Market Making with Equity Options Netflix Inc. (NFLX)

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Presentation outline

1. STRATEGY OVERVIEW

2. GREEKS EXPOSURE

3. PORTFOLIO VaR

4. PORTFOLIO SENSITIVITY

5. STRESS TEST

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Strategy

- **Underlying stock:** Netflix

- **October 14, 2024** – day before the company's earnings release

- Betting on strong (positive or negative) price movements around earnings release

- Minimizing exposure to implied volatility changes

- Reducing dependence on the good or bad results of earnings

- Reaching desired second order risks and monitoring market/liquidity risk

Delta-Neutral

Vega-Neutral

Gamma-Long

Selling/Buying OTC options with clients & Hedging Greeks exposures

Strategy

OTC Options:
- Clients have a bearish view → They sell ITM calls and buy OTM puts
- Longer maturities, farther strikes (compared to listed options)
- Priced using Black-Scholes, with volatility from similar listed options

Hedging Process:
- Gamma Target: 15
  Vega Target: 0
- Loss function minimizes gamma & vega deviations from targets
- Delta hedge with 446 Netflix shares

Final Portfolio:
- 50 Listed Options
- 10 OTC Options
- 446 Netflix Shares (Delta Hedge)

Final Portfolio Composition

Number of Call Listed Options	-260
Number of Put Listed Options	741
Number of Call OTC Options	65
Number of Put OTC Options	-310
Number of Underlying Contracts	446

Listed Options

Number of Listed Call OTM	156
Number of Listed Call ITM	-175
Number of Listed Call ATM	-241
Number of Listed Put OTM	424
Number of Listed Put ITM	-173
Number of Listed Put ATM	490

Maturity: Between 1 & 12 months

OTC Options

Number of OTC Call OTM	20
Number of OTC Call ITM	35
Number of OTC Call ATM	10
Number of OTC Put OTM	-310
Number of OTC Put ITM	0
Number of OTC Put ATM	0

Maturity: Between 7 & 24 months

Greeks Exposure

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Before hedging:

INITIAL VALUE OF PORTFOLIO ($)	DELTA	GAMMA	VEGA
-1,552.49	109.51	-0.2873	-424.31

We bought the listed options to reach our target exposures.
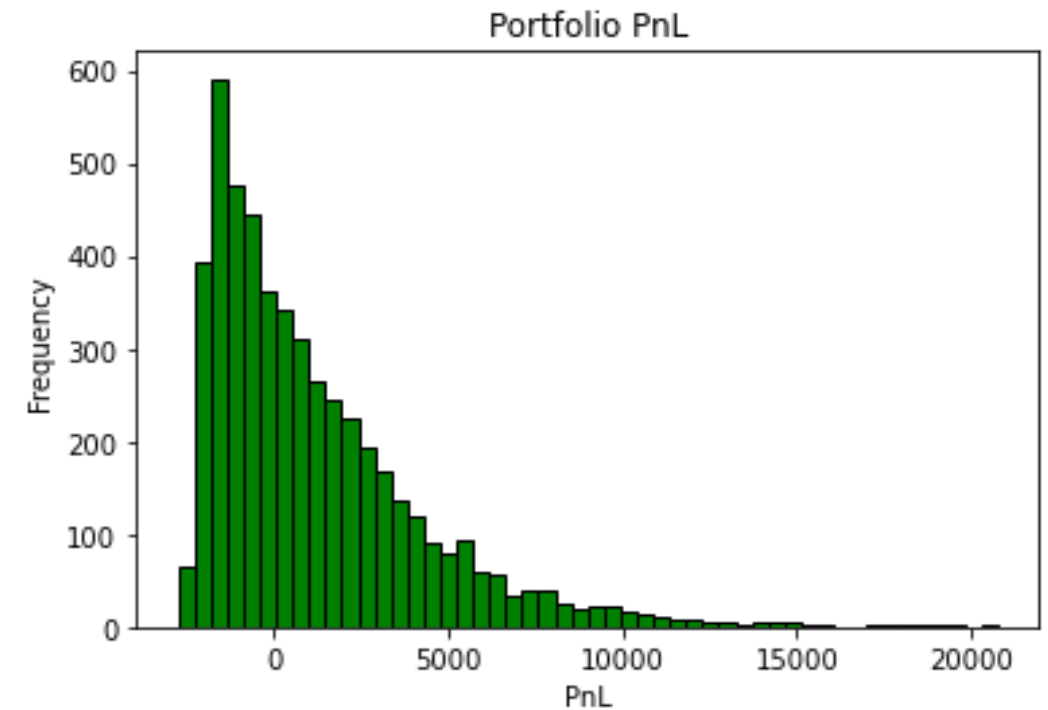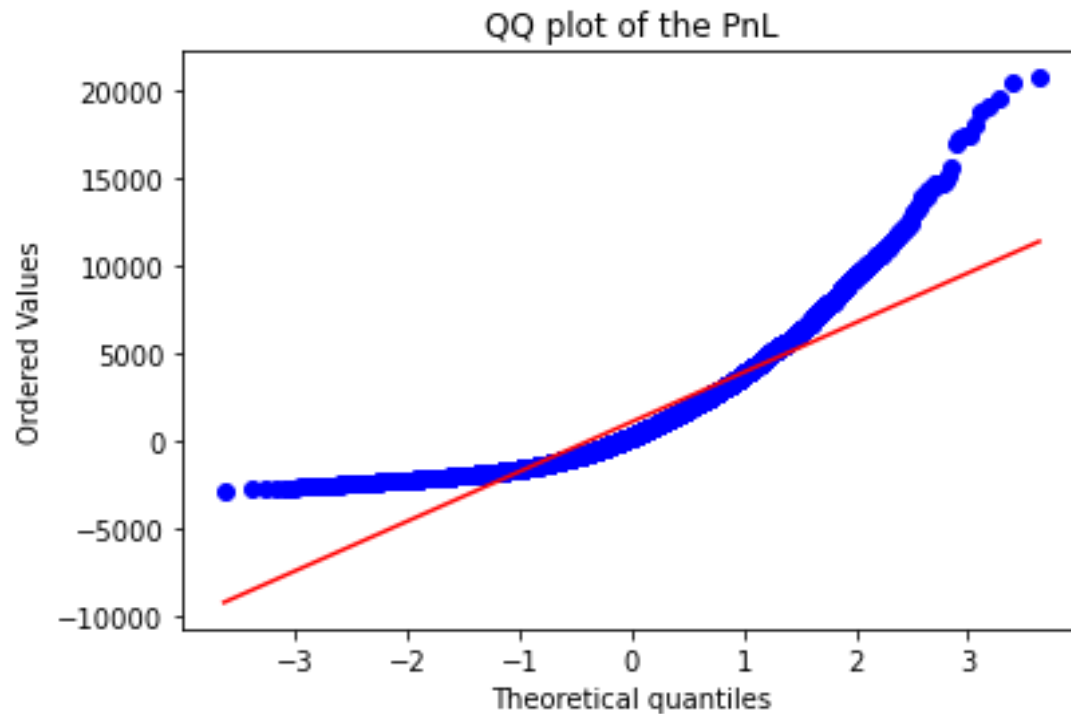
Furthermore, to be delta-neutral we bought 446 Netflix shares.

After hedging:

FINAL VALUE OF PORTFOLIO ($)	DELTA	GAMMA	VEGA
317,962.78	-0.1115	14.97	-1.87

Portfolio VaR

Simulated Stock Returns — Simulated VIX Returns — Simulated Interest Rate Returns
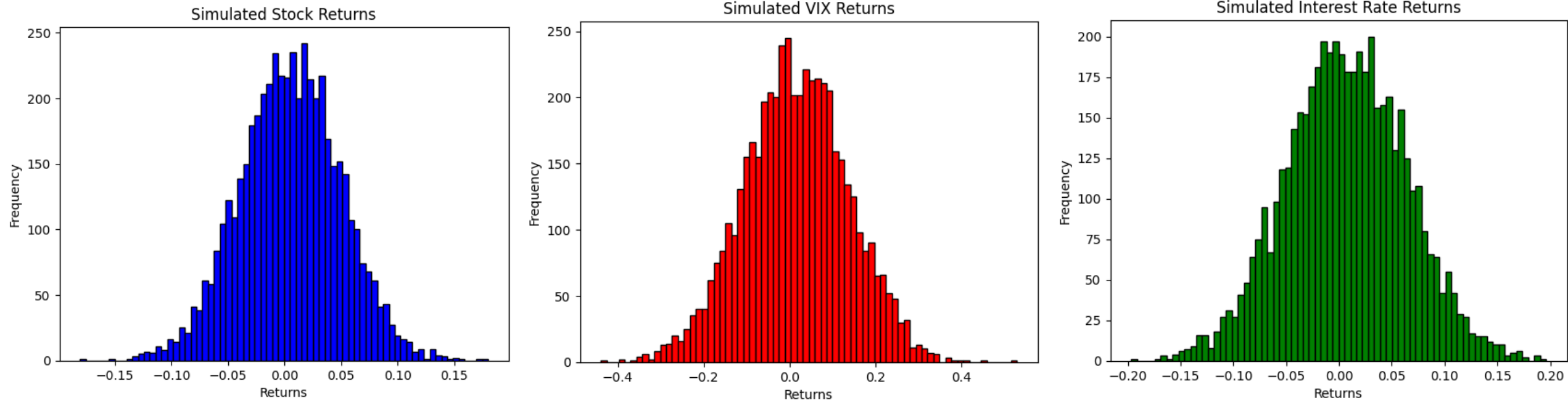
Multivariate Monte Carlo Simulation

Portfolio VaR

QQ plot of the PnL

Portfolio PnL

VaR at 95% confidence:
-$2,010.83

Limit (LAC):
$10,000.00

Limit Usage:
20%

Expected PnL:
$1,251.16

Portfolio Sensitivity ($)

Shock	Factor Sens.	Limits	Limit Usage (%)	Gross Sens. Long	Gross Sens. Short
All Mkts. +1%	792.00	1,000.00	79%	10,312.00	-9,519.00
All Mkts. +10%	9,828.00	-15,000.00	N.A.	38,291.00	-28,462.00
All Mkts. -10%	-1,621.00	-15,000.00	11%	-580.00	-1,041.00
Vola. +1%	196.00	3,000.00	7%	10,567.00	-10,370.00
Vola. +20%	112.00	-5,000.00	N.A.	55,427.00	-55,315.00
Vola. -20%	-2,720.00	-5,000.00	54%	-38,706.00	35,985.00

Stress Test: results

Initial Portfolio Value Before Sensitivity Tests: **$317,962.779**

Scenarios	Underlying	Volatility	Interest Rate	Absolute Change ($)	Portfolio Value ($)
COVID-19	-15%	+70%	+150 bp	-9,271.18	308,691,599
Tech Rally (November 2021)	+25%	-30%	Stable	36,769.72	354,732.499
Outstanding Earnings Release	+30%	-25%	-50 bp	46,214.76	364,177.539
Disappointing Earnings Release	-30%	+20%	-50 bp	1,580.77	319,543.549

COVID-19	Stress Test Warning Level	WL Usage (%)
-$9,271.18	-$10,000.00	93%

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Thank you!

Market Risk

MAFINRISK 24./25.