Prices under Crises

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Abstract: The PVGO of the share prices shows the investors future hope. If the global trends are changed, then need to evaluated the theoretical thesis by the practice. Let’s look the BSE blue chips behavior in the last year, under crises.

Keywords: crises, share, stock market, PVGO, Budapest Stock Exchange

1 Theoretical Background

All kind of financial instrument prices well be calculated by the same form: the price is equal by the present value of the generated cash flow (Figure 1)

\[ P_0 = \sum_{i=1}^{m} \frac{CF_i}{(1 + r_i)^i} \]  \hspace{1cm} (1)

When

- \( P_0 \) = the efficient market price (strike price, prompt or spot price)
- \( CF_i \) = the instrument generated cash flow, in the period
- \( r_i \) = the yield curve value at the \( i \) period
- \( m \) = the maturity of the instrument (can be \( \infty \))

In the stock exchange the most popular product is the share. The shareholder can do two things: enjoy the dividend or sell the share. Therefore the price of the hare show the next form: (Figure 2)

\[ P_0 = \sum_{i=1}^{m} \frac{DIV_i}{(1 + r_i)^i} + \frac{P_m}{(1 + r_m)^m} \]  \hspace{1cm} (2)
When

\[ P_0 = \text{the market price (strike price, prompt or spot price)} \]

\[ P_m = \text{the seller's price} \]

\[ DIV_i = \text{the dividend of the share} \]

\[ r_i = \text{the yield curve value at the } i \text{ period} \]

\[ m = \text{the maturity of the instrument} \]

If the yield curve is constant (2a), then the form is simplified by (2b)

\[ r_i = r_j; \quad \forall i, j; \quad i \neq j; \quad i, j \in \mathbb{Z} \quad (2a) \]

\[ P_0 = \sum_{i=1}^{m} \frac{DIV_i}{(1 + r)^i} + \frac{P_m}{(1 + r)^m} \quad (2b) \]

The source of the dividend is the earning of the share’s company. From the earning the not for dividend paid amount belonging to the profit reserves, and this retained earning is the source of the company’s growing. If all kinds of shares are the same type, then the earning divided by the number of the shares is the EPS.

\[ dr + rr = 1; \quad (2c) \]

\[ DIV = EPS \times dr; \quad (2d) \]

\[ ROE \times rr = g; \quad (2e) \]

If all years the dividend are the same, or has a same growing rate (g) then – used the perpetuity form – the price of the share can described by the form (3)

\[ P_0 = \frac{DIV}{r - g} \quad (3) \]

The share’s price can be described by one non-growing part and the PVGO (Present Value of the Growing Opportunity)

\[ P_0 = \frac{EPS}{r} + PVGO \quad (3) \]
2 Practical Part: Selected Blue Chips of the BSE

In this part let’s try to look during four shares, what was happened in the Budapest Stock Exchange from 01. January 2007. The selected shares are: OTP (major Bank in Hungary), MOL (Oil Company), MTELECOM (Telecommunication Company) and RICHTER (Pharmaceutical Company).

2.1 Fundamental Background of the BSE’s Selected Blue Chips

The major indicator included the following sheet:

<table>
<thead>
<tr>
<th>Name</th>
<th>MOL</th>
<th>MTELEKOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>2006</td>
<td>2007</td>
</tr>
<tr>
<td>EPS (HUF)</td>
<td>3424</td>
<td>3057</td>
</tr>
<tr>
<td>DIV (HUF)</td>
<td>507.96</td>
<td>883.36</td>
</tr>
<tr>
<td>ROE</td>
<td>25.92%</td>
<td>28.03%</td>
</tr>
<tr>
<td>dr</td>
<td>14.84%</td>
<td>28.90%</td>
</tr>
<tr>
<td>rr</td>
<td>85.16%</td>
<td>71.10%</td>
</tr>
<tr>
<td>g</td>
<td>22.07%</td>
<td>19.93%</td>
</tr>
<tr>
<td>P (DIV/(r-g))</td>
<td>13 210</td>
<td>10 905</td>
</tr>
<tr>
<td>P (EPS/ROE)</td>
<td>13 210</td>
<td>10 905</td>
</tr>
</tbody>
</table>

The Sheet 1 show, that the run of the MOL share is in the year 2006 and 2007 regular, but in the year 2008 don’t pay dividende. The run of the MTeleKom Share in the year 2006 and 2008 is regular, but in the year 2007 payed more dividende, as the EPS, that does it mean, that the g is negativ. The run of the OTP
share is in the year 2006 regular, but in the year 2007 and 2008 don’t pay dividend. Only the run of the Richter share is regular during the analysed period. The consequences of the subrime crises was the sinkig of the stock market prices. The companies aswer: the most pay never dividende.

2.2 Historical Analisys of the PVGO of the BSE’s Selected Blue Chips

Based by the Historical analisys, we can describe the following different type of cases:

- regular (normal)
- zero dividende
- more dividende, as the EPS

In the regular cases, the PVGO is more as 0. If the dividende is zero, then the PVGO goes to the negative territory. If the dividende is more that the EPS, then the growing rate (g) is less than zero. That’s shows the following graphs:

![Graph 1](image1.png)

**Graph 1**
MOL Market Price, PVGO, and Δ

![Graph 2](image2.png)

**Graph 2**
MTELEKOM Market Price, PVGO, and Δ

![Graph 3](image3.png)

**Graph 3**
OTP Market Price, PVGO, and Δ

![Graph 4](image4.png)

**Graph 3**
RICHTER Market Price, PVGO, and Δ
Conclusion

Is not so easy to competition the fundamental prices, what changed only yearly, with the spot prices, what have daily flexibility.

The MTeleCom followed the Lintner theory, not reduced the dividend, but this action destroyed the standard PVGO theory, and give the sinking of the company market value.

The MOL, and the OTP reduced to zero the dividend.

Only the Richter can save the positive PVGO

References

[1] Ross Westenfels Jaffe: Corporate Finance