Investment Strategy Analysis Report

1. Introduction

This report presents an analysis of investment strategies based on Value and Growth ETFs for the USA and Europe. The data was sourced from Yahoo Finance, and key indicators such as cumulative returns and RSI were calculated. Machine learning models were trained to predict future returns based on these indicators.

2. Data and Methods

Data was collected for the period from 2010 to 2024. The cumulative returns were calculated by compounding the daily returns, and the RSI was calculated using a 14-day window. Models used for prediction include RandomForest, LogisticRegression, and SVM.
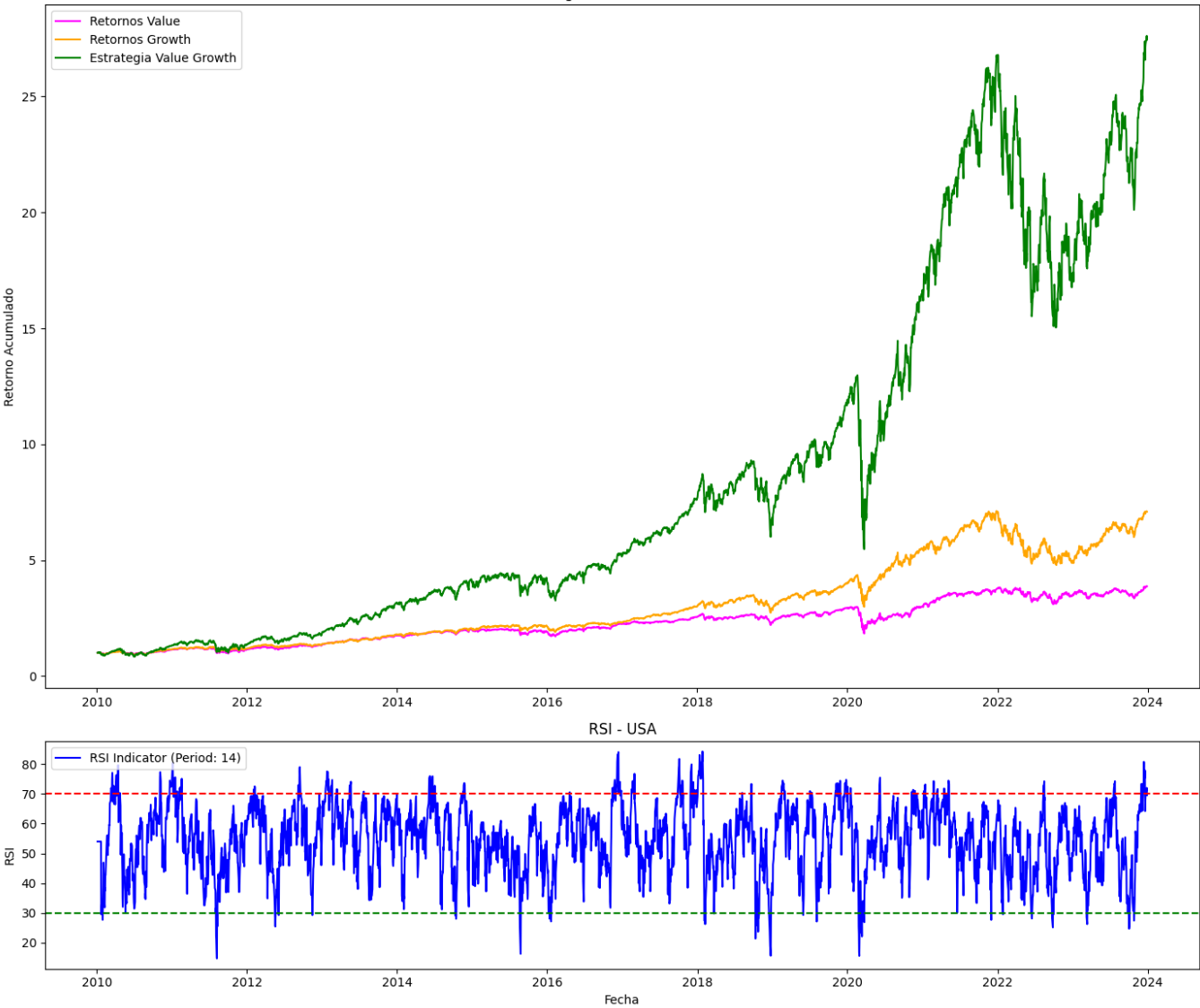
3. Results

Investment Strategy Analysis Report

Figure 1: Cumulative returns and RSI for the USA Value and Growth ETFs. The green line represents the combined strategy
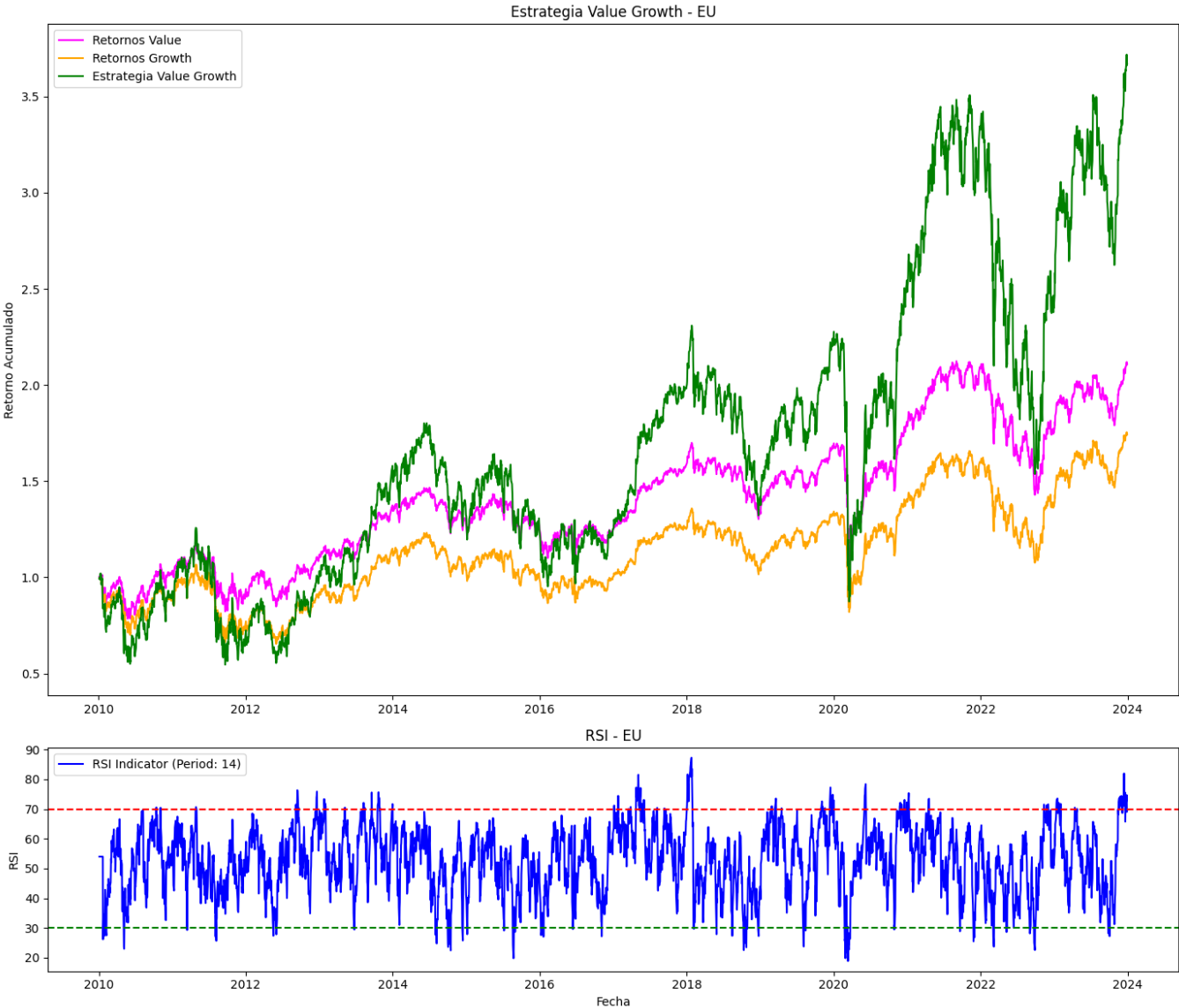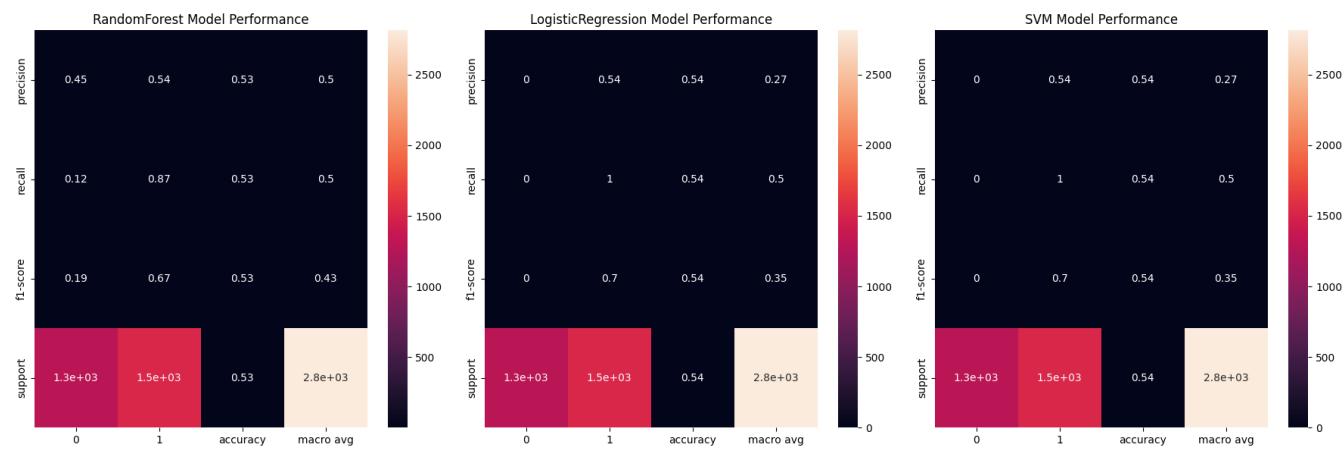
Figure 2: Cumulative returns and RSI for the European Value and Growth ETFs. Similar to the USA analysis, the combined strategy is represented by the green line.

4. Model Training and Prediction

Investment Strategy Analysis Report

RandomForest Model Accuracy: 52.95%

Classification Report:

	1	weighted avg	0	macro avg	accuracy
precision	0.5409	0.4996	0.4507	0.4958
recall	0.8721	0.5295	0.1241	0.4981
f1-score	0.6677	0.4510	0.1946	0.4312
support	1525.0000	2814.0000	1289.0000	2814.0000

LogisticRegression Model Accuracy: 54.19%

Classification Report:

	1	weighted avg	0	macro avg	accuracy
precision	0.5419	0.2937	0.0000	0.2710
recall	1.0000	0.5419	0.0000	0.5000
f1-score	0.7029	0.3809	0.0000	0.3515
support	1525.0000	2814.0000	1289.0000	2814.0000

Investment Strategy Analysis Report

SVM Model Accuracy: 54.19%

Classification Report:

	1	weighted avg	0	macro avg	accuracy
precision	0.5419	0.2937	0.0000	0.2710
recall	1.0000	0.5419	0.0000	0.5000
f1-score	0.7029	0.3809	0.0000	0.3515
support	1525.0000	2814.0000	1289.0000	2814.0000

5. Conclusion

The analysis shows that combining Value and Growth strategies can provide a diversified approach to investing. The use of technical indicators such as RSI, along with machine learning models, can enhance the decision-making process by providing predictive insights. Further research could involve testing additional models and expanding the feature set for improved accuracy.

6. Future Work

Future work could explore the use of more advanced machine learning models, such as ensemble methods or neural networks, to further improve prediction accuracy. Additionally, incorporating macroeconomic indicators and sentiment analysis from news data could provide a more holistic view of the market conditions.