



Quantitative Factor Suite Overview

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Introduction

The Gradient Factor Suite represents cutting-edge research that has been transformed into quantitative signals designed to help managers generate excess returns and reduce portfolio risk. Our models are robust on a standalone basis while also having low correlation with other commonly used factors, including other factors in the suite.

Our models are developed rigorously using separate in-sample and out-of-sample periods. Extensive backtests reveal that the resultant factors generate highly significant excess returns on average. And the results are generalizable to firms of different market capitalizations, sectors/industries, risk levels and price-to-fundamental relationships.

Each model runs weekly for each of the largest 5,000 U.S.-based companies (by market capitalization) plus select ADRs. Scores are produced ranging from 1 (equivalent to strong sell) to 8 (equivalent to strong buy). A more granular score of 1 to 100 is also available for each model.

Comprehensive Model (Version 1.1)

The *Comprehensive Model* combines the most compelling signals in our Factor Suite and dynamically adjusts their weighting every month based on the signals that are most in favor. Using the Earnings Quality, Equity Incentive, Fundamental and Technical signals, the model produces a truly comprehensive outlook for a stock.

Based on an analysis of recent returns and monotonicity for each input model, the *Comprehensive Model* applies a greater weight to the higher-ranked models. This weighting is evaluated at the sector level on a monthly basis to ensure that the optimal weighting is continually maintained. As is generally the case with the models underlying the signal, the *Comprehensive Model* is optimal in the six-to-12-month timeframe.

The Comprehensive Model is scored from 1 to 5, with a granular score of 1 to 100 also available.

Earnings Quality Model (version 1)

Academic research demonstrates that the market does not fully impound information about earnings quality at the time that detailed financial statement data are released. That is, a statistically based approach to analyzing earnings quality can yield profitable investment and trading strategies. The original earnings quality factor, the *Earnings Quality Model v1*, is based on an empirical analysis of earnings quality factors identified by academic and proprietary research. The model objectively measures earnings quality via accrual- and cash-flow-based variables across a broad spectrum of companies and provides a long-term and short-term score for time horizons greater than three months or less than three months, respectively. Further, EQMv1 uses a sector-based approach because of the important and inherent differences in financial statements across different sectors.

Earnings Quality Model (version 2)

A follow-up to our original earnings quality model, the *Earnings Quality Model v2* uses the same rigorous modeling approach as the previous version of the model, but it is a different model based upon a combination of existing and newer accrual- and cash-flow-based variables that have been found to be predictive of future stock returns. The EQMv2 signal is optimal for a six-to-12-month holding period.

Leveraging over three years of ongoing research into earnings quality since the launch of EQMv1, the newer model incorporates different variables with a focus on more specific scaling and variable definition. For example, Cash Conversion Cycle, which essentially replaced a more generic Receivables variable, is a strong

indicator of a company's ability to generate cash flow and is often used in a more qualitative earnings quality analysis. The resultant model is substantially different from EQMv1 with a moderate correlation of 0.39, reflecting the new explanatory variables. Similar to the original model, a sector-based approach is used.

Equity Incentive Model (Version 1.1)

The *Equity Incentive Model* is a unique factor developed from the academic and proprietary research of our founders and team of financial engineers that provides a robust forecast of a firm's future stock-price performance for at least a three-month holding period and is optimal during the following 12-to-24 month timeframe. The model leverages our proprietary database of executive-compensation-related disclosures (such as the type and nature of option grants, bonus plans, etc.) and our latest academically proven models of executive option-exercise behavior.

The multidimensional model also leverages our evidence showing that the choice of option valuation assumptions for purposes of FAS123 and FAS123R is related to abnormal stock returns. An analysis of the type of compensation instruments used (e.g., whether the firm uses accelerated or contingent vesting provisions for LTIPs or options plans, and the nature of the provisions) rounds out the model's distinctive inputs. Empirical evidence from Bettis, Coles and Kalpathy (2004) shows that there are important cross-sectional differences in returns related to these provisions.

As a result of the proprietary data collection involved for the Equity Incentive Model, the universe is currently limited to the largest 2,000 U.S.-based companies and select ADRs.

Fundamental X-Ray Model

The *Fundamental X-Ray Model* is a quantitative factor designed to capture the information contained in key fundamental and valuation metrics. The model incorporates the most important dimensions of fundamental information into an Overall score, and also provides a more specific Financial Statement score and Valuation score based on the nature of the underlying fundamental variables. The Financial Statement model focuses primarily on capturing earnings momentum and its relationship to future excess returns. The Valuation model incorporates both relative and absolute valuation metrics in order to rank firms according to their future return prospects. The Overall score is a combination of all individual components to create one optimized score, which performs most consistently across time. All of the FXM signals are optimal for a six-to-12-month holding period.

Technical Model

The *Technical Model* combines many uniquely scaled price and volume technical metrics. Specifically, the model includes a variety of both mean reversion and momentum/strength variables combined with trading-volume analysis. A variety of metrics from simple (relative strength, moving average) to complex (non-linear price and volume relationships) are examined. Based on an evaluation of these metrics in an absolute sense as well as relative to carefully selected peer groups, the model derives a score where the excess returns to the signal are robust for periods from one week to six months.

Both Daily and Weekly versions of the Technical Model are available.

The following pages show period-specific returns for model scores based on an Event Study methodology. Also included is a summary of the relationship between various models.

Performance Summary

Event-study average returns are calculated by taking each portfolio week and treating it as a separate event portfolio. For each of these 696 event portfolios we calculate the average returns over each interval from three months to 24 months. Finally, for each interval we average the return measures for the 696 event-study portfolios.

The results for each score reflect the on-average results for an investor who constructs a portfolio of all companies for each score during a given week.

Raw returns are computed using compounded, dividend-inclusive returns. A Sector-Size index is used as a baseline to measure excess return.

Comprehensive Model Version 1.1

Score	Raw Returns (%)				Excess Returns (%)			
	1 Month	3 Month	6 Month	12 Month	1 Month	3 Month	6 Month	12 Month
Full Sample (01/01/1996–07/31/2009)								
5	2.30%	5.99%	10.98%	21.55%	0.87%	2.08%	4.16%	7.07%
4	1.67%	4.40%	7.95%	15.86%	0.36%	0.88%	1.80%	2.98%
3	1.32%	3.48%	5.87%	11.86%	0.09%	0.18%	0.28%	0.19%
2	0.88%	2.58%	3.95%	8.65%	-0.24%	-0.50%	-1.19%	-2.10%
1	0.15%	0.78%	0.66%	3.64%	-0.85%	-2.08%	-4.02%	-6.43%
In-Sample (01/01/1996–06/30/1998, 07/01/1999–06/30/2000 and 07/01/2002–06/30/2003)								
5	3.39%	8.77%	17.38%	36.55%	1.12%	2.81%	5.70%	10.24%
4	2.52%	6.53%	13.05%	27.81%	0.45%	1.00%	2.15%	3.45%
3	2.10%	5.64%	10.65%	23.22%	0.09%	0.26%	0.35%	0.14%
2	1.55%	4.47%	8.10%	19.69%	-0.34%	-0.72%	-1.78%	-2.76%
1	1.00%	2.88%	5.28%	14.96%	-0.85%	-2.16%	-4.20%	-7.14%
Out-of-Sample (07/01/1998–06/30/1999, 07/01/2000–06/30/2002 and 07/01/2003–07/31/2009)								
5	1.75%	4.58%	7.62%	13.20%	0.75%	1.70%	3.36%	5.31%
4	1.24%	3.32%	5.28%	9.20%	0.31%	0.81%	1.62%	2.72%
3	0.93%	2.37%	3.36%	5.54%	0.09%	0.14%	0.24%	0.22%
2	0.55%	1.61%	1.77%	2.50%	-0.18%	-0.39%	-0.88%	-1.73%
1	-0.27%	-0.29%	-1.76%	-2.66%	-0.85%	-2.04%	-3.93%	-6.04%
Live Period (10/1/2006–07/31/2009)								
5	0.07%	-1.12%	-7.02%	-21.31%	0.08%	-0.11%	-0.48%	-1.06%
4	-0.02%	-1.21%	-6.42%	-20.11%	0.04%	0.08%	0.33%	0.52%
3	-0.06%	-1.24%	-6.60%	-20.30%	0.06%	0.14%	0.41%	0.62%
2	-0.24%	-1.49%	-7.28%	-22.35%	0.04%	0.14%	0.12%	-0.33%
1	-0.96%	-3.15%	-10.31%	-26.40%	-0.44%	-1.01%	-2.22%	-3.20%

Earnings Quality Model (version 1)

Score	Raw Returns (%)				Excess Returns (%)			
	1 Month	3 Month	6 Month	12 Month	1 Month	3 Month	6 Month	12 Month
Full Sample (01/01/1996–07/31/2009)								
8	1.80%	4.95%	8.63%	17.73%	0.48%	1.31%	2.44%	4.73%
7	1.47%	4.00%	7.00%	14.88%	0.20%	0.53%	1.07%	2.19%
6	1.46%	3.93%	7.02%	14.07%	0.20%	0.54%	1.18%	1.74%
5	1.26%	3.37%	5.73%	11.94%	0.06%	0.16%	0.27%	0.36%
4	1.08%	3.09%	5.28%	11.06%	-0.09%	-0.12%	-0.17%	-0.32%
3	1.10%	3.00%	4.86%	10.28%	-0.09%	-0.27%	-0.70%	-1.27%
2	0.91%	2.38%	3.75%	8.81%	-0.25%	-0.77%	-1.61%	-2.42%
1	0.59%	1.66%	2.16%	4.47%	-0.48%	-1.29%	-2.77%	-5.76%
In-Sample (01/01/1996–06/30/1998 and 07/01/1999–06/30/2000)								
8	2.59%	6.90%	12.62%	24.72%	0.59%	1.96%	4.22%	8.33%
7	2.10%	5.34%	9.67%	20.29%	0.22%	0.86%	2.02%	4.89%
6	2.24%	5.71%	10.33%	19.62%	0.35%	1.19%	2.67%	4.37%
5	1.97%	4.71%	8.19%	16.37%	0.16%	0.45%	1.19%	1.99%
4	1.57%	3.75%	5.88%	12.22%	-0.12%	-0.27%	-0.49%	-0.61%
3	1.51%	3.19%	4.18%	9.51%	-0.13%	-0.63%	-1.87%	-3.35%
2	1.24%	2.73%	3.19%	8.34%	-0.38%	-1.03%	-2.80%	-4.49%
1	0.95%	1.62%	0.44%	0.37%	-0.70%	-2.27%	-5.62%	-11.86%
Out-of-Sample (07/01/1998–06/30/1999 and 07/01/2000–07/31/2009)								
8	1.53%	4.26%	7.16%	15.03%	0.43%	1.08%	1.79%	3.34%
7	1.25%	3.52%	6.03%	12.79%	0.19%	0.41%	0.72%	1.14%
6	1.19%	3.30%	5.81%	11.93%	0.15%	0.31%	0.63%	0.72%
5	1.00%	2.89%	4.83%	10.23%	0.03%	0.06%	-0.07%	-0.26%
4	0.90%	2.86%	5.06%	10.61%	-0.08%	-0.06%	-0.05%	-0.21%
3	0.95%	2.93%	5.10%	10.58%	-0.08%	-0.14%	-0.27%	-0.47%
2	0.80%	2.26%	3.95%	8.99%	-0.20%	-0.68%	-1.18%	-1.63%
1	0.47%	1.67%	2.79%	6.05%	-0.40%	-0.93%	-1.72%	-3.41%
Live Production (01/01/2002–07/31/2009)								
8	1.32%	3.45%	5.21%	11.98%	0.32%	0.75%	0.99%	1.34%
7	1.04%	2.61%	3.97%	10.30%	0.06%	-0.06%	-0.24%	-0.47%
6	1.05%	2.67%	4.33%	10.78%	0.07%	0.02%	0.07%	-0.06%
5	0.89%	2.38%	3.69%	9.76%	-0.04%	-0.13%	-0.39%	-0.61%
4	0.87%	2.59%	4.15%	10.15%	-0.10%	-0.09%	-0.17%	-0.63%
3	1.04%	2.95%	4.93%	12.04%	-0.03%	-0.06%	-0.06%	0.12%
2	0.96%	2.51%	4.12%	11.05%	-0.09%	-0.39%	-0.64%	-0.34%
1	0.70%	2.35%	3.97%	8.97%	-0.22%	-0.27%	-0.34%	-1.46%

Earnings Quality Model (version 2)

Score	Raw Returns (%)				Excess Returns (%)			
	1 Month	3 Month	6 Month	12 Month	1 Month	3 Month	6 Month	12 Month
Full Sample (01/01/1996–07/31/2009)								
8	1.95%	5.15%	8.85%	17.18%	0.63%	1.57%	2.69%	4.36%
7	1.66%	4.53%	8.26%	16.11%	0.42%	1.16%	2.26%	3.62%
6	1.47%	3.96%	6.98%	14.09%	0.20%	0.55%	1.17%	1.86%
5	1.34%	3.76%	6.53%	13.53%	0.09%	0.36%	0.77%	1.40%
4	1.20%	3.26%	5.50%	12.24%	-0.01%	-0.03%	-0.17%	0.25%
3	0.94%	2.76%	4.74%	10.05%	-0.21%	-0.39%	-0.68%	-1.30%
2	0.73%	1.85%	3.01%	7.49%	-0.37%	-1.14%	-2.07%	-3.48%
1	0.37%	0.90%	0.38%	3.21%	-0.67%	-1.97%	-4.37%	-7.00%
In-Sample (01/01/1996–06/30/1998, 07/01/1999–06/30/2000 and 07/01/2002–06/30/2003)								
8	3.00%	8.00%	15.36%	31.74%	0.74%	1.97%	3.52%	5.72%
7	2.46%	6.99%	14.30%	30.87%	0.45%	1.46%	3.22%	5.92%
6	2.30%	6.11%	12.37%	27.41%	0.24%	0.64%	1.60%	2.65%
5	2.15%	6.01%	11.81%	26.06%	0.10%	0.40%	1.02%	2.27%
4	1.93%	5.23%	10.11%	23.30%	-0.01%	-0.02%	-0.12%	0.05%
3	1.71%	4.88%	9.21%	20.35%	-0.19%	-0.28%	-0.68%	-1.97%
2	1.43%	3.29%	6.16%	16.64%	-0.38%	-1.50%	-3.02%	-4.71%
1	1.17%	2.82%	4.05%	12.37%	-0.65%	-2.02%	-4.93%	-8.20%
Out-of-Sample (07/01/1998–06/30/1999, 07/01/2000–06/30/2002 and 07/01/2003–07/31/2009)								
8	1.43%	3.69%	5.44%	9.06%	0.57%	1.36%	2.26%	3.59%
7	1.26%	3.28%	5.09%	7.88%	0.40%	1.00%	1.76%	2.34%
6	1.05%	2.87%	4.15%	6.67%	0.17%	0.50%	0.94%	1.42%
5	0.94%	2.62%	3.77%	6.56%	0.08%	0.34%	0.64%	0.92%
4	0.83%	2.26%	3.08%	6.08%	-0.01%	-0.04%	-0.20%	0.36%
3	0.55%	1.69%	2.39%	4.31%	-0.22%	-0.45%	-0.67%	-0.93%
2	0.38%	1.12%	1.36%	2.40%	-0.36%	-0.95%	-1.57%	-2.80%
1	-0.04%	-0.08%	-1.54%	-1.88%	-0.68%	-1.95%	-4.08%	-6.34%
Live Production (08/01/2005–07/31/2009)								
8	0.58%	0.74%	-1.90%	-7.88%	0.31%	0.39%	0.34%	-0.19%
7	0.51%	0.95%	-0.91%	-6.27%	0.22%	0.57%	0.90%	0.51%
6	0.42%	0.95%	-0.97%	-5.94%	0.10%	0.39%	0.70%	1.11%
5	0.12%	0.09%	-2.40%	-7.27%	-0.14%	-0.22%	-0.42%	-0.28%
4	0.30%	0.41%	-1.92%	-6.59%	0.01%	-0.03%	-0.15%	-0.01%
3	0.06%	0.01%	-2.04%	-6.87%	-0.18%	-0.37%	-0.35%	-0.22%
2	0.08%	-0.26%	-2.71%	-7.46%	-0.13%	-0.48%	-0.74%	-0.75%
1	-0.09%	-0.37%	-3.28%	-8.87%	-0.35%	-0.84%	-1.93%	-3.11%

Equity Incentive Model Version 1.1

Score	Raw Returns (%)				Excess Returns (%)			
	3 Month	6 Month	12 Month	24 Month	3 Month	6 Month	12 Month	24 Month
Full Sample (01/01/1996–07/31/2009)								
8	2.62%	4.78%	13.00%	30.46%	-0.32%	-0.67%	1.53%	4.32%
7	3.35%	6.57%	13.33%	28.55%	0.54%	1.75%	3.29%	5.59%
6	3.25%	5.67%	11.98%	28.94%	0.13%	0.38%	1.38%	3.76%
5	2.78%	5.10%	10.64%	23.07%	0.10%	0.40%	0.62%	-0.70%
4	2.96%	4.87%	9.79%	22.92%	0.08%	0.05%	-0.18%	-0.91%
3	2.91%	5.25%	10.57%	23.34%	0.06%	0.35%	0.63%	0.44%
2	2.71%	4.56%	9.44%	18.98%	0.08%	0.21%	0.52%	-0.50%
1	2.72%	3.48%	6.84%	18.55%	-0.20%	-1.17%	-2.88%	-2.94%
In-Sample (01/01/1996–06/30/1998, 07/01/1999–06/30/2000 and 07/01/2002–06/30/2004)								
8	3.83%	10.12%	23.96%	43.31%	-1.04%	-0.22%	2.08%	3.59%
7	5.58%	12.09%	25.43%	43.66%	0.95%	2.51%	4.61%	7.46%
6	5.68%	11.24%	24.98%	47.10%	0.17%	0.80%	2.89%	7.22%
5	5.12%	10.60%	23.55%	39.68%	0.58%	1.29%	2.54%	2.12%
4	4.89%	9.60%	20.52%	37.08%	0.12%	0.33%	0.20%	0.44%
3	4.19%	8.97%	20.08%	36.41%	-0.45%	-0.29%	-0.23%	0.46%
2	6.05%	10.69%	21.15%	32.75%	0.54%	0.42%	0.68%	-0.30%
1	7.46%	10.76%	18.16%	35.20%	1.34%	0.01%	-2.52%	-0.55%
Out-of-Sample (07/01/1998–06/30/1999, 07/01/2000–06/30/2002 and 07/01/2004–07/31/2009)								
8	1.79%	1.03%	4.75%	19.15%	0.18%	-0.99%	1.12%	4.97%
7	1.83%	2.69%	4.23%	15.30%	0.26%	1.21%	2.29%	3.95%
6	1.55%	1.63%	1.90%	12.51%	0.10%	0.08%	0.22%	0.62%
5	1.13%	1.12%	0.63%	8.02%	-0.24%	-0.25%	-0.87%	-3.25%
4	1.60%	1.44%	1.47%	10.11%	0.05%	-0.16%	-0.47%	-2.14%
3	2.01%	2.56%	3.19%	11.51%	0.41%	0.82%	1.30%	0.43%
2	0.37%	0.12%	0.36%	6.51%	-0.25%	0.06%	0.39%	-0.68%
1	-0.62%	-1.79%	-1.95%	3.47%	-1.29%	-2.02%	-3.17%	-5.10%
Live Production (05/01/2006–07/31/2009)								
8	0.62%	-4.64%	-12.00%	-24.39%	0.81%	-1.73%	-1.33%	-3.87%
7	1.05%	-1.49%	-10.20%	-16.18%	0.50%	0.74%	1.63%	8.10%
6	-0.01%	-2.97%	-13.36%	-25.24%	-0.12%	-0.66%	-2.19%	-2.57%
5	-0.25%	-2.69%	-11.55%	-24.01%	-0.18%	-0.10%	-0.44%	-1.54%
4	-0.31%	-3.38%	-11.43%	-21.70%	-0.21%	-0.63%	-0.94%	-1.06%
3	-0.08%	-2.10%	-8.98%	-19.78%	-0.17%	0.21%	1.02%	0.53%
2	-0.70%	-2.99%	-8.70%	-19.65%	-0.83%	-0.69%	1.94%	1.74%
1	-0.35%	-2.91%	-11.35%	-27.31%	-0.40%	-0.72%	-1.15%	-5.08%

Fundamental X-Ray Model

Overall Score

Score	Raw Returns (%)				Excess Returns (%)			
	1 Month	3 Month	6 Month	12 Month	1 Month	3 Month	6 Month	12 Month
Full Sample (01/01/1996–07/31/2009)								
8	1.95%	5.20%	10.01%	21.09%	0.55%	1.32%	3.21%	7.01%
7	1.80%	4.75%	8.32%	16.80%	0.45%	1.07%	1.95%	3.42%
6	1.56%	4.12%	7.27%	14.84%	0.29%	0.67%	1.24%	1.96%
5	1.33%	3.47%	6.03%	12.56%	0.11%	0.22%	0.39%	0.65%
4	1.19%	3.24%	5.33%	10.66%	-0.01%	-0.03%	-0.13%	-0.70%
3	1.02%	2.78%	4.30%	8.94%	-0.15%	-0.40%	-0.93%	-1.88%
2	0.93%	2.77%	4.17%	9.00%	-0.20%	-0.37%	-1.08%	-1.86%
1	0.52%	1.55%	2.05%	5.10%	-0.53%	-1.26%	-2.66%	-4.88%
In-Sample (01/01/1996–06/30/1998 and 07/01/1999–06/30/2000)								
8	2.76%	6.88%	13.63%	29.73%	0.91%	2.43%	6.03%	13.72%
7	2.39%	6.08%	10.39%	21.68%	0.53%	1.67%	3.20%	6.73%
6	1.82%	4.51%	8.18%	18.25%	0.13%	0.54%	1.49%	3.73%
5	1.82%	4.44%	7.50%	16.29%	0.09%	0.34%	0.70%	1.85%
4	1.62%	3.89%	6.38%	12.40%	-0.14%	-0.35%	-0.48%	-1.21%
3	1.85%	4.07%	5.67%	9.81%	-0.08%	-0.41%	-1.34%	-3.61%
2	1.59%	3.54%	4.39%	7.56%	-0.22%	-0.74%	-2.42%	-5.42%
1	1.24%	2.72%	2.51%	3.17%	-0.50%	-1.34%	-3.98%	-9.75%
Out-of-Sample (07/01/1998–06/30/1999 and 07/01/2000–07/31/2009)								
8	1.66%	4.60%	8.68%	17.76%	0.42%	0.92%	2.18%	4.42%
7	1.60%	4.27%	7.56%	14.92%	0.43%	0.85%	1.50%	2.14%
6	1.48%	3.98%	6.94%	13.52%	0.35%	0.72%	1.16%	1.27%
5	1.15%	3.13%	5.49%	11.12%	0.12%	0.17%	0.28%	0.19%
4	1.04%	3.00%	4.94%	9.99%	0.04%	0.08%	0.00%	-0.51%
3	0.73%	2.32%	3.80%	8.61%	-0.17%	-0.39%	-0.78%	-1.22%
2	0.70%	2.49%	4.09%	9.56%	-0.19%	-0.24%	-0.59%	-0.49%
1	0.27%	1.14%	1.88%	5.85%	-0.54%	-1.23%	-2.17%	-3.00%
Live Production (01/01/2003–07/31/2009)								
8	1.37%	3.77%	6.74%	13.03%	-0.05%	-0.39%	0.04%	1.42%
7	1.48%	4.12%	6.84%	12.27%	0.13%	0.16%	0.36%	0.96%
6	1.45%	3.96%	6.47%	11.24%	0.19%	0.33%	0.62%	1.15%
5	1.21%	3.26%	5.33%	9.21%	0.01%	-0.16%	-0.09%	0.02%
4	1.16%	3.41%	5.09%	8.13%	-0.03%	-0.05%	-0.25%	-0.75%
3	1.08%	3.11%	4.67%	7.48%	-0.06%	-0.28%	-0.59%	-1.19%
2	1.02%	3.36%	5.09%	8.42%	-0.05%	0.14%	-0.04%	-0.27%
1	0.79%	2.57%	3.64%	5.46%	-0.24%	-0.48%	-1.15%	-2.50%

Valuation Score

Score	Raw Returns (%)				Excess Returns (%)			
	1 Month	3 Month	6 Month	12 Month	1 Month	3 Month	6 Month	12 Month
Full Sample (01/01/1996–07/31/2009)								
8	1.85%	4.77%	8.57%	17.38%	0.50%	1.06%	1.90%	3.24%
7	1.49%	3.88%	6.90%	14.96%	0.19%	0.35%	0.58%	1.41%
6	1.33%	3.53%	6.31%	13.10%	0.08%	0.12%	0.35%	0.58%
5	1.24%	3.38%	5.93%	12.14%	0.04%	0.09%	0.32%	0.56%
4	1.17%	3.04%	5.04%	9.89%	0.00%	-0.07%	-0.14%	-0.74%
3	1.39%	4.10%	6.94%	14.30%	0.14%	0.56%	1.01%	2.06%
2	1.17%	3.32%	4.80%	9.68%	-0.01%	0.09%	-0.43%	-1.14%
1	0.49%	1.52%	2.04%	5.65%	-0.63%	-1.48%	-2.88%	-4.89%
Live Production (01/01/2003–07/31/2009)								
8	1.71%	4.54%	7.30%	12.64%	0.36%	0.71%	0.98%	1.10%
7	1.26%	3.34%	5.50%	11.21%	0.01%	-0.19%	-0.31%	0.37%
6	1.10%	2.97%	4.84%	8.88%	-0.09%	-0.40%	-0.64%	-0.93%
5	1.13%	3.21%	5.14%	9.15%	-0.07%	-0.29%	-0.44%	-0.48%
4	1.01%	2.81%	4.47%	7.51%	-0.07%	-0.31%	-0.44%	-0.69%
3	1.45%	4.51%	7.45%	12.63%	0.21%	0.74%	1.41%	2.84%
2	1.08%	3.36%	4.86%	6.99%	-0.05%	-0.07%	-0.37%	-1.06%
1	0.72%	2.78%	3.61%	3.68%	-0.49%	-0.91%	-2.09%	-4.77%

Growth Score

Score	Raw Returns (%)				Excess Returns (%)			
	1 Month	3 Month	6 Month	12 Month	1 Month	3 Month	6 Month	12 Month
Full Sample (01/01/1996–07/31/2009)								
8	1.58%	4.49%	8.51%	17.21%	0.31%	1.01%	2.57%	5.08%
7	1.78%	4.66%	8.52%	18.72%	0.52%	1.12%	2.41%	5.80%
6	1.63%	4.18%	7.00%	14.93%	0.40%	0.92%	1.53%	3.40%
5	1.40%	3.81%	6.55%	13.20%	0.15%	0.35%	0.64%	0.56%
4	1.21%	3.36%	5.77%	11.33%	-0.01%	0.04%	0.11%	-0.19%
3	1.13%	3.03%	4.93%	10.09%	-0.07%	-0.22%	-0.58%	-1.56%
2	0.94%	2.53%	4.02%	9.04%	-0.20%	-0.49%	-1.05%	-1.55%
1	0.79%	2.52%	4.01%	10.12%	-0.37%	-0.72%	-1.44%	-1.64%
Live Production (01/01/2003–07/31/2009)								
8	0.80%	2.60%	4.01%	7.02%	-0.34%	-0.76%	-1.11%	-1.24%
7	1.41%	3.59%	6.06%	11.60%	0.20%	-0.02%	0.39%	2.03%
6	1.30%	3.73%	5.95%	9.31%	0.08%	0.18%	0.36%	0.35%
5	1.29%	3.77%	6.17%	10.88%	0.06%	0.08%	0.27%	0.56%
4	1.26%	3.60%	5.76%	8.94%	0.05%	0.17%	0.37%	0.22%
3	1.07%	3.16%	4.85%	7.92%	-0.08%	-0.24%	-0.47%	-1.04%
2	1.03%	3.01%	4.61%	8.03%	-0.12%	-0.27%	-0.62%	-0.74%
1	1.14%	3.47%	4.86%	7.93%	-0.09%	-0.16%	-0.93%	-1.95%

Technical Model

Score	Raw Returns (%)				Excess Returns (%)			
	1 Week	1 Month	3 Month	6 Month	1 Week	1 Month	3 Month	6 Month
Full Sample (01/01/1996–07/31/2009)								
8	0.67%	2.28%	5.64%	10.30%	0.30%	0.87%	2.02%	3.96%
7	0.59%	1.76%	4.09%	6.96%	0.24%	0.43%	0.63%	0.97%
6	0.42%	1.59%	4.14%	6.95%	0.09%	0.28%	0.61%	0.84%
5	0.33%	1.33%	3.59%	6.08%	0.01%	0.07%	0.21%	0.32%
4	0.26%	1.09%	3.07%	5.41%	-0.02%	-0.07%	-0.05%	0.08%
3	0.28%	1.21%	3.25%	5.36%	-0.01%	0.00%	-0.02%	-0.14%
2	0.12%	0.86%	2.77%	4.52%	-0.15%	-0.34%	-0.61%	-1.19%
1	-0.12%	0.16%	1.86%	3.40%	-0.38%	-1.00%	-1.58%	-2.39%
In-Sample (01/01/1996–06/30/1998 and 07/01/1999–06/30/2000)								
8	1.17%	4.32%	10.18%	18.17%	0.62%	2.17%	5.03%	8.95%
7	0.86%	2.61%	5.78%	9.26%	0.36%	0.67%	1.24%	1.67%
6	0.61%	2.22%	5.21%	8.62%	0.12%	0.30%	0.70%	0.94%
5	0.46%	1.95%	4.62%	7.73%	0.00%	0.10%	0.27%	0.56%
4	0.37%	1.56%	4.13%	7.15%	-0.02%	-0.12%	0.07%	0.50%
3	0.35%	1.54%	3.74%	5.86%	-0.05%	-0.15%	-0.35%	-0.58%
2	0.11%	1.05%	2.77%	3.89%	-0.26%	-0.61%	-1.28%	-2.36%
1	-0.24%	0.11%	1.38%	1.70%	-0.57%	-1.36%	-2.41%	-4.01%
Out-of-Sample (07/01/1998–06/30/1999, 07/01/2000–06/30/2002 and 07/01/2003–07/31/2009)								
8	0.50%	1.57%	4.02%	7.42%	0.18%	0.41%	0.95%	2.13%
7	0.49%	1.46%	3.49%	6.11%	0.20%	0.35%	0.41%	0.71%
6	0.36%	1.37%	3.76%	6.33%	0.08%	0.28%	0.58%	0.81%
5	0.28%	1.11%	3.22%	5.48%	0.02%	0.06%	0.19%	0.24%
4	0.23%	0.92%	2.69%	4.77%	-0.02%	-0.05%	-0.09%	-0.07%
3	0.25%	1.09%	3.07%	5.18%	0.00%	0.06%	0.09%	0.03%
2	0.12%	0.80%	2.77%	4.74%	-0.10%	-0.25%	-0.37%	-0.77%
1	-0.07%	0.18%	2.03%	4.03%	-0.31%	-0.87%	-1.28%	-1.80%
Live Production (04/01/2004–07/31/2009)								
8	0.22%	0.46%	0.87%	0.89%	0.01%	-0.24%	-0.62%	-0.69%
7	0.30%	0.73%	1.36%	1.47%	0.12%	0.13%	-0.11%	0.01%
6	0.25%	0.91%	2.07%	2.35%	0.08%	0.29%	0.50%	0.67%
5	0.18%	0.68%	1.69%	1.72%	0.01%	0.09%	0.20%	0.26%
4	0.14%	0.55%	1.37%	1.50%	-0.02%	-0.04%	-0.07%	0.10%
3	0.17%	0.70%	1.73%	1.72%	0.01%	0.09%	0.21%	0.20%
2	0.06%	0.38%	1.24%	0.59%	-0.06%	-0.16%	-0.26%	-0.83%
1	-0.16%	-0.34%	0.25%	-0.53%	-0.28%	-0.86%	-1.32%	-2.10%

Gradient Factor Correlations with Other Common Factors

01/01/1996 to 07/31/2009

Pearson Correlation Coefficients

Factors	<i>EQM</i>	<i>EQM</i>	<i>FXM</i>	<i>FXM</i>	<i>FXM</i>	<i>Technical</i>	<i>Equity Incentive 1.1</i>
	<i>Version 1</i>	<i>Version 2</i>	<i>Overall</i>	<i>Fin. Stmt.</i>	<i>Valuation</i>		
Insider Factor	0.030	-0.035	0.020	-0.051	0.136	-0.141	0.194
Analyst Revision Factor	0.008	0.021	0.028	-0.007	0.032	0.007	-0.034
Earnings Surprise Factor	0.042	0.076	0.073	0.356	-0.054	-0.050	-0.061
Predicted Earnings Surprise	-0.002	0.019	0.010	0.006	0.022	0.027	-0.034
Momentum Factor	0.031	0.149	0.195	0.180	0.183	0.068	-0.072
Valuation Factor	0.052	0.094	0.155	0.042	0.175	0.075	-0.108
Growth Factor	-0.083	-0.094	-0.181	0.024	-0.437	-0.026	-0.199
EQM Version 1	1	0.382	0.191	0.042	0.150	0.016	0.040
EQM Version 2	0.382	1	0.148	0.091	0.125	0.069	0.018
FXM Overall	0.191	0.148	1	0.536	0.679	0.009	-0.010
FXM Financial Statement	0.042	0.091	0.536	1	0.073	0.059	-0.050
FXM Valuation	0.150	0.125	0.679	0.073	1	-0.018	0.055
Technical	0.016	0.069	0.009	0.059	-0.018	1	-0.003
Equity Incentive v1.1	0.040	0.018	-0.010	-0.050	0.055	-0.003	1