Buying distressed European Ultra-large caps: A low-effort systematic innvesting strategy

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The goal of this project is to test and analyze the value and viability of a systematic strategy based on the purchase of distressed ultra-large capitalization equities. While the merits of passive investing have been extensively documented and widely popularized through the advent of low-cost, low-risk exchange-traded funds (ETFs), the question remains whether systematic, rules-based contrarian strategies applied to the most resilient firms can deliver superior outcomes. In particular, this research investigates whether such an approach justifies the added effort and risk relative to a purely passive allocation.

The strategy under consideration relies on a simple yet powerful heuristic: acquiring shares of the largest European firms once their prices have fallen substantially from prior peaks. The theoretical rationale is grounded in both behavioral finance, which suggests that investors often overreact to temporary shocks, and the economic resilience of systemically important corporations, which are more likely to recover from crises than their mid- and small-cap counterparts. In this sense, the approach is designed to capture value created by temporary mispricings in highly visible, highly liquid equities.

Several features make this strategy attractive in principle. First, it is low effort relative to most active investment approaches: it relies on transparent signals (drawdowns from prior highs) and requires infrequent execution. Second, it is gradual in its deployment of capital: positions are only initiated when pre-defined distress conditions are met, rather than through continuous turnover. Third, its theoretical soundness stems from a combination of contrarian logic and the implicit "too big to fail" nature of ultra-large caps, which benefit from structural advantages in survival and eventual recovery. Furthermore, this research also analyzes whether the performance of the strategy comes from its systematic, trend-reversing nature or simply the purchase of companies with good financial indicators at a good price.

Yet, the strategy also raises important questions: Does it meaningfully outperform broad market indices such as the Euro Stoxx 600 or global benchmarks like the S&P 500, once biases are accounted for? Is the additional idiosyncratic risk of concentrated equity purchases adequately compensated by higher risk-adjusted returns? And critically, is the incremental complexity over a passive ETF allocation worth the effort for investors seeking long-term capital growth?

This project seeks to provide a systematic answer to these questions by formally defining the strategy, analyzing its historical performance, identifying potential biases (such as survivorship and look-ahead), and proposing robustness tests. In doing so, it aims to clarify whether distressed large-cap equity purchases represent a viable enhancement to passive investing or whether their apparent success is largely an artifact of biased backtesting.

1 A Drawdown-Based Contrarian Strategy in European Blue-Chip Equities

1. Strategy Definition

We define a contrarian investment strategy based on large drawdowns in the share prices of the largest European corporations by market capitalization. The core intuition is that mega-cap firms, owing to their systemic importance, established market position, and access to capital markets, are less likely to default and more likely to eventually recover following episodes of market distress.

Formally, let $P_{i,t}$ denote the price of stock i at time t. The rolling maximum over a lookback horizon L (e.g., 10 years $\approx$ 2520 trading days) is defined as

$$H_{i,t} = \max\{P_{i,s} : t - L \leq s \leq t\}.$$

The relative drawdown from the rolling peak is then

$$D_{i,t} = \frac{P_{i,t}}{H_{i,t}} - 1.$$

A buy signal is generated when

$$D_{i,t} \leq \theta,$$

where θ is a threshold parameter, typically set at -0.40, corresponding to a 40% decline from the 10-year high. Upon signal activation, a fixed investment amount C (e.g., €1000) is allocated to stock i, resulting in

$$Q_{i,t} = \frac{C}{P_{i,t}}$$

shares purchased and held until the end of the sample horizon. Only one entry per stock is permitted under the baseline specification.

The aggregate portfolio value at time t is

$$V_t = \sum_{i \in \mathcal{U}} Q_{i,\tau_i} \cdot P_{i,t},$$

where τ_i is the entry date for stock i, and $\mathcal{U}$ denotes the investment universe (e.g., top 50 European firms by market capitalization at a reference date).

2. Theoretical Justification

The central premise of this strategy is rooted in the observation that financial markets are prone to systematic overreactions in the presence of negative shocks. Under the assumptions of the Gaussian paradigm, as illustrated by the Galton board (**?**), the likelihood of extreme deviations from the mean diminishes rapidly as outcomes move further into the tails. This implies that events such as a 40% drawdown should be virtually negligible in frequency.

However, a robust body of evidence, beginning with **?**, has demonstrated that empirical return distributions exhibit leptokurtosis and fat tails, which significantly increase the probability of extreme market outcomes. This renders rare, catastrophic declines integral features of financial markets. The existence of fat tails implies that large drawdowns are not only possible but also recurrent, particularly during systemic crises, volatility clustering, or liquidity shocks.

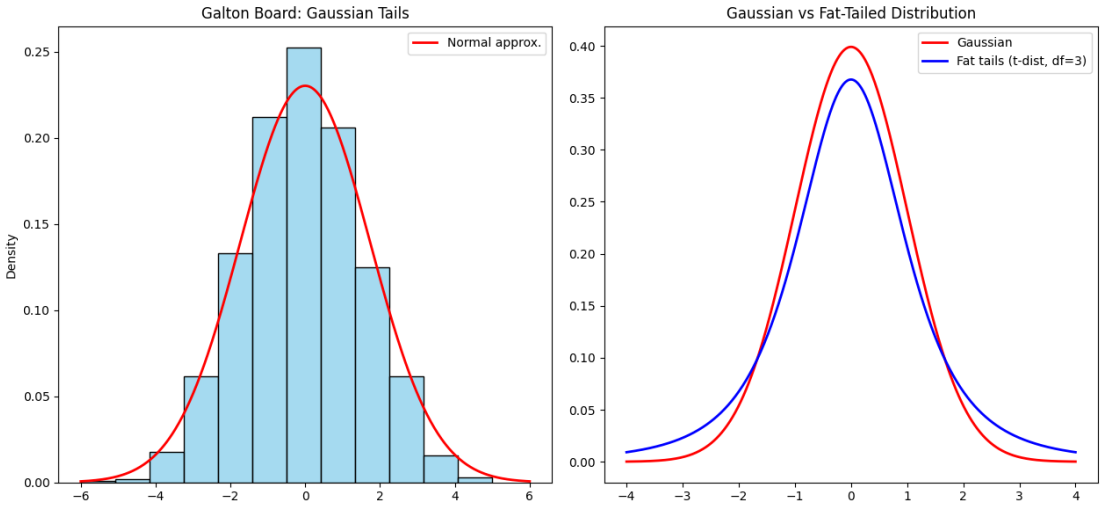

Figure 1: Gaussian Vs. Fat-tailed distribution

Behavioral finance provides a complementary lens to this statistical foundation. **?** document that investors tend to overreact to short-term negative news, leading to long-term reversals as prices eventually converge back to fundamentals. This *overreaction hypothesis* aligns with the operationalization of our strategy, which imposes a deterministic threshold (e.g., -40% from a rolling high) as a proxy for "extreme" mispricing. The underlying mechanism is that during distress episodes, noise trading, herding, and forced liquidations amplify declines

beyond levels justified by fundamentals, creating systematic opportunities for contrarian entries.

This approach is theoretically consistent with the tradition of value investing (**?**). Empirical work by **??** formalized this intuition in the cross-section of expected returns, showing that value firms—typically characterized by temporarily depressed valuations—earn superior forward returns relative to growth firms. Our framework extends this principle to ultra-large-cap equities, whose size and market dominance imply resilience and survival capacity even in the face of extreme downturns. This is a critical consideration: while small-cap value firms may disappear in crises, large-cap firms often retain access to financing, state support, and long-term investor trust, in a "too big to fail" logic, making them natural candidates for mean reversion-based strategies.

Furthermore, this design indirectly exploits the *limits of arbitrage* (**?**). Professional investors often cannot commit capital during crises due to redemption risk or leverage constraints, leaving mispricings uncorrected until after panic subsides. This structural inefficiency opens a window for systematic contrarian strategies that deploy capital precisely when others are unable or unwilling to do so.

In portfolio-theoretic terms, such a strategy represents a dynamic contrarian tilt that selectively increases exposure during volatility-induced dislocations. Unlike passive investing, which allocates continuously, this method uses volatility and distress as entry signals, thereby concentrating capital in high-expected-return states. Formally, the expected excess return conditional on distress can be expressed as:

$$E[R_{i,t+H} \mid R_{i,t} \leq -\theta] \; > \; E[R_{m,t+H}], \tag{1}$$

where $R_{i,t}$ denotes firm i's return at time t, θ is the deterministic distress threshold (e.g., 40% decline), and $R_{m,t+H}$ is the benchmark market return over horizon H. This inequality captures the essence of contrarian value strategies: conditional excess returns arise due to temporary dislocations that revert over time.

2 Results and execution

2.1 Biased execution on European Equities

The following tables and graph demonstrate the example transactions and performance of a portfolio undergoing the following strategy: buying €1000 worth of the top 50 current largest European companies when they reach a 40% drawdown from their previous 10-year high. The portfolio voluntarily demonstrates biases, such as look-ahead bias and survivorship bias in order to demonstrate flawed methodology undertaken in certain financial media arguing that a similar buy the dip strategy results in 19% annual returns.

Table 1: Portfolio Performance Summary: Buy and hold €1000 when current top 50 biggest European firm drops 40% off 5-year peak since 2000. No re-entry.

Ticker	Entry Date	Entry Price (€)	Shares	Position Size (€)	Current Price	Current Value	PnL (€)	PnL (%)	Days Held
SAF.PA	2009-10-05	9.64	103.74	1,000	287.20	29,793.06	28,793.06	2,879.31	5,789
TT	2009-10-05	14.76	67.73	1,000	428.07	28,994.60	27,994.60	2,799.46	5,789
ASML.AS	2009-10-05	21.73	46.02	1,000	627.00	28,853.86	27,853.86	2,785.39	5,789
ETN	2009-10-05	18.38	54.40	1,000	360.11	19,588.88	18,588.88	1,858.89	5,789
AIR.PA	2011-08-08	16.34	61.21	1,000	175.80	10,760.43	9,760.43	976.04	5,117
MUV2.DE	2009-10-05	54.15	18.47	1,000	567.00	10,471.68	9,471.68	947.17	5,789
SAP.DE	2009-10-05	25.97	38.50	1,000	249.35	9,600.01	8,600.01	860.00	5,789
JCI	2009-10-05	11.03	90.63	1,000	105.71	9,580.79	8,580.79	858.08	5,789
ALV.DE	2009-10-05	38.69	25.85	1,000	363.90	9,406.73	8,406.73	840.67	5,789
SU.PA	2011-11-23	24.89	40.18	1,000	218.65	8,785.64	7,785.64	778.56	5,010
SIE.DE	2009-10-05	30.29	33.02	1,000	228.05	7,529.89	6,529.89	652.99	5,789
VOLV-B.ST	2009-10-05	40.41	24.75	1,000	287.90	7,124.13	6,124.13	612.41	5,789
DTE.DE	2009-10-05	4.42	226.13	1,000	29.96	6,774.99	5,774.99	577.50	5,789
CS.PA	2010-02-05	6.22	160.86	1,000	41.62	6,695.02	5,695.02	569.50	5,666
DG.PA	2011-09-13	19.17	52.17	1,000	124.90	6,516.11	5,516.11	551.61	5,081
CRH	2009-10-27	16.79	59.55	1,000	107.42	6,396.50	5,396.50	539.65	5,767
BMW.DE	2010-02-12	14.71	68.00	1,000	86.58	5,887.22	4,887.22	488.72	5,659
ENEL.MI	2010-05-07	1.51	660.46	1,000	7.81	5,159.50	4,159.50	415.95	5,575
ISP.MI	2009-10-05	1.12	892.51	1,000	5.32	4,752.61	3,752.61	375.26	5,789
IBE.MC	2009-10-05	3.34	299.82	1,000	15.62	4,684.71	3,684.71	368.47	5,789
MDT	2010-08-24	21.74	46.00	1,000	92.74	4,266.42	3,266.42	326.64	5,466
INGA.AS	2009-10-05	4.90	204.13	1,000	20.76	4,237.83	3,237.83	323.78	5,789
BBVA.MC	2010-02-04	4.15	240.71	1,000	16.06	3,865.80	2,865.80	286.58	5,667
NVO	2016-11-03	14.60	68.51	1,000	49.87	3,416.47	2,416.47	241.65	3,203
BNP.PA	2009-11-03	24.43	40.93	1,000	81.55	3,338.18	2,338.18	233.82	5,760
TTE	2010-05-06	19.51	51.24	1,000	60.99	3,125.29	2,125.29	212.53	5,576
ITX.MC	2020-03-16	17.91	55.82	1,000	42.22	2,356.72	1,356.72	135.67	1,974
RMS.PA	2022-06-14	961.57	1.04	1,000	2,037.00	2,118.41	1,118.41	111.84	1,154
SAN	2010-05-04	4.69	213.03	1,000	9.32	1,985.45	985.45	98.55	5,578
CDI.PA	2020-03-12	266.50	3.75	1,000	440.00	1,651.05	651.05	65.10	1,978
UCG.MI	2009-10-05	55.02	18.17	1,000	67.35	1,224.05	224.05	22.40	5,789
DBK.DE	2009-10-05	29.74	33.62	1,000	31.15	1,047.39	47.39	4.74	5,789
MC.PA	2025-04-07	499.99	2.00	1,000	458.00	916.02	-83.98	-8.40	126

Table 2: Strategy vs Benchmark Metrics (aligned to first buy, equal capital)

	Annualized Return	Volatility	Sharpe Ratio	Max Drawdown	Total Return
Strategy	0.1909	0.2032	0.9620	-0.4141	15.3066
SPY	0.1403	0.1713	0.8525	-0.3372	7.1455

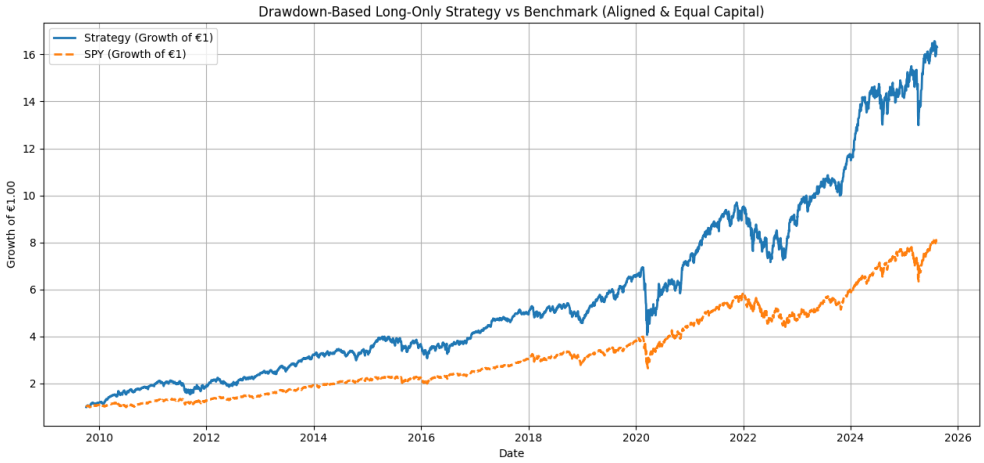

Figure 2: Strategy 1 performance against SPY

Total Invested:	€33 000.00
Current Value:	€538 117.51
Total PnL:	€505 117.51 (1530.66%)
Number of Positions:	33
Average Holding Period:	5060.0 days

While the strategy consisting in investing €1000 in the stocks of the top 50 biggest European companies in market cap can be shown to exhibit high returns with relatively low effort required, there is an important fundamental bias existing in the methodology used in certain financial media. Here, survivor bias is clearly at play. The very composition of the portfolio limited to firms that currently occupy the top tier in terms of market capitalization implicitly selects for entities that have already demonstrated resilience and substantial post-crisis recovery. Consequently, historical performance evaluations of such a portfolio are artificially inflated, as they omit companies that have either declined in value or ceased to exist. This exclusion systematically overstates the attainable returns for an investor employing the strategy in real time, thereby undermining the validity of any backward-looking profitability assessment.

2.2 Removing survivorship and look-ahead bias using the top equities from the year 2000

Table 3: Executed Orders: invest €1000 in Top 50 largest European companies in the year 2000 after 40% drawdown

Ticker	Entry Date	Entry Price (€)	Shares	Position Size (€)	Current Price	Current Value	PnL (€)	PnL (%)	Days Held
AIR.PA	2011-08-08	16.34	61.21	1,000	175.80	10,760.43	9,760.43	976.04	5,117
MUV2.DE	2009-10-09	55.61	17.98	1,000	567.00	10,195.36	9,195.36	919.54	5,785
SAP.DE	2009-10-09	27.07	36.94	1,000	249.35	9,211.61	8,211.61	821.16	5,785
ALV.DE	2009-10-09	40.69	24.57	1,000	363.90	8,942.72	7,942.72	794.27	5,785
SIE.DE	2009-10-09	32.38	30.88	1,000	228.05	7,042.55	6,042.55	604.25	5,785
VOLV-B.ST	2009-10-09	41.23	24.25	1,000	287.90	6,982.21	5,982.21	598.22	5,785
DTE.DE	2009-10-09	4.45	224.56	1,000	29.96	6,727.74	5,727.74	572.77	5,785
CS.PA	2010-02-05	6.22	160.86	1,000	41.62	6,695.02	5,695.02	569.50	5,666
ZURN.SW	2009-10-09	96.28	10.39	1,000	571.20	5,932.63	4,932.63	493.26	5,785
BMW.DE	2010-02-12	14.71	68.00	1,000	86.58	5,887.22	4,887.22	488.72	5,659
ENEL.MI	2010-05-07	1.51	660.46	1,000	7.81	5,159.50	4,159.50	415.95	5,575
IBE.MC	2009-10-09	3.35	298.68	1,000	15.62	4,666.80	3,666.80	366.68	5,785
ABBN.SW	2009-10-09	11.88	84.19	1,000	53.26	4,484.21	3,484.21	348.42	5,785
MBG.DE	2009-10-09	12.09	82.69	1,000	51.72	4,276.71	3,276.71	327.67	5,785
INGA.AS	2009-10-09	5.52	181.19	1,000	20.76	3,761.48	2,761.48	276.15	5,785
G.MI	2009-10-09	9.15	109.30	1,000	33.48	3,659.27	2,659.27	265.93	5,785
BNP.PA	2009-11-03	24.43	40.93	1,000	81.55	3,338.18	2,338.18	233.82	5,760
ROG.SW	2011-08-09	77.16	12.96	1,000	246.30	3,192.16	2,192.16	219.22	5,116
SAN.MC	2011-08-04	2.86	349.05	1,000	8.00	2,792.40	1,792.40	179.24	5,121
UBSG.SW	2009-10-09	11.53	86.73	1,000	31.91	2,767.66	1,767.66	176.77	5,785
ENI.MI	2011-08-08	5.42	184.50	1,000	14.77	2,725.84	1,725.84	172.58	5,117
TTE.PA	2020-03-09	22.19	45.06	1,000	52.52	2,366.69	1,366.69	136.67	1,981
VOW3.DE	2009-10-16	42.80	23.36	1,000	96.76	2,260.51	1,260.51	126.05	5,778
PHIA.AS	2009-10-09	10.19	98.17	1,000	23.00	2,257.92	1,257.92	125.79	5,785
GLE.PA	2009-10-09	26.40	37.88	1,000	57.58	2,180.97	1,180.97	118.10	5,785
REP.MC	2010-05-07	6.19	161.63	1,000	13.18	2,129.42	1,129.42	112.94	5,575
PRU.L	2009-10-09	521.94	1.92	1,000	968.80	1,856.17	856.17	85.62	5,785
HSBA.L	2011-08-10	512.44	1.95	1,000	949.40	1,852.72	852.72	85.27	5,115
SHEL.L	2015-12-11	1,446.29	0.69	1,000	2,644.15	1,828.23	828.23	82.82	3,531
BN.PA	2020-10-28	39.69	25.20	1,000	70.86	1,785.52	785.52	78.55	1,748
ERIC-B.ST	2009-10-09	44.30	22.57	1,000	72.72	1,641.44	641.44	64.14	5,785
LLOY.L	2009-10-09	62.32	16.05	1,000	82.44	1,322.76	322.76	32.28	5,785
BAS.DE	2020-02-28	36.47	27.42	1,000	44.75	1,227.02	227.02	22.70	1,991
GSK.L	2009-10-09	1,240.29	0.81	1,000	1,403.84	1,131.86	131.86	13.19	5,785
TSCO.L	2014-03-20	369.31	2.71	1,000	411.50	1,114.23	114.23	11.42	4,162
TEF.MC	2012-05-18	4.32	231.61	1,000	4.70	1,087.86	87.86	8.79	4,833
BARC.L	2009-10-09	346.80	2.88	1,000	371.00	1,069.77	69.77	6.98	5,785
BP.L	2010-06-08	405.56	2.47	1,000	423.42	1,044.02	44.02	4.40	5,543
DBK.DE	2009-10-09	31.27	31.98	1,000	31.15	996.17	-3.83	-0.38	5,785
MC.PA	2025-04-07	499.99	2.00	1,000	458.00	916.02	-83.98	-8.40	126
DGE.L	2024-07-30	2,417.20	0.41	1,000	2,059.00	851.81	-148.19	-14.82	377
CA.PA	2009-10-09	18.33	54.55	1,000	12.70	693.00	-307.00	-30.70	5,785

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Table 3 – continued from previous page

Ticker	Entry Date	Entry Price (€)	Shares	Position Size (€)	Current Price	Current Value	PnL (€)	PnL (%)	Days Held
VOD.L	2009-10-09	136.50	7.33	1,000	85.78	628.41	-371.59	-37.16	5,785
NOKIA.HE	2009-10-09	6.27	159.49	1,000	3.53	563.30	-436.70	-43.67	5,785
BAYN.DE	2018-08-16	62.35	16.04	1,000	25.71	412.34	-587.66	-58.77	2,552

Total Invested	€45,000.00	
Current Value	€285,787.27	
Total PnL	€240,787.27	(535.08%)
Number of Positions	45	
Average Holding Period	5006.3 days	

Table 4: Strategy for Euopean equities vs Benchmark Metrics (aligned to first buy, equal capital)

	Annualized Return	Volatility	Sharpe Ratio	Max Drawdown	Total Return
Strategy (EU)	0.1236	0.1941	0.6979	−0.3916	5.3534
SPY	0.1391	0.1725	0.8420	−0.3372	6.8994
Euro Stoxx 600	0.0525	0.1658	0.3920	−0.3555	1.2525
MSCI World	0.0842	0.1529	0.6058	−0.3421	2.6086
MSCI Europe	0.0562	0.2287	0.3542	−0.4137	1.3819

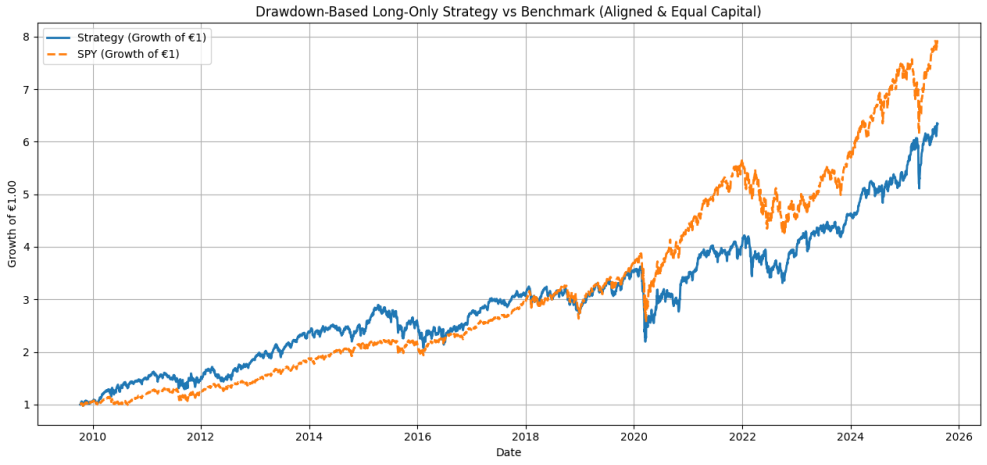

Figure 3: Strategy 1 performance with 50 biggest European firms in the year 2000 against SPY

When compared with its unbiased execution, for which the 50 biggest European equities in the year 2000 were chosen, the peformance of the strategy significantly decreases, but

remains good. The choice of the year 2000 was partly to simulate the effects of the explosion of a speculative bubble on the strategy. Here, we see that despite the bursting of the dot-com bubble, and the large destruction of targeted value it represents, the strategy performs well. This is despite the absence of a dynamic universe.

During the studied period however, the strategy, when tested using a methodolgy reducing survivorship bias, underperforms the S&P 500, which demonstrated exceptional returns in the studied period, and amply outperformed other valued geographic ETFs.

A geographic bias is presented in using such a benchmark however, as the American equity market, as well as the American economy as a whole, has largely dominated its European counterparts. Indeed, when compared to the Euro STOXX 600 or MSCI Europe, the strategy performs well and amply outperforms them in all major metrics.

To avoid this geographic bias and in order to achieve a performance review of the strategy on a global scale, it is necessary to analyze the strategy in different geographic samples.

Table 5: Performance Metrics: Year 2000 Top 50 Equities of geographic zone: Strategy vs. geographic index

	Annualized Return	**Volatility**	**Sharpe Ratio**	**Max Drawdown**	**Total Return**
Strategy: US	0.1452	0.1783	0.8498	-0.3054	7.2405
SPY (US)	0.1368	0.1734	0.8268	-0.3372	6.3558
Strategy: EU	0.1236	0.1941	0.6979	-0.3916	5.3534
Euro Stoxx 600 (EU)	0.0525	0.1658	0.3920	-0.3555	1.2525
Strategy: World	0.1404	0.1702	0.8575	-0.3059	6.7208
MSCI World	0.0842	0.1529	0.6058	-0.3421	2.6086

2.3 Strategy Returns distribution

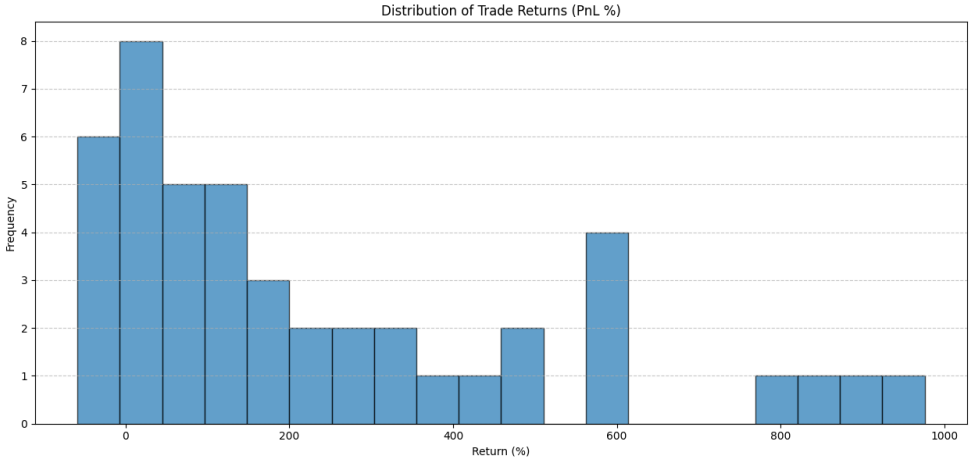

Figure 4: Returns distribution for strategy applied on Top 50 European Equities

A consistent trend seen in the execution of the strategy is that most investments tend to make a profit. Only 6 out of 45 positions in Europe result in a loss. This tends to confirm the initial mostly temporary nature of drawdowns of the biggest equities. Like in the return distributions of composite indexes, the returns are fueled by that of outliers.

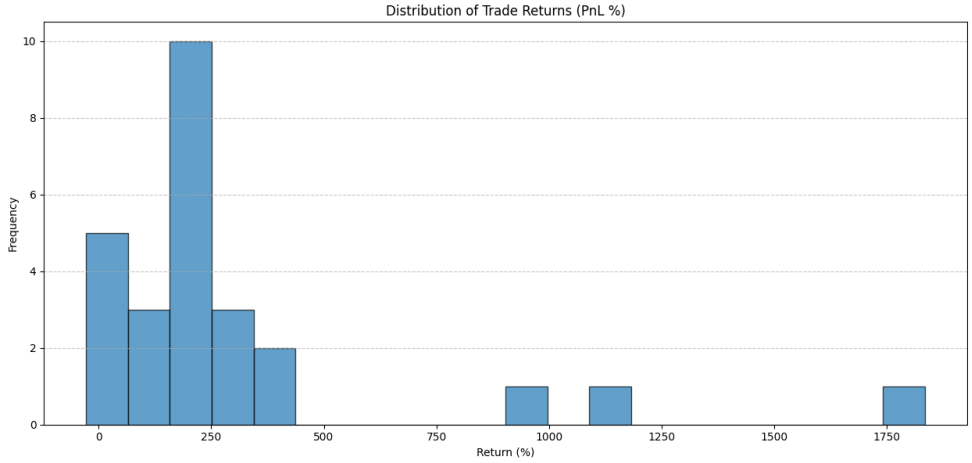

Figure 5: Returns distribution for strategy applied on Top 50 US Equities

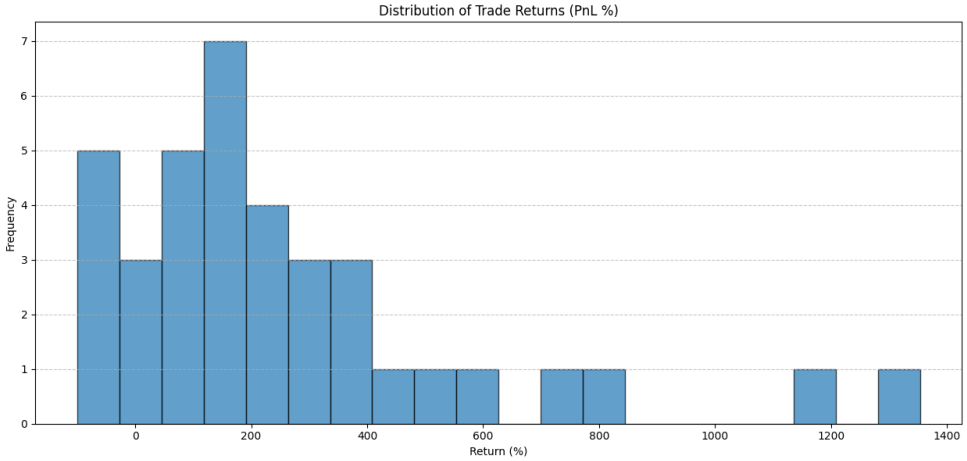

Figure 6: Returns distribution for strategy applied on Top 50 Equities in the World

2.4

3 Discussion

The past results of this systematic contrarian investing strategy demonstrate its relevance. In all studied geographic zones, where there is the strongest potential for the advent of fundamental, theoretical basis of the strategy, the strategy outperforms passive investment in the index ETF for the same geographical zone. While being relatively low-effort, the strategy

achieves satisfactory returns on the long-term and picks few "losing" stocks, meaning most ultra-large cap equities bounce back from extreme drawdowns to deliver decent returns.

It is important to note however, that a strategy where an agent would have concentrated a higher portion of their portfolio on distressed ultra-large cap equities that combine a further set of criteria: a wide moat, strong Free Cash Flow, strong revenue and revenue growth and a relatively low Price/ Earnings-to-Growth ratio, among others could have performed better and filter out the few but existing "losing" positions.

It is also important to note that the strategy requires strong patience and