



## Earnings Revisions Strategies

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## Why do earnings revisions strategies work?

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- It has been possible to this day to make money from tracking short-term changes in analysts' expectations of future earnings.
- Stock prices usually do react to earnings estimate revisions. However, the fact that they do is not sufficient to make money since it is possible that the market is efficient in discounting information in the revision and in the history of past revisions.
- Hence the market must not be efficient in discounting revisions. This leads to two theories for explaining why money can be made from revisions:

**Post-revision price drift** Stock prices initially *underreact* to information, whether favorable or unfavorable, about a company's market value contained in the estimate revision. This creates a tradeable price drift in the same direction as the revision.

**Positive serial correlation in estimate revisions** Analysts tend to change their forecasts incrementally over time due to peer group and economic contingencies within which they operate. They behave as a herd because the utility of a bold but wrong estimate is far lower than that of a bold but right estimate. For example, it is not in an analyst best interest to be the "first messenger" of bad news (a negative forecast) since he or she may antagonize corporate managers. Such biases cause estimate revisions to be positively serially correlated.

- It is only necessary for one of the above theories to be correct in order to make money.
- If the market were efficient in discounting information in the revision but successive revisions are positively correlated, it is still possible to profit from correctly predicting future revisions from past revisions.



## Post-revision price drift is a weak effect

- Earnings estimate revisions would not work if there is no post-revision price drift and no serial correlation in the revisions.
- An analysis of the information coefficient of revisions (correlation of percent change in mean estimate over past month to next month's stock return) shows that the post-revision price drift is a weak effect:

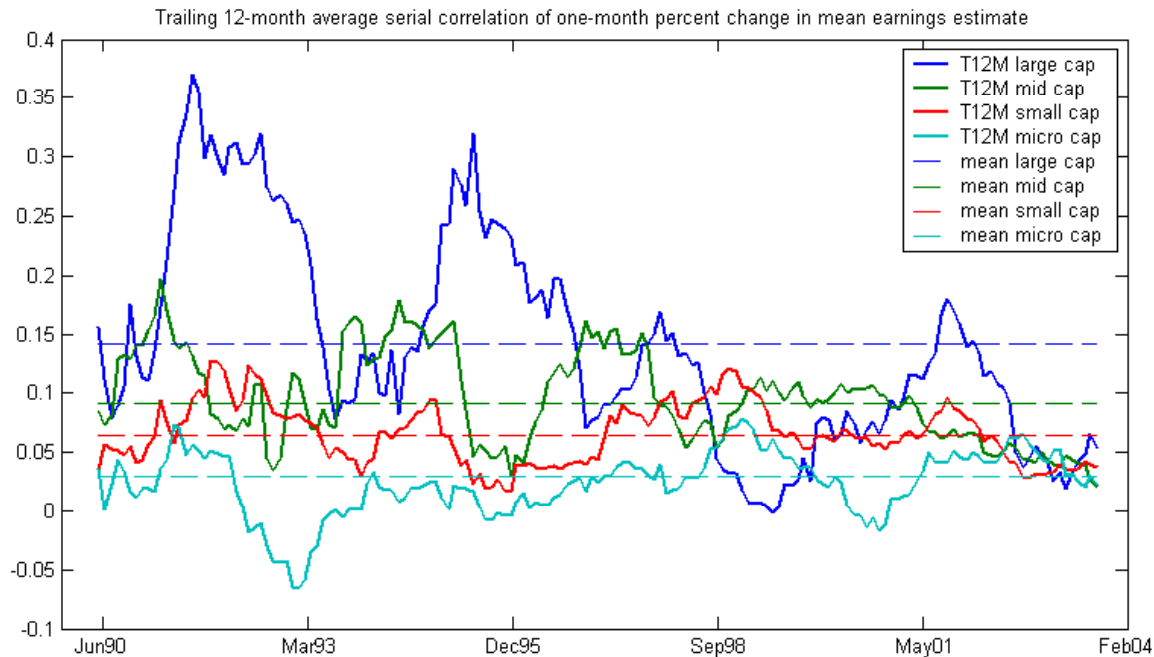
	IC of revisions, unconditional	IC of revisions conditional on subsequent revision being zero	IC of revisions conditional on subsequent revision being non-zero
<b>large cap stocks (top 10 percentiles)</b>			
mean	0.013	-0.018	0.018
t statistic	2.30	-1.16	2.60
<b>mid cap stocks (67 to 90 percentiles)</b>			
mean	0.006	0.006	0.006
t statistic	1.74	0.68	1.60
<b>small cap stocks (33 to 66 percentiles)</b>			
mean	0.013	0.009	0.018
t statistic	3.96	1.26	3.94
<b>micro cap stocks (1 to 32 percentiles)</b>			
mean	0.009	0.010	0.010
t statistic	2.47	1.60	2.21
1. The information coefficient is the Pearson's correlation coefficient of the percent change in the mean current fiscal year estimate over the past month to the stock return in the subsequent month. The mean IC shown above is the average IC over months and over all stocks in the given market cap bracket.			
2. IC's shaded in pink are significantly different from zero at the 95% confidence level			
3. Stock universe is the entire Murex Fundamentals database between 5/1989 and 9/2003.			

- The information coefficient of revisions conditional on no revision for the next month (center column) measures the degree to which stock returns respond purely to the last revision. As shown above, this coefficient is not significantly different from zero for all market cap brackets.



## Do past revisions predict future revisions?

- The serial correlation of earnings revisions has persisted at a statistically significant positive level through time:



Serial correlation of one-month percent change in mean earnings estimate	
	large cap stocks (top 10 percentiles)
mean	0.141
t statistic	7.51
	mid cap stocks (67 to 90 percentiles)
mean	0.091
t statistic	7.36
	small cap stocks (33 to 66 percentiles)
mean	0.064
t statistic	8.10
	micro cap stocks (1 to 32 percentiles)
mean	0.030
t statistic	3.78

- Since the post-revision price drift is a weak effect, we profit from earnings revisions primarily because past revisions is a good indicator of future revisions.
- There is a slightly negative correlation of -0.11 between the one-month serial correlation of revisions for large cap stocks and monthly S&P 500 Index returns. This is likely due to the more gradual discounting of bad earnings news compared to that of good earnings news.



## When do earnings revisions not work?

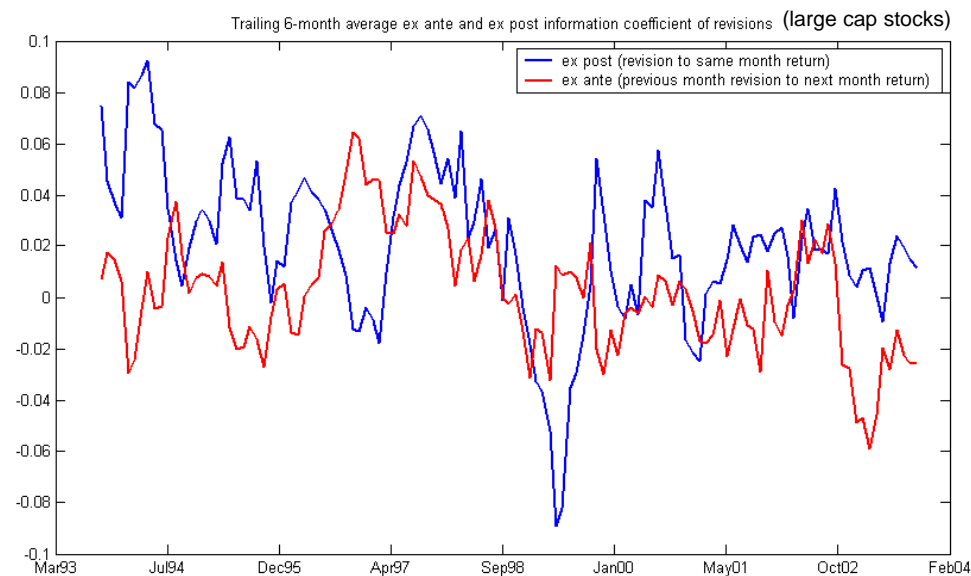
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- Earnings revisions do not work when the information coefficient of revisions is low or negative. One might think that a low or negative information coefficient arises because of a reduction in the serial correlation of revisions.
- However, the information coefficient has a very low correlation to the serial correlation of revisions. And while serial correlation in revisions has risen and ebbed over time, it has always remained at a statistically significant positive level.
- Therefore, a reduction of serial correlation is not the main reason why earning revisions sometimes do not work.
- **As it turns out, the real reason is that stock prices sometimes do not respond to earnings revisions.**
- In contrast to strategies based on absolute valuation such as price-to-book or price-to-earnings ratios, an earnings revisions strategy can be made free from valuation biases that persist for long periods of time. Thus, unlike a value strategy, it is not necessary to correct for negative price momentum as valuations get cheaper (as was the case in the late 1990s).



## When do earnings revisions not work?

- By calculating the ex-post information coefficient (correlation of contemporaneous revisions and stock returns), we can tell how much money can be made if we had perfect foresight, i.e. if we had known the future revision.
- From the graph below we see the ex post information coefficient (blue line) is generally higher than than its ex ante counterpart (red line), though occasionally it can become very low or negative (notably in 1999 and 2001).
- When this happens, stock prices are not responding to revisions and there is no value in predicting them. We cannot make money even if we had known the future revision, since prices move contrary to the prediction even if it is correct.
- A more in-depth study shows that predicting revisions has no value when prices are not driven by fundamentals but by other factors such as liquidity needs or speculation. This usually occurs during rallies in which stocks with weak fundamentals rise dramatically against analysts' judgments.





## Finding a low-cost and high value-added vendor of earnings estimate data

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- There are many well-established providers of earnings estimate data such as Thomson Financial and I/B/E/S, etc. Some provide only raw analyst and consensus estimates; others provide value-added models that account for practical nuances in constructing accurate mean estimates.
- While we can construct our own earnings revisions factor from raw analyst estimates, we believe it is more cost effective to buy an “off-the-shelf” model from a data provider. After all, it is not clear that we can build a better model ourselves and our hedge fund competitors likely also bought the same off-the-shelf models.
- We settled on the model and data provided by Starmine Corporation (the “Starminc Indicator”) which costs about \$50k a year. The data can be downloaded via FTP from their website daily at 5:30 a.m.
- The Starmine model is specifically designed for the post-regulation FD environment. It explicitly accounts for the “outdating” of estimates that were not revised following pre-announcements (“corporate guidance”) by a company. It also accounts for estimate clustering, analyst disagreements and analysts with history of more successful or influential predictions.
- Starmine has published many white papers documenting their model and data. The high level of transparency allows us to determine if their model can be used in particular strategies.





## We aim to outperform both basic revisions and Starmine models

- Our aim is to outperform both a basic consensus revisions model and the Starmine model. Our strategy takes as input only the Starmine model and other data provided by Starmine, including stock prices.
- We should at least outperform a basic model since we expect the Starmine model to outperform the basic model.
- The premise is to create using an earnings revisions factor fractile (e.g. decile) portfolios from a stock universe constrained to mid and small cap stocks. Special algorithms are applied to (1) trade strong signals as soon as they arise; (2) detect when earnings revisions might reverse; and (3) ameliorate the adverse effect of “speculative rallies” by not forcing the strategy to trade marginal short candidates.
- The average holding period for a stock in the portfolio is 1.5 months. Strict dollar neutrality is not imposed to save transaction costs, but the portfolio is expected to stay within  $\pm 15\%$  of average total dollar value per side. An index hedge can be applied to achieve strict neutrality if wished.
- Below is the actual performance of an earnings revisions strategy designed as described above :

### Earnings Revisions Program (actual, gross of fees)

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Return Highlights				Return/Risk									
MTD 10/08/04	3.3%	Compound Ann ROR	15%	Best Month	5.2%	Sharpe Ratio	1.1	Assets Managed	\$5,000,000				
YTD 2004	13.2%	Avg Month ROR	1.1%	Worst Month	-4.7%	Max Drawdown	5%	Inception Date	1/2/2004				
Q3-2004	5.6%	Tot Ret from Inception	13%	Success Rate	80%	Correlation to S&P	43%	Strategy Type	Earnings Revisions				
2003	0.0%	Program Lifetime	12 months	Standard Deviation	11.6%	Min Rolling 12M ROR							
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	2.3%	2.0%	0.4%	-4.7%	0.4%	3.7%	4.6%	-4.2%	5.2%	3.3%			13.2%

- The theoretical year-to-date returns through August 2004 before transaction costs of the Starmine model and basic revisions model for small cap stocks are 3.3% and 2.9% respectively.



## How much money can we expect to make?

- Philosophically, we believe that any strategy that mechanically captures a risk premium is a contingent claim (call option) on the underlying asset class. Therefore over the long term we expect the earnings revisions strategy to have returns commensurate with the average return of stocks in the same market segment.
- However because the strategy is hedged (dollar neutral), the returns will have lower volatility and therefore can be leveraged.
- We expect conservatively a long-term average return of 10% net of transaction costs on capital defined as 0.5 times long market value plus absolute value of short market value. The maximum drawdown is expected to be 20% of capital.
- A simulation of the strategy with a 20bp per round-turn transaction cost is given below:

### Earnings Revisions Strategy (U.S. stocks, 20bp round turn commissions applied)

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Return Highlights				Return/Risk									
MTD 07/31/04	3.7%	Ann ROR	16%	Best Month	10.1%	Sharpe Ratio	1.5	Assets Managed	\$10,000,000				
YTD 2004	6.5%	Avg Month ROR	1.3%	Worst Month	-10.5%	Max Drawdown	11%	Inception Date	2/10/1995				
Q1-2004	-0.7%	Tot Ret from Inception	149%	Success Rate	78%	Correlation to S&P	3%	Strategy Type	Earnings Revisions				
2003	3.7%	Program Lifetime	112 months	Standard Deviation	3.0%	Min Rolling 12M ROR	-6%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-2.3%	0.9%	0.7%	0.1%	0.4%	3.0%	3.7%						6.5%
2003	0.8%	2.2%	0.4%	-2.5%	0.1%	1.6%	1.6%	-1.2%	-1.6%	4.2%	1.7%	-3.4%	3.7%
2002	0.1%	2.0%	1.4%	5.1%	2.9%	5.7%	3.7%	0.6%	5.9%	-1.0%	-10.5%	4.2%	20.1%
2001	-9.2%	3.9%	2.3%	-1.4%	0.7%	3.6%	4.9%	3.0%	4.5%	-3.6%	-6.0%	0.6%	3.2%
2000	1.6%	-3.2%	6.2%	1.4%	-2.4%	4.5%	-2.8%	4.9%	5.4%	-1.7%	1.6%	3.4%	18.7%
1999	0.6%	0.7%	-6.8%	4.1%	2.1%	5.4%	3.8%	-1.0%	1.1%	5.3%	1.3%	0.1%	16.7%
1998	2.3%	2.2%	3.3%	-0.1%	1.3%	4.9%	-0.5%	-3.7%	2.9%	-1.1%	4.0%	6.0%	21.4%
1997	2.7%	0.6%	0.6%	0.8%	2.1%	2.6%	0.3%	1.3%	1.9%	-0.3%	2.0%	1.0%	15.5%
1996	1.7%	3.3%	1.8%	1.9%	-0.4%	2.2%	1.3%	1.8%	0.5%	0.6%	1.2%	2.8%	18.7%
1995		-0.0%	0.6%	3.0%	1.2%	10.1%	2.7%	1.0%	1.4%	6.0%	1.3%	4.4%	31.6%

- The returns have likely moderated from the higher levels seen in earlier years because Regulation FD (fair disclosure) has resulted in less selective disclosure and thus less serial correlation in revisions.



## Apply model globally to reduce strategy down times

- Although earnings revisions are an important component of many multi-factor long/short models and have worked in at least 8 of the last 10 years, they constitute only one source of alpha and may therefore cause a portfolio to have long down times.
- Therefore we should trade a global strategy on all markets for which earnings revisions data are available.
- Simulations of a few international markets are provided below. They are created using data from Starmine and assume a 20bp per round turn transaction cost and a stock universe constrained to mid and small cap stocks.

### Earnings Revisions Strategy (Canada)

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Return Highlights		Return/Risk											
MTD 05/21/04	1.5%	Ann ROR	17%	Best Month	8.2%	Sharpe Ratio	1.8	Assets Managed	\$10,000,000				
YTD 2004	3.9%	Avg Month ROR	1.4%	Worst Month	-7.8%	Max Drawdown	13%	Inception Date	2/10/1995				
Q1-2004	1.7%	Tot Ret from Inception	162%	Success Rate	74%	Correlation to S&P	-2%	Strategy Type	Earnings Revisions				
2003	2.0%	Program Lifetime	112 months	Standard Deviation	2.8%	Min Rolling 12M ROR	-3%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-3.4%	1.8%	3.3%	0.8%	1.4%								3.9%
2003	-1.6%	4.6%	1.3%	-5.3%	-7.8%	4.6%	0.7%	-0.1%	5.2%	2.8%	-0.0%	-2.4%	2.0%
2002	5.4%	3.4%	1.8%	2.7%	3.1%	-4.1%	0.3%	8.2%	6.0%	-1.2%	0.9%	7.0%	33.4%
2001	0.6%	8.1%	8.2%	-0.1%	0.5%	1.7%	2.3%	2.9%	4.2%	-0.3%	-5.8%	-1.5%	20.7%
2000	0.9%	5.3%	1.2%	4.5%	2.0%	1.0%	1.3%	2.5%	0.3%	3.4%	-0.8%	3.9%	25.6%
1999	-1.7%	4.2%	0.7%	-0.0%	5.2%	-3.1%	2.5%	-0.8%	0.5%	2.7%	-0.7%	1.1%	10.6%
1998	2.3%	-1.3%	0.4%	-1.9%	-0.6%	0.9%	-0.5%	1.7%	3.3%	1.1%	1.4%	6.5%	13.4%
1997	5.0%	-3.6%	2.2%	0.0%	3.0%	1.7%	2.3%	-1.4%	2.0%	1.4%	5.7%	3.0%	21.3%
1996	2.3%	3.8%	-0.1%	2.9%	1.7%	3.1%	-2.0%	3.7%	1.3%	1.9%	0.3%	2.7%	21.5%
1995		1.1%	0.1%	2.4%	0.8%	2.3%	1.9%	-1.7%	1.2%	0.9%	2.7%	-2.4%	9.3%



## More simulations of international markets

### Earnings Revisions Strategy (United Kingdom)

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Return Highlights		Return/Risk											
MTD 05/21/04	0.5%	Ann ROR	10%	Best Month	6.8%	Sharpe Ratio	1.3	Assets Managed	\$10,000,000				
YTD 2004	9.7%	Avg Month ROR	0.8%	Worst Month	-9.1%	Max Drawdown	9%	Inception Date	2/10/1995				
Q1-2004	9.3%	Tot Ret from Inception	90%	Success Rate	71%	Correlation to S&P	1%	Strategy Type	Earnings Revisions				
2003	19.7%	Program Lifetime	112 months	Standard Deviation	2.2%	Min Rolling 12M ROR	-5%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	3.2%	4.8%	1.3%	-0.2%	0.6%								9.7%
2003	-0.4%	1.0%	2.2%	0.9%	3.6%	1.5%	1.7%	2.5%	2.7%	5.1%	0.3%	-1.4%	19.7%
2002	-0.2%	2.5%	3.3%	-3.3%	-0.3%	0.9%	-5.0%	5.7%	1.2%	3.1%	-9.1%	1.7%	0.3%
2001	-0.5%	1.6%	0.0%	-4.4%	-2.3%	3.3%	2.2%	1.7%	6.8%	1.8%	-4.1%	3.4%	9.6%
2000	-1.7%	-1.5%	1.3%	1.5%	3.2%	1.6%	-0.7%	1.1%	-1.1%	1.5%	2.4%	1.2%	8.8%
1999	1.7%	1.3%	-1.1%	-1.1%	-1.4%	1.0%	3.8%	-0.3%	-1.1%	1.2%	-1.4%	-1.4%	1.3%
1998	-0.3%	0.9%	4.0%	1.6%	2.3%	0.6%	-1.0%	-1.8%	0.8%	0.2%	0.1%	1.9%	9.3%
1997	3.2%	0.9%	0.7%	0.3%	1.1%	-0.3%	1.6%	3.2%	2.1%	-0.0%	0.4%	1.0%	14.1%
1996	0.3%	1.3%	0.8%	1.3%	1.7%	0.3%	0.2%	3.0%	2.3%	0.7%	1.8%	0.6%	14.3%
1995		-0.7%	-1.9%	2.4%	2.0%	-0.7%	1.4%	1.9%	1.7%	0.3%	-2.1%	-1.2%	3.2%

### Earnings Revisions Strategy (Australia)

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Return Highlights		Return/Risk											
MTD 05/21/04	-0.6%	Ann ROR	12%	Best Month	12.5%	Sharpe Ratio	1.3	Assets Managed	\$10,000,000				
YTD 2004	4.3%	Avg Month ROR	1.0%	Worst Month	-9.6%	Max Drawdown	11%	Inception Date	2/10/1995				
Q1-2004	3.3%	Tot Ret from Inception	116%	Success Rate	63%	Correlation to S&P	-3%	Strategy Type	Earnings Revisions				
2003	5.5%	Program Lifetime	112 months	Standard Deviation	2.7%	Min Rolling 12M ROR	-3%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	2.4%	0.9%	-0.0%	1.6%	-0.6%								4.3%
2003	-0.9%	4.7%	-1.7%	-4.0%	5.2%	1.8%	-2.6%	-1.1%	-0.4%	2.9%	1.2%	0.3%	5.5%
2002	-1.7%	-1.0%	4.9%	3.1%	2.2%	3.6%	1.5%	-3.1%	5.3%	-1.8%	-2.3%	-0.2%	10.6%
2001	-4.3%	3.2%	5.2%	2.1%	4.5%	5.8%	7.3%	12.5%	5.5%	-9.6%	3.2%	-2.0%	33.6%
2000	3.2%	1.9%	-3.5%	3.9%	3.3%	3.3%	-1.6%	0.5%	4.0%	2.1%	-0.4%	6.5%	23.0%
1999	-0.0%	0.2%	1.3%	-0.7%	2.3%	-0.6%	2.0%	0.3%	-0.1%	-3.3%	-0.6%	2.2%	2.9%
1998	0.2%	2.3%	2.2%	-0.6%	-1.1%	-0.4%	-0.3%	-0.3%	-1.0%	-1.1%	0.5%	1.2%	1.5%
1997	0.4%	0.7%	-0.4%	0.5%	1.4%	1.8%	0.3%	3.0%	3.1%	1.7%	-0.8%	1.1%	13.0%
1996	1.7%	1.1%	0.2%	3.4%	-0.3%	0.8%	1.0%	1.0%	1.6%	1.0%	-0.1%	-0.6%	11.0%
1995		0.4%	2.1%	-0.3%	0.3%	1.3%	2.5%	1.7%	-0.1%	0.3%	-0.3%	2.6%	10.4%



## More simulations of international markets

### Earnings Revisions Strategy (Japan)

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Return Highlights				Return/Risk									
MTD 05/21/04	3.0%	Ann ROR	13%	Best Month	9.1%	Sharpe Ratio	1.8	Assets Managed	\$10,000,000				
YTD 2004	9.4%	Avg Month ROR	1.1%	Worst Month	-3.5%	Max Drawdown	5%	Inception Date	2/10/1995				
Q1-2004	4.2%	Tot Ret from Inception	120%	Success Rate	67%	Correlation to S&P	4%	Strategy Type	Earnings Revisions				
2003	17.9%	Program Lifetime	112 months	Standard Deviation	2.0%	Min Rolling 12M ROR	-4%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-0.0%	2.7%	1.5%	2.3%	3.0%								9.4%
2003	1.1%	3.0%	2.8%	2.8%	-1.7%	0.2%	3.7%	3.3%	-3.2%	2.3%	1.6%	2.0%	17.9%
2002	2.0%	-1.1%	-0.7%	-0.7%	3.9%	0.9%	2.9%	-0.2%	2.9%	4.5%	-1.6%	2.6%	15.4%
2001	0.8%	-1.0%	3.9%	2.0%	0.7%	2.9%	0.5%	3.7%	-0.5%	2.6%	1.5%	-0.3%	16.7%
2000	-1.2%	3.0%	3.7%	-0.5%	-0.8%	-2.3%	0.2%	3.9%	0.7%	-2.1%	0.3%	-1.2%	3.8%
1999	3.4%	1.0%	9.1%	4.6%	-0.1%	4.3%	4.7%	1.1%	2.5%	2.6%	2.2%	2.1%	37.3%
1998	5.5%	0.5%	0.3%	0.5%	1.0%	1.6%	2.0%	-1.9%	1.9%	1.7%	2.4%	1.9%	17.4%
1997	1.9%	2.3%	0.9%	2.6%	-1.5%	0.8%	0.9%	-2.1%	-0.2%	-2.3%	0.8%	-0.8%	3.3%
1996	0.1%	-0.5%	-0.6%	-0.5%	0.5%	0.8%	-0.7%	-0.8%	-0.2%	-1.2%	-0.9%	-0.1%	-4.2%
1995		-0.5%	-3.5%	0.4%	-0.9%	-0.2%	1.5%	1.9%	2.5%	0.6%	0.3%	0.3%	2.5%

### Earnings Revisions Strategy (Germany)

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Return Highlights				Return/Risk									
MTD 05/21/04	-1.2%	Ann ROR	26%	Best Month	13.4%	Sharpe Ratio	1.6	Assets Managed	\$10,000,000				
YTD 2004	11.0%	Avg Month ROR	2.1%	Worst Month	-8.0%	Max Drawdown	8%	Inception Date	1/8/1999				
Q1-2004	10.7%	Tot Ret from Inception	134%	Success Rate	69%	Correlation to S&P	2%	Strategy Type	Earnings Revisions				
2003	-1.4%	Program Lifetime	65 months	Standard Deviation	4.6%	Min Rolling 12M ROR	-6%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	2.5%	6.0%	2.2%	1.4%	-1.1%								10.9%
2003	0.3%	-2.3%	2.3%	-4.6%	3.3%	-1.2%	-0.5%	3.3%	-6.3%	-0.4%	4.2%	0.6%	-1.4%
2002	-6.7%	-1.2%	6.0%	1.4%	3.3%	2.0%	-6.6%	5.5%	5.2%	-1.3%	2.6%	-2.0%	8.2%
2001	2.5%	5.5%	5.0%	6.7%	-2.2%	13.3%	3.5%	10.2%	3.7%	-1.6%	2.4%	0.7%	49.7%
2000	9.3%	8.6%	-6.6%	4.1%	6.5%	-4.7%	1.8%	3.0%	-0.4%	8.3%	5.2%	4.1%	39.3%
1999	5.5%	1.0%	2.2%	4.9%	-0.6%	1.6%	-3.8%	5.6%	-8.0%	2.9%	7.8%	13.4%	32.6%



## More simulations of international markets

### Earnings Revisions Strategy (Singapore)

10/15/2004 2:43 PM

Return Highlights		Return/Risk											
MTD 05/21/04	-2.2%	Ann ROR	15%	Best Month	13.6%	Sharpe Ratio	1.0	Assets Managed	\$10,000,000				
YTD 2004	4.2%	Avg Month ROR	1.2%	Worst Month	-9.7%	Max Drawdown	13%	Inception Date	2/10/1995				
Q1-2004	5.4%	Tot Ret from Inception	135%	Success Rate	63%	Correlation to S&P	8%	Strategy Type	Earnings Revisions				
2003	45.6%	Program Lifetime	112 months	Standard Deviation	4.1%	Min Rolling 12M ROR	-8%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	1.2%	0.6%	3.7%	0.5%	-1.7%								4.2%
2003	2.3%	2.6%	1.6%	5.6%	0.1%	1.0%	10.0%	3.3%	7.4%	4.0%	6.9%	0.8%	45.6%
2002	1.5%	0.0%	1.5%	0.7%	3.5%	3.0%	-1.7%	4.6%	2.4%	-5.1%	-0.1%	4.2%	14.6%
2001	-3.1%	3.1%	2.2%	3.4%	0.4%	4.4%	-0.8%	-1.0%	0.8%	-3.6%	3.6%	-0.7%	8.6%
2000	1.4%	-3.7%	6.9%	2.1%	5.8%	-0.2%	-1.6%	-2.3%	-6.3%	-2.8%	1.2%	2.9%	3.5%
1999	3.1%	-3.7%	0.6%	-0.9%	7.1%	13.6%	-6.0%	-0.8%	-5.9%	5.9%	-2.8%	3.3%	13.4%
1998	10.7%	12.9%	-5.3%	-0.5%	-0.6%	-2.8%	2.3%	-3.6%	10.1%	10.3%	-0.1%	1.7%	35.0%
1997	2.7%	1.8%	-2.8%	4.2%	6.0%	-1.2%	9.5%	-9.7%	0.5%	0.0%	2.0%	0.0%	13.2%
1996	1.0%	2.7%	-0.5%	-3.4%	0.1%	3.7%	1.1%	-5.0%	-7.8%	-0.0%	4.5%	0.9%	-2.8%
1995		-1.0%	-0.7%	-0.9%	3.5%	1.0%	-1.6%	-1.9%	0.9%	-0.0%	-1.5%	2.1%	-0.0%

### Earnings Revisions Strategy (Korea)

10/15/2004 2:44 PM

Return Highlights		Return/Risk											
MTD 05/21/04	2.2%	Ann ROR	14%	Best Month	18.1%	Sharpe Ratio	0.6	Assets Managed	\$10,000,000				
YTD 2004	10.5%	Avg Month ROR	1.1%	Worst Month	-28.7%	Max Drawdown	49%	Inception Date	2/10/1995				
Q1-2004	-0.8%	Tot Ret from Inception	126%	Success Rate	56%	Correlation to S&P	3%	Strategy Type	Earnings Revisions				
2003	41.2%	Program Lifetime	112 months	Standard Deviation	6.2%	Min Rolling 12M ROR	-47%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-2.3%	0.6%	1.0%	9.1%	2.2%								10.5%
2003	0.7%	-1.3%	13.3%	5.3%	5.3%	-0.1%	1.7%	6.9%	-2.4%	4.5%	4.7%	2.7%	41.2%
2002	-1.9%	5.5%	9.8%	2.4%	-4.0%	3.0%	1.0%	0.9%	-4.1%	3.8%	5.4%	-0.8%	20.9%
2001	-28.7%	7.4%	1.7%	-5.1%	9.7%	12.6%	3.6%	1.3%	9.6%	2.1%	2.2%	8.4%	24.7%
2000	-0.5%	-0.5%	-10.7%	-2.6%	-2.7%	6.5%	-5.6%	-2.5%	-5.0%	1.6%	-3.2%	8.2%	-17.1%
1999	8.4%	-0.1%	2.7%	18.1%	5.2%	-2.8%	17.6%	0.3%	-0.0%	2.4%	8.5%	-3.2%	57.1%
1998	11.9%	1.6%	-4.4%	-3.1%	-12.3%	-11.2%	-0.4%	-5.4%	-0.5%	7.5%	-3.1%	17.3%	-2.1%
1997	1.5%	8.1%	0.6%	3.3%	1.7%	0.6%	3.7%	-0.6%	0.4%	-3.6%	-8.5%	-10.7%	-3.6%
1996	1.0%	-2.4%	2.9%	4.5%	-2.5%	-2.9%	3.2%	1.6%	-0.6%	-2.2%	2.3%	-0.7%	4.3%
1995		-7.0%	-0.8%	-0.3%	-2.6%	2.5%	0.1%	1.8%	-0.2%	-0.7%	-1.0%	-1.6%	-9.8%





## Performance summary for international markets

- The performance of an equally weighted combination of all 17 markets:

### Earnings Revisions Strategy (all markets)

10/15/2004 2:53 PM

Return Highlights		Return/Risk											
MTD 05/21/04	0.9%	Ann ROR	15%	Best Month	6.3%	Sharpe Ratio	2.9	Assets Managed	\$10,000,000				
YTD 2004	4.5%	Avg Month ROR	1.2%	Worst Month	-1.6%	Max Drawdown	2%	Inception Date	1/8/1999				
Q1-2004	2.5%	Tot Ret from Inception	78%	Success Rate	83%	Correlation to S&P	3%	Strategy Type	Earnings Revisions				
2003	22.9%	Program Lifetime	65 months	Standard Deviation	1.4%	Min Rolling 12M ROR	6%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-1.3%	3.0%	0.8%	1.1%	0.9%								4.5%
2003	2.2%	1.4%	3.2%	-0.1%	1.2%	0.4%	1.3%	1.0%	1.5%	6.3%	2.1%	2.3%	22.9%
2002	1.6%	0.8%	1.4%	2.0%	2.1%	-0.9%	-0.3%	0.9%	0.5%	2.5%	-1.6%	1.4%	10.3%
2001	1.0%	1.8%	-1.3%	2.3%	1.2%	2.4%	4.3%	1.1%	4.1%	1.3%	-0.6%	0.3%	18.2%
2000	0.8%	0.9%	0.7%	1.8%	0.2%	1.0%	0.5%	0.9%	-0.9%	0.6%	0.8%	-0.7%	6.7%
1999	0.7%	1.2%	1.4%	4.1%	0.5%	3.5%	1.5%	-0.3%	-1.4%	0.9%	1.4%	3.0%	16.3%

- The performance of an equally weighted combination of all non-U.S. markets:

### Earnings Revisions Strategy (all markets ex-U.S.)

10/15/2004 2:55 PM

Return Highlights		Return/Risk											
MTD 05/21/04	0.9%	Ann ROR	15%	Best Month	6.4%	Sharpe Ratio	2.9	Assets Managed	\$10,000,000				
YTD 2004	4.9%	Avg Month ROR	1.2%	Worst Month	-1.6%	Max Drawdown	2%	Inception Date	1/8/1999				
Q1-2004	2.7%	Tot Ret from Inception	79%	Success Rate	85%	Correlation to S&P	3%	Strategy Type	Earnings Revisions				
2003	24.1%	Program Lifetime	65 months	Standard Deviation	1.5%	Min Rolling 12M ROR	6%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-1.2%	3.1%	0.8%	1.2%	1.0%								4.9%
2003	2.2%	1.4%	3.4%	0.0%	1.3%	0.3%	1.3%	1.1%	1.7%	6.4%	2.1%	2.6%	24.1%
2002	1.7%	0.7%	1.3%	1.8%	2.0%	-1.3%	-0.5%	0.9%	0.1%	2.7%	-1.0%	1.2%	9.7%
2001	1.7%	1.7%	-1.5%	2.6%	1.3%	2.4%	4.3%	1.0%	4.1%	1.7%	-0.2%	0.3%	19.2%
2000	0.7%	1.1%	0.3%	1.8%	0.4%	0.8%	0.7%	0.7%	-1.2%	0.8%	0.8%	-0.9%	5.9%
1999	0.6%	1.3%	1.9%	4.1%	0.4%	3.4%	1.3%	-0.3%	-1.6%	0.6%	1.4%	3.2%	16.1%





## The danger of shorting high beta stocks

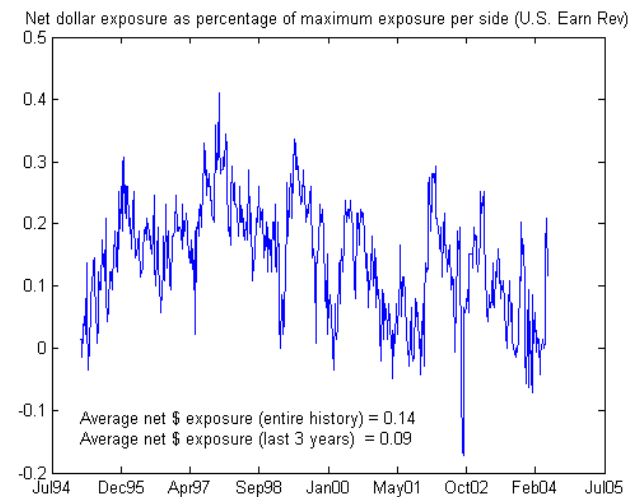
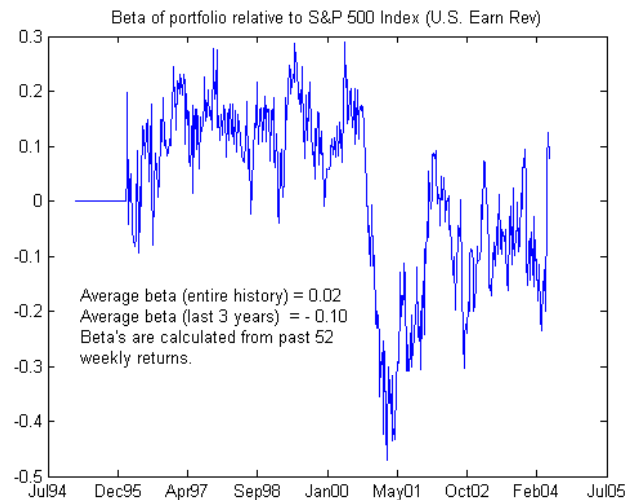
- Here's a recap of the simulation of the earnings revisions strategy applied to U.S. stocks:

### Earnings Revisions Strategy

11/23/2004 12:52 PM

Return Highlights				Return/Risk									
MTD 05/21/04	-0.4%	Ann ROR	16%	Best Month	10.1%	Sharpe Ratio	1.5	Assets Managed	\$10,000,000				
YTD 2004	-1.0%	Avg Month ROR	1.3%	Worst Month	-10.5%	Max Drawdown	11%	Inception Date	2/10/1995				
Q1-2004	-0.7%	Tot Ret from Inception	149%	Success Rate	78%	Correlation to S&P	3%	Strategy Type	Earnings Revisions				
2003	3.7%	Program Lifetime	112 months	Standard Deviation	3.0%	Min Rolling 12M ROR	-6%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-2.3%	0.9%	0.7%	0.1%	-0.4%								-1.0%
2003	0.8%	2.2%	0.4%	-2.5%	0.1%	1.6%	1.6%	-1.2%	-1.6%	4.2%	1.7%	-3.4%	3.7%
2002	0.1%	2.0%	1.4%	5.1%	2.9%	5.7%	3.7%	0.6%	5.9%	-1.0%	-10.5%	4.2%	20.1%
2001	-9.2%	3.9%	2.3%	-1.4%	0.7%	3.6%	4.9%	3.0%	4.5%	-3.6%	-6.0%	0.6%	3.2%
2000	1.6%	-3.2%	6.2%	1.4%	-2.4%	4.5%	-2.8%	4.9%	5.4%	-1.7%	1.6%	3.4%	18.7%
1999	0.6%	0.7%	-6.8%	4.1%	2.1%	5.4%	3.8%	-1.0%	1.1%	5.3%	1.3%	0.1%	16.7%
1998	2.3%	2.2%	3.3%	-0.1%	1.3%	4.9%	-0.5%	-3.7%	2.9%	-1.1%	4.0%	6.0%	21.4%
1997	2.7%	0.6%	0.6%	0.8%	2.1%	2.6%	0.3%	1.3%	1.9%	-0.3%	2.0%	1.0%	15.5%
1996	1.7%	3.3%	1.8%	1.9%	-0.4%	2.2%	1.3%	1.8%	0.5%	0.6%	1.2%	2.8%	18.7%
1995		-0.0%	0.6%	3.0%	1.2%	10.1%	2.7%	1.0%	1.4%	6.0%	1.3%	4.4%	31.6%

- While the strategy is designed to achieve an average portfolio beta close to zero over the entire simulation, the portfolio beta since mid-2001 has been slightly negative. This is the case even though the portfolio has an average net *positive* dollar bias of 14%.





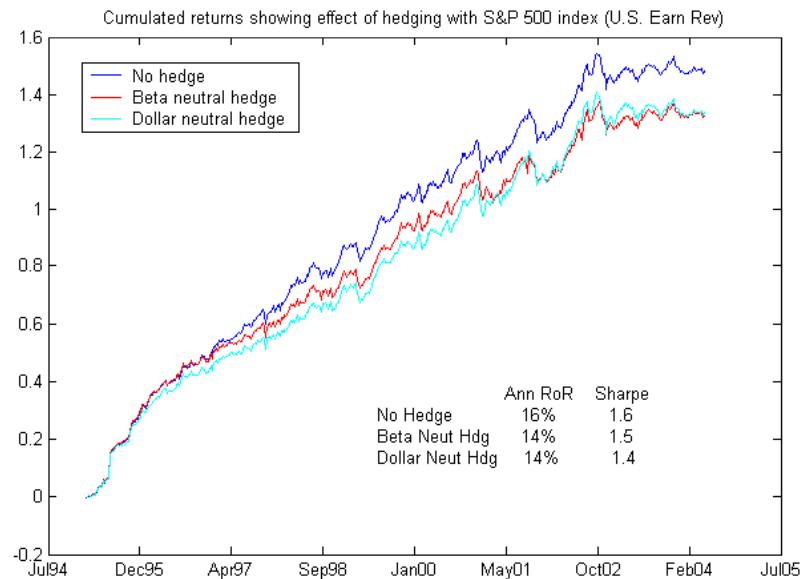
## Dollar neutral hedge versus beta neutral hedge

- A dollar neutral hedge, i.e. a position in SPY with face value equal to minus the portfolio net dollar which is rebalanced weekly, is not recommended as it decreases returns and worsens drawdowns:

### Earnings Revisions Strategy (U.S., dollar neutral hedge)

11/22/2004 6:47 PM

Return Highlights				Return/Risk									
MTD 05/21/04	-0.2%	Ann ROR	14%	Best Month	10.0%	Sharpe Ratio	1.4	Assets Managed	\$10,000,000				
YTD 2004	-1.0%	Avg Month ROR	1.2%	Worst Month	-11.1%	Max Drawdown	13%	Inception Date	2/17/1995				
Q1-2004	-0.9%	Tot Ret from Inception	135%	Success Rate	74%	Correlation to S&P	-3%	Strategy Type	Earnings Revisions				
2003	3.2%	Program Lifetime	112 months	Standard Deviation	3.0%	Min Rolling 12M ROR	-6%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-2.5%	0.9%	0.7%	0.2%	-0.2%								-1.0%
2003	1.8%	2.5%	0.4%	-2.8%	-0.7%	1.4%	1.5%	-1.4%	-1.7%	4.0%	1.5%	-3.4%	3.2%
2002	0.9%	3.0%	-0.1%	6.3%	2.9%	6.8%	4.3%	-0.5%	5.0%	-1.7%	-11.1%	5.3%	21.1%
2001	-9.4%	4.3%	2.5%	-1.6%	0.5%	3.9%	5.0%	3.1%	4.7%	-4.1%	-5.9%	0.4%	3.5%
2000	2.5%	-3.4%	5.8%	1.7%	-1.4%	3.2%	3.2%	-2.8%	4.0%	6.4%	-1.3%	1.9%	20.7%
1999	0.2%	0.7%	-6.9%	3.1%	3.0%	5.2%	3.6%	-1.4%	2.0%	3.5%	0.5%	-0.2%	13.2%
1998	1.1%	0.7%	2.3%	-0.3%	1.5%	4.0%	-0.5%	-1.9%	2.7%	-2.0%	2.6%	6.1%	16.4%
1997	1.9%	0.6%	0.8%	1.3%	0.5%	1.8%	-0.9%	2.2%	0.5%	1.0%	0.5%	1.5%	11.6%
1996	1.5%	2.2%	2.3%	1.7%	-0.7%	2.2%	2.2%	1.2%	-0.1%	0.5%	0.0%	2.6%	15.7%
1995		0.3%	0.5%	2.8%	1.0%	10.0%	2.4%	1.1%	1.0%	6.1%	0.6%	3.8%	29.7%





## Are the benefits of hedging worth the cost?

- A beta neutral hedge, i.e. a position in SPY with face value equal to the sum of stock betas times stock dollar positions, does better by reducing drawdowns and volatility slightly. However, returns and Sharpe ratio are reduced as well.

### Earnings Revisions Strategy (U.S., beta neutral hedge)

11/23/2004 12:32 PM

Return Highlights				Return/Risk									
MTD 05/21/04	-0.4%	Ann ROR	14%	Best Month	10.1%	Sharpe Ratio	1.5	Assets Managed	\$10,000,000				
YTD 2004	-0.9%	Avg Month ROR	1.2%	Worst Month	-10.1%	Max Drawdown	10%	Inception Date	2/17/1995				
Q1-2004	-0.7%	Tot Ret from Inception	134%	Success Rate	80%	Correlation to S&P	4%	Strategy Type	Earnings Revisions				
2003	4.8%	Program Lifetime	112 months	Standard Deviation	2.8%	Min Rolling 12M ROR	-4%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-2.0%	1.1%	0.2%	0.2%	-0.3%								-0.9%
2003	0.8%	1.9%	0.6%	-2.2%	0.6%	1.5%	1.8%	-1.5%	-1.7%	4.5%	1.6%	-3.2%	4.8%
2002	0.0%	2.1%	0.8%	5.0%	3.1%	5.6%	2.1%	1.5%	4.0%	0.9%	-10.1%	3.1%	18.0%
2001	-8.5%	1.7%	-0.6%	1.9%	1.8%	2.3%	4.5%	0.9%	2.1%	-2.5%	-5.1%	0.4%	-1.1%
2000	2.0%	-3.0%	5.2%	1.8%	-1.4%	3.3%	-2.6%	3.8%	6.2%	-1.1%	1.5%	3.1%	18.7%
1999	0.1%	0.6%	-6.8%	3.5%	2.7%	4.9%	3.8%	-1.2%	2.3%	4.7%	0.7%	0.1%	15.3%
1998	1.9%	1.1%	2.7%	-0.3%	1.3%	4.3%	-0.9%	-2.8%	2.8%	-1.7%	2.8%	5.9%	17.2%
1997	1.9%	0.5%	0.7%	1.0%	0.7%	2.1%	-0.6%	1.9%	1.0%	0.4%	0.8%	1.1%	11.6%
1996	1.7%	3.0%	1.6%	1.9%	0.0%	2.2%	2.0%	1.5%	0.1%	0.4%	0.4%	2.7%	17.5%
1995		0.3%	0.6%	3.0%	1.2%	10.1%	2.7%	1.0%	1.4%	6.0%	1.3%	4.4%	32.0%

- Hedging is inefficient since the Sharpe ratio of the hedged strategies are lower than that of the unhedged strategy.
- This is likely due to the fact that the calculated betas are unreliable since mid and small caps are very volatile. The beta of a small cap stock calculated from the historical correlation between its returns and those of the market may understate its performance in a “relief” or “speculative” rally.
- We may take comfort from the fact that the portfolio has a slightly negative beta in recent years and is thus “hedged” against market declines. We should monitor the beta of the portfolio in real time and adjust the strategy filtering parameters to obtain a portfolio composition having a beta within acceptable limits.



## More performance capsules

### EarnRevHK

9/22/2005 5:09 PM

Return Highlights		Return/Risk											
MTD 05/21/04	1.8%	Ann ROR	4%	Best Month	10.3%	Sharpe Ratio	0.1	Assets Managed	\$1				
YTD 2004	6.9%	Avg Month ROR	0.3%	Worst Month	-80.3%	Max Drawdown	83%	Inception Date	2/10/1995				
Q1-2004	3.7%	Tot Ret from Inception	33%	Success Rate	64%	Correlation to S&P	3%	Strategy Type	undefined				
2003	28.1%	Program Lifetime	112 months	Standard Deviation	8.4%	Min Rolling 12M ROR	-79%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	3.2%	4.7%	-4.1%	1.3%	1.9%								6.9%
2003	0.3%	1.4%	3.8%	2.1%	-9.3%	4.6%	2.0%	3.4%	9.4%	2.9%	1.4%	6.2%	28.1%
2002	-1.5%	-1.5%	0.3%	3.1%	2.5%	-2.4%	0.7%	1.3%	7.4%	-0.2%	4.8%	-1.8%	12.5%
2001	2.1%	5.1%	-8.7%	0.8%	1.6%	2.9%	2.6%	3.6%	10.1%	-1.6%	-1.9%	2.0%	18.6%
2000	4.0%	3.3%	5.5%	0.4%	5.3%	-0.6%	0.7%	2.2%	-0.3%	4.4%	0.8%	0.2%	25.9%
1999	-2.0%	-0.5%	0.4%	0.2%	4.8%	5.5%	-2.5%	-1.2%	4.5%	0.8%	2.1%	-1.0%	11.2%
1998	-4.4%	10.3%	2.4%	-2.3%	1.7%	-4.8%	1.2%	-2.5%	1.2%	-11.1%	-2.5%	3.9%	-6.7%
1997	0.4%	-3.2%	-2.8%	2.4%	4.4%	3.2%	-4.4%	4.5%	4.1%	-4.7%	0.9%	5.9%	10.6%
1996	3.7%	-2.2%	-0.4%	-1.1%	0.1%	1.9%	-2.4%	2.4%	-3.9%	2.0%	3.3%	-1.8%	1.7%
1995			-0.4%	4.3%	-80.3%	-0.8%	1.2%	-0.9%	-0.3%	-0.8%	0.1%	2.3%	-75.6%

### EarnRevDC (Denmark)

10/10/2005 2:17 PM

Return Highlights		Return/Risk											
MTD 05/21/04	-1.8%	Ann ROR	21%	Best Month	17.8%	Sharpe Ratio	1.3	Assets Managed	\$1				
YTD 2004	11.4%	Avg Month ROR	1.7%	Worst Month	-15.0%	Max Drawdown	23%	Inception Date	2/10/1995				
Q1-2004	9.1%	Tot Ret from Inception	193%	Success Rate	64%	Correlation to S&P	6%	Strategy Type	undefined				
2003	17.9%	Program Lifetime	112 months	Standard Deviation	4.5%	Min Rolling 12M ROR	-3%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	10.0%	-0.6%	-0.2%	4.0%	-1.8%								11.4%
2003	7.2%	2.3%	-4.3%	2.5%	2.8%	-3.2%	0.4%	5.6%	5.0%	2.6%	-3.2%	0.3%	17.9%
2002	-0.3%	-0.2%	3.3%	1.2%	4.1%	-2.4%	0.1%	3.2%	3.6%	0.9%	0.5%	4.9%	18.8%
2001	-1.3%	7.9%	4.9%	-4.0%	-10.5%	11.7%	0.7%	2.9%	-3.1%	-0.9%	2.2%	-2.9%	7.6%
2000	-0.4%	-1.4%	-15.0%	1.3%	5.6%	5.5%	7.2%	-2.3%	3.7%	1.1%	-2.9%	10.4%	12.8%
1999	8.7%	-1.4%	-2.8%	7.2%	4.1%	-0.5%	-2.4%	6.9%	8.6%	9.1%	3.0%	-5.9%	34.6%
1998	5.1%	-0.3%	9.2%	3.7%	-0.4%	-0.9%	2.5%	3.6%	3.3%	17.8%	-4.2%	-3.4%	36.1%
1997	6.7%	0.6%	-2.7%	2.3%	8.6%	-1.1%	5.3%	-2.4%	3.8%	1.6%	2.7%	7.8%	33.0%
1996	-4.2%	0.6%	2.7%	-3.4%	2.8%	2.6%	-1.0%	2.2%	3.6%	4.8%	1.1%	-1.9%	10.0%
1995			0.9%	-0.7%	0.4%	1.8%	4.1%	-7.3%	3.6%	1.9%	4.1%	2.3%	11.1%



## More performance capsules

### EarnRevSW (Switzerland)

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Return Highlights				Return/Risk									
MTD 05/21/04	-0.3%	Ann ROR	11%	Best Month	13.4%	Sharpe Ratio	0.7	Assets Managed	\$1				
YTD 2004	1.8%	Avg Month ROR	0.9%	Worst Month	-16.6%	Max Drawdown	27%	Inception Date	2/10/1995				
Q1-2004	2.0%	Tot Ret from Inception	103%	Success Rate	66%	Correlation to S&P	3%	Strategy Type	undefined				
2003	-0.5%	Program Lifetime	112 months	Standard Deviation	4.6%	Min Rolling 12M ROR	-23%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	1.4%	-0.1%	0.7%	0.1%	-0.3%								1.8%
2003	2.3%	-1.3%	3.9%	-3.3%	-15.3%	2.5%	0.0%	-1.2%	0.5%	6.8%	3.2%	1.3%	-0.5%
2002	5.4%	5.3%	1.1%	3.9%	2.6%	0.9%	5.7%	-3.5%	8.3%	0.5%	-16.6%	4.6%	18.3%
2001	2.1%	7.0%	3.8%	5.6%	6.1%	6.6%	0.6%	12.0%	-1.9%	-6.7%	2.1%	2.5%	39.6%
2000	-0.6%	3.6%	-0.0%	4.5%	0.1%	9.0%	4.6%	7.0%	2.2%	0.8%	3.4%	-1.1%	33.3%
1999	1.0%	-0.7%	-0.6%	-3.6%	0.0%	0.0%	0.6%	1.0%	-0.9%	-2.6%	-1.1%	5.7%	-1.1%
1998	-4.7%	-1.1%	-2.6%	-1.9%	4.5%	1.0%	3.1%	2.4%	2.6%	-16.3%	5.1%	0.8%	-7.0%
1997	3.4%	-14.0%	-7.8%	3.1%	1.0%	1.3%	-1.2%	4.3%	-0.1%	-1.9%	0.7%	1.5%	-9.6%
1996	-2.0%	0.9%	3.0%	-0.1%	-1.2%	5.2%	0.1%	1.4%	13.4%	1.4%	-3.5%	8.9%	27.4%
1995			0.5%	-0.6%	-0.4%	2.0%	0.8%	-1.8%	0.5%	0.3%	-1.3%	1.1%	1.1%

### EarnRevSM (Spain)

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Return Highlights				Return/Risk									
MTD 05/21/04	-0.6%	Ann ROR	13%	Best Month	12.2%	Sharpe Ratio	1.0	Assets Managed	\$1				
YTD 2004	8.2%	Avg Month ROR	1.1%	Worst Month	-14.6%	Max Drawdown	17%	Inception Date	2/10/1995				
Q1-2004	4.8%	Tot Ret from Inception	118%	Success Rate	52%	Correlation to S&P	-13%	Strategy Type	undefined				
2003	19.5%	Program Lifetime	112 months	Standard Deviation	3.6%	Min Rolling 12M ROR	-2%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	2.8%	4.1%	-2.1%	3.9%	-0.6%								8.2%
2003	0.1%	10.0%	3.9%	-4.3%	0.2%	6.4%	0.5%	-7.4%	-0.7%	3.8%	3.6%	3.4%	19.5%
2002	5.0%	8.0%	-3.3%	4.1%	3.5%	0.5%	0.8%	3.0%	12.2%	-1.7%	3.6%	8.9%	44.4%
2001	3.3%	7.6%	2.8%	-1.7%	2.7%	3.4%	5.0%	0.6%	2.9%	-14.6%	-2.4%	4.2%	13.9%
2000	4.5%	3.8%	11.2%	-1.2%	8.5%	5.7%	-0.6%	-3.3%	-3.7%	5.1%	-2.8%	-1.2%	26.0%
1999	1.4%	2.6%	3.4%	-3.7%	2.7%	-3.1%	-0.5%	-0.3%	-3.2%	3.5%	-3.2%	-0.5%	-1.0%
1998		2.8%	-0.1%			0.7%	-0.9%	-3.8%	2.4%	0.3%	0.4%	3.6%	5.4%
1997		0.8%					0.0%		-0.2%	-0.7%	-0.2%	-0.0%	-0.3%
1996		1.4%	-1.0%	1.3%	0.7%	0.2%			0.6%	0.1%	-0.7%	2.0%	4.6%
1995			-1.0%	-0.3%	-0.2%	-0.3%	0.7%	-0.8%	-0.2%			-0.4%	-2.4%



## More performance capsules

### EarnRevGR (Germany)

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Return Highlights		Return/Risk											
MTD 05/21/04	0.5%	Ann ROR	13%	Best Month	17.9%	Sharpe Ratio	0.8	Assets Managed	\$1				
YTD 2004	-0.6%	Avg Month ROR	1.1%	Worst Month	-13.4%	Max Drawdown	30%	Inception Date	2/10/1995				
Q1-2004	-1.0%	Tot Ret from Inception	123%	Success Rate	62%	Correlation to S&P	-13%	Strategy Type	undefined				
2003	-16.4%	Program Lifetime	112 months	Standard Deviation	4.5%	Min Rolling 12M ROR	-26%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-5.5%	3.8%	0.8%	0.0%	0.5%								-0.6%
2003	3.4%	0.8%	4.0%	-13.4%	-1.0%	-7.2%	0.5%	-4.3%	-2.6%	-1.9%	3.1%	2.3%	-16.4%
2002	-6.8%	2.4%	0.7%	2.7%	7.1%	4.6%	-7.3%	2.0%	13.0%	-7.6%	1.4%	1.8%	14.1%
2001	1.9%	5.4%	14.4%	3.3%	-2.8%	15.9%	5.3%	17.9%	4.7%	-6.4%	3.0%	4.0%	66.8%
2000	4.2%	7.3%	-5.3%	3.6%	10.6%	2.7%	3.8%	-0.6%	-2.3%	4.5%	4.9%	5.9%	39.2%
1999	10.4%	-1.0%	1.3%	1.3%	-1.7%	0.1%	-4.3%	4.5%	-3.9%	0.4%	4.4%	5.2%	16.8%
1998									-0.0%			0.1%	0.1%
1997	0.3%	0.1%	-0.0%	-1.0%	0.1%	0.1%	0.9%	0.3%	0.2%	-0.4%	0.7%	0.1%	1.5%
1996	0.5%	-1.1%	2.0%	3.4%	-6.6%	-0.5%	0.0%	0.9%	0.2%	3.0%	-4.0%	-0.2%	-2.3%
1995			1.1%	-0.1%	-0.8%	0.2%	1.8%	0.0%	0.9%	-0.2%	-0.5%	0.9%	3.3%

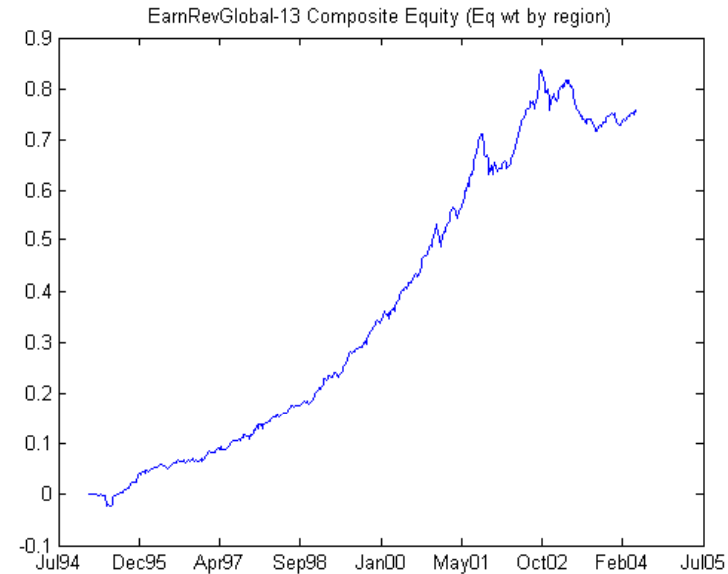
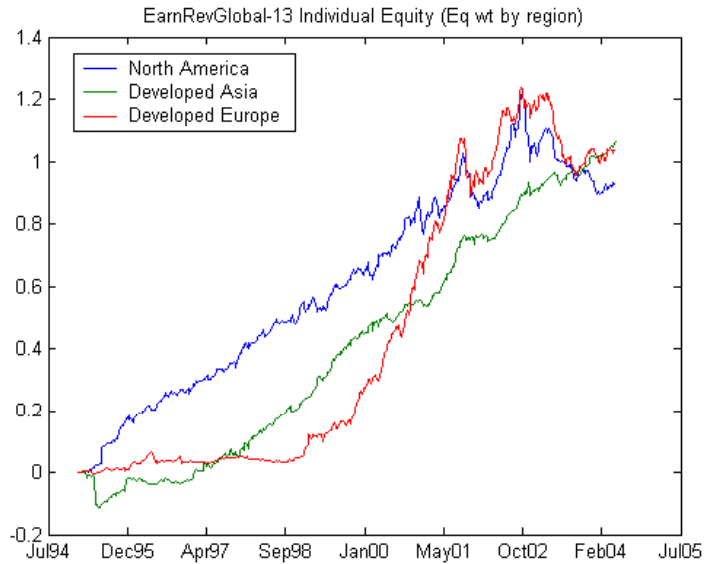
### EarnRevFP (France)

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Return Highlights		Return/Risk											
MTD 05/21/04	1.6%	Ann ROR	7%	Best Month	15.8%	Sharpe Ratio	0.4	Assets Managed	\$1				
YTD 2004	-1.7%	Avg Month ROR	0.6%	Worst Month	-21.7%	Max Drawdown	51%	Inception Date	2/10/1995				
Q1-2004	-5.0%	Tot Ret from Inception	66%	Success Rate	56%	Correlation to S&P	-13%	Strategy Type	undefined				
2003	-19.7%	Program Lifetime	112 months	Standard Deviation	4.9%	Min Rolling 12M ROR	-44%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-2.6%	-0.3%	-2.2%	1.7%	1.6%								-1.7%
2003	2.0%	-2.6%	-1.4%	2.3%	-13.2%	-6.7%	-0.2%	-2.6%	-1.6%	3.6%	-1.1%	1.7%	-19.7%
2002	-0.7%	5.8%	-0.7%	7.1%	15.8%	-5.2%	3.2%	-10.4%	5.5%	-5.5%	-21.7%	7.5%	0.7%
2001	-4.7%	11.9%	1.5%	0.2%	-4.4%	7.6%	9.7%	8.5%	-5.4%	-15.0%	-3.2%	0.1%	6.9%
2000	-2.2%	-6.5%	5.3%	3.4%	0.8%	4.6%	5.4%	-3.7%	10.7%	5.4%	8.3%	12.5%	44.1%
1999	6.1%	1.9%	1.4%	-4.4%	4.1%	3.4%	3.8%	3.0%	0.9%	4.2%	2.5%	3.2%	30.1%
1998	-0.3%	-0.5%	-1.0%	-0.1%	-0.1%	-0.2%	-0.1%	-0.6%	0.3%	1.4%	0.6%	1.6%	0.9%
1997	-0.7%	-0.6%	0.3%	0.0%	0.1%	-0.0%	0.2%	0.1%	-0.1%	0.4%	0.1%	-0.7%	-0.9%
1996	0.8%	-0.2%	-1.2%	1.1%	-0.2%	-0.0%	0.1%	0.6%	0.1%	-0.1%	1.3%	0.2%	2.5%
1995			0.6%	-1.3%	-0.5%	2.4%	-0.1%	0.9%	0.8%	0.5%	-0.1%	0.1%	3.2%



## Equal weight by region (North America, Developed Asia, Developed Europe)



### EarnRevGlobal-13, Eq wt by region, 30bp RT TC

10/18/2005 2:25 PM

Return Highlights				Return/Risk								Assets Managed	
MTD 05/21/04	0.6%	Ann ROR	10%	Best Month	5.1%	Sharpe Ratio	1.4	Assets Managed	\$1				
YTD 2004	1.0%	Avg Month ROR	0.8%	Worst Month	-5.7%	Max Drawdown	9%	Inception Date	1/8/1999				
Q1-2004	-0.4%	Tot Ret from Inception	55%	Success Rate	74%	Correlation to S&P	-25%	Strategy Type	undefined				
2003	-4.2%	Program Lifetime	65 months	Standard Deviation	2.1%	Min Rolling 12M ROR	-9%						
Monthly Performance (actual, gross of fees)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-1.6%	0.7%	0.5%	0.9%	0.6%								1.0%
2003	0.9%	0.5%	1.0%	-2.6%	-3.4%	-1.3%	-0.1%	-1.3%	-0.3%	1.0%	1.2%	0.2%	-4.2%
2002	-0.3%	1.6%	-0.7%	3.1%	5.1%	1.5%	1.4%	0.4%	5.1%	-0.4%	-5.7%	3.4%	14.5%
2001	-3.1%	2.8%	4.0%	-0.6%	0.6%	3.9%	3.2%	4.7%	3.3%	-4.4%	-1.8%	-0.3%	12.3%
2000	1.0%	0.1%	1.5%	1.6%	1.9%	1.1%	0.7%	1.2%	3.0%	1.0%	1.5%	3.9%	18.5%
1999	1.9%	0.8%	-0.4%	0.1%	1.6%	1.6%	1.6%	0.6%	0.2%	2.2%	1.4%	1.5%	13.0%