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Opportunities in S&P 500 Dividend-Paying Stocks

This project explores dividend investing strategies for S&P 500 stocks. After 8 months of development, it launched in April 2024. This Data Analyst project employs fundamental and technical analysis using Colab Notebook and Python Libraries to identify undervalued and overvalued stocks. The following sections present the results and outline the methods and tools used.

› Timeline and Achievement

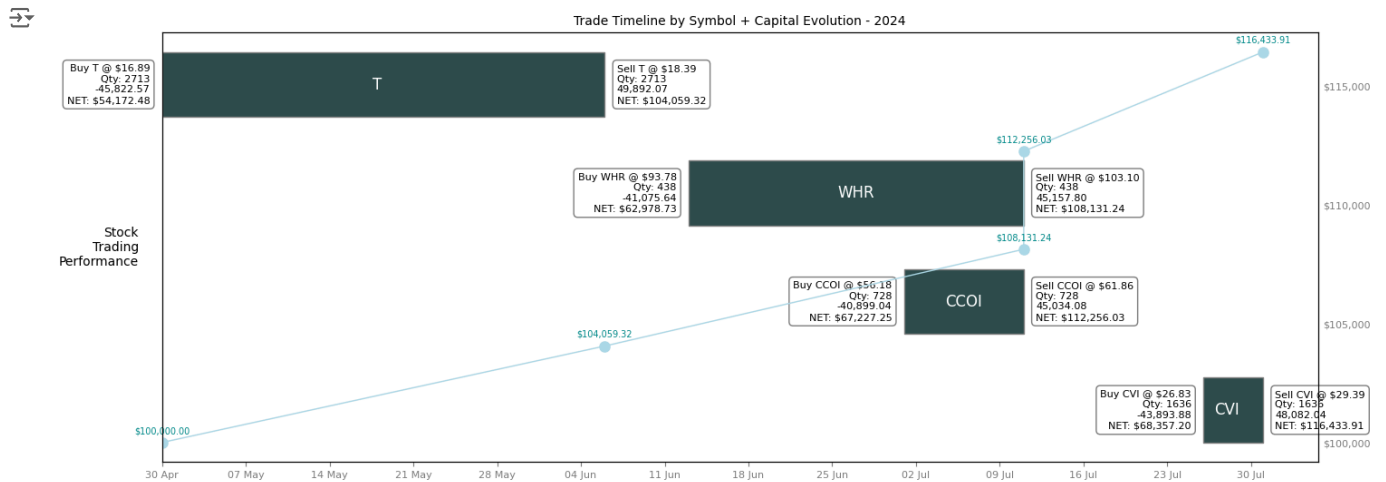To enhance document readability and comprehension, Python Code will be stored in hidden cells.
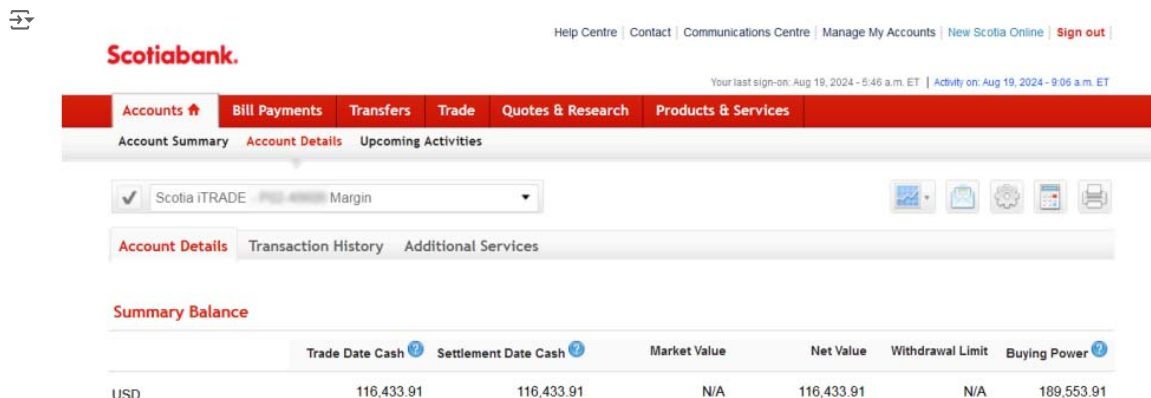
[ ] ↳ *4 cells hidden*

˅ Results and Trades Overview

```
1 display(HTML(df.to_html().replace('<table', '<table style="font-size:12px"')))
```

	Trade Date	Trade #	Action	Quantity	Symbol	Description	EX	Price	Comm	SEC Fees	Interest Amount	Position Amount	NET Value	Profit
0	2024-04-30	----	----	----	----	----	----	----	----	----	----	----	100,000.00	----
1	2024-04-30	181EDF	Buy	2,713	T	AT&T INC	NY	16.89	-4.95	0	0	-45,822.57	54,172.48	0
2	2024-06-06	1AA2C2	Sell	2,713	T	AT&T INC	NY	18.39	-4.95	-0.28	0	49,892.07	104,059.32	4,069.50
3	2024-06-13	1095D6	Buy	438	WHR	WHIRLPOOL CORP	NY	93.78	-4.95	0	0	-41,075.64	62,978.73	0
4	2024-07-11	4E340F	Sell	438	WHR	WHIRLPOOL CORP	NY	103.1	-4.95	-0.34	0	45,157.80	108,131.24	4,082.16
5	2024-07-01	1FA5FE	Buy	728	CCOI	COGENT COMM INC	NY	56.18	-4.95	0	0	-40,899.04	67,227.25	0
6	2024-07-11	610F58	Sell	728	CCOI	COGENT COMM INC	NY	61.86	-4.95	-0.35	0	45,034.08	112,256.03	4,135.04
7	2024-07-26	73E96C	Buy	1,636	CVI	CVR ENERGY INC	NY	26.83	-4.95	0	0	-43,893.88	68,357.20	0
8	2024-07-31	7A3185	Sell	1,636	CVI	CVR ENERGY INC	NY	29.39	-4.95	-0.38	0	48,082.04	116,433.91	4,188.16

```
1 plot_timeline()
```



```
1 plt_itrade()
```


The following pages will demonstrate the Methodology in Action step by step, along with the method's best practices.

Methodology and Best Practices

Methodology in Action

The combination of Data Science and Machine Learning utilizes a methodology that applies algorithms and statistical models to financial data in a Google Colab Notebook, driving action by identifying undervalued and overvalued stocks following these conditions:

1. **Find High-Yielding Stocks**:

   - Search the S&P 500 for companies with dividend yields above 6% and a consistent payout history of at least 5 years.

2. **Build Your Valuation Model**:

   - Create a model that considers key financial ratios like price-to-book, price-to-earnings, and dividend yield. Assign weights to each ratio to determine a stock's fair value.

3. **Calculate Intrinsic Value and Spot Opportunities**:

   - Use the model to determine the intrinsic value of each stock and identify companies trading below their calculated value.

4. **Focus on Stable Sectors**:

   - Prioritize sectors known for steady dividends, such as utilities, financials, and energy. Choose companies within these sectors with strong track records of consistent payouts.

Best Practices and Trading Strategies

1. **Swing Trading – Buy, Hold, and Take Profit**: This trading strategy involves holding stocks for a few days to profit from price swings. It uses financial data on a Daily (D) chart time frame and technical indicators to guide trades. The strategy recommends setting take-profit levels up to 8% below the stock's intrinsic value to lock in gains. Finally, the method is designed to trade two stocks simultaneously.

2. **Buy and Hold – S&P 500 Portfolio**: This strategy involves building a portfolio of dividend-paying stocks for passive income using a "Buy and Hold" approach. It focuses on long-term investment in high-yielding stocks from stable sectors within the S&P 500, avoiding frequent trading. By determining each stock's intrinsic value and investing in undervalued companies, investors can create a diversified portfolio that generates income through dividends and has the potential for capital appreciation.

🗒️ Python Libraries, Code, and Outcomes

Four Steps | Daily (D) Investment Opportunities in Dividend-Paying Stocks

> **STEP ONE**

1. **Dividend-Paying Stocks:** Research S&P 500 Companies that offer dividends with a history of at least 5 years of consistent payouts.
2. **Fundamental Analysis Model Development:** Create a model incorporating key financial ratios like P/B, P/E, and dividend yields, assigning appropriate weights to each for valuation.
3. **Calculation Process:** Detail the methodology for integrating the weighted variables to calculate the considered stock price.

```
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```

1 : **OUTPUT**

- The model identifies **Undervalued** or **Overvalued** stocks by comparing market prices with calculated values, using variables and weights. It focuses on companies that have offered dividends for at least **5 consecutive years**.

```
1 pd.set_option('display.max_rows', 8)
2 display(df_SP500_FINAL)
```

	Code	Company Name	P/B Ratio	P/E Ratio	Dividend Yield (%)	Current Price	Considered Opportunity
68	MERC	Mercer International Inc.	0.859493	-156.750000	4.78	6.27	Overvalued
66	MAC	Macerich Company (The)	1.343928	-86.444440	4.37	15.56	Overvalued
23	CSR	D/B/A Centerspace	1.902246	-195.210530	4.04	74.18	Overvalued
30	DEI	Douglas Emmett, Inc.	1.217795	-62.960000	4.83	15.74	Overvalued
...	...	...	...	...	...	...	...
88	SPG	Simon Property Group, Inc.	18.695261	24.962519	4.92	166.50	Undervalued
97	VRTS	Virtus Investment Partners, Inc	1.767027	7.743480	4.15	216.74	Undervalued
40	FANG	Diamondback Energy, Inc.	1.995992	9.650025	5.51	195.22	Undervalued
64	LXP	LXP Industrial Trust	1.478650	1025.000000	5.07	10.25	Undervalued

102 rows × 7 columns

⌄ STEP TWO

- **Dividend Stability:** Analysis of the output already identified **Undervalued** and **Overvalued** stocks by comparing their market price with calculated intrinsic value. As a result, only S&P 500 dividend-paying companies yielding **over 6% annually** are selected.

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⌄ 2 : **OUTPUT**

- The model continues to evolve and now exclusively targets S&P 500 Companies that pay dividends of over **6%** annually for more than **5** consecutive years.

```
1 pd.set_option('display.max_rows', 9)
2 display(df_high_dividend_yield)
```

	Code	Company Name	P/B Ratio	P/E Ratio	Dividend Yield (%)	Current Price	Considered Opportunity
76	ONL	Orion Office REIT Inc.	0.279701	-5.828571	9.80	4.08	Undervalued
85	RWT	Redwood Trust, Inc.	0.842214	10.068493	8.71	7.35	Undervalued
1	ADTN	ADTRAN Holdings, Inc.	2.001432	23.291668	6.77	5.59	Undervalued
11	BGS	B&G Foods, Inc.	0.870240	10.782051	9.04	8.41	Undervalued
...	...	...	...	...	...	...	...
98	VZ	Verizon Communications Inc.	1.803817	8.805555	6.45	41.21	Undervalued
5	APAM	Artisan Partners Asset Manageme	8.619135	11.718663	6.75	42.07	Undervalued
100	WHR	Whirlpool Corporation	1.818004	8.118160	6.84	102.37	Undervalued
52	IIPR	Innovative Industrial Propertie	1.824017	19.538462	6.11	124.46	Undervalued

19 rows × 7 columns

› STEP THREE

1. **Intrinsic Value Confirmation:** This step involves revisiting the intrinsic value determination process to ensure accuracy. It includes a comprehensive examination of dividend yield and projected growth assessments.

2. **Relative Strength Index (RSI) Evaluation:** Assess the Relative Strength Index (RSI) for individual stocks, a technical tool employed to determine if a stock is exhibiting signs of being overbought, oversold, or trading neutrally in the market.

3. **Filtering and Arrangement Criteria:** Identify stocks meeting specific criteria, such as having an intrinsic value exceeding their current market price and maintaining a dividend yield above a set threshold. These stocks are then organized for further examination.

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⌄ 3 : **OUTPUT**

- Fundamental metrics such as dividend yield and intrinsic value, combined with technical indicators such as **RSI**, help identify investment opportunities in the stock market. This approach integrates both fundamental and technical analysis to highlight potential opportunities.

```
1 pd.set_option('display.max_rows', None)
2 display(df_neutral_oversold_rsi)
3 print(df_neutral_oversold_rsi.shape)
```

	Code	Current Price	Intrinsic Value	Dividend Yield (%)	RSI	Calculated RSI	Signal
22	CMP	9.25	10.21	6.49	Oversold	21.154	◯◯🟢
99	WBA	10.30	17.01	9.71	Neutral	43.438	◯🟠◯
1	ADTN	5.59	6.44	6.77	Neutral	47.099	◯🟠◯
20	CHCT	19.20	31.48	9.64	Neutral	48.469	◯🟠◯
25	CVI	24.81	34.01	8.06	Neutral	50.000	◯🟠◯
11	BGS	8.41	12.93	9.04	Neutral	50.741	◯🟠◯
29	DEA	13.45	18.02	7.88	Neutral	56.897	◯🟠◯
63	LTC	36.15	38.79	6.31	Neutral	62.706	◯🟠◯
76	ONL	4.08	6.80	9.80	Neutral	64.394	◯🟠◯
98	VZ	41.21	45.20	6.45	Neutral	67.939	◯🟠◯
100	WHR	102.37	119.08	6.84	Neutral	69.283	◯🟠◯

(11, 7)

> **STEP FOUR**

- Focusing on long-term passive income, five broad sectors are considered: **Insurance**, **Utilities**, **Banking**, **Energy**, and **Telecommunications**. Only companies with a history of **strong dividend distribution** are selected.

[ ] ⌊ *3 cells hidden*

∨ 4 : **OUTPUT**

```
1 pd.set_option('display.max_rows', None)
2 display(df_SP500_SECTORS)
3 print(df_SP500_SECTORS.shape)
```

	Code	Current Price	Intrinsic Value	Dividend Yield (%)	RSI	Calculated RSI	Signal
99	WBA	10.30	17.01	9.71	Neutral	43.438	⚪🟠⚪
25	CVI	24.81	34.01	8.06	Neutral	50.000	⚪🟠⚪
98	VZ	41.21	45.20	6.45	Neutral	67.939	⚪🟠⚪

(3, 7)

∨ Decision Making: Collaborative Technical Analysis

After running the previous 4 steps, a comprehensive DataFrame is generated. Then, a Collaborative Technical Analysis based on 2 RSI indicators is utilized on tradingView.com to define the best entry point. Finally, the stock is bought to start the trade.

```
1 plt_view()
```