MASTERS STUDENT INVESTMENT FUND
THE UNIVERSITY OF UTAH

INSTITUTE OF ADVANCED INVESTMENT MANAGEMENT
THE UNIVERSITY OF UTAH

Systematic Defense: Profitability, Size, and Value in Low-Risk Investing

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Executive Summary

Strategy	Invest in large-cap U.S. stocks with low market beta and reasonable valuations, while excluding small growth and unprofitable firms, to achieve S&P 500–like returns with lower volatility and smaller drawdowns.
Performance	10-year Projections – Return 9.94% (SPX 14.7%), Alpha −2.22, Beta 0.77, STDV 16.89, MDD −9.28% (SPX −24.6%), Sharpe 0.52 (SPX 0.79)
Recommendation	Quantum Returns is advising that we <u>DO NOT BUY.</u>

Strategy Rational

Article Title: NBER.pdf

Understanding Defensive Equity.pdf

Key Takeaways:

- Defensive (low-beta, low-volatility) portfolios earn higher risk-adjusted returns than predicted by traditional models.
- Neither article specifies specific defensive sectors, instead they break out the criteria for a defensive equity.
- The study cautions that "defensiveness" isn't purely about risk—it often overlaps with quality and value characteristics.

Low Beta / Volatility	Less sensitive to market swings, producing smaller drawdowns.
High Profitability / Quality	Firms with strong margins, stable earnings. and low leverage.
Large Size Bias	Defensive portfolios tilt toward large-cap, profitable, value firms.
Value & Profitability Tilt	Outperformance mainly comes from excluding unprofitable small-cap growth stocks.
Downside Protection	Outperform in bear markets, smaller drawdowns, faster recovery.
Stable Long-Run Returns	Similar mean returns as the benchmark but higher Sharpe ratios.

Strategy Design

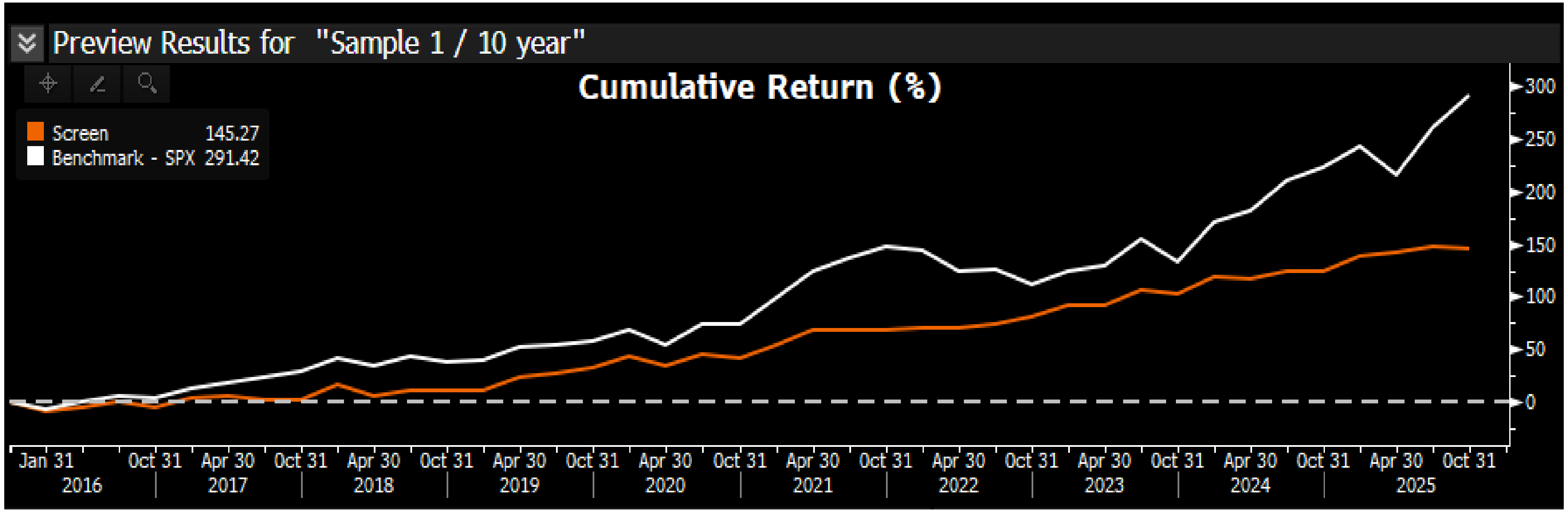
Description	*Focus on large, profitable companies with steady earnings, low beta, and fair valuations for stable, long-term returns.*
Origin	*Based on AQR (2012) and Novy-Marx (2014) – both show profitability and value drive defensive outperformance.*
Goal	*Show that high-quality, defensive firms outperform by avoiding losses from unprofitable small-cap growth stocks.*
Parameters	*Beta <1 | ROIC > 9% | EPS > 13% | P/E < 20 | Market Cap > $10B* *Focus on Healthcare | 15 holdings | quarterly rebalance | 1-, 5-, 10-year backtest.*

Backtesting Parameters

Screening Criteria

Parameter	Article Characteristic	Description	Stock Universe
Exchanges		USA	14,833 stocks
[Beta 5 years]	Low Beta / Volatility	< 1	8,880 stocks
[ROIC 5 years]	High Profitability / Quality	>= 9%	750 stocks
[CAGR EPS 5 years]	Stable Long-Run Returns	>= 13%	387 stocks
[Market Cap]	Size	>= $ 10Bn	109 stocks
P/E	Value & Profitability Tilt	<= 20x	54 stocks
TOP 15			15 Stocks

Backtesting Results - Performance

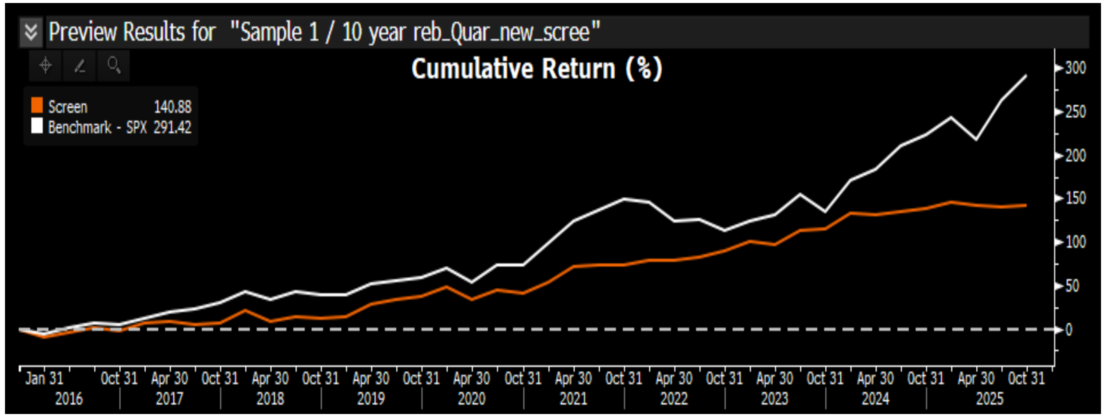


Period	Return	α*	β*	σ*	Max DD*	Sharpe*
1yr	9.58%	-3.68	0.52	15.36%	-1.25%	0.43
5yr	11.97%	-0.68	0.65	15.06%	-1.38%	0.66
10yr	9.94%	-2.22	0.77	16.89%	-9.28%	0.52
10yr SPX	14.7%	0	1	16.96	-24.6%	0.79

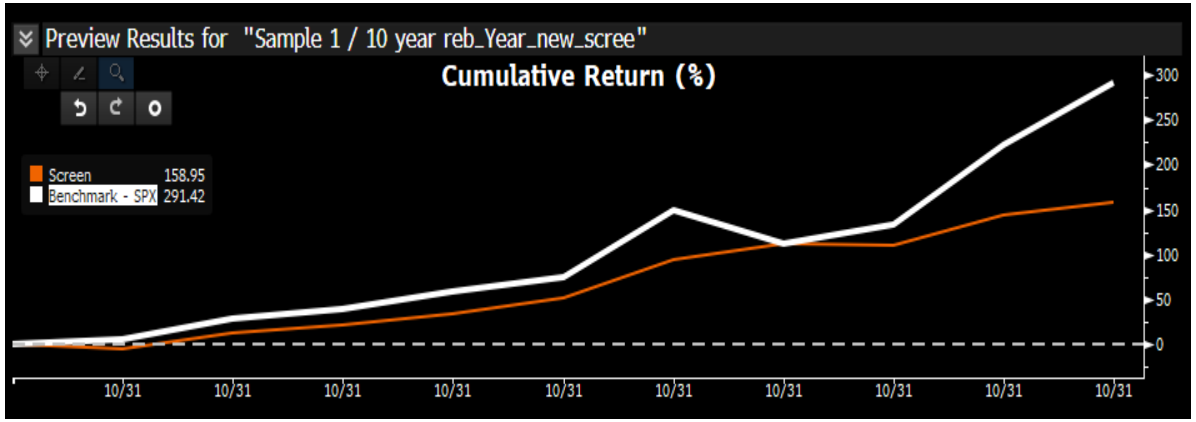
- **Consistent defensive profile:** $\beta < 0.8$ and $\sigma \leq 17\%$, confirming low market exposure and controlled risk.
- **Expected behavior:** defensive stocks lag in bull markets but deliver stable, low-dispersion returns over time.
- **Full-cycle capture:** five-year horizon reflects both expansion and correction, achieving balance between stability and return.
- **Mid-term efficiency (3–6 yrs):** strongest performance when short-term noise fades but long cycles don't dominate.
- Favorable market context (2019–2024):
  - Covid
  - Recovery 2021-2025

Backtesting Results - Performance

10 Y – Quarterly New Screening



10 Y – Yearly New Screening



	Return	α*	Β	σ*	Max DD*	Sharpe*
10 Y - Quarterly New Screening	9.85%	-2.48	0.77	16.96%	-10.24%	0.51
10 Y - Yearly New Screening	10.37%	-1.57	0.76	16.84%	-5.36%	0.56
10 Y - SPX	14.70%	0	1	16.96%	-24.6%	0.79

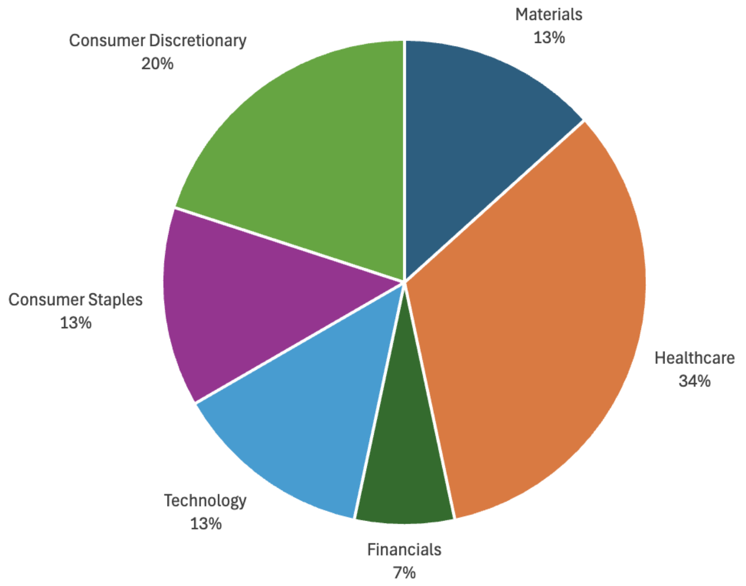
- **Annual rebalancing = more efficient & stable** for fundamentally defensive strategies with broader screening.
- **Broader screening (ROIC ≥ 8%, CAGR EPS ≥ 11%),** lower concentration, smoother volatility, and stronger Sharpe ratio.
- **Fundamentals evolve slowly** : annual rebalancing preserves conviction and minimizes turnover noise.

Recommended Purchases

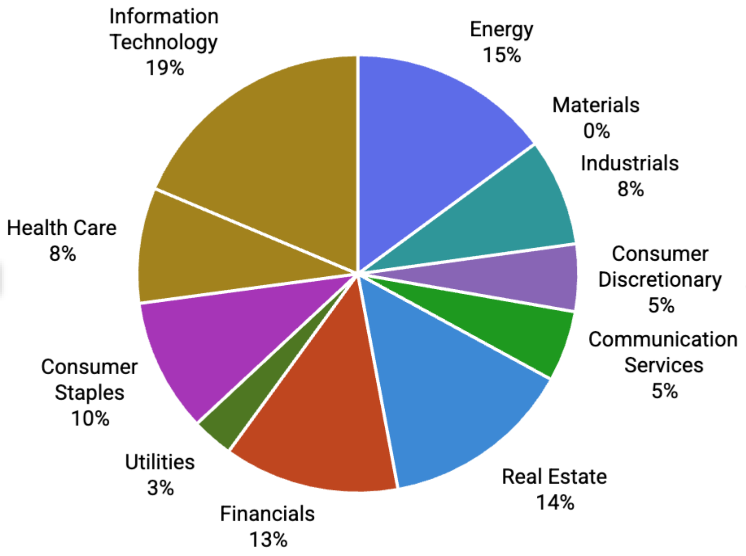
Point In Time Results for 'In' (Sample 1 / 10 year)			Rebalance Period: 10/31/2025		Previous	Next
Ticker		Short Name	Market Cap B	Weight	In/Out	In/Out
ABT	US	ABBOTT LABS	214,959	6.67 %	In	Out
AU	US	ANGLOGOLD ASHANT	34,322	6.67 %	Out	Out
COKE	US	COCA-COLA COMPANY	11,140	6.67 %	Out	Out
DECK	US	DECKERS OUTDOOR	11,878	6.67 %	In	Out
EXEL	US	EXELIXIS INC	10,410	6.67 %	Out	Out
INCY	US	INCYTE CORP	18,352	6.67 %	In	Out
LULU	US	LULULEMON ATH	20,223	6.67 %	Out	Out
MO	US	ALTRIA GROUP INC	94,643	6.67 %	In	Out
MRK	US	MERCK & CO	214,759	6.67 %	Out	Out
NEM	US	NEWMONT CORP	88,359	6.67 %	Out	Out
NTES	US	NETEASE INC-ADR	88,711	6.67 %	Out	Out
NVR	US	NVR INC	20,693	6.67 %	In	Out
PDD	US	PDD HOLDINGS INC	191,467	6.67 %	In	Out
RGA	US	REINSURANCE GROU	11,990	6.67 %	Out	Out
UTHR	US	UNITED THERAPEUT	19,178	6.67 %	Out	Out

Effect on the Portfolio

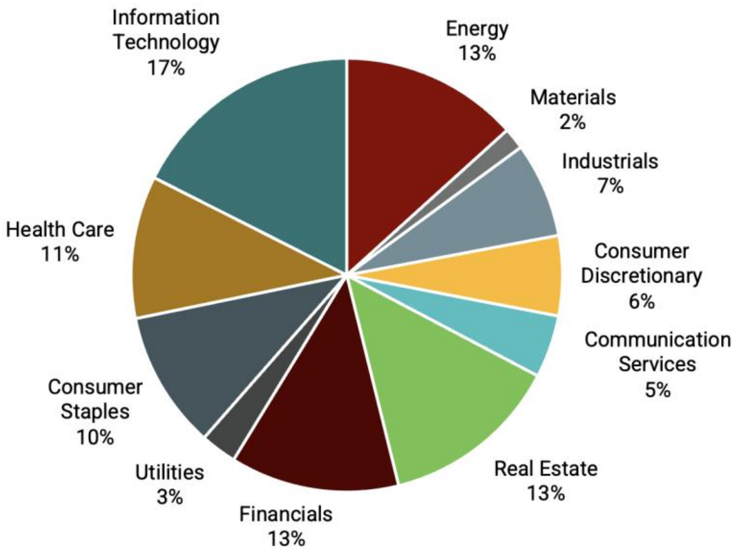
Proposed Investment Sectors



Current Portfolio



Adjusted Sector Breakdown



Portfolio	Exp. Return	St. Dev	Beta	Sharpe	Idio. Risk
Existing	14.52%	8.39%	0.79	1.24	8.38%
Adjusted	14.61%	8.44%	0.79	1.24	8.43%

Risks

The defensive equity strategy, leveraging low-risk anomaly, tends to do well in bear markets with lower volatility, but can underperform in prolonged bull markets.

Risk Category	Specific Risks	Mitigations
Model & Research	The “low-risk anomaly” might not always hold — especially in the US or during long bull markets.	Try running the same strategy on newer data and other markets to see if the pattern still works.
Data & Assumptions	The backtests were done a long time ago (up to 2011) and based on MSCI World data — results might look different now.	Backtest again with newer data (post-2011) and compare results during both bull and bear periods. Adjust for realistic costs.
Portfolio	The paper didn’t clearly say how often to rebalance or manage sector weights. Without rebalancing, some stocks or sectors could dominate the portfolio.	Rebalance annually with equal weighting.

Summary & Recommendation

Strategy Merits

- **Performance**
  - Stable, low-volatility returns
  - Lagged market during bull cycles
- **Risk**
  - Low beta (<1), defensive profile confirmed
  - Strong downside protection, limited upside
- **Effects on Portfolio**
  - Adds stability and lowers total risk
  - Shows growth in current high-beta market

Action Plan

- **Recommendation: Do Not Buy**
  - Strategy solid, but returns not compelling vs. benchmark
  - No fund sale or reallocation proposed
  - Maintain current positions; Keep on watch for volatility opportunities