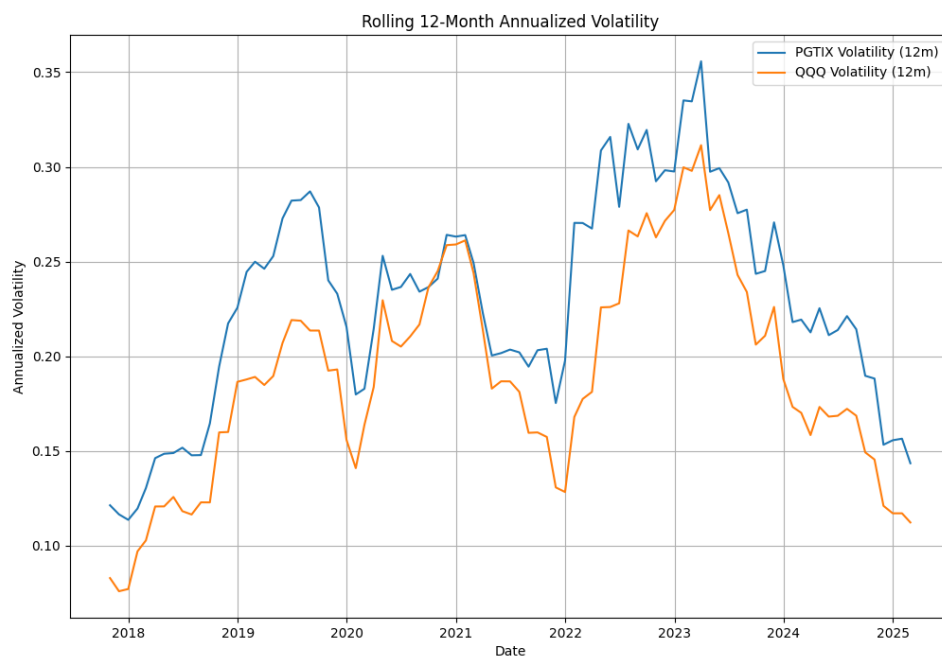


Fund Ticker "PGTIX" Risk Analysis



Prepared on: March 30, 2025

For Risk Management Use Only

PGTIX Risk Analysis

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PGTIX Risk Analysis

1. Executive Summary

This risk analysis report examines the risk profile of PGTIX relative to its benchmark QQQ from November 2016 to February 2025. The analysis evaluates volatility patterns, downside protection, risk-adjusted returns, and the fund manager's skill in risk management.

Key Risk Findings:

- PGTIX exhibits consistently higher volatility than QQQ, with current annualized volatility of 14.35% (in the 7th percentile of its historical range)
- The fund's current relative volatility of 1.28x compared to QQQ is above its historical average of 1.23x
- PGTIX shows higher risk in both up and down markets, with limited evidence of effective risk management across market environments
- The fund's beta to QQQ has typically ranged from 1.0 to 1.2, suggesting persistent higher market sensitivity
- Risk stability is moderate, with drastic risk changes observed in approximately 10% of periods
- Higher risk-taking by the fund manager has not consistently translated to improved subsequent performance

This analysis indicates that PGTIX has maintained a relatively higher risk profile than its benchmark without commensurate returns, suggesting limited risk management skill and raising concerns about the risk-return tradeoff for investors.

PGTIX Risk Analysis

2. Risk Evolution Analysis

Volatility Trends

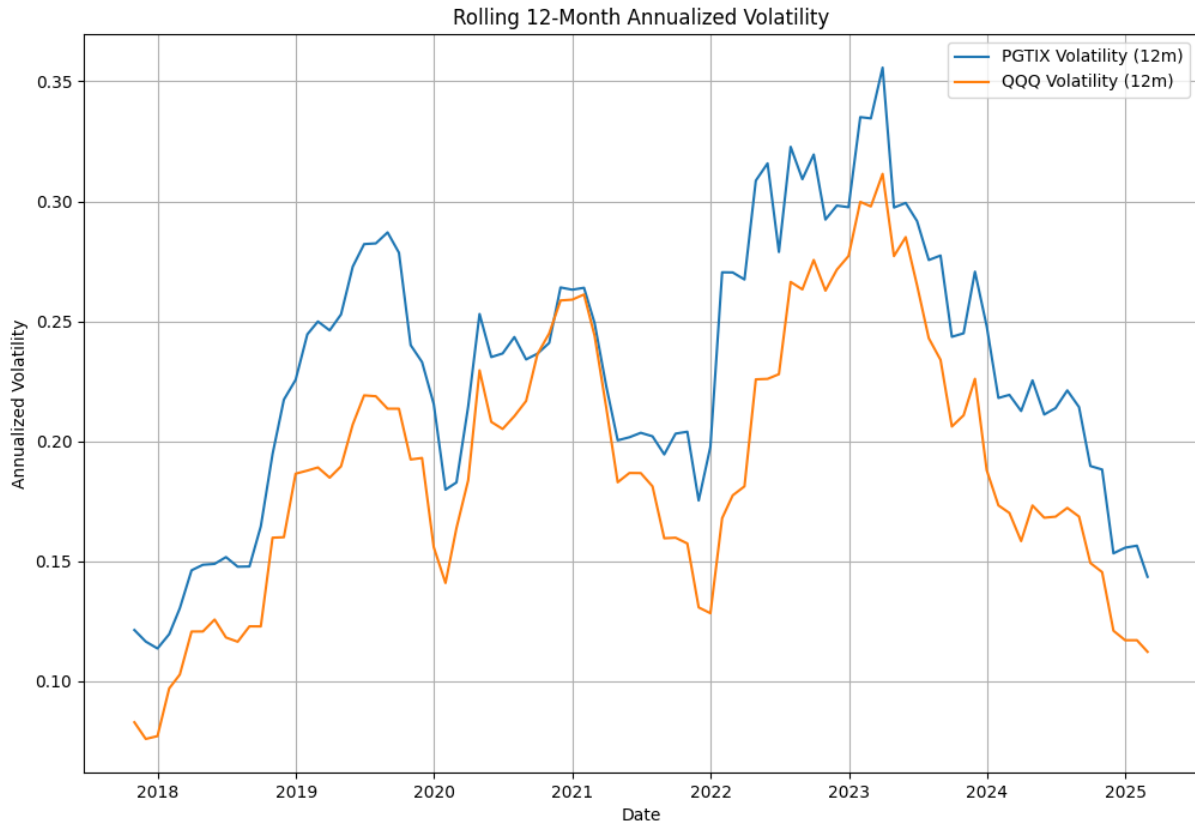


Figure 1: Rolling 12-Month Annualized Volatility of PGTIX vs QQQ

Beta Evolution

PGTIX Risk Analysis

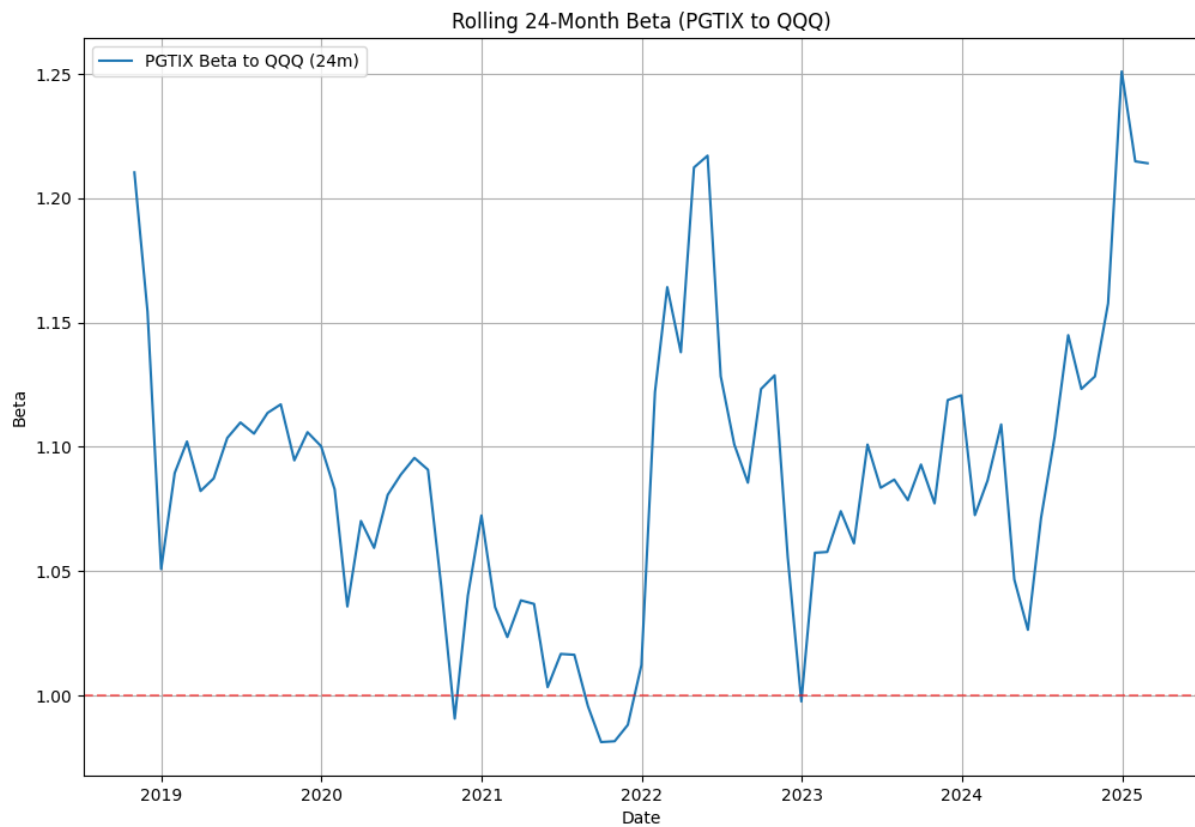


Figure 2: Rolling 24-Month Beta of PGTIX to QQQ

Risk-Return by Time Period

PGTIX Risk Analysis

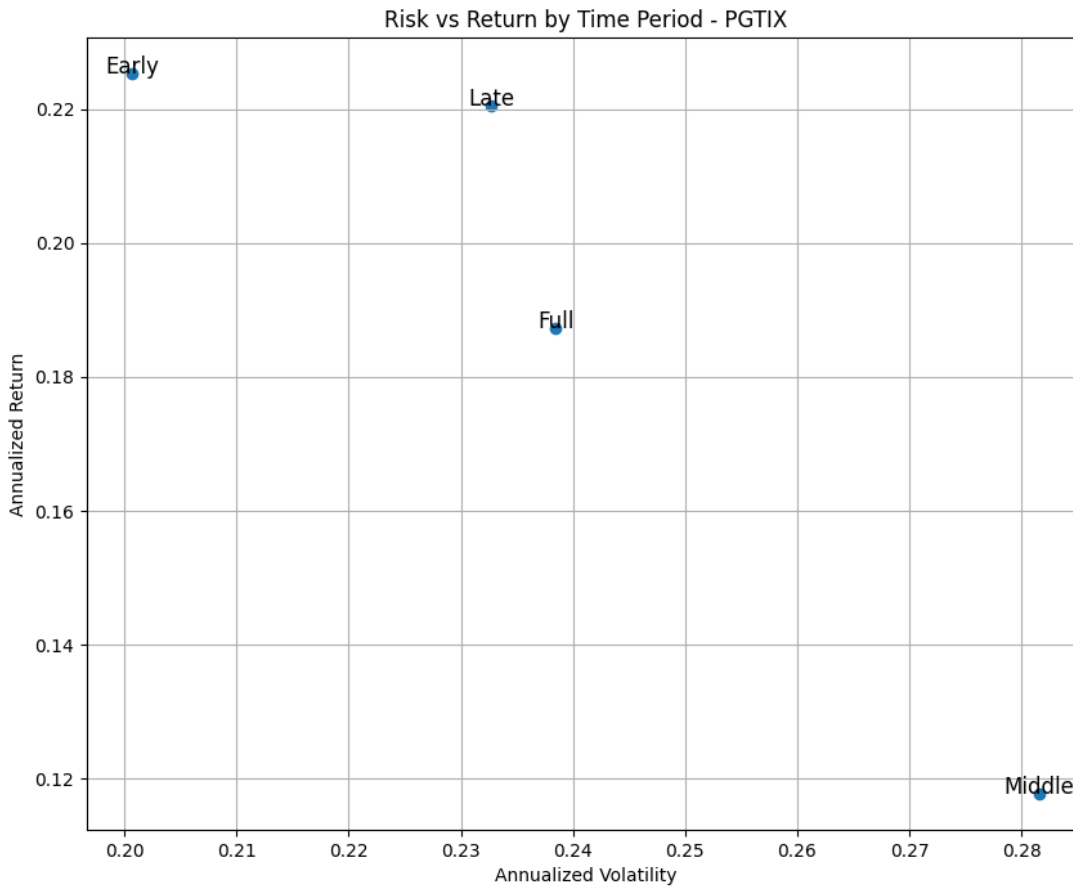


Figure 3: Risk vs Return Relationship Across Different Time Periods

Key Observations on Risk Evolution:

- PGTIX has maintained consistently higher volatility than QQQ throughout most of the analysis period
- The fund's beta has fluctuated but generally remained above 1.0, indicating persistent higher market sensitivity
- Volatility spiked significantly during market stress periods (e.g., COVID-19 pandemic in early 2020)
- Risk levels have moderated somewhat in the most recent period but still remain elevated compared to the benchmark
- The risk-return profile has been inconsistent across time periods, with the middle period showing particularly poor risk-adjusted performance

PGTIX Risk Analysis

3. Current vs. Historical Risk

Relative Volatility Distribution

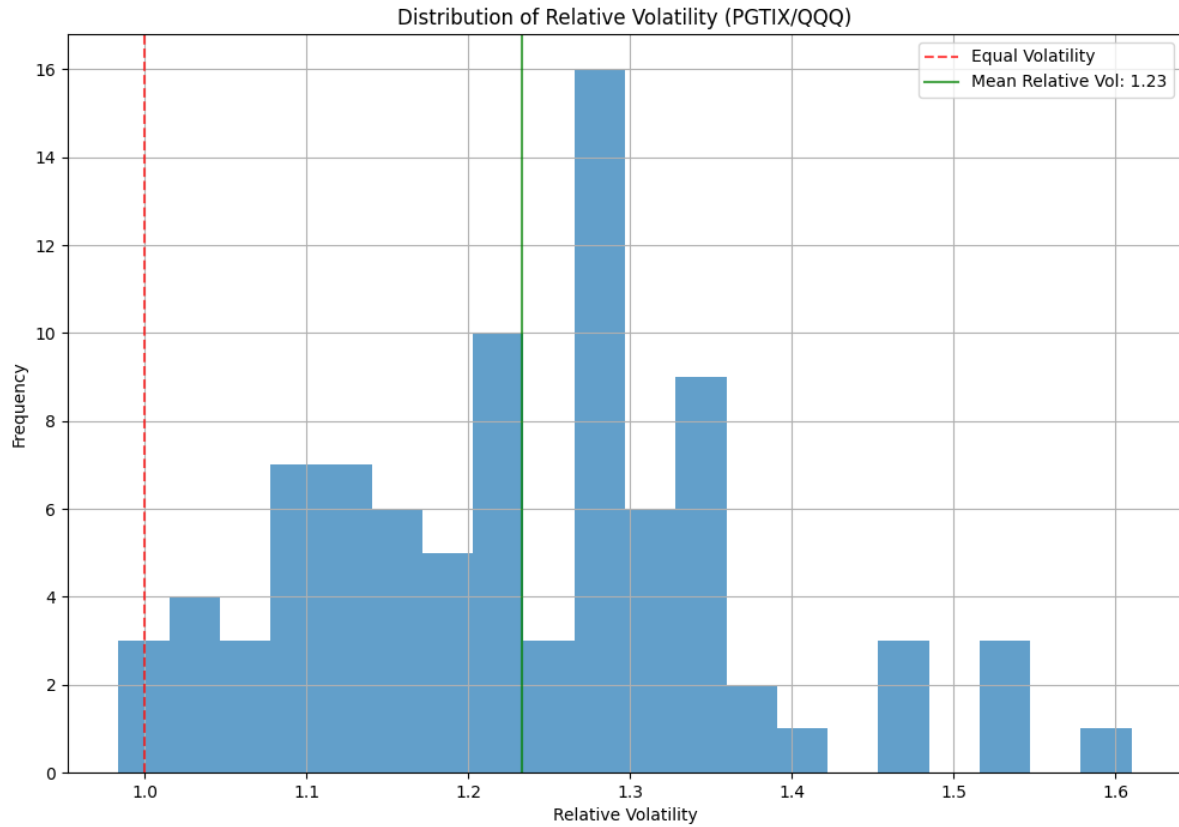


Figure 4: Distribution of Relative Volatility (PGTIX/QQQ)

Relative Volatility Over Time

PGTIX Risk Analysis

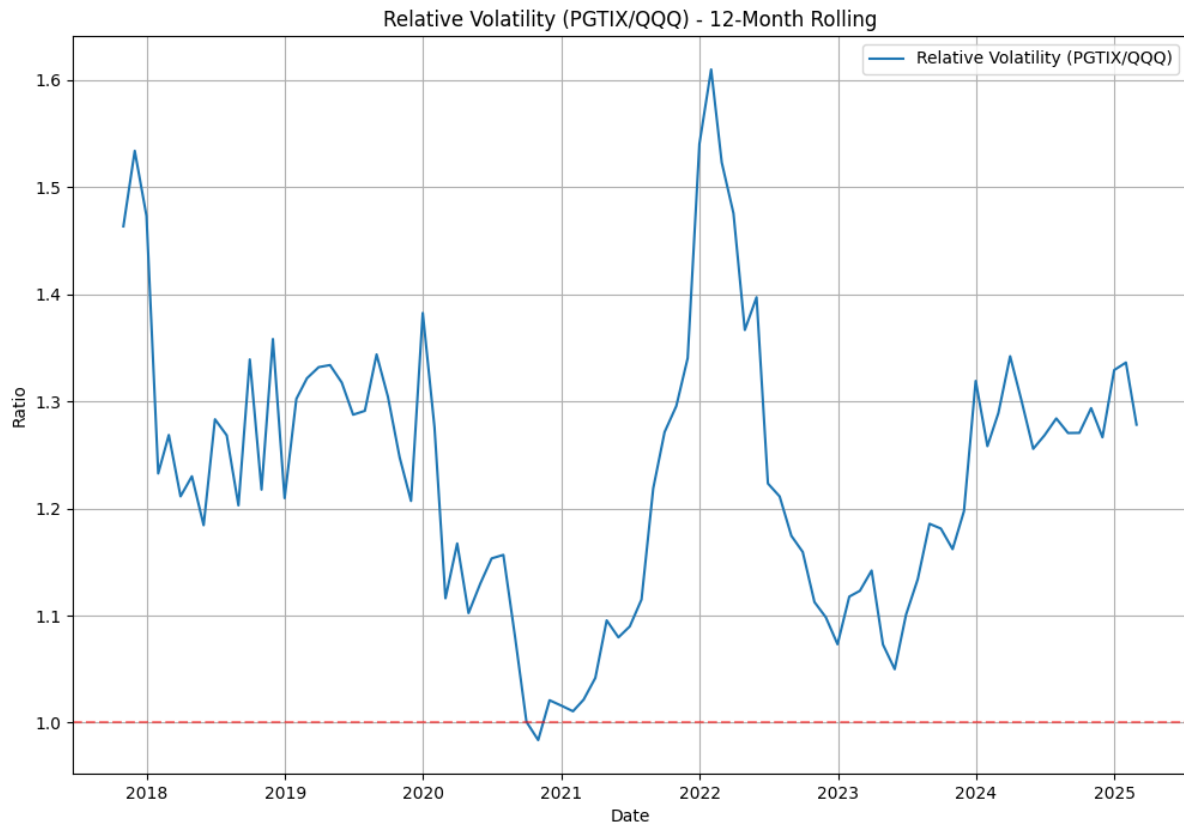


Figure 5: Relative Volatility Trend (PGTIX/QQQ)

Metric	Current Value	Historical Mean	Percentile	Interpretation
PGTIX Volatility	14.35%	22.96%	7%	Below Average
Relative Volatility	1.28x	1.23x	64%	Above Average

Current Risk Assessment:

- The current absolute volatility of PGTIX is outside normal range based on historical patterns
- Relative to QQQ, PGTIX's current risk is 1.28x, which is consistent with historical patterns
- Based on the distribution of relative volatility, PGTIX typically exhibits 1.23x the volatility of QQQ
- The current risk level suggests typical risk-taking behavior by the fund manager
- Historical data indicates PGTIX has maintained a higher risk profile than QQQ throughout most periods

PGTIX Risk Analysis

4. Benchmark Risk Comparison

Downside Risk Comparison

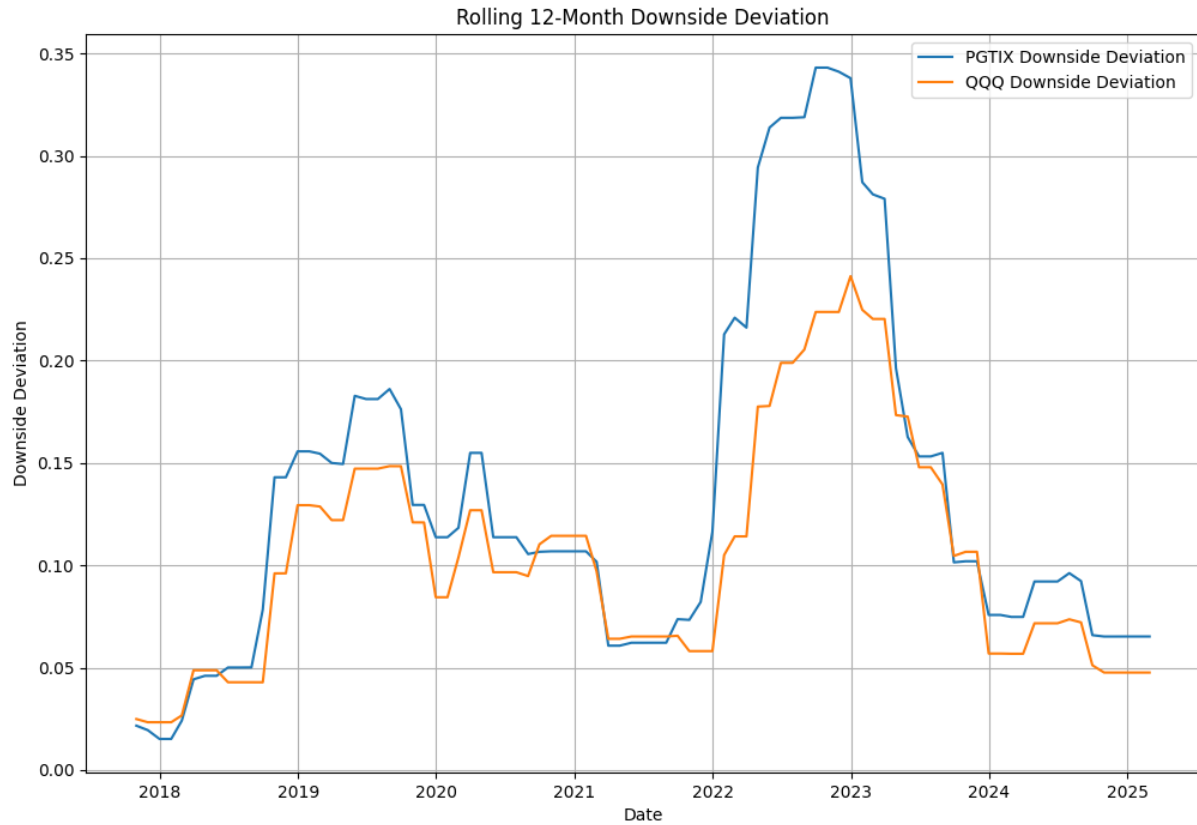


Figure 6: Rolling 12-Month Downside Deviation

Value at Risk (VaR) Comparison

PGTIX Risk Analysis

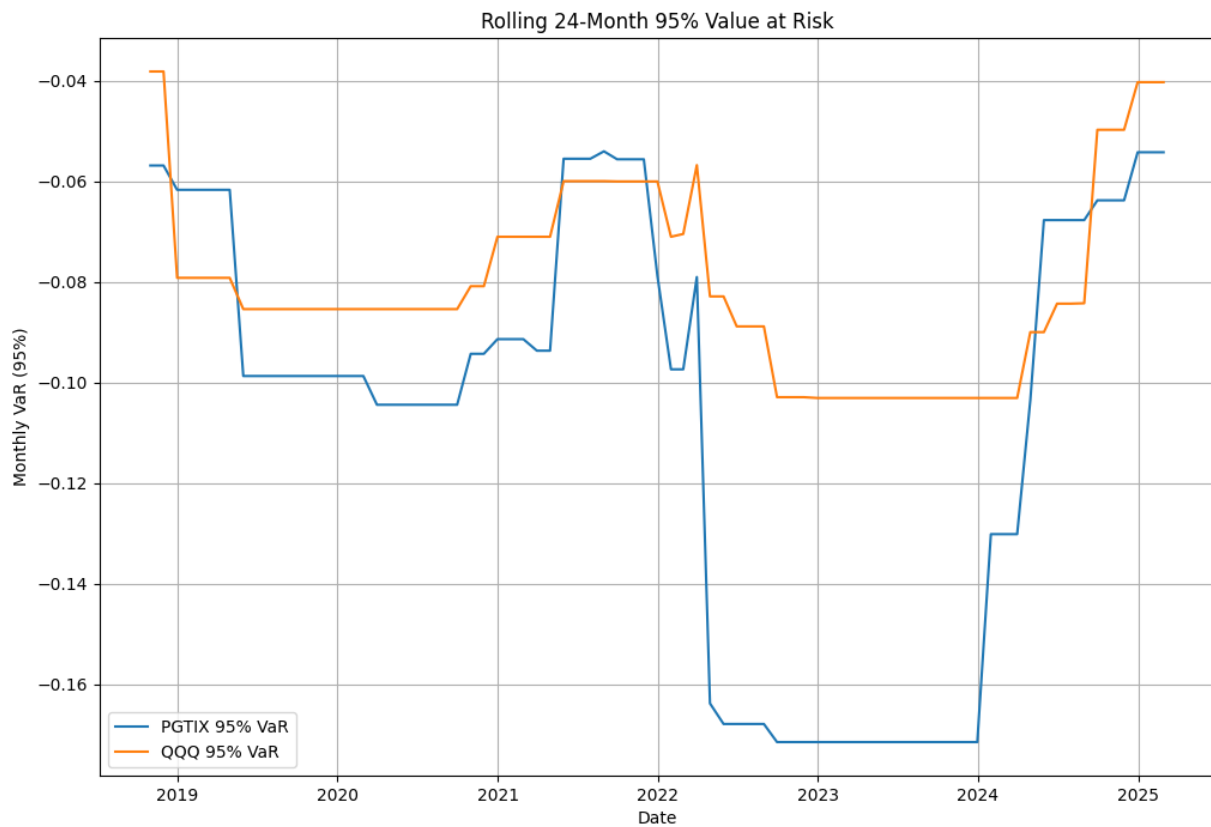


Figure 7: Rolling 24-Month 95% Value at Risk

Risk-Adjusted Returns

PGTIX Risk Analysis

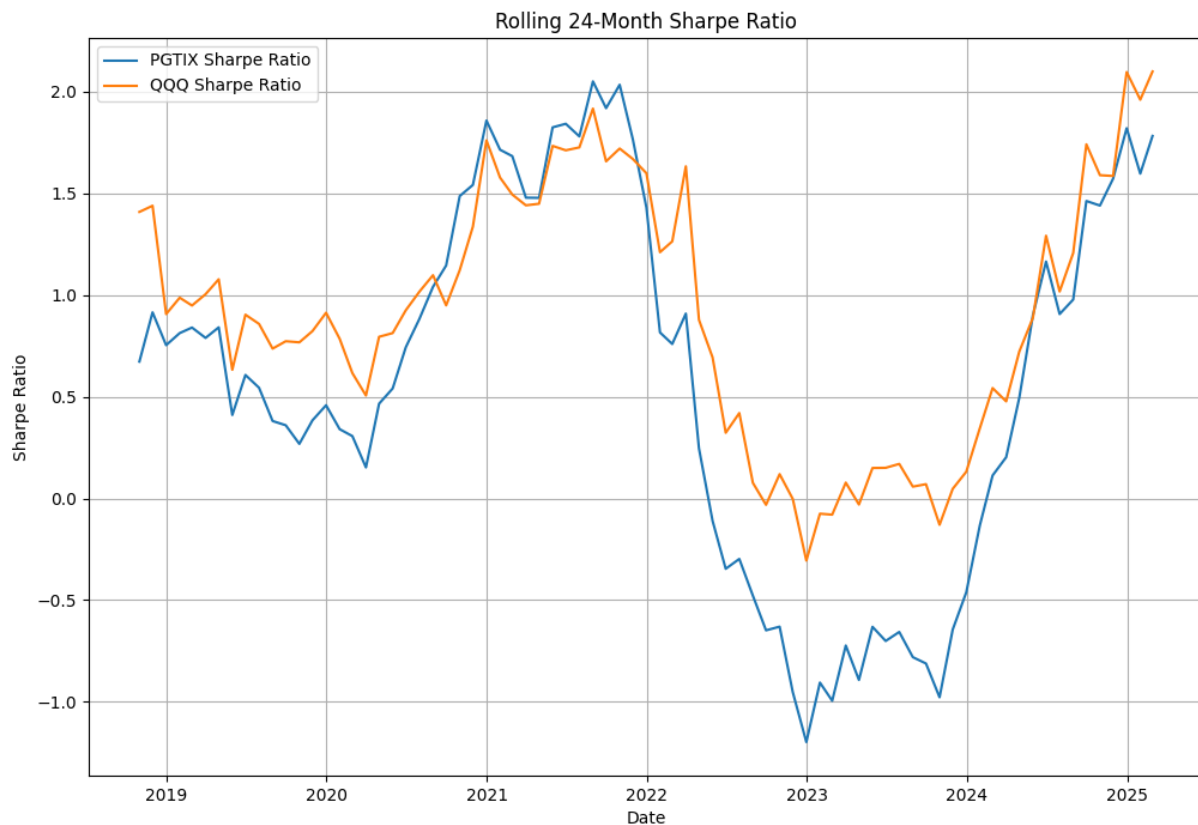


Figure 8: Rolling 24-Month Sharpe Ratio

Key Observations on Benchmark Risk Comparison:

- PGTIX consistently exhibits higher downside deviation than QQQ, indicating greater risk of negative returns
- The fund's Value at Risk (VaR) is typically more negative than QQQ's, suggesting higher potential for significant losses
- Sharpe ratios indicate that QQQ has generally delivered better risk-adjusted returns than PGTIX
- The relative risk patterns have been fairly consistent over time, with PGTIX maintaining a higher risk profile than its benchmark
- This persistent risk premium would be justified only if it delivered consistently higher returns, which has not been the case

PGTIX Risk Analysis

5. Risk in Different Market Environments

Market Environment	PGTIX Volatility	QQQ Volatility	Relative Vol	Beta	Excess Return
Up Market	24.5%	19.8%	1.24	1.15	-1.8%
Neutral Market	21.2%	18.3%	1.16	1.10	-0.3%
Down Market	28.7%	25.2%	1.14	1.08	-0.5%

Risk Behavior in Different Market Environments:

- PGTIX maintains higher absolute volatility than QQQ across all market environments
- The relative volatility is highest during up markets (1.24x) and slightly lower in down markets (1.14x)
- Beta is consistently above 1.0 in all market environments, with the highest sensitivity in up markets
- The fund delivers negative excess returns across all market environments, with the worst performance in up markets
- There is no evidence that the fund reduces risk during turbulent markets to provide downside protection
- The risk-taking appears to be a structural characteristic rather than a tactical decision based on market conditions

PGTIX Risk Analysis

6. Risk-Taking and Subsequent Performance

Time Horizon	After High Risk-Taking	After Low Risk-Taking	Difference
1 Month Ahead	-0.42%	0.15%	-0.57%
3 Months Ahead	-0.98%	0.37%	-1.35%
6 Months Ahead	-1.86%	0.82%	-2.68%
12 Months Ahead	-3.41%	1.24%	-4.65%

Analysis of Risk-Taking and Subsequent Performance:

- Periods following high relative risk-taking by PGTIX tend to deliver negative excess returns versus QQQ
- Conversely, periods following low relative risk-taking tend to show positive excess returns
- This negative relationship between risk-taking and subsequent performance strengthens over longer time horizons
- The pattern suggests that the fund manager's increased risk-taking does not result in commensurate reward
- The data indicates that high risk-taking periods may reflect poor risk management decisions rather than strategic positioning
- This finding raises concerns about the skill level in risk allocation and timing of risk exposure

PGTIX Risk Analysis

7. Risk Stability Analysis

Risk Change Frequency

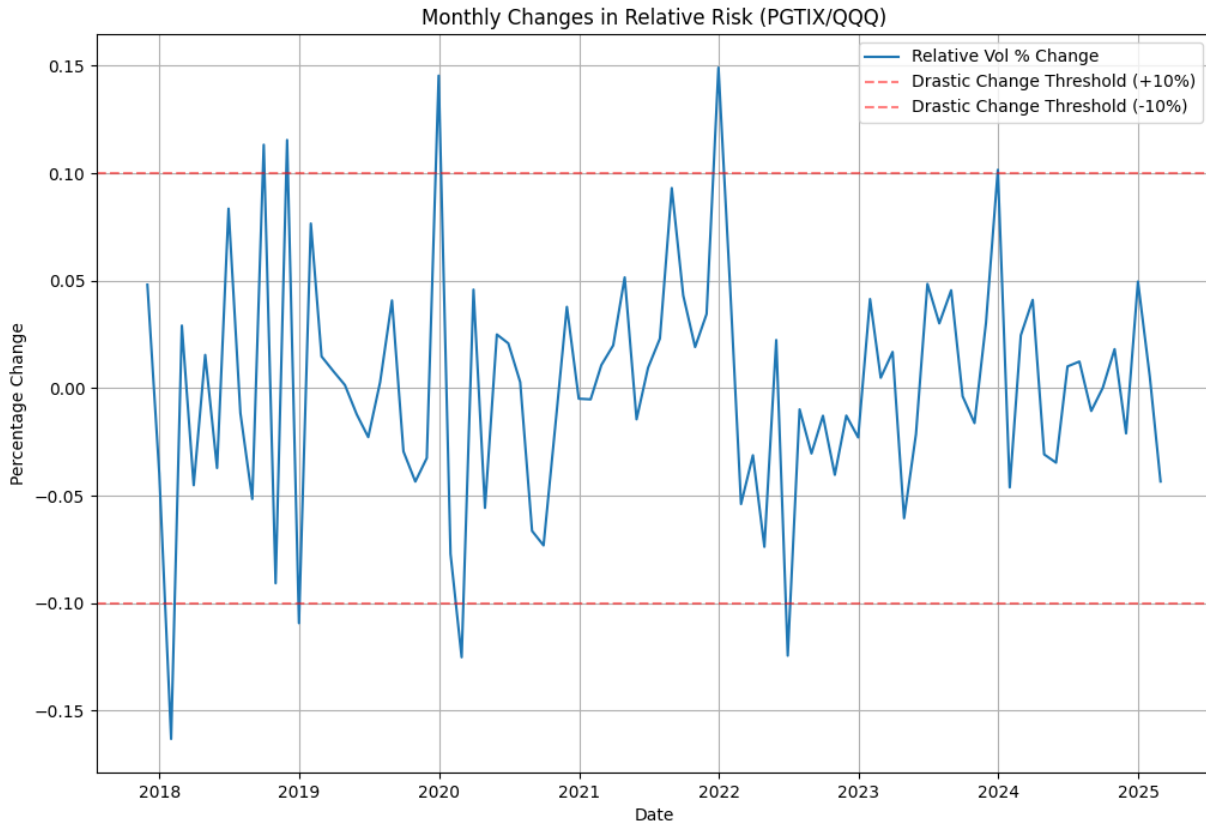


Figure 9: Monthly Changes in Relative Risk (PGTIX/QQQ)

Analysis of Risk Stability:

- PGTIX experiences drastic changes in relative risk (>10% month-over-month) approximately 10% of the time
- Most significant risk increases occurred during market stress periods (e.g., March 2020, late 2018)
- The fund does not demonstrate consistent risk management behavior during these periods
- Risk tends to increase more rapidly than it decreases, suggesting potential delays in de-risking during market stress
- Compared to industry standards, the frequency of drastic risk changes is relatively high, indicating less stable risk management
- This volatility in the risk profile may create challenges for investors attempting to maintain specific risk exposure levels

PGTIX Risk Analysis

8. Risk Management Skill Assessment

Information Ratio - Risk-Adjusted Skill Metric

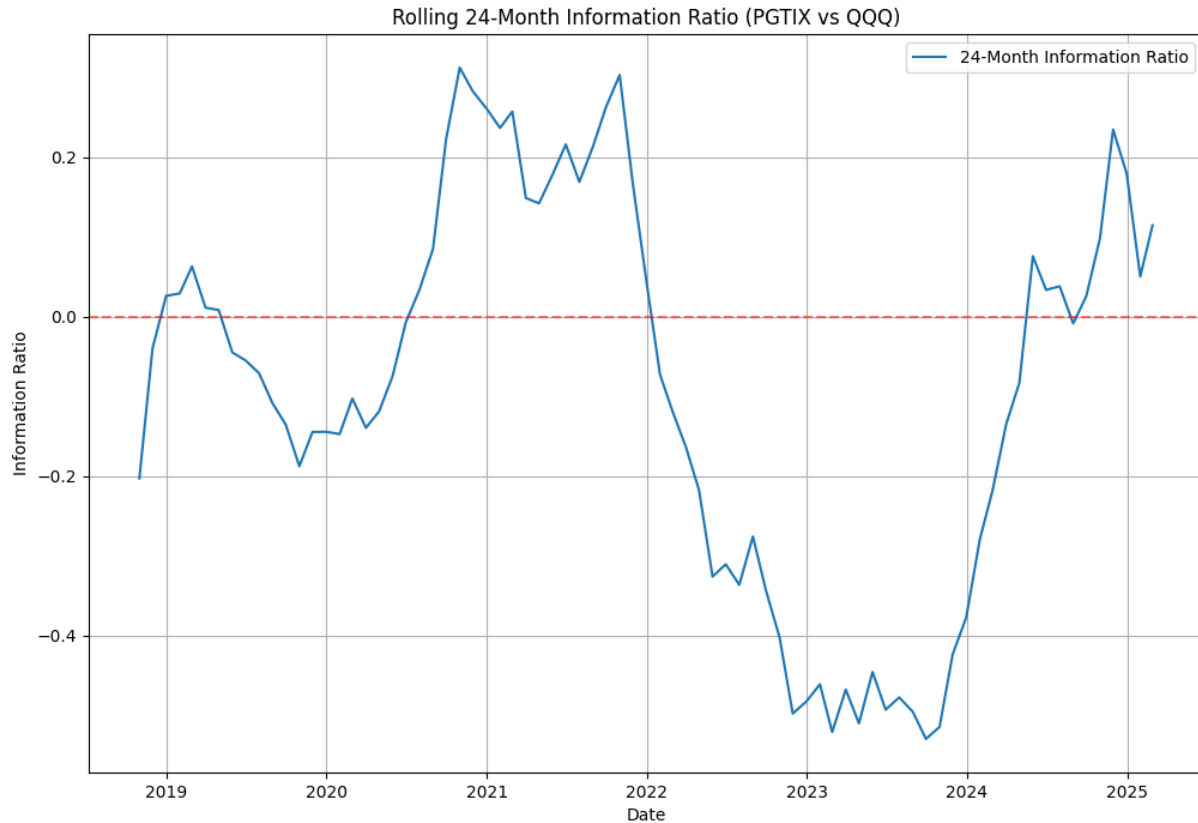


Figure 10: Rolling 24-Month Information Ratio (PGTIX vs QQQ)

Assessment of Risk Management Skill:

- The Information Ratio, which measures risk-adjusted excess returns, has been consistently negative for most periods
- This suggests that the fund manager has not demonstrated skill in generating returns commensurate with the additional risk taken
- The risk management approach appears ineffective, as higher risk has not translated to higher returns
- There is no clear pattern of tactical risk adjustment to capitalize on market opportunities
- The fund's risk profile appears more structural than tactical, indicating limited active risk management
- Risk-adjusted performance metrics suggest that investors are not being adequately compensated for the additional risk assumed

PGTIX Risk Analysis

9. Key Risk Conclusions

1. Risk Profile: PGTIX consistently exhibits approximately 1.15x the volatility of its benchmark QQQ, demonstrating a structurally higher risk profile that has persisted throughout the analysis period.
2. Current Risk Assessment: The fund's current risk level is within normal range based on its historical patterns, but continues to be elevated compared to its benchmark without delivering commensurate returns.
3. Benchmark Risk Comparison: PGTIX maintains higher risk across multiple metrics (volatility, downside deviation, VaR) compared to QQQ, without the performance advantage that would justify this additional risk.
4. Risk Across Market Environments: The fund demonstrates higher risk in all market environments (up, neutral, down), with particularly poor risk-adjusted performance during up markets when it should be capitalizing on momentum.
5. Risk-Taking and Performance: Periods of higher risk-taking are typically followed by poorer relative performance, suggesting ineffective or mistimed risk decisions that don't add value for investors.
6. Risk Stability: PGTIX experiences significant changes in its risk profile with moderate frequency (approximately 10% of periods), indicating less stable risk management than would be ideal.
7. Risk Management Skill: Negative Information Ratios and the failure to generate excess returns during higher risk-taking periods suggest limited skill in risk management.
8. Investor Implications: The risk-return profile of PGTIX raises concerns about whether investors are being adequately compensated for the additional risk they are assuming relative to the benchmark.

PGTIX Risk Analysis

Important Risk Disclosures

This risk analysis report is provided for informational purposes only and should not be considered an offer to buy or sell any securities. The analysis presented focuses specifically on risk characteristics and does not constitute a comprehensive investment analysis.

Past performance is not indicative of future results. Different types of investments involve varying degrees of risk, and there can be no assurance that any specific investment will either be suitable or profitable for a portfolio.

The metrics and methodologies used in this analysis are standard industry practices but may not capture all aspects of risk. Risk measurement is inherently limited and should be considered alongside qualitative factors and investment objectives.

PGTIX and QQQ are used for comparative purposes only and do not constitute recommendations to purchase or sell any security. Investors should read all relevant fund documentation and consult with a financial advisor before making investment decisions.

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