

① $P_0 = 54,89$
 $t = 2003 - 2006$

$\text{ROE} = \frac{8,9 + 1,6 + 16,3 + 21,8}{4} = 12,15$

① $\text{EPS} = \frac{1,45 + 0,23 + 2,13 + 2,55}{4} = 1,59$

$\text{EPS} = 2,33$

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$P/E = 54,89 / 1,59 = 34,52$

$P/E = 24,81$

② $P/E_1 = \frac{v}{r-g}$ $P/E_0 = \frac{v \cdot (1+g)}{r-g}$

$v_1 = \frac{18}{60} = 0,3$

$\rightarrow v = 0,3 \rightarrow 30\%$

$v_2 = \frac{24}{80} = 0,3$

$b = 0,4 \rightarrow 40\%$

A) $P/E_0 = \frac{0,3 \cdot (1+0,13)}{0,14-0,13} = 33,9$ $P/E_1 = \frac{0,3}{0,14-0,13} = 30$

3) $\left[\begin{array}{l} \uparrow \beta \rightarrow \downarrow P/E_1 \rightarrow \uparrow r_e \\ \uparrow g \rightarrow \uparrow P/E_1 \\ \uparrow r_p \rightarrow \downarrow P/E_1 \rightarrow \uparrow r_e \end{array} \right]$

③ $r = 0,09$
 $v = 0,45$

A) $V_3 = P/E \cdot E_3$

$V_3 = 12 \cdot 3 = 36$

① $\text{ROE} = 0,1$

$E_3 = 3$

① $P/E = 12$

B) $V_3 = \frac{34}{r-g} = \frac{0,45 \cdot 3 \cdot (1+g)}{0,09-g}$

$g = b \cdot \text{ROE} \rightarrow 0,55 \cdot 0,1 = 5,5\%$

$V_3 = 40,69$

$$P_0 = 10$$

$$Q = 20.000.000$$

$$S = 1.000.000.000$$

$$\frac{EPS}{SPS} = 5\% \rightarrow 0,05$$

$$P/S = \frac{10}{\frac{1.000.000.000}{20.000.000}}$$

$$P/S = \underline{0,2}$$

$$\underline{\text{MARGIN } 0,05}$$

$$P_0 = 20$$

$$Q = 30.000.000$$

$$S = 1.600.000.000$$

$$\frac{EPS}{SPS} = 4,9\% \rightarrow 0,049$$

$$P/S = \frac{20}{\frac{1.600.000.000}{30.000.000}}$$

$$P/S = \underline{0,375}$$

$$\underline{\text{MARGIN} = 0,049}$$

5

$$P_0 = 38,5$$

$$EPS_0 = 1,36$$

$$DPS_0 = 0,91$$

$$ROE = 24\%$$

$$\frac{EPS}{SPS} = 10,24\%$$

$$r_f = 4,9\%$$

$$r_p = 5,5$$

$$\beta = 1,2$$

$$A) r_c = r_f + \beta \cdot r_p = 4,9 + 1,2 \cdot 5,5 = \underline{11,5\%}$$

$$B) g = 9\%$$

$$P/E_0 = \frac{p \cdot (1+g)}{r-g} = \frac{0,91}{1,36} \cdot \frac{(1+0,09)}{0,115 - 0,09} = \underline{29,14}$$

$$P/S = \frac{p \cdot \frac{EPS}{SPS} \cdot (1+g)}{r-g} = \frac{0,91}{1,36} \cdot \frac{0,1024 \cdot (1+0,09)}{0,115 - 0,09} = \underline{2,99}$$

$$P/BV = \frac{ROE - g}{r-g} = \frac{0,24 - 0,09}{0,115 - 0,09} = \underline{1,2}$$

= 3 =

| | |
|-----------------|--------------|
| $P/E^+ = 29,17$ | $P/E = 28,3$ |
| $P/BV^+ = 4,2$ | $P/BV = 4,1$ |
| $P/S^+ = 2,99$ | $P/S = 2,9$ |

FAIR, SLIGHTLY UNDER PRICED

6) P/EBITDA

$$P/EBITDA = \frac{150 \cdot 5000.000}{62.500.000} = 12$$

$$P/EBITDA = \frac{100 \cdot 2000.000}{20.000.000} = 10$$

$$EBITDA = 49,5 + 2 + 8 + 3 = 62,5$$

$$EBITDA = 8 + 5 + 4 + 3 = 20$$

$$EV = 50.000.000 + 150 \cdot 5000.000 - 5000.000 = 795.000.000$$

$$EV = 100.000.000 + 100 \cdot 2000.000 - 2000.000 = 298.000.000$$

$$EV/EBITDA = \frac{795}{62,5} = 12,72$$

$$EV/EBITDA = \frac{298}{20} = 14,9$$

$$P/E = \frac{65,5}{3,5} = \underline{18,71} \quad (A)$$

= 42

$$P/S = \frac{34,23}{\frac{64.440.000.000}{1.638.821.000}} = \underline{0,905} \quad (C)$$

9) C

10) C

11) A

$$PEG_{\text{CANNAN}} = \frac{18,71}{12,41} = \underline{1,5}$$

$$PEG_{\text{FRESM}} = \frac{16,59}{9,52} = \underline{1,74}$$

$$PEG_{\text{NONUTTER}} = \frac{15,64}{11,94} = \underline{1,31}$$

$$PEG_{\text{Q}} = \frac{16,40}{10,80} = \underline{1,52}$$

FAIRLY VALUED \Rightarrow C

$$P/E_0 = \frac{50}{5,64} = \underline{8,87} \quad (B)$$

$$r = 0,15$$

$$g = 0,06$$

$$P/E_1 = \frac{\frac{2,91}{6}}{0,15 - 0,06} = \underline{5,38} \quad (A)$$

$$BV = 826 + 121 = 947.000.000$$

$$BVPS = 947.000.000 / 42.940.000 = 22,58$$

$$P/BVPS = 50 / 22,58 = \underline{2,21} \quad (B)$$

$$16) \quad EV = 41.940.000 \cdot 50 + 16.000.000 \cdot 5,25 + 367.000.000 - 102.000.000$$

$$EV = 2.446.000.000$$

$$EV/S = \frac{2.446.000.000}{3.186.000.000} = 0,767 = \underline{0,77} \quad (C)$$

$$14) \quad \phi P/E_{HARMONIC} = \frac{5}{\frac{1}{5,9} + \frac{1}{8,3} + \frac{1}{3} + \frac{1}{15} + \frac{1}{4,6}} = \underline{5,51}$$

$$P/E = \frac{50}{6} = \underline{8,33} \quad \rightarrow \quad P/E > \phi P/E_{HARMONIC}$$
$$8,33 > 5,51$$

OVERVALUED

$$18) \quad EPS = \phi ROE \cdot BV$$

$$\phi ROE = \frac{0,1301 + 0,1371 + 0,1158 + 0,1421}{4} = \underline{0,131}$$

$$EPS = 0,131 \cdot 22,58 = \underline{2,96} \quad \rightarrow A$$

$$BVPS = \frac{947.000.000}{42.940.000} = \underline{22,58}$$