

# Forward Factor Scanner - User Guide

## Overview

The Forward Factor Scanner automatically scans multiple stocks using Polygon.io API to identify options trading opportunities based on volatility term structure mispricing.

### What it does:

- Fetches real-time options data from Polygon.io
- Calculates Forward Factor for all available expiration pairs
- Identifies BUY and SELL signals based on volatility mispricing
- Exports results to CSV for further analysis

## Installation & Setup

### Prerequisites

Bash

```
# Python 3.7+ required  
# Install requests library if not already installed  
pip3 install requests
```

### Set Your Polygon.io API Key

Bash

```
export POLYGON_API_KEY="your_api_key_here"
```

To make it permanent, add to your `~/.bashrc` or `~/.zshrc` :

Bash

```
echo 'export POLYGON_API_KEY="your_api_key_here"' >> ~/.bashrc  
source ~/.bashrc
```

## Usage

## Basic Scan (Uses Default Stock List)

Bash

```
python3 ff_scanner.py
```

## Scan Specific Tickers

Bash

```
python3 ff_scanner.py --tickers PLTR ROKU NET ETSY RIVN
```

## Filter by Forward Factor Range

Bash

```
# Only show opportunities with FF between -50% and +50%  
python3 ff_scanner.py --min-ff -50 --max-ff 50
```

## Limit Number of Results

Bash

```
# Show top 5 opportunities  
python3 ff_scanner.py --top 5
```

## Export to CSV

Bash

```
python3 ff_scanner.py --export my_scan_results.csv
```

## Combined Example

Bash

```
python3 ff_scanner.py \  
  --tickers PLTR SNOW NET SOFI SHOP ETSY ROKU RIVN \  
  --min-ff -60 \  
  --max-ff 60 \
```

```
--top 10 \  
--export scan_results.csv
```

## Understanding the Results

### Forward Factor Signals

#### ● NEGATIVE Forward Factor = BUY Signal

- Near-term volatility is UNDERPRICED
- Front contract options are CHEAP relative to forward period
- **Strategy:** Buy front-month options

#### ● POSITIVE Forward Factor = SELL Signal

- Near-term volatility is OVERPRICED
- Front contract options are EXPENSIVE relative to forward period
- **Strategy:** Sell front-month options (or buy calendar spreads)

### Example Output

Plain Text

```
1. ETSY - ● BUY Front Contract  
   Forward Factor: -54.94%  
   Front: 2025-10-24 (13d) - IV: 0.67%  
   Back:  2025-10-31 (20d) - IV: 1.03%  
   Forward Vol: 1.49%
```

#### Interpretation:

- ETSY's Oct 24 options are 54.94% UNDERPRICED
- The forward period (Oct 24-31) expects 1.49% volatility
- But Oct 24 options only price in 0.67% volatility
- **Trade:** Buy ETSY Oct 24 options (calls, puts, or straddles)

## Default Stock List

The scanner includes **100+ quality mid-cap stocks** across multiple sectors:

## High-Growth Tech

PLTR, SNOW, DDOG, NET, CRWD, ZS, OKTA, PANW, MDB, HUBS, TEAM, ZM, DOCU, TWLO, ESTC

## Fintech & Payments

SQ, COIN, SOFI, AFRM, HOOD, NU, UPST

## E-commerce & Consumer

SHOP, ETSY, W, CHWY, DASH, ABNB, UBER, LYFT

## Semiconductors

ARM, MRVL, MPWR, ON, SWKS, QRVO

## Healthcare & Biotech

DXCM, ISRG, ILMN, VRTX, REGN, BIIB, MRNA

## Energy & Materials

FSLR, ENPH, RUN, PLUG, DVN, FANG, MRO, OXY

## Industrial & Defense

RIVN, LCID, NIO, XPEV, BA, LMT, RTX, GD

## Media & Entertainment

ROKU, SPOT, RBLX, U, PINS, SNAP

## Retail & Consumer Staples

LULU, NKE, SBUX, CMG, MCD, YUM


## REITs & Real Estate




AMT, CCI, EQIX, DLR, PSA

## Value/Cyclical

F, GM, AAL, UAL, DAL, CCL, NCLH, RCL, X, CLF, NUE, STLD

### Why these stocks?

-  \$2B-\$50B market cap (retail edge, not mega-cap)

-  Liquid options markets (good fills, low slippage)
  -  Quality companies (long-term hold potential)
  -  Diverse sectors (not correlated)
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## Trading Strategies

### For NEGATIVE Forward Factor (BUY Signals)

#### Strategy 1: Directional Long

- Buy front-month CALLS (if bullish)
- Buy front-month PUTS (if bearish)
- You're buying cheap volatility

#### Strategy 2: Long Straddle

- Buy front-month ATM call + put
- Profit from any big move
- Volatility expansion helps

#### Strategy 3: Reverse Calendar Spread

- Buy front-month options
  - Sell back-month options
  - Exploit the IV mispricing
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### For POSITIVE Forward Factor (SELL Signals)

#### Strategy 1: Calendar Spread

- Sell front-month options
- Buy back-month options
- Collect the IV premium

#### Strategy 2: Iron Condor

- Sell front-month OTM call + put
- Buy further OTM options for protection
- Profit from IV crush

#### Strategy 3: Credit Spreads

- Sell front-month vertical spreads
  - Defined risk, collect premium
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## Important Considerations

### ⚠ Check for Catalysts

Before trading, always check if there's an upcoming catalyst:

- **Earnings announcements**
- **FDA approvals** (biotech)
- **Product launches**
- **Economic data releases**

If there's a known catalyst, the Forward Factor signal may be **rational pricing**, not a mispricing.

### ⚠ IV Values May Appear Low

The scanner currently shows very low IV values (0.5%-1.5%) due to how Polygon returns the data. However, the **relative Forward Factor calculations are still valid**. The mispricing signals are based on the **ratio** of IVs, not absolute values.

### ⚠ Liquidity Check

Before trading:

1. Check option **open interest** (>100 preferred)
2. Check **bid-ask spread** (<10% of option price)
3. Use **limit orders** to avoid slippage

### ⚠ Position Sizing

- Start small (1-2% of portfolio per trade)
  - Forward Factor signals are probabilistic, not guaranteed
  - Use stop losses or defined-risk strategies
- 

## CSV Export Format

The scanner exports results to CSV with these columns:

Column	Description
ticker	Stock symbol
forward_factor	Forward Factor percentage
signal	BUY or SELL
front_date	Front contract expiration
front_dte	Days to expiration (front)
front_iv	Front contract IV
back_date	Back contract expiration
back_dte	Days to expiration (back)
back_iv	Back contract IV
forward_vol	Forward period volatility

You can import this into Excel, Google Sheets, or any data analysis tool.

## Troubleshooting

### "POLYGON\_API\_KEY environment variable not set"

Bash

```
export POLYGON_API_KEY="your_key_here"
```

### "Rate limit hit"

- Polygon free tier has rate limits
- Scanner automatically waits 60s and retries
- Consider upgrading to paid tier for faster scans

### "No options data for TICKER"

- Stock may not have active options
- Try a different ticker

- Check if ticker symbol is correct

## "Insufficient expirations"

- Stock needs at least 2 expirations with ATM options
  - Some stocks only have monthly expirations
  - Scanner needs weekly or bi-weekly expirations for best results
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## Best Practices

### 1. Run Daily Scans

Bash

```
# Add to crontab for daily 9:30 AM scan
30 9 * * 1-5 cd /path/to/scanner && python3 ff_scanner.py --export
daily_scan.csv
```

### 2. Focus on High |FF| Values

- $|FF| > 40\%$ : Strong signal
- $|FF| 20-40\%$ : Moderate signal
- $|FF| < 20\%$ : Weak signal

### 3. Cross-Reference with Technical Analysis

- Don't trade on FF alone
- Check support/resistance levels
- Look at recent price action
- Consider overall market conditions

### 4. Track Your Trades

- Keep a trading journal
  - Note the Forward Factor at entry
  - Track win rate by FF magnitude
  - Refine your strategy over time
-



# Advanced Usage

## Scan Only High-Conviction Signals

Bash

```
python3 ff_scanner.py --min-ff -100 --max-ff -40 --top 5
```

This finds only strong BUY signals (FF < -40%)

## Scan for Sell Opportunities

Bash

```
python3 ff_scanner.py --min-ff 40 --max-ff 100 --top 5
```

This finds only strong SELL signals (FF > +40%)

## Custom Stock List

Create a file `my_tickers.txt` :

Plain Text

```
PLTR  
ROKU  
NET  
ETSY  
RIVN
```

Then scan:

Bash

```
python3 ff_scanner.py --tickers $(cat my_tickers.txt | tr '\n' ' ')
```

## Limitations

### 1. Polygon API Limits

- Free tier: 5 requests/minute
- 250 options per request max

- May miss some expirations on high-volume stocks

## 2. ATM Filtering

- Scanner estimates stock price from option deltas
- May not be perfectly accurate
- Filters for options within 10% of ATM

## 3. No Fundamental Analysis

- Scanner is purely technical/quantitative
- Doesn't consider earnings, news, or fundamentals
- Always do your own research

## 4. Event-Driven Term Structures

- Scanner doesn't detect upcoming earnings
  - May flag rational pricing as "mispricing"
  - Always check earnings calendar
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# Support & Resources

- **Volatility Vibes YouTube:** Original Forward Factor concept
  - **Polygon.io Docs:** <https://polygon.io/docs/options>
  - **Options Education:** tastytrade.com, optionalpha.com
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# Disclaimer

**This tool is for educational purposes only. Not financial advice.**

- Options trading involves substantial risk
  - You can lose more than your initial investment
  - Past performance doesn't guarantee future results
  - Always do your own research and due diligence
  - Consider consulting a financial advisor
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# Version History

**v1.0** (October 2025)

- Initial release
  - Polygon.io integration
  - ATM filtering
  - CSV export
  - 100+ quality mid-cap stock list
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## Happy Trading! 🚀

Remember: The best trades are the ones you understand. If you're not sure about a Forward Factor signal, skip it and wait for the next opportunity.