Associés en Finance

Financial Letter - # 31 -

September 1998

NOT JUST ANOTHER BEAUTY CONTEST

Quantitative performance measurement of equity analysts is unusual. Unlike fund managers, who are constantly subjected to various rankings based upon the returns they've achieved, analysts have only one or two annual surveys about which to worry (or not).

So far, the market has been satisfied with analyst rankings such as Institutional Investor's All-American Research Team survey in the United States, or the FT Extel Annual Survey in the UK. Portfolio managers receive a questionnaire asking them to select their favorite analysts. Although the criteria set forth for selection of the top analysts vary, they generally include the quality of the analysts' written reports and customer service as well as the accuracy of their earnings forecasts and recommendations.

These surveys are reliable to some degree. Academics have compared the performance of the financial analysts cited in Institutional Investor with the performance of those who don't appear in any survey: on average, cited analysts provide more accurate forecasts, revise their forecasts more frequently, and have a greater market impact. However, the results vary considerably when cited analysts are compared to each other.

It used to be difficult to gather analysts' forecasts and recommendations: they preferred to keep their research for their clients or for themselves. That's partly why there have been few quantitative studies on analysts until now. Thanks to ever more efficient communications, information technology, and increasing competition, a lot of equity research is almost publicly available, and more people are beginning to look at it more closely.

Here, we present a more formal approach to the performance measurement of financial analysts, an approach based on earnings forecasts rather than polls. Polls are exogenous to analysts' work: that's why we assimilate them to Keynes's «beauty contests». Analysts' earnings forecasts, on the other hand, couldn't be more endogenous to their work.

The importance of short-term earnings forecasts

Analysts are usually reluctant to be evaluated through the sole criteria of their forecasting accuracy. They stress the importance of other criteria, such as the quality of their recommendations, their good relationship with clients, their role as strategists, the market share they generate for their firm, etc. These criteria are indeed important, but they all relate to EPS forecasting accuracy — or at least they should.

Basically, financial analysts face two difficult tasks: forecasting EPS for two or three years and formulating recommendations to buy or sell securities. These two tasks are not as different as they may seem. Recommending a «buy» for a particular security implicitly requires forecasting higher short-term and long-term earnings than the market — i.e. all analysts covering that particular company — and/or to consider that the risk surrounding the company's cash earnings is lower than the market thinks. The opposite is true for sell recommendations. We focus here on short-term earnings forecasts, and to a lesser extent on risk.

The accuracy of short-term EPS forecasts is of premier importance in itself. This is illustrated in Table 1, which shows the earnings surprise effect in the UK for 1996 - 1998. Portfolio 1 contains 10 stocks which posted strong positive surprises for 1997. Portfolio 2 contains 10 stocks which posted strong negative surprises. For example, 1997 EPS forecasts for Britannic Assurance were indexed at 100 in May 1996 and came out at 287 in April 1998; 1997 EPS forecasts for Pilkington were indexed at 100 in May 1996 and came out at 32.

Portfolio 1 outperformed the FTSE 100 index by over 24 percentage points, +79.4% versus +55.3% for the Footsie. Portfolio 2 underperformed the FTSE 100

223, rue Saint-Honoré - 75001 PARIS - Tél. 01 44 50 56 25

S.A. au capital de 1 000 000 F - RCS Paris B 394 630 867 - APE 724Z

index by nearly 50 points (+5.7%).[1] Whoever had the better 1997 earnings forecasts for those 20 stocks stood to profit handsomely, judging by the two portfolios' respective performances relative to the benchmark.

Table 1: Earnings Surprises in the UK - 1997 EPS

1997 EPS forecasts May 1996		1997 EPS « forecasts » April 1998	Portfolio Performance May 1996-April 1998
100	Britannic Assurance	287	
	Wilson Bowden	169	
	Nycomed Amersham	156	**Positive**
	British Land	150	**Surprises**
	Scottish Media	150	**79.4%**
	General Accident	149	
	Geest	143	
	Kingfisher	139	
	Premier Oil	136	**FTSE 100**
	Berkeley Group	130	
			55.3%
	Courtaulds Textiles	56	
	NatWest	56	
	Racal	56	
	Monument Oil & Gas	50	
	BICC	49	**Negative**
	LASMO	48	**Surprises**
	House of Fraser	48	**5.7%**
	Dalgety	41	
	ICI	36	
	Pilkington	32	

The outperformance of stocks with positive surprises doesn't occur just because their 1997 earnings beat market expectations. The higher-than-expected 1997 earnings normally lead to upward revisions of all future earnings flows, and these higher future earnings flows are met by a higher share price. The inverse is true for stocks with negative surprises. This observation infers a link between earnings surprises, one year forecasts, and analysts' recommendations. Hence the importance of getting the first year of forecasts right and being among the first to do so.

EPS forecasts are good if they're accurate and timely. Thus, we ask two questions in evaluating the quality of an analyst's forecasts: 1) how big an error did he make while forecasting EPS for a given stock (the precision of forecasts), and 2) was he ahead of the game or just being gregarious (the timeliness of forecasts).

The precision of forecasts

To analyze the precision of forecasts, we measure the distance between all the analyst's forecasts over the forecast period and the analyst's last «forecast». This last forecast, published several months after the end of the fiscal year, is considered the «realized» EPS. We come up with a mean absolute forecasting error by comparing the series of forecasts and the realized EPS, from which we derive a notation per stock/analyst from 0 to 10, as explained in the insert below.

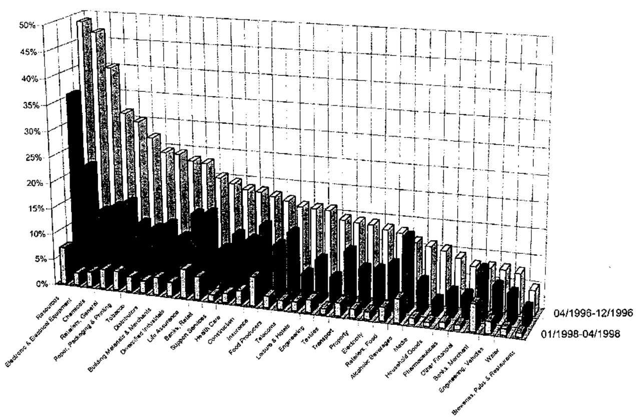
Such measures are valid only when comparing analysts covering the same stocks and/or the same sector. The risk dimension of forecasts should be figured into the quantification of forecasting ability, especially when comparing analysts who cover different sectors.

Graph 1 presents the forecasting errors for stocks classified by industry. Analysts are organized along this or another industry classification in most research teams, and one or more analysts cover a particular sector or one of its subsets. The graph shows that the average EPS forecasting error varies greatly among sectors, and remains volatile even as the forecast horizon narrows, i.e. when the analysts' estimates are closer to the end of the fiscal year.

For example, analysts were off by an average 50% in forecasting 1997 EPS for the Resources industry group during the first eight months of the forecast period, from April 1996 to December 1996. Their overall average error fell to 35% over 1997, and ended up close to zero (7%) in the first four months of 1998.

Graph 1

Mean Absolute Forecasting Error by Sector
United Kingdom, 1997 EPS



Twenty-three to nineteen months before realized EPS is «known», the industries exhibiting the largest forecasting errors of EPS are Resources, Electronic & Electrical Equipment, Chemicals, General Retailers, and Paper, Packaging and Printing.

The differences disappear at the end of the forecast period (January - April 1998), but none of these four months are prior to the companies' fiscal year ends.

(1) The data used here are from Associés en Finance's Consensus database. This database covered approximately 1200 European companies across fifteen countries in 1998, with forecasts from over 150 mainly sell-side research teams.
These research teams provide forecasts of key financial variables on a regular basis: earnings per share, dividend per share, and cash flow per share for the next two or more fiscal years, estimates of a five-year EPS growth rate, current fiscal year net asset value, and free float.

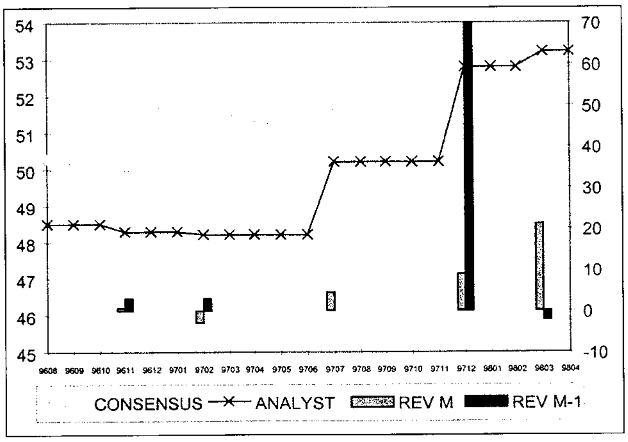
The timeliness of forecasts

Considering the methodology described above, an analyst whose strategy would be purely to conform to the last known consensus estimate could get away with a decent grade. The same goes for an analyst who would never revise his forecasts.

The timeliness of forecasts is important beyond their accuracy. We determine whether or not analysts have a tendency to move toward or away from consensus forecasts of one month prior. The first graph below shows the evolution of the consensus and an analyst's 1997 EPS forecasts for Scottish & Newcastle.(2) The overall picture of this graph strongly suggests that the analyst was lagging consensus revisions. The analyst also has the largest forecasting error: 6.30 versus 1.40 for the Consensus. That leaves him ranked last out of eleven analysts, with a rating of zero.

Scottish & Newcastle

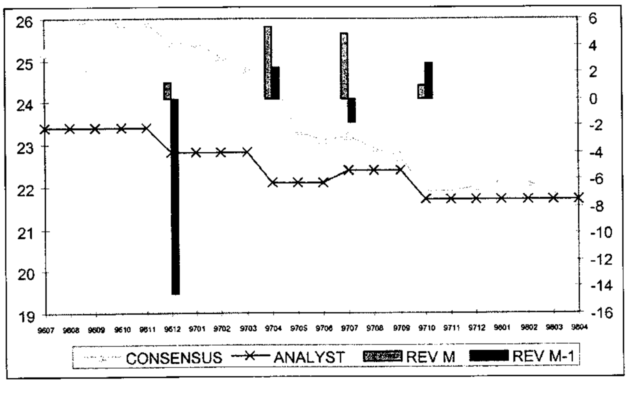
Average Consensus Error: 1.40 Ranking: 11/11
Average Analyst Error: 6.30 Rating: 0



The second graph below shows an analyst who seems to have led consensus estimates while also having a lower forecasting error. He is ranked second out of ten analysts, with a rating of 7.63/10.

BPB Industries

Average Consensus Error: 8.50 Ranking: 2/10
Average Analyst Error: 3.40 Rating: 7.63



The casual observation of such graphs can be misleading and lead to erroneous conclusions regarding the potential causation of two time series in general, and these two time series in particular. That's why we also quantified the measurement of forecasts' timeliness (see insert).

And the winners are...

The research teams who were most accurate overall in forecasting earnings for UK stocks were Merrill Lynch, Charterhouse Tilney, and Warburg Dillon Read for 1996 EPS and Credit Suisse First Boston (previously BZW), ABN AMRO, and Warburg Dillon Read for 1997 EPS.(3) The outcome isn't radically different from that of the FT Extel Survey in 1996 and 1997: there aren't any blatant contradictions.

Detailed down to the sector or the individual stock level, these results have proven useful for those who deal most with equity analysts: heads of research and institutional investors. Heads of research can keep track of the recommendations and forecasts their analysts have been making — no small task when teams with 100-plus analysts are involved. Investors can refer to the rankings to check which analyst or research team has historically been the most reliable for a given sector or a given stock and decide whom to call — no small task either when one sees all the research investment managers receive on a daily basis. Finally, large institutional investors can use the quantitative ranking within their broader efforts to cut costs as a source of information on the value added by their financial intermediaries.

(2) REV M is the ratio of the analyst's revision in a given month to the consensus revision the same month. REV M-1 is the ratio of the analyst's revision in a given month to the consensus revision the previous month. The right hand scale in the graphs indicates the value of the ratio. For example, the Scottish & Newcastle analyst's revision in December 1997 was seventy times greater than the consensus revision in November 1997, and nearly ten times greater than the consensus revision in December.

(3) The contributors to the Associés en Finance UK Consensus at the time of this study are: ABN AMRO, BT Alex. Brown (previously NatWest Markets), Charterhouse Tilney, Credit Lyonnais Laing, Credit Suisse First Boston, Dresdner Kleinwort Benson, HSBC Securities, Merrill Lynch, Panmure Gordon, Salomon Smith Barney, Warburg Dillon Read, SG Securities, UBS (1996 only), and Williams de Broë. Salomon Smith Barney and SG Securities were excluded from the ranking because they follow an insufficient number of stocks. HSBC Securities, a relatively recent contributor to Associés en Finance's Consensus, will be ranked next year along with other new research teams.

The precision of forecasts

The following formula is used to compute the forecasting error statistic for each analyst and each stock:

$$\frac{1}{T}\sum_{t=1}^{T}\frac{|E_t(EPS) - REPS|}{REPS}$$

T is the length of the forecast period in months. Et(EPS) is the analyst's forecast in month t. REPS is the analyst's last forecast, considered the «realized» EPS. Two benchmarks other than the analyst's last forecast could be considered as the realized EPS. One is EPS as reported by the company itself. This solution was eliminated, as analysts are requested to forecast retreated earnings according to certain guidelines, and not reported EPS. A second candidate was the last consensus forecast. Yet even if analysts agree upon a single set of financial accounting principles, their placement of certain items on the income statement and on the balance sheet invariably leads to differences, however slight they may be.

In order to test the potential bias introduced by the choice of the analyst's last forecast as a benchmark, the standard deviations of last forecasts were computed for each stock covered. The overall mean standard deviation of the last EPS estimate is between 4% and 7%, depending on the year and the country. Individual stocks' standard deviations were equal to more than twice the mean standard deviation just 4 to 7% of the time as well. Thus, the choice of last forecasts as the benchmark for «realized» EPS doesn't seem to be a biased measure, and it is probably the fairest solution for the analysts.

The forecasting error statistic gives a measure of analysts' accuracy, but it doesn't clearly show where analysts stand relative to each other. An error rating alleviates this drawback:

$$10 * [\frac{Err_{\max} - Err_{ana}}{Err_{\max} - Err_{\min}}]$$

Err_{max} and Err_{min} represent the maximum and minimum forecasting errors among all analysts covering the stock, and Err_{ana} is the error observed for the analyst in question. It follows that the analyst with the lowest error receives a rating of 10 and the analyst with the highest error a rating of zero.

The timeliness of forecasts

The consensus EPS forecast converges over time with an analyst's EPS forecast for the same stock if $|EPS_{css, t} - EPS_{ana, t-1}| < |EPS_{css, t-1} - EPS_{ana, t-1}|$, in other words, if the consensus forecast at time t is closer to the analyst's forecast at time t-1 than the previous consensus forecast at time t-1.

On the other hand, the analyst's forecast converges with the consensus forecast if $|EPS_{ana, t} - EPS_{css, t-1}| < |EPS_{ana, t-1} - EPS_{css, t-1}|$.

The sum of the revisions which lead to a convergence over the entire forecasting period for each stock shows whether an analyst converges with the consensus, or vice versa, such that:

CV cons → analyst = $\Sigma\ |EPS_{css, t} - EPS_{css, t-1}|$ when $|EPS_{css, t} - EPS_{ana, t-1}| < |EPS_{css, t-1} - EPS_{ana, t-1}|$

CV analyst → cons = $\Sigma\ |EPS_{ana, t} - EPS_{ana, t-1}|$ when $|EPS_{ana, t} - EPS_{css, t-1}| < |EPS_{ana, t-1} - EPS_{css, t-1}|$

The convergence ratio CR follows:

CR = CV cons / CV analyst

By definition, this ratio is equal to one for the consensus or for an analyst who mimics the consensus, and it is highest for the analyst who on average leads consensus revisions.

Associés en Finance is an independent company that provides finance professionals with objective analysis of European companies, sectors, and markets. The company calculates consensus forecasts for 1200 European stocks, monitors the accuracy and timeliness of analysts' estimates and recommendations, and runs a quantitative valuation model for Belgium, France, Germany and Switzerland - the **Security Market Line**. Associés en Finance meets the sophisticated valuation needs of investment banks, investors, companies, governments, and consultants with tailor-made solutions and personalized assistance.

223, rue Saint-Honoré - 75001 PARIS - Tél. 01 44 50 56 25

S.A. au capital de 1 000 000 F - RCS Paris B 394 630 867 - APE 724Z