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CAMBRIDGE ASSOCIATES LLC

EUROPEAN MARKET COMMENT: EUROPEAN VALUATIONS

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European Valuations

Although equity market valuations never became as stretched in the European markets as they did in the States, they have shared in the pain of mean reversion as technology and telecom sector earnings have been revised downward and investors forced to reappraise their earlier optimism. In light of the markets' recent volatility, we thought it might be useful to revisit valuation levels in U.K. and Europe ex U.K. equity markets to see where they stand today.

Our dividend discount model indicates that U.K. equities are currently fairly valued whereas continental European equities are slightly undervalued. To be more precise, U.K. equities are 9.6% undervalued and Europe ex U.K. equities are -26.9% undervalued. We view any reading between +/- 20% as too low to provide meaningful indicators of over/undervaluation.

Share prices are determined by corporate earnings and the multiple investors are willing to assign to those earnings, which, in turn depends on the level of interest rates. Over the course of the last 12 months, a steady increase in European (including U.K.) corporate earnings has been offset by a contraction in the multiple investors have been prepared to pay—a result of their becoming more risk-averse in response to rising economic uncertainty. However, it is worth noting that our valuation model takes as given analysts' consensus earnings estimates, and although these have been steadily slashed since early last year, they remain high by historical standards. For example, the I/B/E/S 12-month forward consensus earnings growth estimates are 10.3% for the FTSE All-Share Index and 14.0% for Europe ex U.K. (see Notes on the Data), and these are used as base case assumptions for our model.

Yields on U.K. and Euro-zone government bonds have fallen 60 and 57 basis points, respectively, over the last year, as measured by the J.P. Morgan U.K. Government Bond and J.P. Morgan German Government Bond indexes. Other things being equal, such a move enhances the fair value of the markets because the present value of future cash flows rises. The equity risk premium, defined as the difference between the return on equity and the return on risk free assets, is subject to considerable debate, given that it varies greatly from one period to another, and from country to country over the same time period. Here (as so often) history provides no reliable guide to the future and there seems no viable method of predicting what the premium might be going forward. Attempts to do so should be acknowledged as educated guesses. For this analysis, we have adopted the low end of a 3% to 4% guesstimate, cited in ABN Amro's "*Millenium Book II*."

The net result of the negative impact of lower earnings estimates and contracting valuation multiples and the positive impact of lower interest rates and lower share prices is a more defensible market price, both for the United Kingdom and Europe ex U.K., relative to underlying fundamentals.

However, since we are at the beginning of the 2001 forecast year, we would expect to see earnings estimates trimmed in the months ahead, as systemic analyst optimism is winnowed from forecasts. If we assume, as an alternative case, that earnings for both the United Kingdom and Europe ex U.K. come in at 7% (which corresponds to the estimated long-term average annual growth rate[1] for both markets), and hold constant our equity risk premium assumption, then our dividend discount model would price these two markets at 20.9% and 29.9% *overvalued*. Similarly, if we were to assume an equity risk premium of 2% rather than 3%, while continuing to rely on current I/B/E/S earnings estimates, then the model would compute that the U.K. market is 25.6% and Europe ex U.K. 40.0% *undervalued*. Such dramatic shifts in valuations highlight the model's sensitivity to different input assumptions, and is a reason why such models should not be used as market timing indicators. Tables A and B provide further valuation sensitivity analysis under differing equity risk premium and earnings growth assumptions.

A dividend discount model can also be used to derive the equity risk premium implicit in the assumption that the market is fairly valued. Using I/B/E/S short-term estimates, the ex-ante equity risk premium for the United Kingdom is now 3.6%, and that of Europe ex U.K., 4.8%. In other words, for continental Europe, this suggests that equities will outperform bonds by 4.8%, as long as earnings grow at 14.0% and bond yields are unchanged.

Although our model infers that valuation levels appear more appealing in continental Europe than in the United Kingdom, suggesting that the U.K. market might be more susceptible to further earnings disappointments, recent evidence suggests the gap is narrowing. In addition, in seven out of ten sectors, the U.K. market is trading at more attractive multiples to 12-month forward earnings.

In the last 12 months there have been significant negative earnings revisions throughout Europe, particularly in Scandinavian markets, where tech/telecom companies constitute a significant portion of equity markets. In Finland and Sweden, I/B/E/S 12-month forward estimates have been slashed in half since February 2000, from 21% in both markets to 10% and 9% respectively. At present, the highest earnings growth estimates are in the two continental heavyweights, France and Germany, for which I/B/E/S 12-month forward estimates are only slightly down from earlier levels, at 18% and 17% respectively.

Dividend Discount Models help provide an understanding as to the dynamic of the markets and, as with most valuation tools, the worth lies in the questions they raise. What has caused the model to assign a fair value 30% lower than last year? Is it because of higher interest rates or lower earnings estimates? How sensitive is any given model's output to changes in one input variable? The model is most useful when the assumptions are kept constant so that shifts in the market are made apparent.

[1] 1960-2000.

Notes on the Data

I/B/E/S does not calculate estimates for regions and therefore our short-term earnings growth assumption for Europe ex U.K., 14.0%, has been calculated by aggregating country estimates according to weights in the MSCI Europe ex U.K. Index. Portugal, representing 1.2% of the index, has been excluded because no I/B/E/S estimate was available.

I/B/E/S estimates for sector earnings growth are calculated for the FTSE UK Index and the FTSE Europe ex U.K. Index, which, although not 100% comparable with previous estimates, highlights the general sector trends.

Table A

DIVIDEND DISCOUNT MODEL VALUATIONS UNDER VARYING ASSUMPTIONS

Fair Value and Over- (Under-) Valuation of the FTSE ALL-SHARE INDEX Under Varying Equity Risk Premium and Earnings Growth Assumptions

Base Case Assumptions

Current earnings derived from trailing P/E ratio.
Ten-year earnings growth of 10.3%. I/B/E/S 12m forward consensus estimates.
Risk Free Rate of 4.70%, the yield on J.P. Morgan U.K. Govt Bond Index.
Equity Risk Premium of 3.0%.

Base Case Results

DDM Fair Value = 3173.75
Index level as of 28 Feb 2001 = 2868.00
Market undervaluation = -9.6%

Equity Risk Premium	Earnings Growth										Model indicates fair value with earnings growth rate of
	1.0%	3.0%	5.0%	7.0%	9.0%	11.0%	13.0%	15.0%	17.0%	19.0%	
0%	2564.3 11.8%	3107.5 -7.7%	3761.4 -23.8%	4546.3 -36.9%	5486.1 -47.7%	6608.1 -56.6%	7944.1 -63.9%	9530.9 -69.9%	11410.4 -74.9%	13631.1 -79.0%	2.2%
1%	2029.6 41.3%	2446.8 17.2%	2947.9 -2.7%	3548.3 -19.2%	4266.0 -32.8%	5121.5 -44.0%	6138.9 -53.3%	7345.8 -61.0%	8773.7 -67.3%	10459.2 -72.6%	4.7%
2%	1662.2 72.5%	1993.4 43.9%	2390.3 20.0%	2865.1 0.1%	3431.6 -16.4%	4105.8 -30.1%	4906.6 -41.5%	5855.2 -51.0%	6976.3 -58.9%	8298.3 -65.4%	7.0%
3%	1396.0 105.4%	1665.5 72.2%	1987.8 44.3%	2372.4 20.9%	2830.6 1.3%	3375.0 -15.0%	4020.6 -28.7%	4784.5 -40.1%	5686.2 -49.6%	6748.3 -57.5%	9.2%
4%	1195.6 139.9%	1419.1 102.1%	1685.7 70.1%	2003.3 43.2%	2380.9 20.5%	2828.8 1.4%	3359.2 -14.6%	3985.8 -28.0%	4724.7 -39.3%	5593.9 -48.7%	11.2%
Model indicates fair value with equity risk premium of	-0.4%	0.3%	1.1%	2.0%	2.9%	3.9%	5.0%	6.1%	7.2%	8.4%	

Market overvalued (FV > 20%) | Market fairly valued (-20% < FV < 20%) | Market undervalued (FV < -20%)

Table B

DIVIDEND DISCOUNT MODEL VALUATIONS UNDER VARYING ASSUMPTIONS

Fair Value and Over- (Under-) Valuation of the MSCI EUROPE EX U.K. INDEX Under Varying Equity Risk Premium and Earnings Growth Assumptions

Base Case Assumptions

Current earnings derived from trailing P/E ratio.
Ten-year earnings growth of 14.0%. Aggregate of I/B/E/S 12m fwd consensus country estimates.
Risk Free Rate of 4.83%, the yield on J.P. Morgan German Govt Bond Index.
Equity Risk Premium of 3.0%.

Base Case Results

DDM Fair Value = 1277.72
Index level as of 28 Feb 2001 = 933.878
Market undervaluation = -26.9%

Equity Risk Premium	Earnings Growth										Model indicates fair value with earnings growth rate of
	1.0%	3.0%	5.0%	7.0%	9.0%	11.0%	13.0%	15.0%	17.0%	19.0%	
0%	806.0 15.9%	964.7 -3.2%	1152.5 -19.0%	1374.2 -32.0%	1635.3 -42.9%	1942.0 -51.9%	2301.2 -59.4%	2720.9 -65.7%	3210.1 -70.9%	3779.0 -75.3%	2.6%
1%	636.9 46.6%	759.4 23.0%	904.3 3.3%	1075.1 -13.1%	1276.0 -26.8%	1511.6 -38.2%	1787.4 -47.8%	2109.5 -55.7%	2484.5 -62.4%	2920.3 -68.0%	5.4%
2%	519.9 79.6%	617.5 51.2%	732.8 27.4%	868.6 7.5%	1028.1 -9.2%	1215.0 -23.1%	1433.5 -34.9%	1688.4 -44.7%	1985.1 -53.0%	2329.6 -59.9%	7.9%
3%	434.7 114.8%	514.4 81.5%	608.4 53.5%	718.8 29.9%	848.4 10.1%	1000.2 -6.6%	1177.4 -20.7%	1383.9 -32.5%	1624.0 -42.5%	1902.6 -50.9%	10.2%
4%	370.5 152.1%	436.7 113.8%	514.6 81.5%	606.1 54.1%	713.4 30.9%	838.8 11.3%	985.0 -5.2%	1155.4 -19.2%	1353.2 -31.0%	1582.6 -41.0%	12.3%
Model indicates fair value with equity risk premium of	-0.5%	0.1%	0.9%	1.6%	2.5%	3.4%	4.3%	5.3%	6.3%	7.4%	

Market overvalued (FV > 20%) | Market fairly valued (-20% < FV < 20%) | Market undervalued (FV <-20%)