

Optimal Overwrites this week (17-Mar-25)

Economic and policy news remain in focus

S&P 500 average stock 1-month implied volatility was down 5 points to 31 (82nd %-ile vs the past year), while the average stock realized volatility was up 2 points to 35 (93rd %-ile vs the past year) over the past week. Both the index and average stock 1-month put-call skew for the S&P 500 were down last week. However, the S&P 500 index skew remains elevated at its 96th %-ile compared to the past year suggesting investors are positioned for macro catalysts. We expect investors will be focused on policy & geopolitical news, NVDA GPU Tech Conference (Tue), FOMC (Wed) and Philadelphia Fed Manufacturing index (Thu) this week. We continue to view selling options on Consumer Staples stocks as attractive as their earnings season is complete and the average Consumer Staples stock 1-month implied volatility is 24 (93rd %-ile vs the past year, compared to 82nd %-ile for average S&P 500 stock). Since February expiration, we estimate the average S&P 500 stock with liquid options is down 5.9%; overwriting stocks with 10% OTM 1-month calls outperformed by 55bps, while put selling underperformed by 70bps.

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Overwriting ideas this week: HUM, X, INTC, AAL

We screen for the top 1-6 month overwriting candidates based on our 18-year study as well as our analysts' fundamental ratings and price targets. We identify the most attractive stocks to overwrite for March expiration based on the screen ([Exhibit 4](#)). For 3-6 month overwrites, we highlight the top 50 opportunities based on our analysts' price targets as well as the top 50 put selling candidates based on our analysts' estimates.

Exhibit 1: Collect 2.2% for 10% OTM Apr Calls

Stock	Yield	Stock	Yield	Stock	Yield	Stock	Yield
Apr Expiration							
HUM	4.3	TEAM	2.4	TER	2.0	ALGN	1.6
X	3.9	DECK	2.3	FCX	1.9	EL	1.6
INTC	3.6	CCJ	2.3	GM	1.6	ZION	1.5
AAL	2.7	RCL	2.3	NUE	1.6	KGC	1.5
LRCX	2.5	SIRI	2.1	WDC	1.6	LVS	1.4

Source: Goldman Sachs Global Investment Research

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Overwriting/underwriting performance update

Call selling outperformed by 55bps while put selling underperformed by 70bps since February expiration. We calculate the average return for a portfolio of 362 stocks in the US market that we believe are liquid (as identified by tight bid/ask spreads for 10% OTM calls). We observe that call selling outperformed a long stock strategy only in months with moderate to down stock performance, whereas put selling outperformed in most of the months except those with sharp market sell-offs. See [Exhibit 2](#).

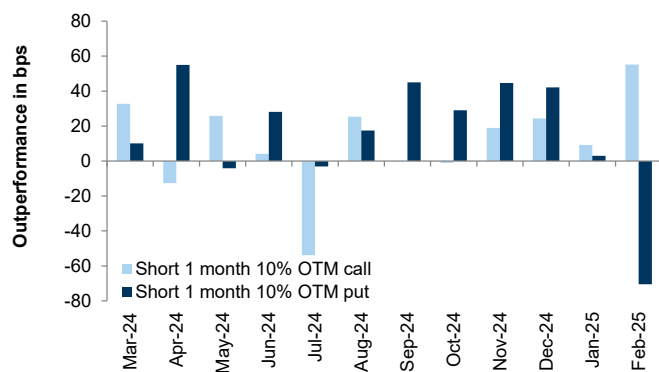
Buy-write portfolio (call sale + long stock) is down 5.3% since February expiration.

We simulate owning stock and selling 10% OTM Mar calls as of Feb expiration. We track this portfolio through the month to see how single stock overwriting has performed. We estimate this portfolio is down 5.3% compared to down 5.9% stock performance. See [Exhibit 3](#).

Put selling portfolio (put sale + long stock) is down 6.6% since February expiration. We track this portfolio through the month to see how single stock put selling has performed. We estimate this portfolio is down 6.6% compared to down 5.9% stock performance. See [Exhibit 3](#).

Exhibit 2: Call selling and put selling outperformance over the last 12 months

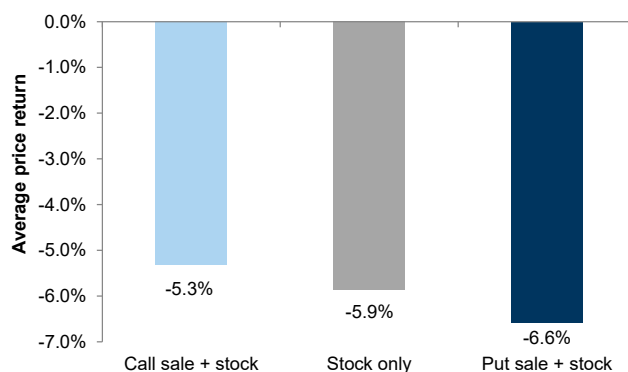
Outperformance of call sale + stock and put sale + stock vs. stock only over the last 12 months. Performance measured from expiration-to-expiration for each month



Source: Goldman Sachs Global Investment Research

Exhibit 3: Call selling and put selling performance since February expiry

Average stock performance from Feb expiration to 14-Mar close; stocks with liquid options; Mar 10% OTM call sale, Mar 10% OTM put sale



Source: Goldman Sachs Global Investment Research

Liquidity: We consider the option liquid for this analysis if the bid-ask spread of the 10% OTM call is less than 30% of the mid-market option premium.

Current yield generation opportunities

We identify short-term overwriting opportunities (1 month) as well as longer-term overwriting opportunities (3-6 months) based on two primary methods.

Short-term overwrites (1 month): We focus on Events, Market Cap and implied volatility. Our overwriting study shows that event timing and stock characteristics are particularly important factors for overwriting outperformance with short-term options. We identify stocks that do not report earnings prior to the next expiration where their market cap is in the top 2/3 of the universe and their implied volatility is also in the top 2/3. We have found that overwriting stocks with these characteristics has added over 500 bps over the past 16 years. See [Exhibit 4](#).

Longer-term overwrites (3-6 months): We focus on our analysts' fundamental views. While short-term volatility may drive a stock from its appropriate longer-term value, we believe that over a sufficiently long period of time, the stock should trend toward that value. We use our analysts' price targets to identify those stocks where calls appear overpriced relative to our analysts' estimate of where shares are likely to trade. This methodology is consistent with our "Buy-write monthly." See [Exhibit 5](#) and [Exhibit 6](#).

Underwriting (6 months): Put-selling screen based on average support levels for EV/EBITDA, EV/SALES and P/FCF (6 months). In this screen, we start with Buy-rated stocks from the Goldman Sachs Global Investment Research coverage universe. The put strike to sell is derived from the average of downsides to the stock price in three scenarios where each of EV/EBITDA, EV/Sales and P/FCF reaches its 10%-ile value in the last 10 years and is based on our analysts' 12-month forward estimates for EBITDA, Sales, and FCF. See [Exhibit 7](#).

Covered call sellers risk limiting upside to the strike price plus the option premium and dividends. Put sellers commit to buying shares at the strike price.

All pricing and data that follow are as of Mar 14, 2025 close unless otherwise specified.

Exhibit 4: Short-term overwriting candidates: Large-cap, high implied volatility stocks that do not have earnings events

Overwrite with April 10% out-of-the-money calls

Ticker	Company	Stock Price (\$)	Mkt Cap (bn\$)	Imp Vol 1m	Next Earnings	Apr-25 Call		Premium	
						Strike	Strike %	\$	%
HUM	Humana Inc.	252.88	30.5	69	30-Apr	280.00	111	10.80	4.3
X	United States Steel Corp.	39.00	8.8	70	1-May	43.00	110	1.51	3.9
INTC	Intel Corp	24.05	104.1	53	27-Apr	26.00	108	0.86	3.6
AAL	American Airlines Group	10.87	7.1	53	23-Apr	12.00	110	0.29	2.7
LRCX	Lam Research Corp	78.69	101.0	44	22-Apr	85.00	108	1.98	2.5
TEAM	Atlassian Corp.	218.44	57.2	49	30-Apr	240.00	110	5.30	2.4
DECK	Deckers Outdoor Corporation	118.68	18.0	47	25-May	130.00	110	2.75	2.3
CCJ	Cameco Corp.	42.47	18.5	50	1-May	47.00	111	0.98	2.3
RCL	Royal Caribbean Cruises Ltd.	212.02	57.1	44	30-Apr	230.00	108	4.80	2.3
SIRI	Sirius XM Holdings	22.67	7.7	46	29-Apr	25.00	110	0.48	2.1
TER	Teradyne, Inc.	86.74	14.0	45	26-Apr	95.00	110	1.70	2.0
FCX	Freeport-McMoRan Inc.	38.85	55.8	44	21-Apr	43.00	111	0.75	1.9
GM	General Motors Co.	48.34	48.1	38	29-Apr	52.50	109	0.79	1.6
NUE	Nucor Corp.	132.09	30.5	41	22-Apr	145.00	110	2.10	1.6
WDC	Western Digital Corp	44.53	15.5	46	2-May	50.00	112	0.70	1.6
ALGN	Align Technology Inc.	166.20	12.2	43	30-Apr	185.00	111	2.60	1.6
EL	Estee Lauder Co.	66.52	23.9	46	1-May	75.00	113	1.04	1.6
ZION	Zions Bancorporation	48.63	7.2	35	21-Apr	52.50	108	0.75	1.5
KGC	Kinross Gold Corp	11.63	14.3	42	6-May	13.00	112	0.17	1.5
LVS	Las Vegas Sands Corp	43.19	30.9	38	19-Apr	47.50	110	0.61	1.4

Source: Company data, Goldman Sachs Global Investment Research, Bloomberg

Exhibit 5: Three-month Buy-write screen based on GS ratings/price targets

Buy-rated names sorted by premium collected for selling calls with GS implied Price Targets at 6-month horizon as strikes. Return to exercise is the maximum return achievable from the strategy at expiration including dividends.

Ticker	Company	Stock Price	GS Target		Jun-25 Call to SELL				Est Div	Return to Exercise (%)
			Price	Term	Strike	Strike % spot	Premium			
							%	\$		
CHWY	Chewy Inc.	\$33.29	\$40.00	12m	\$36.65	110	9.1	3.02	0.0	19
GH	Guardant Health	\$42.89	\$57.00	12m	\$49.95	116	8.5	3.63	0.0	25
SEDG	SolarEdge Technologies Inc.	\$16.12	\$31.00	12m	\$23.56	146	7.8	1.26	0.0	54
BABA	Alibaba Group	\$141.10	\$160.00	12m	\$150.55	107	7.1	10.06	1.0	15
CLF	Cleveland-Cliffs Inc.	\$10.39	\$15.00	12m	\$12.70	122	6.5	0.68	0.0	29
SPOT	Spotify Technology S.A.	\$574.79	\$695.00	12m	\$634.90	110	6.3	36.34	0.0	17
YUMC	Yum China Holdings	\$51.30	\$58.00	12m	\$54.65	107	5.7	2.92	0.2	13
MYGN	Myriad Genetics Inc.	\$10.07	\$18.00	12m	\$14.04	139	5.5	0.55	0.0	45
DLTR	Dollar Tree Stores Inc.	\$64.56	\$93.00	12m	\$78.78	122	5.3	3.43	0.0	27
TRGP	Targa Resources Corp.	\$190.30	\$218.00	12m	\$204.15	107	5.1	9.78	1.0	13
OLLI	Ollie's Bargain Outlet Inc.	\$102.49	\$132.00	12m	\$117.25	114	5.1	5.20	0.0	19
FMC	FMC Corp.	\$41.69	\$51.00	12m	\$46.35	111	4.8	1.99	0.6	17
FIVE	Five Below Inc.	\$73.00	\$117.00	12m	\$95.00	130	4.7	3.41	0.0	35
TTWO	Take-Two Interactive Software Inc.	\$204.57	\$230.00	12m	\$217.29	106	4.6	9.51	0.0	11
EXAS	Exact Sciences Corp.	\$45.00	\$65.00	12m	\$55.00	122	4.6	2.07	0.0	27
CG	Carlyle Group	\$42.36	\$52.00	12m	\$47.18	111	4.4	1.87	0.0	16
DPZ	Domino's Pizza Inc.	\$425.58	\$490.00	12m	\$457.79	108	4.4	18.60	1.7	12
EQT	EQT Corp.	\$50.72	\$62.00	12m	\$56.36	111	4.4	2.21	0.2	16
AR	Antero Resources Corp.	\$37.57	\$48.00	12m	\$42.79	114	4.4	1.64	0.0	18
IBM	International Business Machines C	\$248.35	\$275.00	12m	\$261.68	105	4.3	10.78	1.7	10
SBUX	Starbucks Corp.	\$98.11	\$111.00	12m	\$104.56	107	4.3	4.23	0.0	11
M	Macy's Inc.	\$13.08	\$17.00	12m	\$15.04	115	4.3	0.56	0.4	22
APO	Apollo Global Management Inc.	\$134.32	\$163.00	12m	\$148.66	111	4.2	5.61	0.5	15
EAT	Brinker International Inc.	\$139.41	\$208.00	12m	\$173.71	125	4.1	5.76	0.0	29
DKS	Dick's Sporting Goods	\$194.50	\$242.00	12m	\$218.25	112	4.0	7.84	2.4	17
MOS	Mosaic Co.	\$25.90	\$31.00	12m	\$28.45	110	4.0	1.04	0.2	15
OLED	Universal Display Corp.	\$150.35	\$196.00	12m	\$173.18	115	4.0	6.00	0.9	20
MTCH	Match Group	\$30.94	\$39.00	12m	\$34.97	113	4.0	1.23	0.2	18
PANW	Palo Alto Networks	\$182.34	\$215.00	12m	\$198.67	109	4.0	7.23	0.0	13
VC	Visteon Corp.	\$80.61	\$103.00	12m	\$91.81	114	3.9	3.15	0.0	18
TDG	TransDigm Group	\$1,346.50	\$1,515.00	12m	\$1,430.75	106	3.8	51.50	0.0	10
LEA	Lear Corp.	\$94.71	\$117.00	12m	\$105.86	112	3.6	3.40	0.8	16
GNRC	Generac Holdings	\$130.41	\$168.00	12m	\$149.21	114	3.6	4.68	0.0	18
FOXA	Fox Corp.	\$52.28	\$60.00	12m	\$56.14	107	3.6	1.86	0.0	11
MNST	Monster Beverage Corp.	\$55.09	\$61.00	12m	\$58.05	105	3.5	1.94	0.0	9
LPLA	LPL Financial Holdings	\$321.99	\$405.00	12m	\$363.50	113	3.4	11.00	0.0	16
IBKR	Interactive Brokers Group	\$168.11	\$223.00	12m	\$195.56	116	3.4	5.72	0.0	20
ETN	Eaton Corp.	\$293.61	\$354.00	12m	\$323.81	110	3.4	9.93	1.0	14
AMX	America Movil	\$14.35	\$17.30	12m	\$15.83	110	3.3	0.47	0.0	14
BMJ	Bristol-Myers Squibb Co.	\$59.01	\$67.00	12m	\$63.01	107	3.3	1.92	0.6	11
MHK	Mohawk Industries Inc.	\$114.30	\$145.00	12m	\$129.65	113	3.2	3.62	0.0	17
JBL	Jabil Circuit Inc.	\$135.93	\$179.00	12m	\$157.47	116	3.1	4.19	0.1	19
LNG	Cheniere Energy Inc.	\$218.53	\$265.00	12m	\$241.77	111	3.1	6.72	0.5	14
MAT	Mattel Inc.	\$19.75	\$24.00	12m	\$21.88	111	3.0	0.60	0.0	14
FTNT	Fortinet	\$96.25	\$130.00	12m	\$113.13	118	3.0	2.86	0.0	21
UBER	Uber Technologies Inc.	\$71.55	\$97.00	12m	\$84.28	118	3.0	2.12	0.0	21
KMI	Kinder Morgan Inc.	\$27.10	\$31.00	12m	\$29.05	107	3.0	0.80	0.3	11
IQV	IQVIA Holdings	\$185.19	\$230.00	12m	\$207.60	112	3.0	5.47	0.0	15
ALL	Allstate Corp.	\$207.49	\$234.00	12m	\$220.75	106	2.9	6.10	1.0	10
TPR	Tapestry Inc.	\$70.46	\$98.00	12m	\$84.23	120	2.9	2.07	0.3	23

Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 6: Six-month Buy-write screen based on GS ratings/price targets

Buy-rated names sorted by premium collected for selling calls with GS implied Price Targets at 6-month horizon as strikes. Return to exercise is the maximum return achievable from the strategy at expiration including dividends.

Ticker	Company	Stock Price	GS Target		Sep-25 Call to SELL				Est Div	Return to Exercise (%)
			Price	Term	Strike	Strike % spot	Premium % \$			
SEDG	SolarEdge Technologies Inc.	\$16.12	\$31.00	12m	\$23.56	146	15.2	2.45	0.0	61
GH	Guardant Health	\$42.89	\$57.00	12m	\$49.95	116	14.2	6.08	0.0	31
CHWY	Chewy Inc.	\$33.29	\$40.00	12m	\$36.65	110	13.6	4.52	0.0	24
CLF	Cleveland-Cliffs Inc.	\$10.39	\$15.00	12m	\$12.70	122	11.3	1.18	0.0	34
BABA	Alibaba Group	\$141.10	\$160.00	12m	\$150.55	107	10.8	15.22	1.0	18
SPOT	Spotify Technology S.A.	\$574.79	\$695.00	12m	\$634.90	110	10.3	59.28	0.0	21
MYGN	Myriad Genetics Inc.	\$10.07	\$18.00	12m	\$14.04	139	9.8	0.98	0.0	49
EXAS	Exact Sciences Corp.	\$45.00	\$65.00	12m	\$55.00	122	8.6	3.86	0.0	31
YUMC	Yum China Holdings	\$51.30	\$58.00	12m	\$54.65	107	8.5	4.39	0.5	16
EAT	Brinker International Inc.	\$139.41	\$208.00	12m	\$173.71	125	8.5	11.87	0.0	33
DLTR	Dollar Tree Stores Inc.	\$64.56	\$93.00	12m	\$78.78	122	8.4	5.40	0.0	30
FMC	FMC Corp.	\$41.69	\$51.00	12m	\$46.35	111	8.2	3.43	1.2	22
FIVE	Five Below Inc.	\$73.00	\$117.00	12m	\$95.00	130	8.1	5.94	0.0	38
TRGP	Targa Resources Corp.	\$190.30	\$218.00	12m	\$204.15	107	8.0	15.31	2.0	16
OLLI	Ollie's Bargain Outlet Inc.	\$102.49	\$132.00	12m	\$117.25	114	7.9	8.07	0.0	22
TTWO	Take-Two Interactive Software Inc.	\$204.57	\$230.00	12m	\$217.29	106	7.8	15.99	0.0	14
CG	Carlyle Group	\$42.36	\$52.00	12m	\$47.18	111	7.7	3.27	0.0	19
AR	Antero Resources Corp.	\$37.57	\$48.00	12m	\$42.79	114	7.7	2.89	0.0	22
EQT	EQT Corp.	\$50.72	\$62.00	12m	\$56.36	111	7.6	3.87	0.3	19
DPZ	Domino's Pizza Inc.	\$425.58	\$490.00	12m	\$457.79	108	7.4	31.42	1.7	15
DKS	Dick's Sporting Goods	\$194.50	\$242.00	12m	\$218.25	112	7.3	14.11	2.4	21
APO	Apollo Global Management Inc.	\$134.32	\$163.00	12m	\$148.66	111	7.2	9.73	1.0	19
MTCH	Match Group	\$30.94	\$39.00	12m	\$34.97	113	7.2	2.23	0.2	21
M	Macy's Inc.	\$13.08	\$17.00	12m	\$15.04	115	7.2	0.94	0.5	26
SBUX	Starbucks Corp.	\$98.11	\$111.00	12m	\$104.56	107	7.1	6.93	0.0	14
VC	Visteon Corp.	\$80.61	\$103.00	12m	\$91.81	114	7.0	5.67	0.0	21
PANW	Palo Alto Networks	\$182.34	\$215.00	12m	\$198.67	109	6.9	12.64	0.0	16
MOS	Mosaic Co.	\$25.90	\$31.00	12m	\$28.45	110	6.9	1.80	0.4	18
OLED	Universal Display Corp.	\$150.35	\$196.00	12m	\$173.18	115	6.9	10.37	1.4	23
GNRC	Generac Holdings	\$130.41	\$168.00	12m	\$149.21	114	6.9	8.96	0.0	21
ENPH	Enphase Energy Inc.	\$58.13	\$105.00	12m	\$81.57	140	6.8	3.95	0.0	47
IBM	International Business Machines C	\$248.35	\$275.00	12m	\$261.68	105	6.7	16.65	3.3	13
LEA	Lear Corp.	\$94.71	\$117.00	12m	\$105.86	112	6.4	6.11	1.5	20
TDG	TransDigm Group	\$1,346.50	\$1,515.00	12m	\$1,430.75	106	6.4	86.02	0.0	13
PINS	Pinterest Inc.	\$31.95	\$47.00	12m	\$39.48	124	6.3	2.02	0.0	30
IBKR	Interactive Brokers Group	\$168.11	\$223.00	12m	\$195.56	116	6.3	10.52	0.0	23
LPLA	LPL Financial Holdings	\$321.99	\$405.00	12m	\$363.50	113	6.2	20.06	0.0	19
MHK	Mohawk Industries Inc.	\$114.30	\$145.00	12m	\$129.65	113	6.2	7.06	0.0	20
FTNT	Fortinet	\$96.25	\$130.00	12m	\$113.13	118	6.1	5.91	0.0	24
UBER	Uber Technologies Inc.	\$71.55	\$97.00	12m	\$84.28	118	6.1	4.39	0.0	24
SFM	Sprouts Farmers Market Inc.	\$136.75	\$200.00	12m	\$168.38	123	6.1	8.38	0.0	29
WING	Wingstop Inc.	\$213.20	\$330.00	12m	\$271.60	127	6.1	13.02	0.0	33
ETN	Eaton Corp.	\$293.61	\$354.00	12m	\$323.81	110	6.1	17.92	2.1	17
MNST	Monster Beverage Corp.	\$55.09	\$61.00	12m	\$58.05	105	6.1	3.34	0.0	11
FOXA	Fox Corp.	\$52.28	\$60.00	12m	\$56.14	107	6.0	3.16	0.0	13
JAZZ	Jazz Pharmaceuticals	\$137.96	\$171.00	12m	\$154.48	112	6.0	8.29	0.0	18
NCLH	Norwegian Cruise Line Holdings	\$19.19	\$31.00	12m	\$25.10	131	6.0	1.15	0.0	37
MDB	MongoDB Inc.	\$185.37	\$335.00	12m	\$260.19	140	5.9	11.01	0.0	46
ANET	Arista Networks Inc.	\$83.51	\$130.00	12m	\$106.76	128	5.9	4.93	0.0	34
KKR	KKR & Co.	\$113.31	\$157.00	12m	\$135.16	119	5.7	6.51	0.4	25

Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 7: Underwriting: Six-month put-selling screen based on support levels for EV/EBITDA, EV/Sales and P/FCF

Put strike to sell is derived from average of downsides to the stock price in three scenarios where each of EV/EBITDA, EV/Sales and P/FCF reaches its 10%-ile value in last ten years and using our analysts' 12-month forward estimates for EBITDA, Sales, and FCF.

Ticker	Company	Stock Price	6m Imp Vol	%ile Rank	Sep-25 Put To Sell			
					Strike (\$)	Strike % Spot	Premium (\$)	Premium (%)
TDOC	Teladoc Health Inc.	\$8.62	70.3	83	8.19	95	1.42	16.4
KOS	Kosmos Energy Ltd.	\$2.23	59.9	94	2.12	95	0.31	13.9
EXAS	Exact Sciences Corp.	\$45.00	53.4	74	42.75	95	5.43	12.1
PVH	PVH Corp.	\$63.81	50.9	100	60.62	95	7.29	11.4
TRIP	TripAdvisor Inc.	\$13.84	50.4	70	13.15	95	1.57	11.4
PTEN	Patterson-UTI Energy Inc.	\$7.91	49.4	96	7.51	95	0.87	11.0
FMC	FMC Corp.	\$41.69	44.9	95	39.61	95	4.36	10.5
CCL	Carnival Corp.	\$19.92	46.8	91	18.92	95	2.04	10.2
SRPT	Sarepta Therapeutics Inc.	\$97.19	45.9	70	92.33	95	9.55	9.8
DAL	Delta Air Lines Inc.	\$46.75	43.8	98	43.79	94	4.23	9.1
BIDU	Baidu.com Inc.	\$93.82	44.1	87	89.13	95	8.38	8.9
BABA	Alibaba Group	\$141.10	44.8	91	132.00	94	12.25	8.7
MTCH	Match Group	\$30.94	40.0	77	29.39	95	2.63	8.5
VC	Visteon Corp.	\$80.61	39.1	92	76.58	95	6.57	8.2
PINS	Pinterest Inc.	\$31.95	47.1	85	28.32	89	2.46	7.7
LEA	Lear Corp.	\$94.71	37.2	97	88.77	94	7.09	7.5
BIIB	Biogen Inc.	\$139.44	36.6	84	132.47	95	10.20	7.3
CCJ	Cameco Corp.	\$1.15	46.8	95	0.87	75	0.08	7.1
WDAY	Workday Inc.	\$244.17	35.6	81	231.96	95	17.42	7.1
NBIX	Neurocrine Biosciences Inc.	\$110.75	35.1	73	105.21	95	7.80	7.0
HAL	Halliburton Co.	\$25.07	34.0	89	23.82	95	1.76	7.0
OLED	Universal Display Corp.	\$150.35	42.0	74	134.00	89	10.07	6.7
FDX	FedEx Corp.	\$242.20	33.0	97	229.60	95	16.13	6.7
STZ	Constellation Brands	\$181.33	31.8	92	172.26	95	11.71	6.5
ADBE	Adobe Inc.	\$394.74	33.0	62	375.00	95	25.43	6.4
JAZZ	Jazz Pharmaceuticals	\$137.96	34.1	84	129.19	94	8.86	6.4
EXPE	Expedia Group	\$162.11	40.8	96	143.96	89	10.28	6.3
BAX	Baxter International Inc.	\$34.59	30.2	85	32.86	95	2.11	6.1
MAT	Mattel Inc.	\$19.75	31.1	87	18.70	95	1.19	6.0
SLB	SLB	\$41.10	30.1	64	39.05	95	2.45	6.0
UPS	United Parcel Service Inc.	\$116.76	27.9	96	110.92	95	6.92	5.9
IAC	IAC Inc.	\$44.56	36.7	91	40.26	90	2.63	5.9
BMRN	BioMarin Pharmaceutical Inc.	\$69.44	30.7	65	65.97	95	4.02	5.8
EW	Edwards Lifesciences Corp.	\$69.29	31.6	57	64.80	94	3.98	5.7
DIS	Walt Disney Co.	\$98.64	28.7	93	93.71	95	5.39	5.5
CMCSA	Comcast Corp.	\$35.43	28.0	97	33.66	95	1.93	5.4
CX	Cemex SAB	\$6.02	38.7	69	5.10	85	0.32	5.3
AXTA	Axalta Coating Systems Ltd.	\$34.42	27.3	98	32.70	95	1.78	5.2
MRK	Merck & Co.	\$94.57	27.1	94	88.90	94	4.80	5.1
CRM	Salesforce Inc.	\$279.40	34.7	93	248.45	89	13.85	5.0
QGEN	Qiagen NV	\$36.08	27.8	39	34.27	95	1.78	4.9
PSA	Public Storage Inc.	\$298.13	24.8	83	283.22	95	14.69	4.9
ALLE	Allegion Plc	\$126.66	25.5	87	120.33	95	6.22	4.9
WING	Wingstop Inc.	\$213.20	49.5	98	164.35	77	10.17	4.8
PPG	PPG Industries Inc.	\$113.47	25.1	97	107.45	95	5.35	4.7
PFE	Pfizer Inc.	\$25.72	24.8	58	24.08	94	1.18	4.6
DG	Dollar General Corp.	\$79.02	41.5	54	64.45	82	3.50	4.4
MDLZ	Mondelez International Inc.	\$64.31	24.0	96	61.09	95	2.77	4.3
GIS	General Mills Inc.	\$59.56	35.4	70	54.56	92	2.53	4.2
TGT	Target Corp.	\$104.70	28.9	61	87.28	83	4.33	4.1

Source: Bloomberg, Goldman Sachs Global Investment Research

Call and put selling candidates based on recent stock performance

Recent outperformers may be good overwrites: We highlight stocks that have shown the strongest performance over the last 1-month relative to their past 1-year realized volatility. Investors may like to trim extreme upside exposure to these stocks and collect premium from selling calls, especially where the call premium looks attractive.

Recent underperformers may be good underwrites: We highlight stocks that have shown the weakest performance over the last 1-month relative to their past 1-year realized volatility. Investors that expect the recent underperformance to abate may sell puts to generate yield, especially where the put premium is attractive. See [Exhibit 8](#).

Exhibit 8: Recent outperformers may be good overwrites and recent underperformers may be good underwrites

Sharpe ratio defined as last 1m stock return / 12m realized volatility, options are 3m OTC calls and puts

Overwriting candidates

Ticker	Company	Stock Price	1m Stock Return	Sharpe Ratio	3m Imp Vol	3m 40 delta Call %Premium	Call %OTM
RDUS	Radius Recycling Inc.	27.81	127%	4.7	20	2%	3%
GEL	Genesis Energy L.P.	13.25	27%	2.6	35	5%	7%
AWK	American Water Works Co Inc	144.32	15%	2.4	22	3%	4%
ED	Consolidated Edison Inc.	106.41	13%	2.3	19	3%	3%
CCI	Crown Castle International Corp.	103.22	15%	2.1	24	3%	5%
DB	Deutsche Bank AG	24.22	20%	2.1	38	5%	5%
FNF	Fidelity National Financial, Inc. - FNI	64.79	14%	2.1	27	3%	5%
MNST	Monster Beverage Corp.	55.09	14%	2.0	26	3%	5%
BRKb	Berkshire Hathaway Inc-CI B	514.60	9%	2.0	18	2%	4%
CB	Chubb Ltd.	293.96	11%	2.0	21	3%	4%
MO	Altria Group	58.91	10%	1.9	22	3%	3%
VTR	Ventas Inc	66.89	12%	1.9	26	3%	5%
AES	The AES Corp.	12.31	22%	1.8	41	5%	7%
PGR	Progressive Corp.	283.69	10%	1.7	24	3%	5%
BAX	Baxter International Inc.	34.59	14%	1.7	31	4%	6%

Underwriting candidates

Ticker	Company	Stock Price	1m Stock Return	Sharpe Ratio	3m Imp Vol	3m 40 delta Put %Premium	Put %OTM
WMT	Walmart Inc.	85.35	-18%	-2.9	27	4%	2%
DAL	Delta Air Lines Inc.	46.75	-30%	-2.8	47	8%	2%
IBKR	Interactive Brokers Group	168.11	-27%	-2.7	42	7%	2%
HLT	Hilton Worldwide Holdings	229.37	-16%	-2.7	28	5%	1%
COST	Costco Wholesale	903.92	-15%	-2.6	26	4%	1%
AAL	American Airlines Group	10.87	-33%	-2.6	53	9%	2%
FLS	Flowserve Corp.	49.00	-21%	-2.5	33	5%	2%
ZBRA	Zebra Technologies Corp-CI A	278.97	-21%	-2.5	39	6%	2%
SSTK	Shutterstock, Inc.	19.55	-34%	-2.5	55	9%	3%
LYV	Live Nation Entertainment Inc.	119.26	-20%	-2.5	39	7%	2%
MAR	Marriott International	243.11	-16%	-2.5	30	5%	2%
ALK	Alaska Air Group Inc.	53.94	-27%	-2.5	48	8%	2%
ACN	Accenture Plc	318.82	-18%	-2.4	31	5%	2%
TWLO	Twilio	98.97	-32%	-2.4	51	9%	2%
FRT	Federal Realty Invs Trust	96.16	-13%	-2.3	23	4%	2%

Source: Bloomberg, Goldman Sachs Global Investment Research

The Fundamentals of Overwriting S&P 500 Stocks: A 27-year Study

Over the past 27 years, Buy-write strategies have outperformed the total return of the S&P 500 on a risk-adjusted basis. These strategies have become increasingly

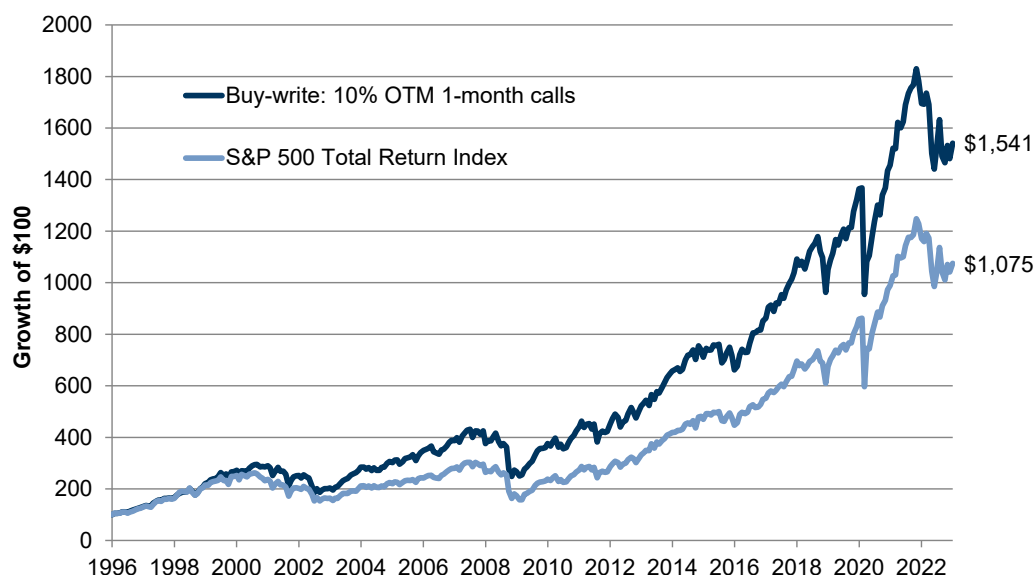
popular among investors, especially given the prospects of flat to negative equity markets. Options provide asymmetric exposure to the underlying asset, unlike stock or stock-like investments. This property helps provide a downside cushion to covered call sellers, in the form of a premium. This premium, especially when viewed in the context of a systematic strategy, is often viewed by investors as similar to interest or coupon payments, and leads to outperformance over stocks in flat to negative equity markets.

Historical Performance of Systematic Overwriting strategies:

1. We performed a detailed analysis of single stock overwriting over the past 27 years for S&P 500 companies. We find that a large variety of systematic overwriting strategies have higher Sharpe ratios than stock only portfolios and select strategies have also had higher total returns.
2. We estimate that selling 10% out-of-the-money 1 month covered calls on stocks with liquid options in the S&P 500 generated a compound annual return of 10.7% since 1996, **outperforming S&P 500 Total Return by 1.5% annually.**
3. Most of the Buy-write strategies have outperformed the total return of S&P 500 on a risk-adjusted basis, regardless of strike selection. The **Return/Volatility ratios across buy-write strategies ranged from 0.47 to 0.64, compared to 0.50 for the S&P 500 Total Return Index** over the same period.

Exhibit 9: Selling 10% OTM covered calls on S&P 500 stocks led to outperformance between 1996-2023

Growth of \$100 invested in the S&P 500 Total Return Index; growth of \$100 invested in a monthly rebalanced market cap-weighted portfolio of stocks included in the buy-write strategy



Data as of Jan-23 expiry

Source: Goldman Sachs Global Investment Research, OptionMetrics

Exhibit 10: Many strategies at the broad market level outperformed the total return of S&P 500 on a risk-adjusted basis

1996-2023; Average returns of a 1 month strategy, market-cap weighted for all stocks with liquid options in the S&P 500

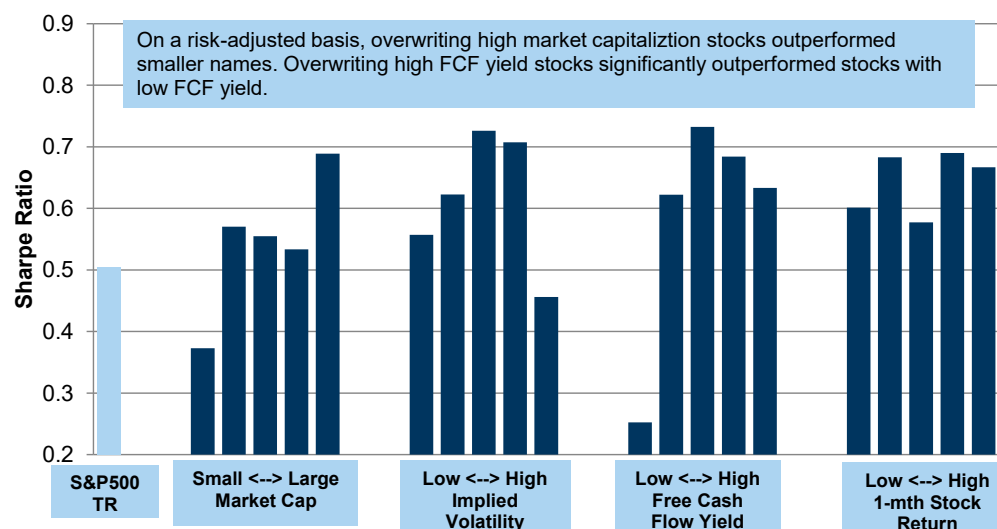
	Annualized		Return/ Volatility	Monthly Return (%)					Option Statistics		
	Compound Return (%)	StdDev		Mean	Median	Min	Max	StdDev	Avg. % OTM	Avg. Prem (%)	Bid-Ask Spread (%)
S&P500 TR	9.2%	18%	0.50	0.88%	1.5%	-30.8%	24.9%	5.3%			
Strategy: Specified Moneyness (1 month calls)											
0% OTM	6.7%	11%	0.60	0.60%	1.3%	-28.3%	8.1%	3.3%	-0.1%	3.5%	7.2%
2% OTM	7.6%	12%	0.61	0.68%	1.5%	-29.0%	8.8%	3.6%	1.8%	2.7%	8.5%
5% OTM	8.9%	14%	0.63	0.81%	1.7%	-29.7%	10.5%	4.1%	4.6%	1.8%	11.1%
10% OTM	10.7%	17%	0.62	0.98%	2.0%	-30.2%	13.4%	4.9%	8.8%	1.2%	14.4%
15% OTM	11.8%	19%	0.62	1.10%	2.2%	-28.9%	17.0%	5.5%	12.1%	1.0%	16.0%
Strategy: Specified Delta (1 month calls)											
70Delta	4.0%	8%	0.47	0.36%	0.9%	-26.1%	5.2%	2.4%	-4.3%	6.1%	6.0%
60Delta	5.1%	10%	0.51	0.46%	1.1%	-27.3%	7.2%	2.9%	-1.8%	4.5%	6.5%
50Delta	6.1%	12%	0.52	0.56%	1.3%	-28.4%	9.2%	3.4%	0.4%	3.2%	7.4%
40Delta	7.0%	13%	0.53	0.64%	1.4%	-29.0%	11.2%	3.8%	2.7%	2.2%	8.9%
30Delta	7.9%	15%	0.54	0.74%	1.6%	-29.6%	14.2%	4.3%	5.1%	1.5%	10.8%
20Delta	8.5%	16%	0.52	0.80%	1.7%	-29.7%	17.1%	4.7%	7.6%	1.0%	13.2%
Strategy: Specified Premium collected (1 month calls)											
1%Yield	7.6%	16%	0.47	0.73%	1.5%	-29.7%	18.1%	4.6%	7.4%	1.0%	12.9%
2%Yield	6.9%	14%	0.48	0.65%	1.4%	-29.0%	15.1%	4.2%	4.2%	1.8%	9.8%
3%Yield	6.2%	13%	0.47	0.58%	1.2%	-28.2%	13.1%	3.8%	2.0%	2.7%	8.2%
Strategy: Specified Premium based on Free Cash Flow Yield (1 month calls)											
1xFCFY	10.4%	16%	0.64	0.94%	1.6%	-29.1%	24.5%	4.7%	8.7%	6.7%	14.5%
2xFCFY	9.8%	15%	0.63	0.89%	1.5%	-29.4%	18.6%	4.5%	6.9%	1.1%	12.6%
3xFCFY	9.2%	15%	0.62	0.83%	1.5%	-29.3%	17.2%	4.3%	5.6%	1.4%	11.5%

Source: Goldman Sachs Global Investment Research, OptionMetrics

Strike selection based on fundamentals added value. Systematically selling at-the-money covered calls with strikes based on Free Cash Flow yield outperformed the S&P 500 on an absolute and risk-adjusted basis, yielding the highest Sharpe ratio in the study. A systematic strategy targeting strikes with an annualized yield equal to the

trailing 12-month Free Cash Flow yield of each stock returned 10.4% annually, with a return/volatility ratio of 0.64, the highest in the study. Targeting 2x and 3x Free Cash Flow yields showed high risk-adjusted returns, but lower absolute annual returns.

Exhibit 11: Market capitalization and Free Cash Flow yields are important considerations for overwriters
Sharpe ratios by quintile for buy-write with 1-month ATM calls on liquid S&P 500 stocks; market-cap weighted



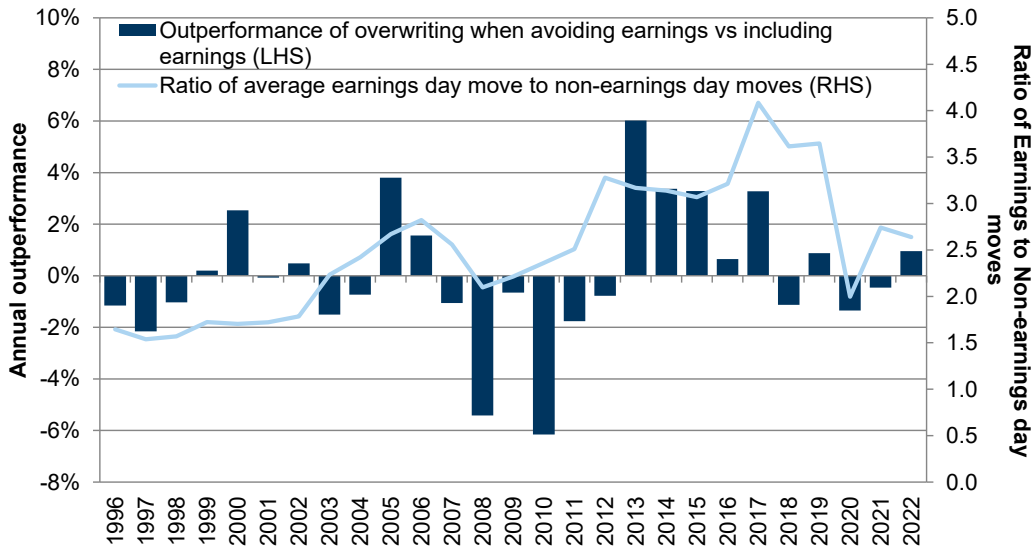
Source: Goldman Sachs Global Investment Research, OptionMetrics

Earnings and the Effect on Overwriting Strategies: To estimate the impact of earnings on overwriting, we subset our analysis to identify stocks that are reporting each month. We avoid selling calls on these stocks, instead capturing stock-only returns for those names in the particular month, driven by our view that earnings are generally positive events for stocks.

The below exhibit compares annual returns of the earnings-adjusted covered call selling strategy with the strategy that includes earnings. We also show the ratio of average earnings-day moves vs. non-earnings days each year. **Conclusion: with earnings days becoming more volatile relative to non-earnings days, avoiding earnings when overwriting systematically has led to higher returns.**

Exhibit 12: Earnings have been a significant drag on overwriting outperformance

Outperformance = Returns from selling covered calls (ATM call selling) when avoiding earnings - Returns from selling covered calls when including earnings



Source: Goldman Sachs Global Investment Research, OptionMetrics

Disclosure Appendix

Reg AC

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