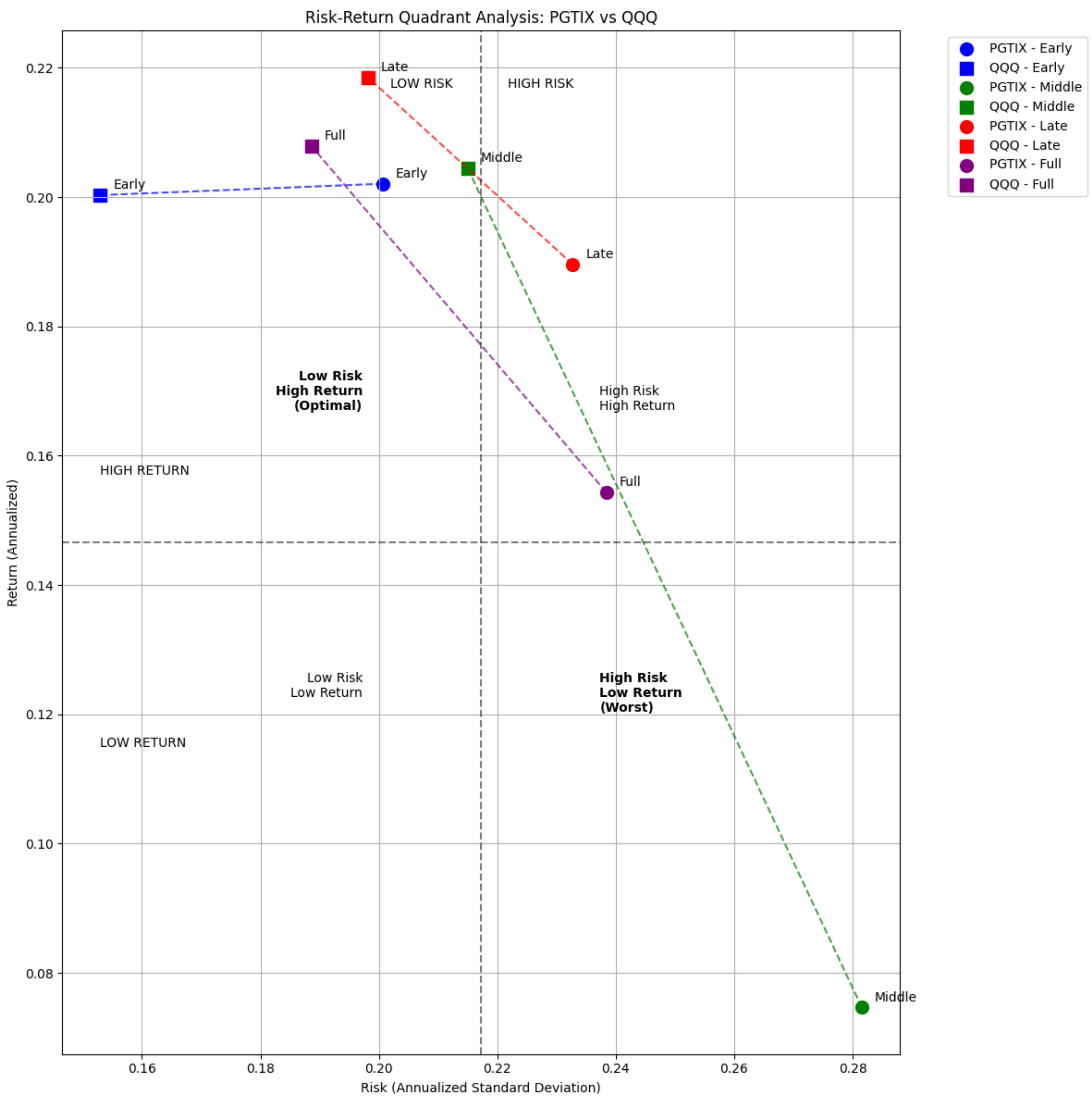
Fund Comparison: PGTIX vs QQQ Comprehensive Analysis



Prepared on: March 30, 2025

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Fund Comparison: Comprehensive Analysis

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Fund Comparison: Comprehensive Analysis

1. Executive Summary

This report provides a comprehensive analysis comparing PGTIX and QQQ from November 2016 to February 2025. The analysis evaluates performance, risk metrics, and behavior across different market environments.

Key Findings:
- Total Return: PGTIX (230.70%) vs QQQ (382.45%), differential of -151.75%
- Annualized Return: PGTIX (15.43%) vs QQQ (20.79%), differential of -5.35%
- Volatility: PGTIX (23.84%) vs QQQ (18.87%), relative volatility of 1.26x
- Risk-Return Profile: PGTIX is in the 'High Risk, High Return' quadrant, while QQQ is in the 'Low Risk, High Return (Optimal)' quadrant
- Sharpe Ratio: PGTIX (0.64) vs QQQ (1.00)
- Maximum Drawdown: PGTIX (-60.65%) vs QQQ (-32.58%)
- Beta: 1.12, Alpha (annualized): -5.72%, Correlation: 0.88

This analysis shows that PGTIX has underperformed QQQ with higher volatility over the analysis period.

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2. Performance Analysis

Performance Overview

Metric	PGTIX	QQQ	Difference/Ratio
Total Return	230.70%	382.45%	-151.75%
Annualized Return	15.43%	20.79%	-5.35%
Monthly Mean Return	1.44%	1.73%	-0.29%
Monthly Median Return	1.41%	2.12%	-0.71%
Positive Months	56 (56.0%)	67 (67.0%)	
Outperformance Frequency	50 of 100	50 of 100	50.0%

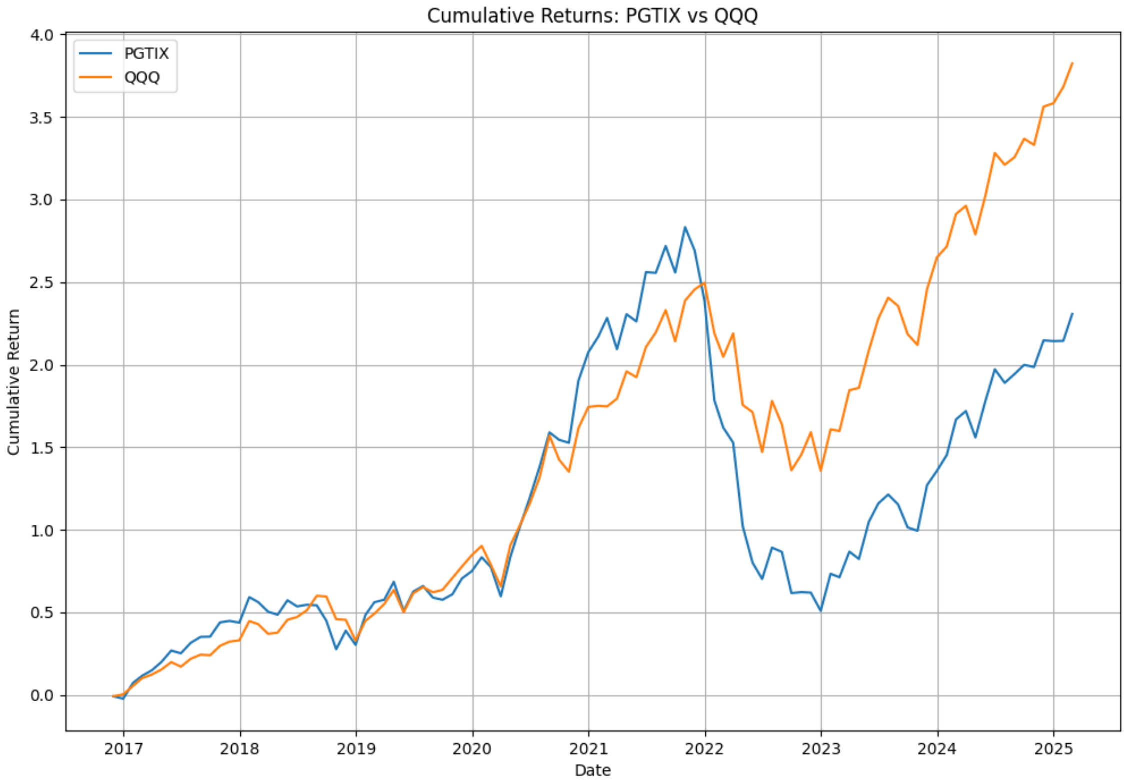

Figure 1: Cumulative Returns (11/2016 - 02/2025)

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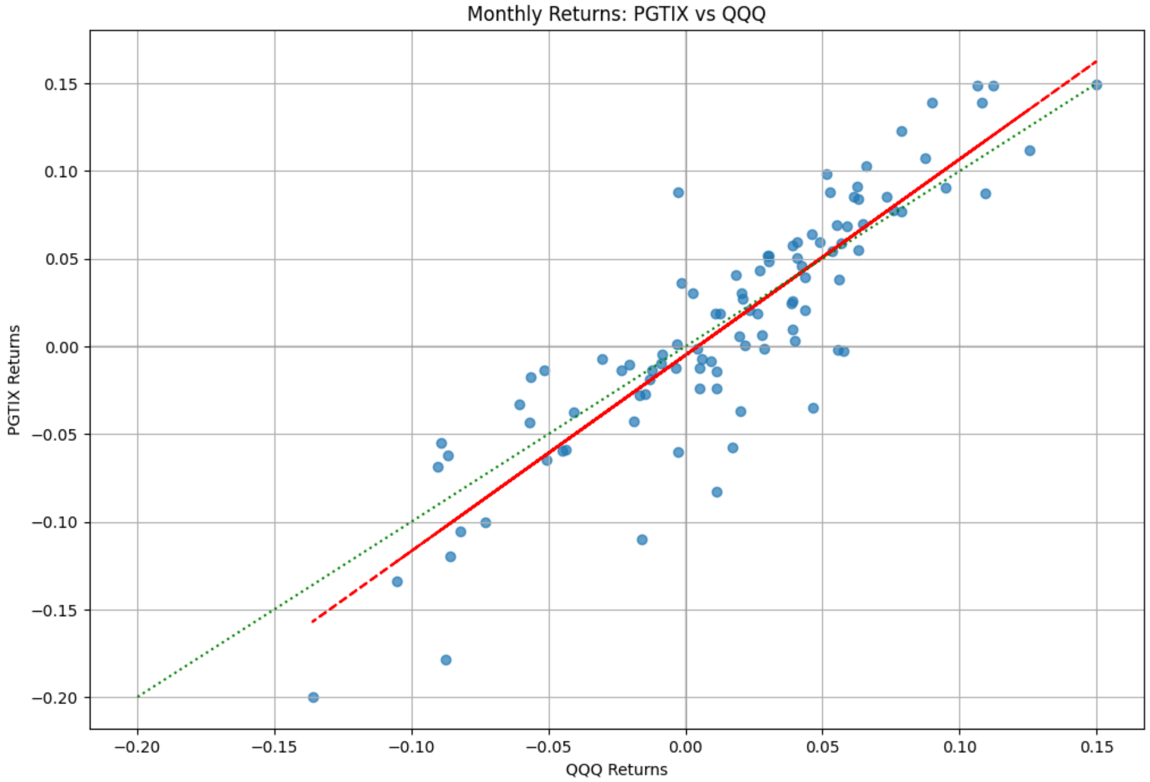

Figure 2: Monthly Returns Comparison with Regression Line (beta=1.12)

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3. Risk Analysis

Risk Metrics

Metric	PGTIX	QQQ	Difference/Ratio
Annualized Volatility	23.84%	18.87%	1.26x
Sharpe Ratio	0.64	1.00	-0.36
Maximum Drawdown	-60.65%	-32.58%	-28.07%
Correlation	0.88	1.00	
Beta	1.12	1.00	
Alpha (Annualized)	-5.72%	0.00%	
Information Ratio	-0.31	N/A	
Tracking Error	11.35%	N/A	

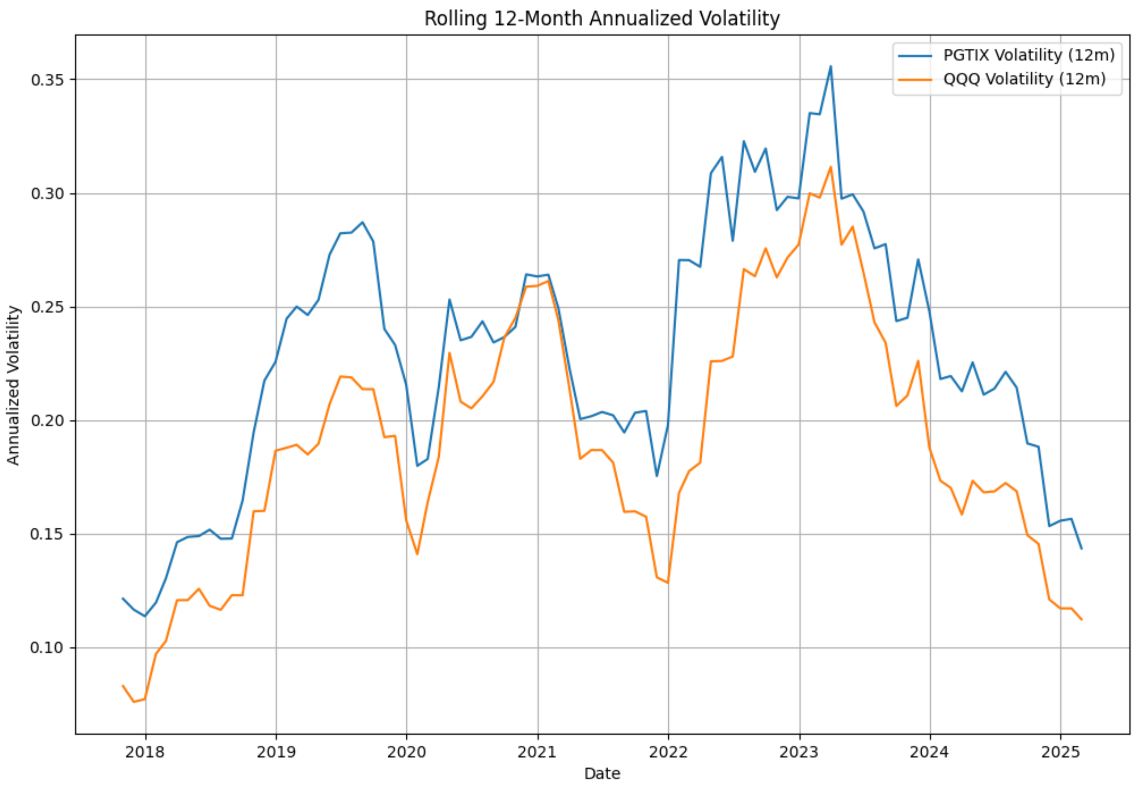

Figure 3: Rolling 12-Month Annualized Volatility

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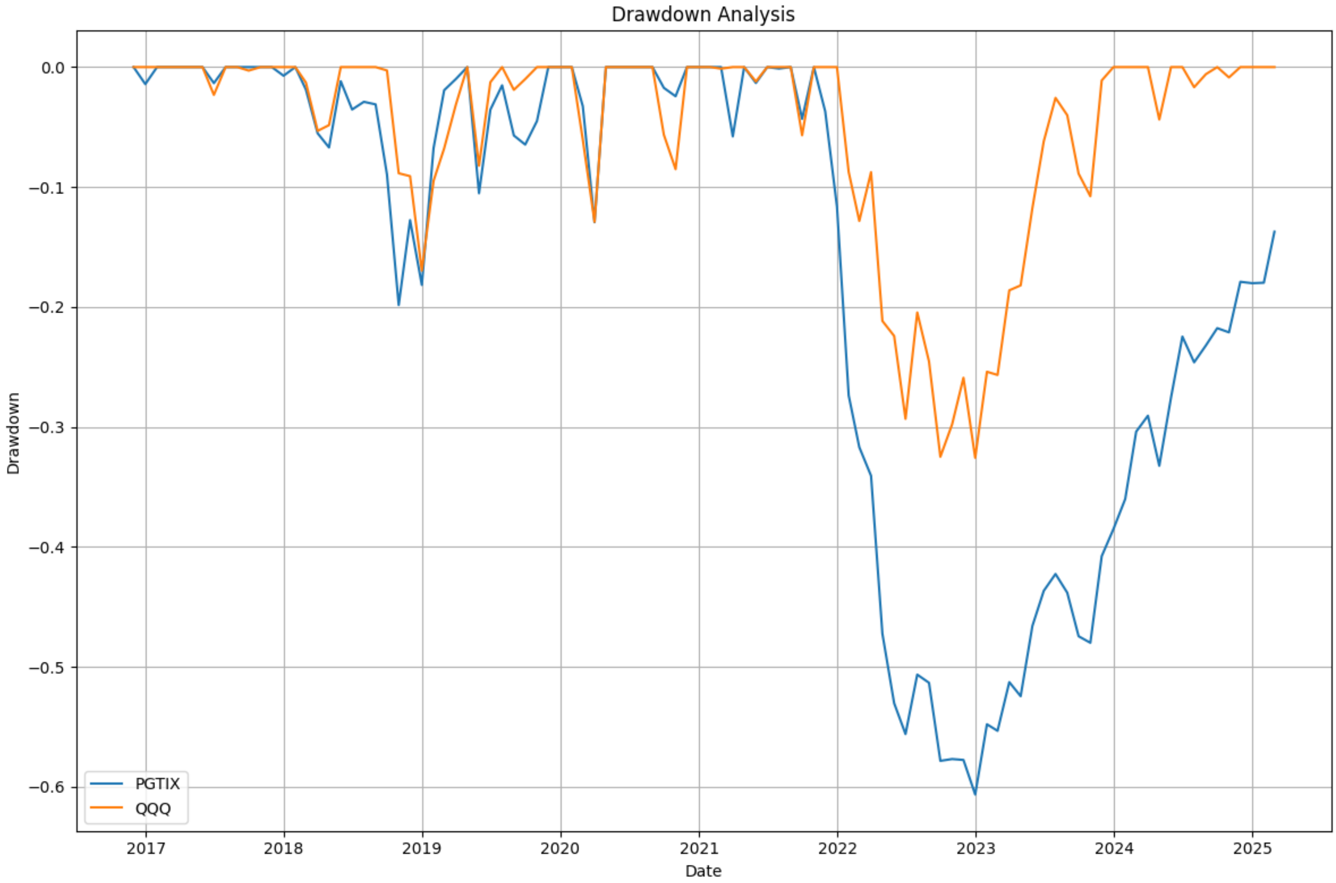

Figure 4: Drawdown Analysis

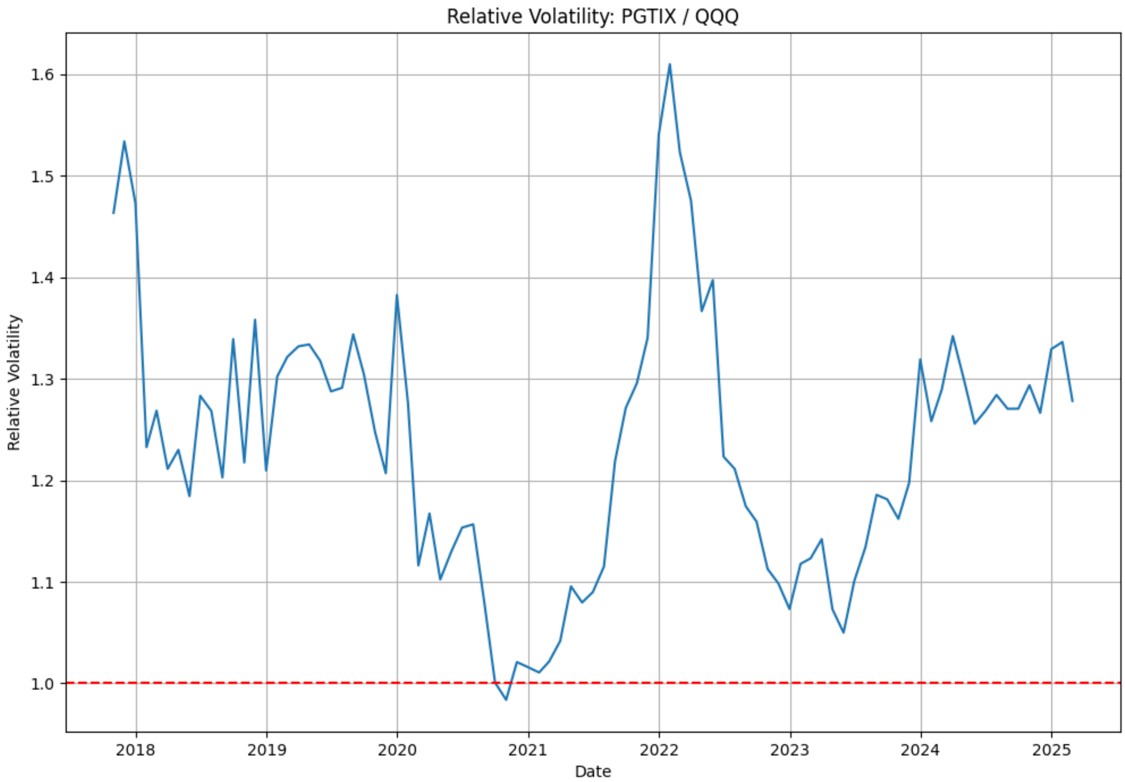

Figure 5: Relative Volatility (PGTIX/QQQ)

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4. Risk-Return Profile

Risk-Return Quadrant Analysis

The Risk-Return Quadrant Analysis plots both funds across different time periods, categorizing them into four quadrants:

- Low Risk, High Return (Optimal): The ideal position, offering high returns with low risk
- High Risk, High Return: Offers high returns but with increased volatility
- Low Risk, Low Return: Provides stability but with modest returns
- High Risk, Low Return (Worst): The least favorable position, exposing investors to high risk without commensurate returns

Currently, PGTIX is positioned in the 'High Risk, High Return' quadrant, while QQQ is in the 'Low Risk, High Return (Optimal)' quadrant.

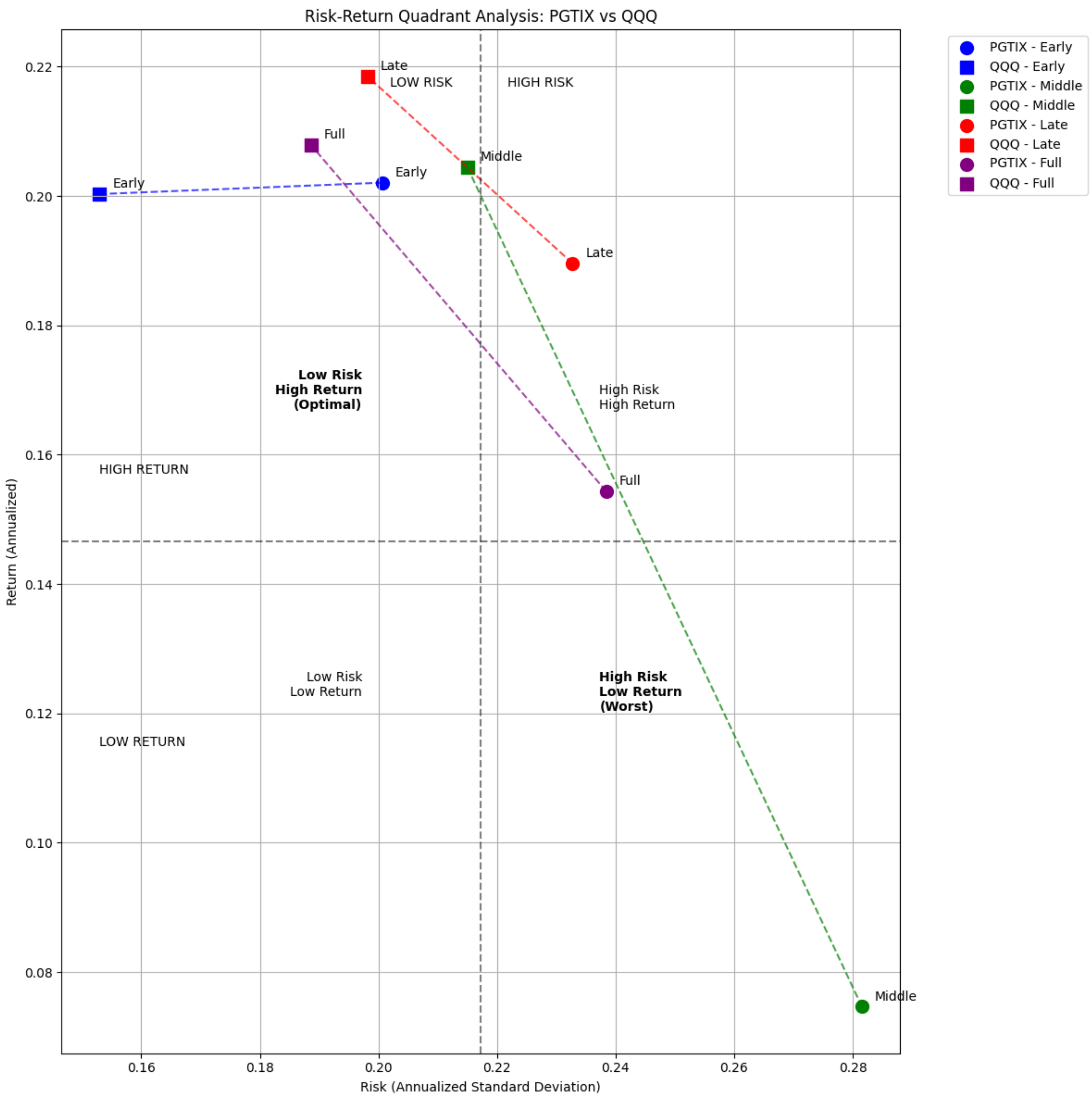

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Figure 6: Risk-Return Quadrant Analysis by Time Period

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5. Time Period Analysis

Performance by Time Period

Period	Date Range	PGTIX Return	QQQ Return	Excess Return	Rel. Vol.
Early	11/2016 - 07/2019	65.89%	65.22%	0.67%	1.31x
Middle	08/2019 - 04/2022	21.89%	66.79%	-44.89%	1.31x
Late	05/2022 - 02/2025	63.54%	75.08%	-11.53%	1.17x
Full	11/2016 - 02/2025	230.70%	382.45%	-151.75%	1.26x

Period	Beta	Correlation	PGTIX Sharpe	QQQ Sharpe	Alpha (Annualized)
Early	1.13	0.86	0.91	1.18	-1.38%
Middle	1.16	0.89	0.19	0.86	-12.85%
Late	1.06	0.90	0.73	1.00	-2.95%
Full	1.12	0.88	0.56	1.00	-5.72%

Key Time Period Observations

- PGTIX outperformed in the early period (11/2016 - 07/2019)
- PGTIX underperformed most significantly in the middle period (08/2019 - 04/2022)
- The correlation between the funds has increased from 0.86 to 0.90
- Beta has decreased from 1.13 to 1.06
- Relative volatility has decreased from 1.31x to 1.17x
- Alpha has deteriorated from -1.38% to -2.95%

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6. Market Environment Analysis

Performance in Different Market Environments

Market Environment	% of Time	PGTIX Return	QQQ Return	Excess Return	Rel. Vol.	Beta
Up Market	30.0%	98.86%	90.61%	8.26%	1.71x	1.21
Neutral Market	40.0%	18.36%	26.95%	-8.59%	2.46x	1.06
Down Market	30.0%	-65.73%	-57.22%	-8.51%	1.47x	1.15

- PGTIX outperforms in up markets with 8.26% outperformance
- PGTIX underperforms in down markets with 8.51% underperformance
- PGTIX's beta is highest in up markets (1.21)
- Relative volatility is consistently higher across market environments

7. Investment Implications

Based on the comprehensive analysis of PGTIX and QQQ, the following investment implications emerge:

Risk-Return Profile:
- PGTIX offers lower returns with higher risk compared to QQQ
- PGTIX generates negative alpha (-5.72% annualized)
- The risk-adjusted performance (0.64 vs 1.00) is inferior for PGTIX

Time Consistency:
- Performance has been inconsistent across different time periods
- The early period showed the best relative performance
- The trend in relative performance is improving

Market Environment Suitability:
- PGTIX is better suited for rising markets
- PGTIX lacks downside protection in declining markets
- The fund is most appropriate for investors seeking higher growth with increased volatility

Recommendation:
- For investors prioritizing absolute performance, QQQ appears to be the more suitable option
- PGTIX should be considered for new investments at this time
- Existing holders of QQQ may not want to consider switching to PGTIX

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Disclaimer

Report generated on March 30, 2025