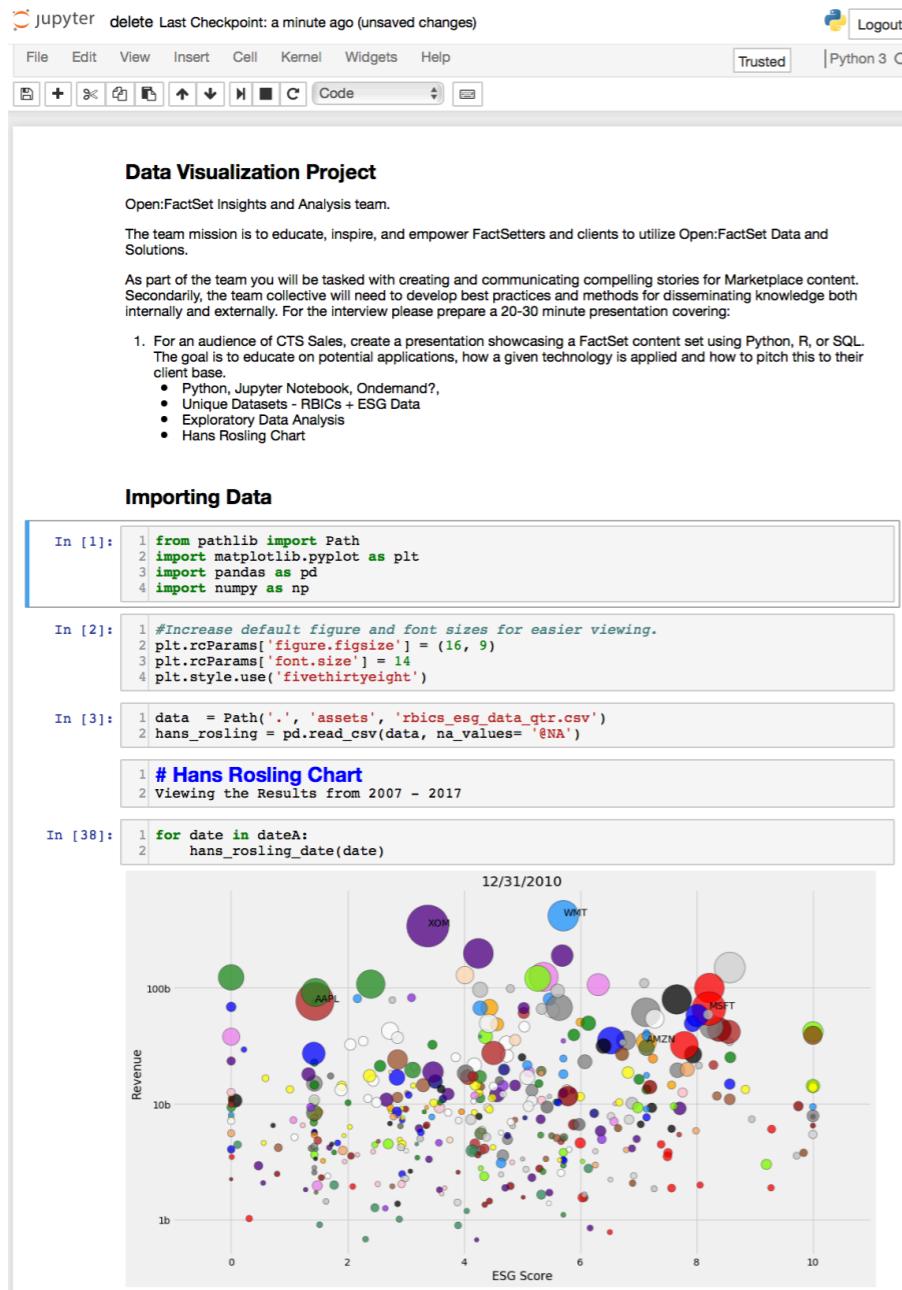
Running and tuning a model using scikit-learn model only 20% of the work

Concordance

FactSet makes the janitorial work easier by providing a cleaner starting dataset

Multiple methods to extract data through Workstation, APIs, and Standard Datafeeds

Document with Jupyter



The screenshot shows a Jupyter Notebook interface. At the top, there's a toolbar with various icons for file operations like opening, saving, and running cells. The menu bar includes File, Edit, View, Insert, Cell, Kernel, Widgets, Help, and a Logout button. A status bar at the bottom indicates "Trusted" and "Python 3".

Data Visualization Project

Open:FactSet Insights and Analysis team.

The team mission is to educate, inspire, and empower FactSetters and clients to utilize Open:FactSet Data and Solutions.

As part of the team you will be tasked with creating and communicating compelling stories for Marketplace content. Secondly, the team collective will need to develop best practices and methods for disseminating knowledge both internally and externally. For the interview please prepare a 20-30 minute presentation covering:

- For an audience of CTS Sales, create a presentation showcasing a FactSet content set using Python, R, or SQL. The goal is to educate on potential applications, how a given technology is applied and how to pitch this to their client base.
 - Python, Jupyter Notebook, Ondemand?,
 - Unique Datasets - RBICs + ESG Data
 - Exploratory Data Analysis
 - Hans Rosling Chart

Importing Data

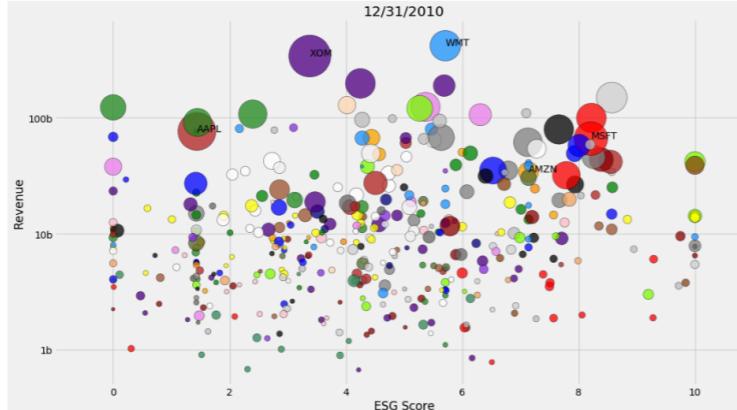
```
In [1]: 1 from pathlib import Path  
2 import matplotlib.pyplot as plt  
3 import pandas as pd  
4 import numpy as np
```

```
In [2]: 1 #Increase default figure and font sizes for easier viewing.  
2 plt.rcParams['figure.figsize'] = (16, 9)  
3 plt.rcParams['font.size'] = 14  
4 plt.style.use('fivethirtyeight')
```

```
In [3]: 1 data = Path('.', 'assets', 'rbics_esg_data_qtr.csv')  
2 hans_rosling = pd.read_csv(data, na_values='@NA')
```

```
In [38]: 1 # Hans Rosling Chart  
2 Viewing the Results from 2007 - 2017
```

```
In [38]: 1 for date in dateA:  
2     hans_rosling_date(date)
```



Notebook

Application that contains live code, narrative text and visualizations

Exploratory Data Analysis

Create and Share with clear instructions

Great for classroom and education

Language Support

Julia, Python, R + 40 different programming languages

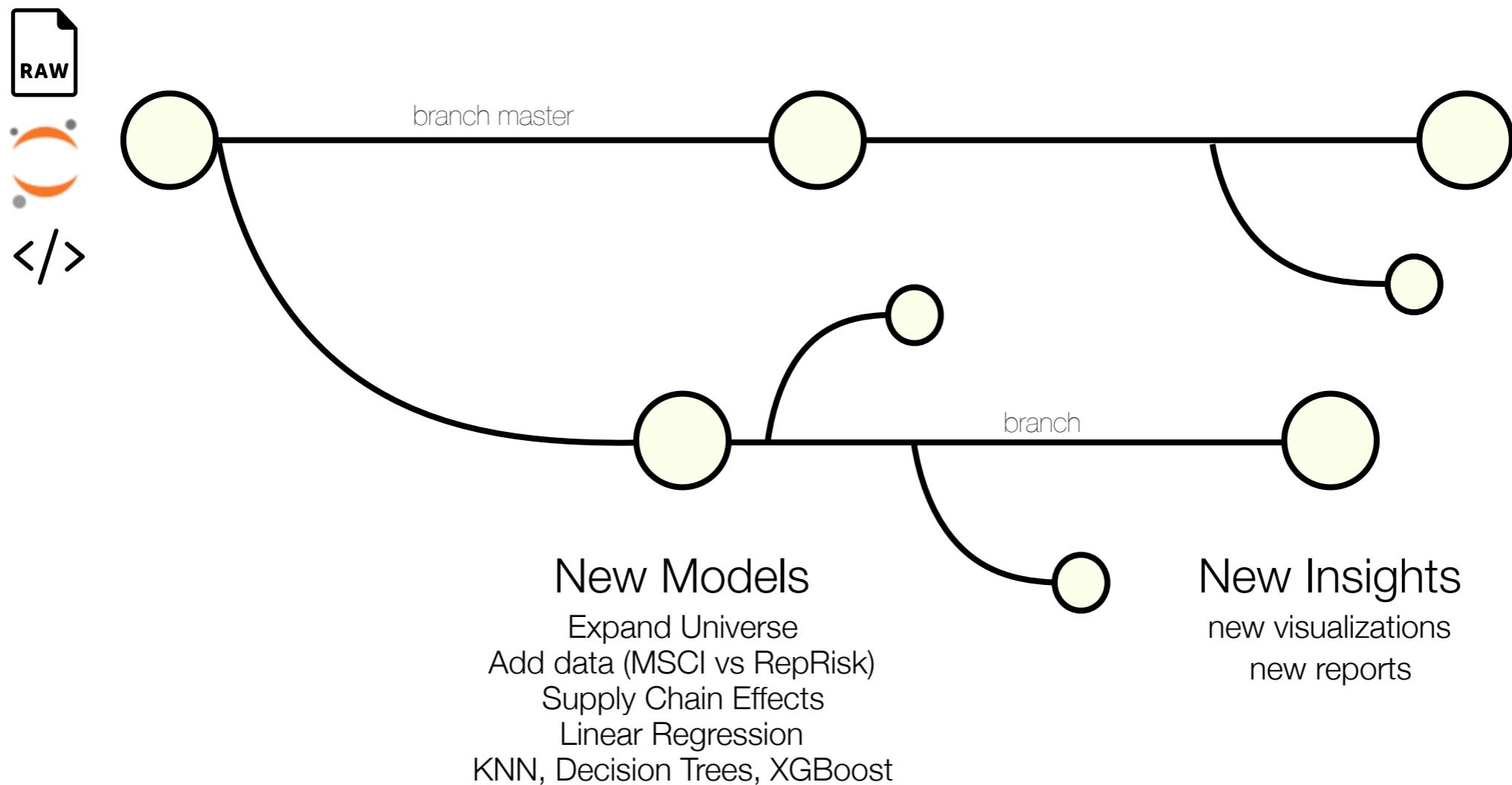
Open Source

Jupyter Notebook w/Anaconda - [installation instructions](#)

Sharing with Github



Share ideas that empower our global community to Create



https://github.com/naidaire/CTS_Project_HR

Educating Consultants and User base

Foundation

Python, R, Statistics

Command Line, Git

LearnPythontheHardWay, Quantopia, DataCamp, Codecademy, Coursera, Udacity, Boot camps

Advanced

Extract data from SQL

Machine learning algorithms

Visualization and Design with Tableau, ggplot

Expert

Neural Nets, Vision Algorithms

D3.js used by the nytimes.com & fivethirtyeight.com

Modern Classroom

Zoom Sessions + Slack + Jupyter + Git = Code Along Program

Questions