Is The Pakistani Stock Market Expensive?

National Fullerton
Asset Management Limited
(A Subsidiary of National Bank of Pakistan)

Dr. Amjad Waheed, CFA
Chief Executive Officer

To value the stock market, we use a basic model known as the Gordon Growth Model. The model is as follows:

$$P = D_1 / (K - g) \qquad (1)$$

Where P is the value of the stock market, D_1 is next year's dividend of the market, K is the rate of return that the investor requires for investing in the stock market, and g is the sustainable corporate earnings growth rate. It is assumed that corporate earnings will grow at the same rate as nominal GDP over the long run. The required rate of return $K = K_{rf} + (K_m - K_{rf})$, where K_{rf} is the risk free rate, and $(K_m - K_{rf})$ is the market risk premium. The risk-free rate is a function of inflation and the real GDP growth rate, whereas the risk-premium is the extra return that the investors expect over and above the risk-free rate for taking the extra risk of investing in the stock market. In other words, the risk premium is the difference between the return on the stock market and the long-term PIB rate. Equation 1 can be elaborated as follows:

$$P = \frac{D_1}{[K_{rf} + (K_m - K_{rf})] - g} \qquad (2)$$

Some of the basic relationships that we can observe from equation 2 are as follows:

1. As the earnings and dividends of stock market rise, the value of the stock market is expected to rise.
2. As inflation rises, the stock market is expected to decline as the required rate of return of investors (K) increases.
3. The rise in real GDP growth has a two-fold impact. On the one hand, the required rate of return rises, which is negative for the stock market. Whereas on the other hand, corporate earnings rise that is positive for the stock market.
4. As the business, financial, political and/or security risks rise, investors demand a higher risk premium to invest in risky assets, which may result in a decline in the stock market.
5. Finally, the higher the long-term corporate earnings growth rate, the higher the expected rise in the stock market.

To value the stock market based on its price-to-earnings ratio, the above model (equation 2) can be modified further as follows:

$$P/E = \frac{(D_1/E)}{[K_{rf} + (K_m - K_{rf})] - g} \qquad (3)$$

Where E is the expected earnings of the companies listed on the stock market.

We now evaluate the Pakistani stock market using Equation 3. Our long-term estimates for various variables are as follows:

Dividend payout ratio of the Pakistani stock market (D_1/E): 54%
Risk free rate using the 10-year PIB rate as a proxy (K_{rf}): 12.8%
Equity risk-premium ($K_m - K_{rf}$): 8.5%
Inflation rate: 10%
Real GDP growth rate (IMF forecast): 5%
Sustainable corporate earnings growth rate (g). (Assuming this equals inflation plus real GDP growth rate): 15%

Inputting the above estimates in Equation 3:

$$P/E = \frac{(0.54)}{[(0.128 + 0.085) - (0.10 + 0.05)]}$$

$$P/E = 8.6$$

Based on the above, the intrinsic price-to-earnings ratio of the Pakistani stock market is estimated at 8.6 times. The price-to-earnings ratio based on FY11 earnings is presently around 7 times. Thus the Pakistani stock market seems to be trading at a 23% discount to its intrinsic value. We expect the stock market to gradually move towards its intrinsic value.