VALUATION AND ANALYSIS OF THE TITAN CEMENT GROUP

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Abbreviations and symbols

ami	*After Minority Interests*
at	*After Tax*
capex	*Capital Expenses*
COD	*Cost Of Debt*
COE	*Cost Of Equity*
COGS	*Cost Of Goods Sold*
D	*Dividends*
D/C	*Debt/Capital*
DDM	*Dividend Discount Model*
EP	*Economic Profit*
FCFE	*Free Cash Flow to Equity*
FCFF	*Free Cash Flow to the Firm*
FOCF	*Free Operating Cash Flow to the Firm*
g	*Growth rate*
GI	*General Index*
IAS	*International Accounting Standards*
InvCap	*Invested Capital*
Mp	*Market Price*
MR	*Market Rank*
mv	*Market Value*
n	*Time series' last observation (to perpetuity)*
NoC	*Number of Companies*
OWC	*Operating Working Capital*
payout	*Payout Ratio*
r	*Discounting Factors*
ROIC	*Return On Invested Capital*
t	*Tax Rate*
Thp	*Theoretical Price*
TR	*Titan Rank*
TV	*Terminal Value*
WACC	*Weighted Average Cost of Capital*
wrt	*With Respect To*
μ	*Mean*
'000	*All figures are in thousand euros except per share data*

Executive summary

The paper at hand comprises a company valuation concerning the Titan Cement Group. The author has taken 35 international cement companies under consideration and used 29 model variations that discount cashflows, dividends and estimate theoretical P/Es, P/BVs and P/Ss. Furthermore, a value driver model variation which is attributable to the author has been used. Seven years of historical data are used to estimate financial statements 11 years in the future. Projections are undertaken on 41 ratios and rates. Historical data and forecasts from the aforementioned 35 companies have been employed in relation to the Titan forecasts, in an effort to produce more realistic estimates. Moreover, financial statement construction aims at maximum interdependence of entries. An important example constitutes the interrelation of forecasts for fixed asset investments and operating working capital (OWC) Δ% in order to avoid arriving at extremely low or high valuations. The large number of models aims at estimating the possible range of the company's theoretical value under best and worst case scenarios as well as equilibrium values and the difference in value due to goodwill. Moreover, theoretical values are determined historically as far back as 1987, through the use of financial statements from 1980 to present. Historic deviations of theoretical values from market prices from the 2 models out of 29 that display the lowest deviation volatility have been used in order to set future target prices on the basis of three scenarios: average, conservative and optimistic. Using the same methodology, target prices are also set historically in order to determine the investment horizon necessary for their achievement and to be able to forecast investment horizon wrt future target prices. A reservation should be noted: the historic period examined, 1987–2002, is characterized by three bull markets. It has been concluded that investment horizons will have to be 2 to 3 times longer in case no future bull markets are experienced during the next 10-15 years. Downside risk has also been assessed on the basis of the 2 models with the least deviation volatility, their historic deviations and the aforementioned volatility.

Moreover, a scenario with a simulated IAS conversion is undertaken since starting from 1Q 2003 financial statements of most floated companies will be in the IAS format.

Titan's forecasts are based on comparisons of 35 international cement companies, while theoretical values emerge from 29 model variations

Value driver model variation attributable to the author

Estimation of fundamental value range

Price targets are based on historical deviations of theoretical company values from market prices

Estimation of investment time horizon wrt price targets by means of setting ex post targets

Concerning current theoretical values results, these are: equilibrium with goodwill 41,58 (33,53 IAS) EURO, equilibrium without goodwill 42,94 (34,09 IAS), average downside risk 31,57 (31,81 IAS) and range of theoretical value under worst and best case scenarios 27,61 (18,69 IAS) – 70 (58,08 IAS).

Conservative targets need maximum 1 year to be achieved, average targets 3 years and optimistic targets 6 years. Conservative targets are: 52,41 EURO – 33,2% return[1] (IAS: 48,51 – 23,3% return). Average targets: 72,52 EURO – 84,3% return (IAS: 67,61 – 71,9% return). Optimistic targets: 140,17 EURO – 256,3% return (IAS: 129,69 – 229,7% return).

Equilibrium values are 41,58 EURO with goodwill, 42,94 EURO without goodwill and downside risk is estimated at 31,57 EURO

Conservative target is 52,41 EURO, average 72,52 and optimistic 140,17 (6-year investment horizon accompanied from 1-2 bull markets)

[1] Calculations involving current market prices refer to CB price of 39,34 EURO and PB price of 35,30 EURO from the 26/03/02. Note that these are relatively near the 2002 average market prices of 39,67 and 34,20 EURO for CB and PB stocks respectively.

Introduction

The first 3 chapters are concerned with Titan's strategy, the international cement market and Titan's investment history. The 4th chapter is on methodology. An effort has been made in that chapter in order for the reader to be able to understand the results of the analysis without going into too much tiring detail. Chapter 5 is on forecasts and analysis follows and is relatively detailed, since discussion involves not only ratios and rates but also discount factors, the stock's relative market liquidity etc. Chapter 6 discusses price targets, theoretical values, an IAS scenario and investment horizons[2]. A brief chapter follows concerning a ranking summary in two versions that is based on a 35 international company comparison, from which Titan comes at 2nd and 1st place and the paper is concluded with conclusive comments. Lastly, it should be noted that the appendices are comprised of very detailed tables that extend the paper's text.

At this point the paper continues with a presentation of the Titan Cement Group.

Titan cement has completed 100 years of history

Titan was founded in 1902, has been listed on the Athens Stock Exchange since 1912 and is a vertically integrated group of companies that mainly produces cement and is active in Greece and internationally. The Group has subsidiaries that are involved in the production of ready-mix concrete and dry mortar, quarrying, transporting and exporting and the offering of services with respect to the aforementioned products.

Strong presence in the US (Virginia and Florida)

Annual production amounts to approximately 12 million tones and is achieved by means of 10 production units located in Greece, the US, Southeast Europe and the Middle East.

Concerning Titan's diachronic development and beyond the aforementioned, the Eleusina factory was electrified for the first time in 1924. Titan contributes to Greece's defense from the Nazi axis, since the Roupel entrenchments are built with Titan cement a few years before world war 2 (1936). The Company proceeds to market development strategy commencing export activity in 1948, while exports are intensified wrt Middle East in 1960. In 1961 the foundation is set for the company's environmental policy and sensitivity through the operation of the first electrostatic filter in Greece. In 1962 the company pursues a market penetration strategy with a 2nd factory in Thessaloniki and a 3d factory (1966) at Drepano in Achaia. In 1971 Titan adopts a policy of environmental restoration through afforestation. In 1976 the 4th factory is acquired at Kamari of Viotia and in 1979 an increase in East Mediterranean exports is achieved due to floated stations' technology. In 1988 Titan extends its activities in USA and Western Europe through distribution stations and in 1991 production becomes vertically integrated through acquisitions and investments in quarries and ready-mix units. In 1992 the Group obtains its 1st production unit in the USA through the Roanoke factory and in 1997 the production of redy-mix Intermix commences. In 1998 the Group continues its geographical expansion through acquisitions in Bulgaria and FYROM, in 1999 in Egypt, and in 2000 in the US continues via the Tarmac acquisition. Through this acquisition the Group's stake at Roanoke increases to 100%, it acquires a 2nd factory in Florida (Pennsuco) as well as 2 quarries, 45 ready-mix production units, 3 cement distribution stations, and units of production and trading of special cement products etc.

STOCK MARKET VALUATION RATIOS BASED ON 2001 FORECASTS

	COMPANY	SECTOR (GREECE)
P/E	8,42	32,78
P/BV	3,26	10,39
P/S	1,44	4,24
P/EBIT	7,32	21,46
P/EBITDA	5,01	16,30
EV/EBIT	11,53	24,89
EV/EBITDA	7,89	18,91
PEG	0,33	1,28
DIV YIELD	2,96%	0,67%

The only cement company in Greece today whose largest shareholders are Greek

Within Greece there are currently three cement producers that are noteworthy: Titan, Hercules and Chalyps.

[2] Historical testing of theoretical values is undertaken only wrt to Titan

Consolidated sales of these three companies add up to 1.606m EURO for 2001. Titan is by far the leader with 61,2% of these sales, Hercules has a 34,51% stake and Chalyps is in effect a very small player with 4,29%. It should be mentioned that Titan is the only Greek owned company. In particular, Titan has the largest free float (74,52%) with the remaining percentage belonging mostly to the founding family of Kanellopoulos. On the other hand Hercules belongs to Lafarge (53,17%) with NBG (26,41%) being the second largest shareholder and a free float of 20,42%. Lastly, Chalyps is part of the Cement Francais Group (which is part of Italcementi) that holds 53,7% of its shares, while 41% belongs to Ammos Eastern Attica Quarries and the free float is only 5,26%.

Furthermore, on the basis of parent company sales, Titan has a 40,92% share, Hercules 52,37% and Chalyps 6,71%.

Large free-float

STOCK DATA @ 31/05/2002	*COMPANY*	*SECTOR (GREECE)*
Stock price	*39,64*	*58,60*
26-week high	*40,44*	*60,96*
26-week low	*37,98*	*55,16*
52-week high	*40,55*	*61,07*
52-week low	*31,24*	*43,89*
Average daily liquidity	*0,104%*	*0,074%*
Stocks outstanding	*41.871.012*	*134.518.115*
Cap	*1.650.532.784*	*2.617.112.717*
Free float	*74,52%*	*34,83%*

Forecast summary*

	1999	*2000*	*2001*	*2002E*	*2003E*	*2004E*
Profit bt	*126.101*	*148.350*	*153.593*	*200.837*	*219.339*	*237.452*
Profit at & min int	*99.322*	*124.841*	*154.415*	*193.808*	*183.460*	*189.072*
EPS bt	*3,04*	*3,58*	*3,70*	*4,84*	*5,29*	*5,72*
EPS at & min int	*2,39*	*3,01*	*3,72*	*4,67*	*4,42*	*4,56*
DPS	*0,65*	*0,71*	*0,81*	*1,17*	*1,44*	*1,82*
Div yield	*1,46%*	*1,65%*	*2,12%*	*2,96%*	*3,65%*	*4,63%*
ROE	*27,2%*	*34,2%*	*25,4%*	*29,4%*	*27,9%*	*25,6%*
ROA	*18,9%*	*15,1%*	*12,4%*	*13,0%*	*12,6%*	*11,7%*
Interest expense at	*5,5%*	*3,6%*	*4,6%*	*3,2%*	*3,5%*	*3,5%*
ROA / WACC	*1,45*	*1,83*	*1,60*	*1,90*	*1,76*	*1,62*
ROE / COE	*1,55*	*2,53*	*2,15*	*2,74*	*2,57*	*2,32*
EBIT margin	*23,2%*	*26,4%*	*19,5%*	*19,6%*	*19,0%*	*18,4%*
EBITDA margin	*28,4%*	*31,9%*	*25,1%*	*28,7%*	*30,7%*	*30,9%*
P/E	*18,6*	*14,3*	*10,2*	*8,4*	*8,9*	*8,6*
P/BV	*5,2*	*4,5*	*3,4*	*3,3*	*2,8*	*2,4*
P/S	*3,3*	*2,9*	*1,6*	*1,4*	*1,3*	*1,1*

**More detailed forecasts (till 2012) are to found in the appendices*

1. Strategy

Main strategic goal of the Titan Group is its establishment as a strong multinational cement group, while paying attention at ethical aspects wrt to its human resources and sustainable development.

Main points of Titan's strategy are:

- Expansion, with a priority in four geographical areas: Greece, East US Coast, Balkans and Middle East
- Vertical integration of activities
- Continuous improvement wrt cost and productivity
- Core competence focus
- HR efficiency and environmental sustainability

Very good growth prospects in the US with central point the Roanoke and Pennsuco factories

Titan follows a market development strategy in the US with a presence in the Southeast. The Group owns 2 factories, 1 in Virginia and 1 in Florida, and is also active through distribution stations, ready-mix units etc. Local market shares (Florida, Carolinas, Virginia and Washington) range between 12% and 30%. Moreover, Titan has a presence in the Balkans with three factories (FYROM, Bulgaria and Serbia) and in Egypt with one factory. The Group aims to turn its US and Balkan subsidiaries into stars since the cement demand life cycle is considered to be in the growth phase concerning these markets. Especially wrt the US, population growth potential is excellent. This strategy is backed by the Greek parent company that is considered a cash cow and follows a market penetration strategy nationally. The Greek cement demand cycle is estimated to be in the mature phase (low income population growth and large international competition in the tourism sector) but exhibits a "cycle-recycle" pattern in the cement demand life-cycle due to large infrastructure works in relation to the upcoming Olympic Games. Furthermore, Egypt is considered a dog in the short-term. After an initial increase in demand, many of the largest global players have now operations in Egypt, resulting in a drop in prices but also in demand, due to subsequent negative macroeconomic factors. Last year matters became worse due to a 30% devaluation of the Egyptian pound that resulted in a large FX loss. Lastly, a diversification strategy is also noteworthy through the acquisition of a US company (Separation Technologies) that is active in the flying ash market and has developed proprietary technology.

In the US, apart from market development strategy, Titan also pursues a differentiation strategy through investments in flying ash

Core competence focus

Reduction in production cost through the use of alternative fuel

Regarding the value chain, Titan's centre of gravity evolves around its core competences. The most basic one is cost effective production by means of changing from other forms of fuel to pet-coke. The strategy relates to all acquisitions except the ones in the US due to stricter quality regulations[3]. Another example of core competence focus is the sale of Tarmac's non-core business units on the same day of its acquisition, as well as a possible future divestment in the porcelain business area. It could be argued that there is a general trend regarding non-core divestments in the cement sector and a good example would be Lafarge.

It becomes evident from the aforementioned that Titan is consistently and systematically investing, having at the same time a core business focus and aiming at long-term growth. Note that the cement sector is capital intensive. On the one hand it requires large capital investments and on the other, due to a low ratio of product value to transportation cost, cement producers are obliged to establish production units geographically proximal wrt the markets they wish to expand into. Furthermore, Titan's investment finance does not depend on raising equity through public offerings (a very

[3] Pet-coke has an adverse effect on cement quality

usual practice in Greece) since the last time the company raised equity through a public offering was in 1990 (20,8m EURO). Instead, the Group finances its investments through strong cashflows and debt. Concerning cashflows note that it achieves a balance regarding dividend policy since the average annual payout ratio is 37,5% during 1995-2001, while if dividends are applied to consolidated accounts the ratio becomes 27,2% for the period 1997-2001. Wrt debt, credit rating is very good, BBB long-term, BB short-term and the deviation of real from theoretical AT cost of debt is negative[4] during 5 out of the 7 examined years, which means that the Group's bargaining power is noteworthy regarding this point.

Investments are benefited from very good credit rating and a real COD that is lower than the theoretical, while a fixed policy of Titan is its forbearance of raising equity through public offerings

Titan is also focusing on HR efficiency, and has lately received an award from the European Organization for Safety and Health at Work concerning a training program wrt accident prevention. Another issue is the modernization and automation of all of its factories and the vertical integration concerning out- and in-bound logistics through subsidiary companies. In this respect it is important to control transportation cost more directly since the ratio product value/product weight is very small in the cement industry. Finally, Titan has developed a policy that exhibits sensitivity regarding sustainable development by taking care of: environmental restoration through forestation and environmental protection by means of using high technology filters.

SWOT Analysis

Strengths

The capability to decrease production cost through the increasing use of pet-coke instead of other types of fuel. Furthermore, the independence of COGS from fluctuations in the price of oil has been historically observed. Lastly, during periods of rising oil prices the operating margin widened and sales growth rates increased[5].

Weaknesses

Restructuring programs that aim at core-business focus often have an adverse short-term effect on results due losses from divestures.

Opportunities

An opportunity arises from further investments in IT in order to enhance e-commerce and the competence of the Group's staff. Siam Cement is an example in this respect, having formed a joint venture with Accenture (formerly known as Andersen Consulting). The aforementioned opportunity could especially grant the Group a competitive edge since there is a relative absence of intense IT investments in the entire sector.

Moreover, opportunities could arise from further geographical expansion, e.g., in California where cement market is still growing strongly.

Threats

Due to the international presence of cement companies they often suffer extraordinary expenses from FX losses, as already mentioned regarding Egypt. Another critical point are above average wet weather conditions that adversely affect sales in certain geographic areas.

[4] Meaning that real interest is lower than theoretical
[5] These issues are discussed in more detail in chapter 5 "Forecasts and analysis of the Titan Group"

2. The international cement market

The cement market is very vulnerable wrt wet weather conditions as already mentioned, since cement and other related products cannot be laid when the ground is wet. This was for example the case with Marshalls (GB) that suffered a GBP 5 million sales loss due to bad weather during 2000. TXI, one of the largest players in Texas and California, also suffered losses due to above average wet weather conditions in 2001.

Another weak point of the industry are the high distribution costs. During 2000 many companies suffered an increase in distribution costs due to the impact of the "fuel crisis". It should also be mentioned that the market experienced a continued downturn in Germany, which has affected among others the RMC Group (GB).

Lastly, recent years have been characterized by massive M&As that led to a considerable concentration of the sector.

Largest global players

Europe

- LAFARGE

The largest cement producer globally

Lafarge of France is active in the areas of cement, aggregates & concrete, roofing and gypsum. After the acquisition of Blue Circle during 2001, Lafarge became the world's largest cement producer with 2001 group sales of 12,2b EURO, 85.000 employees, and operations in 75 countries.

- HOLCIM

Holcim of Switzerland, formerly known as Holderbank, is probably the second largest cement producer in the world with 2001 sales of 9,2b EURO and 44.000 employees.

Japan

- TAIHEIYO CEMENT CORPORATION

Innovative products

The company was formed in 1998 through the merger of Chichibu Onoda Cement Corp. and Nihon Cement Co. and thus became one of the world's largest cement producers with sales of 8,7b EURO for 2001. It pays special attention to environmental management and has developed a product called ecocement that uses recycled materials as the dominant raw material. Another prime example is an experimental surfacing material that combats exhaust gas pollution by using titanium oxide to purify NOx and other gasses.

USA

- TEXAS INDUSTRIES (TXI)

It is a Texas based company (2001 sales of 1,4b EURO) focusing on the cement and structural steel markets, basically active in Texas and California, which are the largest US cement markets.

- Martin Marietta

Local Titan competitor at the East Coast of the US

Headquartered in Raleigh, North Carolina, the company is the second largest producer of construction aggregates in the US with 2001 sales of 1,96b EURO.

Mexico

- CEMEX

One of the largest global cement players with sales of 7,9b EURO for 2001 and with a presence in North, Central, and South America, Europe, Egypt and South East Asia.

Greek sector companies

- TITAN

Titan Cement Group, which is the object of the present paper, is the largest cement producer in Greece on the basis of consolidated 2001 sales (982,9m EURO) and employs 4.756 persons. Apart from Greece, the Group is active in the US, the Balkan countries and Egypt. The Group comprises 10 cement production units, 7 distribution centers, 67 ready-mix units, 10 quarries, 3 mines, 1 mortar production unit, and 1 production unit of porcelain.

- HERCULES

Hercules is the 2nd largest cement producer in Greece on the basis of consolidated sales of 554,1m EURO for 2001, and while a majority stake had been acquired by Blue Circle, Hercules belongs today to Lafarge. Management appointed by Blue Circle is being replaced by Lafarge who considers its running of Hercules as unsatisfactory. It should be mentioned that Hercules has suffered for some years from very high effective tax rates mainly due to related fines.

- CHALYPS

With consolidated sales of 68,9m EURO for 2001, Chalyps consists the smallest cement company in Greece. The company's financial statements depict a positive financial state. Note that while investments are low during recent years, the average annual sales growth for the last 3 years is 18,8%, and operating margin has risen during past years and fluctuates at 24,82% for the past 3 years.

Structure of Titan's Group

The Group's companies are presented according to geographic locations:

Greece	
Interbeton Structural Materials	Concrete company – inert materials - logistics
Intermix	Mortar and other building materials production unit
Shipping companies	
Kimolos	Shipping company
Polikos	Shipping company
Aioliki	Shipping company
Achaiki	Shipping company
Nautitan	Shipping holding
Various	
Ergobeton	Concrete production
Ionia	Porcelain
Infoplan	IT

US	
Titan Atlantic Cement	Holding of the US companies
Carolinas Cement	Roanoke cement factory
Tarmac	Pennsuco cement factory – concrete units – quarries

European Union	
Titan International Commercial	Cement export
Eurotitan	Holding
Intertitan Commercial International	Holding – distribution stations in France
Fintitan	Italian cement trading company
Titan UK	British cement trading company

Southeast Europe

Plevenski Cement	Bulgarian factory
Cementarnica Usje	FYROM factory

Middle East

Misreen	Cement trading in Egypt
Medcement trading	Cement trading in Egypt
4M Titan Silos	Cement trading in Egypt
Beni Suef Cement	Factory in Egypt

3. Investment history

- 2001 - present: Investments of 350m EURO are planned for 2002 – 2003. The largest part, 170m EURO, concerns modernization of the Pennsuco factory (part of and most important asset of the recently acquired Tarmac) in Florida. Furthermore, investments of 79,4m EURO are planned for Serbia, of which 32,3m EURO concern the newly acquired Kosjeric factory (70% of which has been acquired from the Serbian State for 40,3m EURO). Negotiations are recently taking place concerning a 50% participation of the Egyptian Alexandria Cement acquired by Lafarge.
- 2000: Acquisition of Tarmac (100%) (US cement manufacturer) that amounted to 743,2m EURO (651m USD) but simultaneously sold non-core business units after which the final cost of the acquisition amounted to 359,6m EURO (315m USD). Total acquisitions for fiscal year amounted to 374,2m EURO. Fixed asset investments totalled 44m EURO. Modernization of the Thessaloniki plant started and will amount to 79,2m EURO. The Titan – Lafarge joint venture participation in the Beni Suef Cement Company (BSCC) in Egypt increased from 76% to 95%.

Tarmac acquisition

- 1999: Acquisition of 76% of BSCC through a joint venture with Lafarge. Participation through the US subsidiary Carolinas Cement Company (CCC) in Separation Technologies that is active in the flying ash market. Investments of 44m EURO towards productivity improvements and environmental protection. Acquisition of a ready mix concrete unit at Koropi (prefecture of Attica).

Beni Suef acquisition

- 1998: Acquisition of Plevenski Cement (initially 48,6% in April - increased to 83% in November) in Bulgaria. Acquisition of Cementarnica Usje (83%) in FYROM through a joint venture with Holderbank (Holcim). Investment in new distribution station at Safagra in Egypt in cooperation with local investors. Capacity improvement (33%) of the Roanoke factory in the US through Titan's subsidiary, Carolinas Cement Company (CCC). On-going 44m EURO productivity improvement program already mentioned under "1999". Furthermore, 10,6m EURO were invested in production, quality, automation and control systems, and environmental protection. Fixed asset investments amounted to 15,3m EURO. Investment concerning a new unit (Intermix) producing dry cement in Eleusina.

Acquisition in Bulgaria

Roanoke capacity improvement

- 1997: Environmental investments of 4,4m EURO. Innovative investment wrt flying ash from subsidiary CCC in cooperation with Separation Technologies.

Innovative investment in flying ash

- 1996: Modernization of the Roanoke factory (part of CCC) for 29,3m EURO. Moreover, 5,7m EURO fixed asset and environmental management investments.
- 1995: Beginning of the Roanoke modernization mentioned under "1996". New quarry in West Attica. IT investments and 8,8m EURO in fixed-asset investments concerning reduction in operating cost, new technologies, quality and environmental preservation.

Roanoke modernization

- 1994: Beginning of the aforementioned IT investment.
- 1993: 4,6m EURO invested in Roanoke Factory concerning operating and environmental areas.
- 1992: Acquisition of Roanoke factory (cement production unit of Roanoke Cement) in the USA - Virginia state through a joint venture with Tarmac America INC (subsidiary of Tarmac PLC, which is the largest British construction company). Roanoke factory became part of CCC where Tarmac America has a minority stake. 9,7m EURO in fixed asset investments.

Acquisition of Roanoke factory

- 1991: 10,6m EURO in fixed asset investments.
- 1990: Acquisition of the remaining 50% of Essex Cement, which was already Titan's subsidiary. Acquisition of

50% of the Italian Finbeton that was renamed to Fintitan. Commencement of operation of Titan Cement UK (TCUK) at Hull port.

- 1902: Titan's first plant was established in Eleusina.

4. Methodology

Models

29 model variations that determine value with and without goodwill

Concerning valuation models, 29 variations are used and are split into two groups: models that determine value with goodwill and without goodwill. All model variations exist in both groups with the exception of a dividend model that determines value only with goodwill. In both groups there is a value driver variation that is attributable to the author.

Author's model variation

The basic value driver model discounts forecasted annual FCFFs and uses EBIT(1-t)n(1-gn/ROICn) instead of FCFF for the terminal value (TV) calculation, whereas the author's variation uses EBIT(1-t)n(1-gn/ROICn) additionally in place of the forecasted annual FCFFs. This results in a higher valuation, and the notion which is experimented with is that the multiplication of EBIT with (1-gn/ROICn) should be a good proxy for FCFF every year and not just wrt TV calculation. The higher value reached at through this variation should represent a better case scenario towards the upper limits of the theoretical value potential of the company.

TVs of total models employed comprise the following:

- DDM based on projected dividends: TV = (DPSn(1+gn))/(rn-gn)
- Convergence: TV=EBIT(1-t)n/WACCn
- FCFE (FCF to equity) in two variations – desired leverage and levered
- Value driver – author's variation and standard
- Economic profit: TV=EPn/rn+(EBIT(1-t)n(g/ROIC)(ROIC-rn))/(rn(rn-gn)), where EP = InvCap(ROIC-WACC)
- FCFF (FCF to the firm)
- Theoretical PE, PBV and PS – desired leverage and levered. TV calculations follow:

- TV for PE = (FCFEn_payout(1+gn)(1+g)^n)/(rn-gn)
- TV for PBV = TV of theoretical PE x ROEn
- TV for PS = TV of theoretical PE x Net profit margin_n

Projected accounts construction

Maximum interdependence of entries

Concerning the construction of the projected accounts, an effort has been made to achieve maximum interdependence of book entries. As an example, the increase of capex – period dep'n, results in a decrease of the operating working capital (OWC), i.e., no separate forecast has to be made for OWC. Moreover, these accounts include considerable detail since complete forecasts comprise 41 rates and ratios.

41 rates and ratios are forecasted

Cashflows

Due to the large number of valuation models employed, there are in total 6 cashflow variations.

Cost of debt, bond rating, spreads based on benchmark rates

Separate credit rating for long- and short-term debt is undertaken

In order to forecast cost of debt, bond rating is undertaken. In total 18 ratios are used with different rating ranges for long- and short-term debt. These ratios are taken from a S&P methodology and include the following:

Long-term debt

1. Pretax operating interest coverage[6]
2. EBITDA interest coverage
3. Funds from operations[7]/total debt
4. FOCF[8]/debt

[6] EBIT/interest expense
[7] Net operating income+dep'n

5. Pretax return on permanent capital[9]
6. Operating income[10]/sales
7. Long-term debt/capital[11]
8. Total debt/capitalization[12]

Long-term debt (supplementary ratios)

1. EBITDA/(interest+dividends)
2. Discretionary cash-flow[13]/debt
3. Total debt/EBITDA
4. Debt/equity
5. EBITDA/assets
6. Debt/mv of equity[14]
7. Debt/mv of cap[15]
8. Sales
9. Equity
10. Assets

The same ratios are used for short-term debt, but with different ratio ranges, so that credit rating results are different on a given ratio for short- and long-term debt.

Corporate spreads from Bridge Evaluators

Concerning benchmark interest rate spreads over specific credit ratings, these are taken from www.bondsonline.com. In particular, spreads are calculated by Bridge Evaluators and are specific to industrial companies. Because these spreads concern the US market, an adjustment is made. The wanted spread is determined by:

spread_x=spread_US*local_int_rate/US_int_rate

30-year and 2-year bond spreads

Concerning long-term debt, 30Y bond spreads are used, whereas 2Y bond spreads are used for short-term debt. The reason for using 30Y bonds is that in practice many companies do not have the bargaining power to achieve lower spreads, but on the other hand many long-term obligations are longer than 10Y. For the same reasons 2Y bonds are used for short-term debt instead of 1Y.

Long-term interest rates are determined by the 10Y Greek T-bill for the present and the 20Y US-Treasury constant maturity to perpetuity. Short-term interest rates are established from 1Y euribor for the present and the 10Y Greek T-bill to perpetuity. It should be noted that the cost of long-term debt is in general higher than the cost of short-term debt, which means that a better short-term rating is easier to acquire than a long-term rating. Credit rating has been scaled as following: AAA, AA, A, BBB, BB, B and CCC.

7 ratings are used, from AAA to CCC

The procedure up to this point has helped determine the historic and forecasted theoretical short- and long-term cost of debt. But there are often large deviations between theoretical and real cost of debt. Another difficulty is that often it can not be determined without internal company information what portion of interest expense is attributable to short- and what to long-term debt. Therefore, the total real COD is compared with the theoretical short- and long-term COD currently and historically. The deviations are then cleaned from extreme values that are attributable to one time effect events. The historic average deviations are then subtracted/added to the specified theoretical short- and

The historic deviations of total real COD from theoretical short- and long-term COD are used in relation to forecasted theoretical short- and long-term COD in order to arrive at a better estimate of real future COD

[8] Funds from operations-capex-Δwc
[9] EBIT/average assets
[10] EBIT+dep'n
[11] capital=long-term debt+equity
[12] capitalization=total debt+equity
[13] Funds from operations-capex-Δwc-dividends
[14] Minority interest+market cap
[15] Debt+minority interest+market cap

long-term COD in order to arrive at an approximation of future real cost of short- and long-term debt.

Risk premium

Moody's country ratings, Bridge Evaluators corporate spreads and a benchmark premium are used in order to determine different country risk premiums

In order to calculate risk premiums, the author has used 5,51%[16] for the US market, which is considered to be the benchmark. This is then adjusted for different countries through the use of Moody's country ratings and 3Y corporate spreads for industrials from Bridge Evaluators (these data are available at www.bondsonline.com). The source of the aforementioned methodology is www.damodaran.com. Alternatively, risk premiums were taken from dmgasia.com, which is a Deutsche Bank research site that is no longer available to the general public.

Beta

Concerning beta, the author primarily wanted to take all historical data into account, but at the same time the greatest relevance of the most current beta should be underlined.

Decaying weights were used wrt historic betas. Low R-square betas were rejected

First, annual betas were determined against the general index using monthly returns from 1985 to the present. Betas with low R-square were discarded and replaced from bridged figures of valid years. The lowest R-square allowed in the sample was 67,8%, whereas the highest R-square rejected was 54,5%.

In order to estimate beta for any given year, the current beta is weighted together with historical annual betas through the use of decaying weights. Thus, beta for 2001 weights current beta with 13,5% and the weight decreases gradually to 0,6% going back to 1986.

Companies researched

In total 36 companies were researched

Companies used are the following:

- US: Centex, Florida Rock, Martin Mars, Texas Industries (TXI)
- Mexico: Cemex, Apasco
- Australia: Adelaide
- UK: BPB, Hanson, Marshalls, RMC
- France: Ciments Francais, Lafarge
- Swiss: Holcim, Cementia
- Germany: Dyckerhoff, Heidelberger
- Italy: Buzzi, Italcimenti, Italmobiliare
- Spain: Cementos Portland
- Portugal: Cimpor
- Greece: Titan, Hercules, Chalyps
- Japan: Sumitomo Osaka Cement, Taiheiyo
- India: Assoc, Grasim
- Malaysia: Malayan Cement
- Tailand: Siam Cement
- China: Shaanxi Qinling, Sichuan, Tangshan Jidong, Xinjiang
- Taiwan: Taiwan Cement

In order to make more general comparisons the accounts from the above companies have been consolidated to form country, continent and a global account. Thus, the total set numbers 51 accounts.

Lastly, due to the limited resources of the author and of the amount of time needed to complete the paper, historic data on international accounts are only up to 2000, with 2001 figures being forecasts. In an effort to partly update with 2001 results, the accounts of six of the largest companies have been partly or completely updated with 2001 results and these are: Lafarge, Holcim, Martin Mars, TXI, Taiheiyo and

[16] Geometric mean of average premiums for the US market based on data from 1926 to 1990. Geometric mean provides a better estimate for risk premiums in the context of DCF valuations. (par. Damodaran 1996)

Cemex. Tables with ratios and other figures concerning these companies are to be found in the appendices.

Accounts conversion

Accounts' conversion was undertaken while taking under consideration numerous accounting schemes, standards and practices

The model on which the valuation is based, reads financial statement entries from the complete Greek Accounting Scheme for commercial and industrial companies. An effort has been made to paste data from international accounts (obtained partly from annual reports in pdf format and partly from a Bloomberd database) into the Greek accounting scheme. Largest problems encountered where the following: In the Greek scheme accumulated depreciation appears for all fixed and immaterial assets of the balance sheet. This information was rarely available wrt international accounts used. Some accounts do not present separately in the income statement depreciation for intangible assets. Cost for PPE is often not presented for 1999. In some cases interest expense is not explicitly stated. It is rarely possible to separate non-interest bearing from interest bearing short-term liabilities. Sometimes payables appear in the asset part of the balance sheet in which case instead of current assets we have working capital. COGS is often only stated for 2000 and not for 1999. In some cases intangible assets are not separated from tangible assets. Accumulated fixed asset depreciation appears in the initial accounts without having to look into the notes and intangible assets are mostly not depreciated, which makes more sense like in the case of goodwill.

Current assets liquidity

Current assets liquidity is defined as the proportion of cash and securities that exceeds 1% of sales. The resulting figure is excluded from operating working capital and is added to company value at the end of the valuation process.

Forecasts

11 years of forecasts based on 7 years of data. Dynamic discount factors

Forecasts ran for 11 years in the future and are based on 7 years of historic data. They furthermore include discount factors so these are dynamic and change every year.

The purpose of including 35 international cement companies in the analysis was in order for company forecasts to be more logical and realistic. Forecasts and valuations are also undertaken for these companies[17].

Moreover, estimates are undertaken while taking into consideration the principals of prudence and conservatism according to which it is better to underestimate rather than overestimate company value. Due to the methodology of these models, the 11th forecast is to perpetuity and growth rates are assumed to gradually decrease to the expected growth to perpetuity all the way through the annual forecasts.

Short-term forecasts

Short-term forecasts aim at predicting annual from quarterly results. Quarterly, e.g., 3d quarter historic[18] ratios are examined wrt their deviation from annual ratios. The average of the historic deviations is added to or subtracted from current quarterly ratio. The standard deviation of the historic deviations is also examined and increases/decreases ratios on the basis of their historic trends.

[17] Forecasts for these companies were done in a rough manner since key elements were sometimes missing from the accounts, i.e., dep'n figures, while the time devoted to these valuations was also limited, so these were only meant to be indicative.
[18] Refers to 7 years of historic data including current year

Forecasts on operating investments wrt fixed assets and working capital

One of the most important interrelations[19] of the financial statement construction methodology, is the interdependence of the forecasts undertaken concerning investments in fixed and intangible assets with investments in working capital.

Consider the following: The size of assets is initially set through sales/assets. Short-term liabilities are determined by means of debt/capital and short-/long-term debt. Finally, the size of current assets depends on ratios such as non-operating investments/assets, transitory assets/assets, and (fixed, intangible assets and formation expenses before dep'n)/assets. Now, envisage that current assets are equal to total assets minus all non-current asset entries. At this point the only thing left to forecast is dep'n. Through this methodology, the increase of the ratio (capex–period dep'n)/EBIT[20], increases operating investments and simultaneously decreases working capital investment and vice versa. As a result, it is impossible to arrive at an extremely high valuation through, e.g., a sharp reduction of capital investments to perpetuity, because working capital will then increase more to compensate this. To conclude, this technique lessens considerably the danger of arriving at extremely high or low valuations.

Extreme valuation avoidance through forecast interdependence of capital investments and Δ% OWC

Growth to perpetuity

Growth to perpetuity that relates to TVs is determined by bROE and bROA, where ROE=ROA+D/E(ROA-i(1-t)). This specifies that ROE is higher than ROA only when at cost of debt, i(1-t), is lower than ROA. Furthermore, growth is affected by the retention ratio (b). Assumptions are thus more interdependent e.g., a higher b increases growth wrt DDM but simultaneously decreases projected dividends.

Interdependence of forecasted growth with retention ratio, and ROE only higher than ROA if the at COD is lower than ROA

Since the cement sector is a defensive one with low beta and relatively low growth, payout ratio has been set to 100% and bROA and bROE to 0% to perpetuity in order to take a more conservative view.

0% growth to perpetuity in relation to TV

Why so many different models?

The use of many different valuation models facilitates an estimate of the company's value range according to best and worst case scenarios and the determination of an equilibrium value[21]. As forecasts for different ratios change, individual models might be affected differently. As a result it is interesting to observe primarily the effect on equilibrium values since they are much less volatile than individual models, and secondly the change in the company value range according to all models. Of interest is also the standard deviation of the models, which increases uncertainty the higher it is. For example companies that might be in trouble exhibit positive values with some of the models, but negative ones with some others, i.e., a very large standard deviation.

The use of numerous models facilitates the determination of equilibrium values with greater certainty and estimates fundamental value range based on best and worst case scenario values

Historical testing of Titan's theoretical values

Model historical testing was undertaken in order to establish the annual value deviations from the average historical

Theoretical values are estimated back to 1987 through the use of financial statements from 1980 to the present

[19] Due to the degree it affects theoretical values

[20] In order for the forecast of this ratio to be more logical, the historical ratio is contrasted to EBIT growth, credit rating, current ratio and OWC Δ%. The most important of these comparisons is considered to be EBIT growth. Thus, unless other considerations become more important, new investment is determined by the formula:

New investment=time decaying μ of historic investments*(new EBITg/time decaying μ of EBITg)

To what extent the actual forecast will lie over or under the result of the above formula, depends mostly on the level of the difference in annual Δ% in OWC between historical and forecasted percentages. In practice new investments lie usually slightly higher in order to arrive at a more conservative valuation since capital investment Δ affects valuation results more than working capital investments.

[21] The average value of all values found

annual market prices[22] as well as the volatility (standard deviation) of these deviations. Annual theoretical values are determined for every year from the present going back to 1987. An exception exists wrt 2001 and 2002 because there is only one theoretical value determined for both years, i.e., theoretical values amount to 15. Recall that the methodology requires 7 years of historical data, therefore financial statements are used for as far back as 1980. Wrt accounts from 1986 backwards, these had a different format and were not transparent. Most important entries that were missing are: Sales, COGS, formation expenses, intangible assets and transitory accounts.

The two models demonstrating the lowest standard deviations are then used to predict future market prices with the natural reservation that these deviations vary wrt bull and bear markets, thus the maximum deviation will only be established during a bull market. A more detailed explanation follows concerning the method of setting long-term target prices.

Three scenarios are examined, namely average expectation, conservative expectation and optimistic expectation. In order to determine target prices according to these scenarios three parameters are used:

1. Estimation of the two models with the lowest volatility in the annual deviations as aforementioned.
2. Determination of the optimal Thp/Mp-1, i.e., percentage deviation of theoretical value to market price. For the average expectation scenario an average of all 15 deviations is used. Concerning the conservative expectation, the lowest deviation excluding the current one[23] is used and finally the highest one is used for the optimistic expectation.
3. The current theoretical value of the chosen models.

The target price is then the price from which the current theoretical value of the chosen model, demonstrates the optimal deviation chosen for the specific scenario, i.e.,

- target price = current_Thp/(1+(optimal_Thp/Mp-1))

Now since optimal Thp/Mp-1 is always a negative percentage concerning the present case, the target price is a price from which the current theoretical value is lower by exactly the optimal deviation (Thp/Mp-1). Lastly, the recommended target price is the average of the target prices derived from both models.

Historical deviations of theoretical values from market prices are used to adjust current theoretical values to future target market prices

Time horizon of target prices

Target prices are set historically (1987-2000) as well, in order to estimate the necessary time horizon for these targets to be achieved

In order to comment on the investment horizon necessary to achieve target prices, these were also set historically. The aforementioned methodology has been employed with minimal alterations. Firstly, historical theoretical values were taken from the two models demonstrating the minimum historical deviation volatility out of 29. Recall that in order to determine average target prices, the average historical deviations of those models were used. Concerning the present case, the average deviation only included current and historic years in relation to the year in question, i.e, excluded one year every time and can be shown as:

- Average deviation = $\Sigma((Thp/Mp\text{-}1)_{t\text{-}n};\ldots;(Thp/Mp\text{-}1)_{t0})/n$

The same method was used concerning optimistic and conservative target prices. E.g., wrt to conservative target prices, years of minimum deviation were only considered if

[22] All returns mentioned in this paper are calculated on the basis of average annual values unless otherwise stated
[23] The reason for this exclusion is explained under the unit "Market price forecast" in chapter 6

they were current or historic in relation to the year in question.

Then it was examined if any given year's average annual market price exceeded that year's target price and if not when was the target price achieved if at all.

Lastly, in addition to the above, every year's highest theoretical values were compared to corresponding target prices and average annual market prices.

No of shares

PB shares are adjusted to CB in order for PB shares to be included in the total no of shares used to divide the company's value

Apart from CB stocks, Titan also has PB ones. Consider that the company value is included in both stocks. Therefore, in order to divide company value with the right number of shares, PB shares are adjusted to CB shares by dividing PB capitalization with CB price.

The stock's market liquidity

Stock liquidity is historically examined in relation to mean market liquidity and the total no of companies floated every year

The stock's market liquidity has been historically examined in relation to the mean market liquidity to determine trends through time. The mean daily market and stock liquidity are determined for the last day traded, last month, since the beginning of 2001 and for annual intervals before that going back to 1989. These liquidities are then ranked against the appropriate historic number of floated companies (NoC). Next, market (MR) and Titan (TR) ranks are expressed as a percentage against the historic universes of stocks (MR/NoC and TR/NoC). Finally, the percentage difference between the two ratios, i.e., (TR/NoC)/(MR/NoC)-1, is a measure of Titan's liquidity relative to market liquidity. The higher the difference, the lower will be the stock's liquidity relative to market liquidity and vice versa.

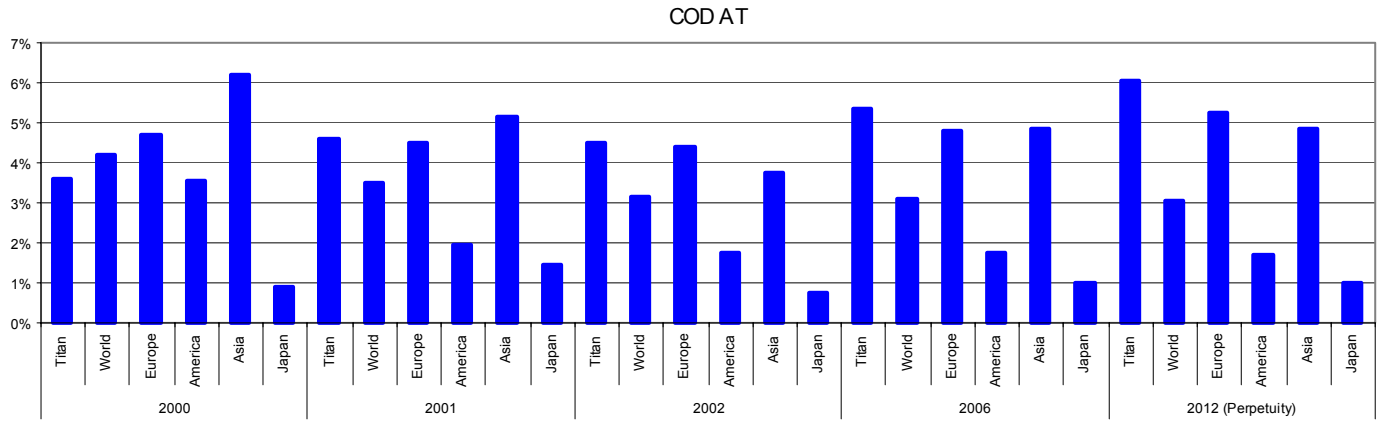
5. Forecasts and analysis of the Titan Group

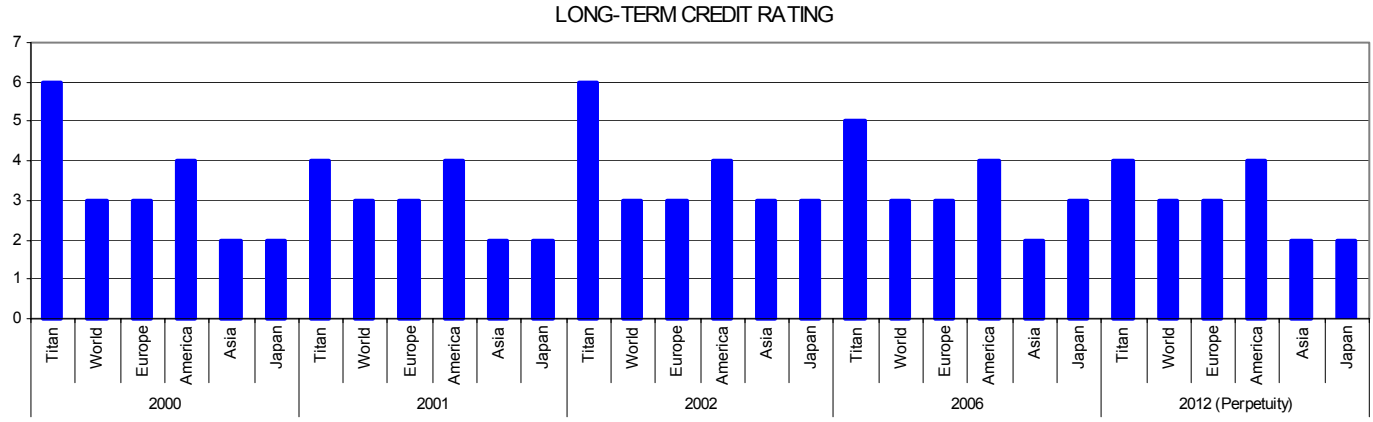
A summary of the most important forecasts follows.

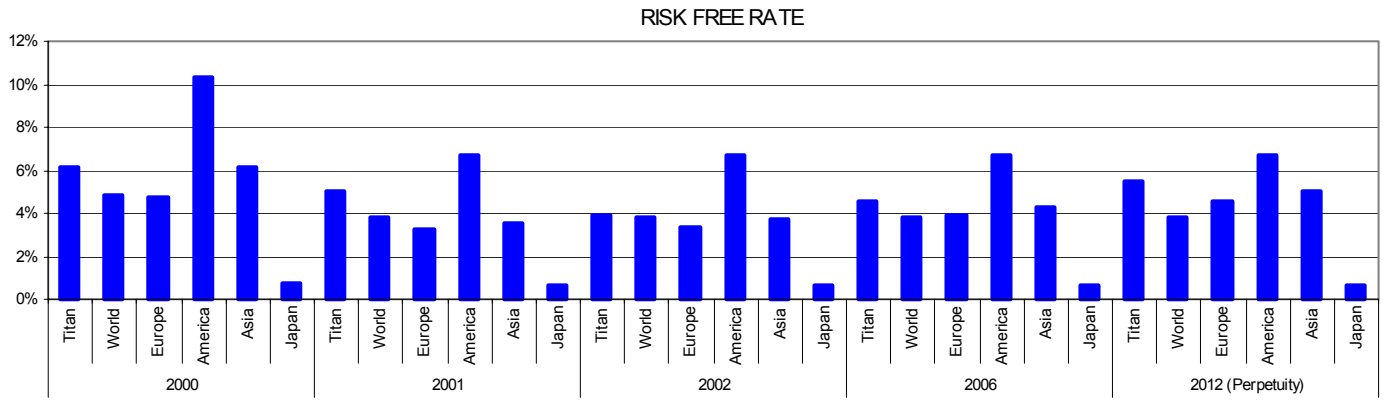
Discount factors

Titan's at COD was 3,6% in 2000 compared to a global sector average of 4,2%. For 2001 it was 4,6%, which was the global average and below the European average of 5,2%, whereas American at COD was very low at 2,1% and Japanese at 1,7%. Credit rating is BBB long-term and BB short-term for 2001 compared to a global average of BB and BB correspondingly. Credit rating is expected to fluctuate around BBB long-term and B short-term to perpetuity comparing again to BB and B globally. In a more detailed global comparison, America has better current rating with BBB and BBB, and the worst is the Japanese one with B and B. Amongst the most important ratios that led to Titan's exceptional rating are: operating income/sales (24,75%), pretax interest coverage (7,39), EBITDA/(interest expense + dividends) (4,14), and EBITDA/assets (20,2%). Furthermore, the aforementioned ratios support Titan's policy to avoid raising equity through public offerings.

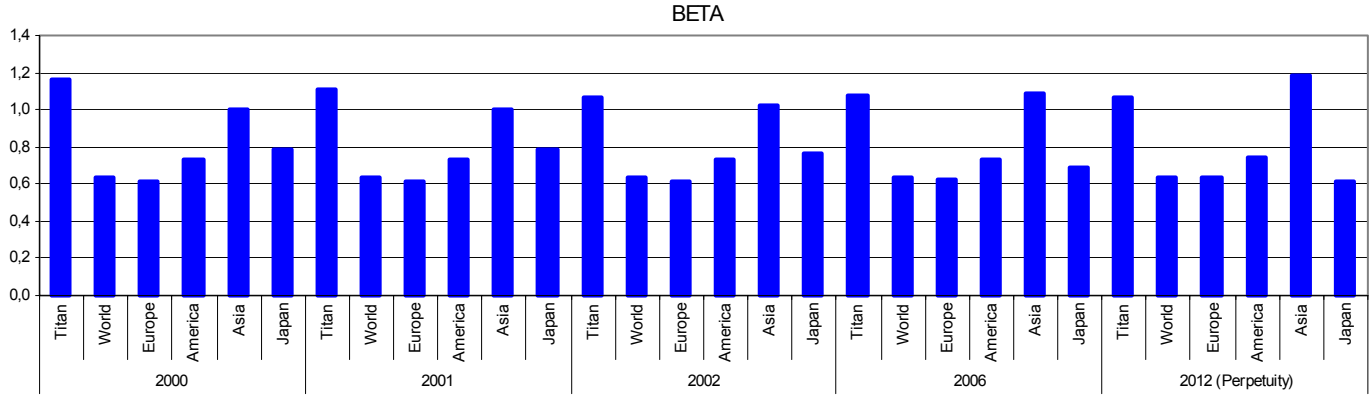
Credit rating is determined at BBB long-term and BB short-term and is in total better than global average



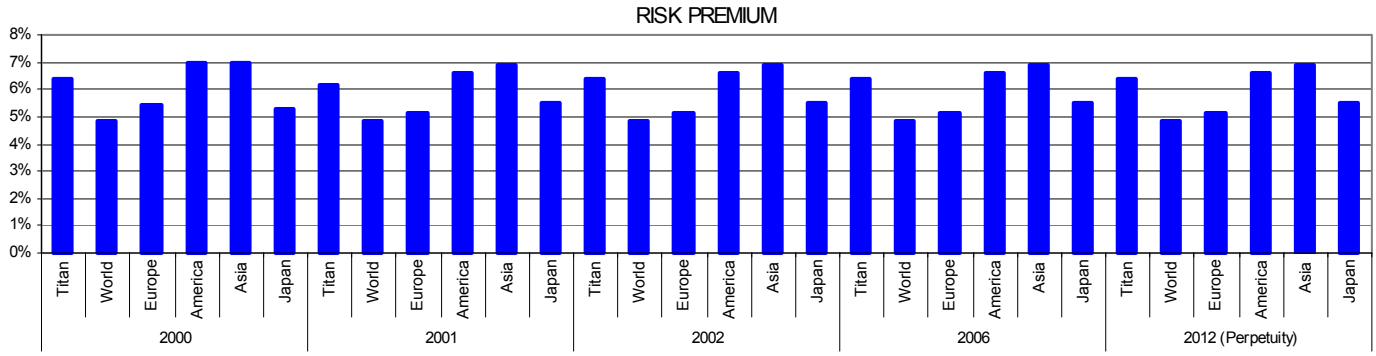




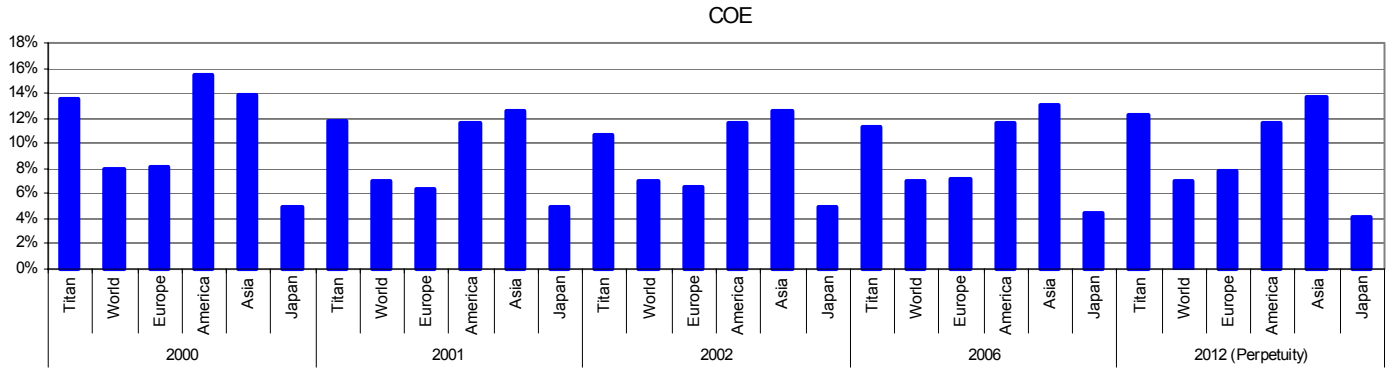
Titan's beta (1,11) appears high on a global basis (0,639) but recall that it is determined through a special methodology, whereas betas for international companies were taken from sites such as yahoo. Without use of the special methodology, current beta would instead be 0,812. Globally, the highest beta is observed with respect to Asian companies (1,005).

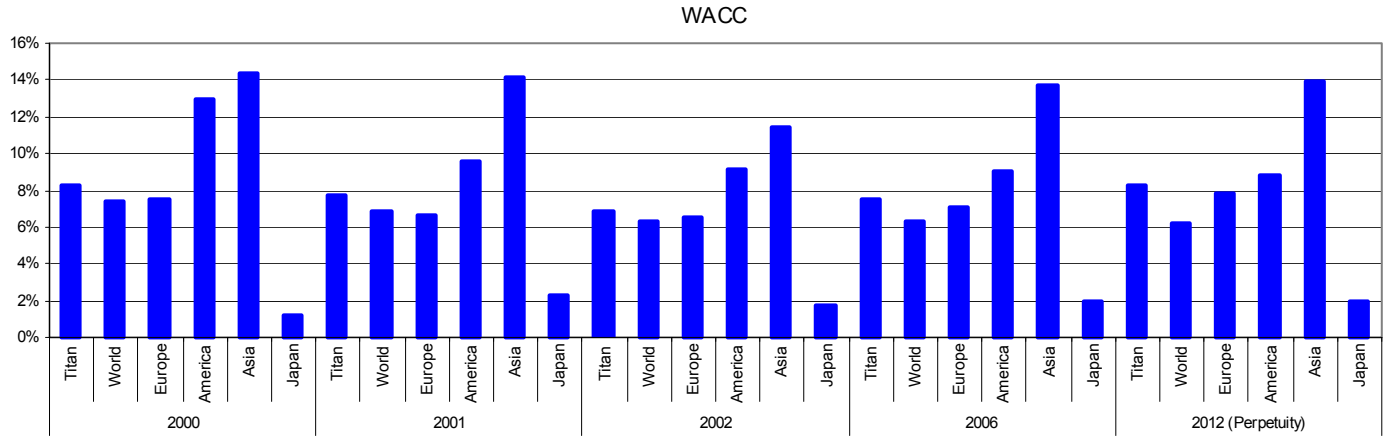


Risk premium for the Greek market (6,1%) for 2001 is higher than the global average (4,9%). This difference has lately decreased (Greece 7,3%, world 5,1% in 1999) but it is not anticipated to be reduced much further in the future due to the course of the Greek economy.



The same holds for COE (11,8%), which is higher than global average (7%) with a recent reduction in the difference. The case appears to be better concerning WACC, 7,8% for Titan, 6,4% global average, because the difference has decreased more.



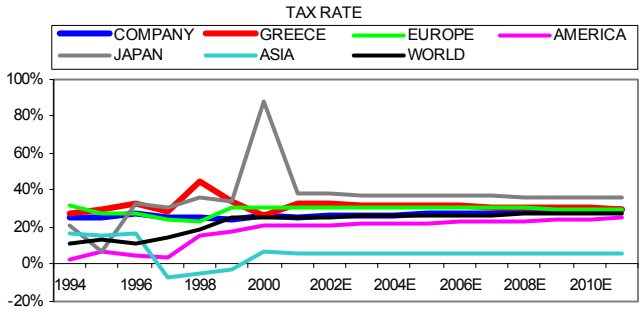


Tax rate

The current effective tax rate for 2001 is 26,42% (comparing with 28,52% expectation from 3Q results), which is much lower than European sector average of 30,81% but higher than the American percentage of 21% that is affected by a very low Mexican rate of 11,7%, attributable mostly to Cemex. It should be noted that due to one time taxation effect concerning Taiheiyo Cement, the Japanese rate was the highest at 88,12% in 2000 and still is at 38,06% in 2001, whereas the lowest is attributed to Asia (without Japan) at 5,85%.

Titan's tax rate that is attributable to operating activities, i.e., tax/(EBIT-i_exp), appears only slightly different from the effective tax rate, tax/results bt, theoretical minus effective tax rate is -1,89% for fiscal 2001, with overall average difference for the period 1995-2001 –0,65%. These differences are very small and demonstrate the absence of large tax fines, or tax that is attributed to non-operating activities. Acquisitions appear to have decreased effective tax rate, since historical averages are 25,76% consolidated and 26,3% parent with the difference decreasing wrt the decaying averages (25,67% cons, 25,95% parent). Finally, regarding taxes attributable to the Group's activities in Greece, floated companies' tax rate is forecasted to decrease in the future.

Titan's rank: 25th highest – 26,4%
Hercules's rank: 41th highest – 35,7%
Highest: Italcementi – 47% (Italy)
Lowest: Hanson - -13,1% (UK)



The difference between theoretical and effective tax rate is currently and historically very small, a fact that suggests absence of tax fines

Sales growth

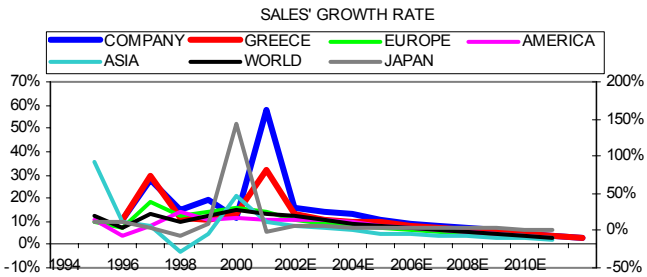
The annual average decaying[24] historic sales growth rate is 16,9% with a 57,9% (59% 3Q expectation) sales increase for 2001. This very large increase was due to the full consolidation of the company's new American subsidiary (Tarmac), which appears consolidated from 1Q 2001 results.

It should be noted that the upcoming Olympic games are expected to boost national sales growth at least for fiscal 2002 and 2003 with a "cycle-recycle" effect on the cement demand life cycle that is estimated to be in the maturity stage. Moreover, global growth rates are 15,2% for 2000, up from 12,12% in 1999 and have increased both in Europe (15,85% from 14,02%) and in America (11,33% from 10,6%). Global growth is estimated at 13% for 2001, European at 13,97%, American at 11%, Japanese at –0,69% and Asian at 9,53%. By taking these figures into consideration a 15,5% increase regarding Titan for 2002 is considered a reasonable and slightly conservative forecast. Growth rates are expected to gradually decrease to 3% by 2012. Wrt to this rate, the following has been taken into consideration. The historic decaying growth rates (1997-2000) for EU construction (3,3%), (1996-2000) US construction supplies (3,5%) and (1996-2000) US stone & earth minerals (0,5%). In addition, the difference between consolidated and parent historical average growth rates is of importance (23,7% consolidated, 12,6% parent), which implies that once concentration in the cement market has reached its maximum and product life cycle matures in all cement markets, consolidated growth rates will decrease.

57,9% sales' growth during 2001 mostly attributable to the Tarmac acquisition

Sales are conservatively forecasted to increase by 15,5% in 2002

3% sales growth to perpetuity



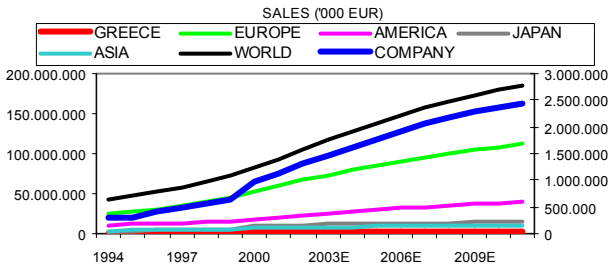
Concerning the sales' geographical breakdown, Titan's portfolio of subsidiaries has decreased the company's dependence on the Greek market since total sales' percentage attributed to the Greek market, has decreased from 56,3% in 1992 to 39% in 2001. Note that, the most important market is currently the East Coast of the USA representing a 44% share of consolidated sales. A growth prospect comparison between the Greek and the Florida cement market follows:

Less dependence on the Greek market (39% of sales)

Florida:

- Sales growth potential is larger, since production is lower than consumption in Florida, while the opposite is true for Greece.
- Population growth rate: During the past 10 years, population has increased approximately by 10% in Greece and 23% in Florida.
- New population in Greece has far less disposable income (more than five times less) than in Florida.

Better growth potential in Florida: qualitative population and tourism growth



Greece:

- It is important that mortgage rates are low. Moreover, there is some confidence that due to the EURO these will remain relatively low in the long-run, even though they could be affected from high oil prices. It should be noted that Titan has not been negatively affected from high oil prices in the past.
- Tourism industry: A strong decrease of foreign tourism has been experienced during the past 15 years (in some areas of Greece by nearly 80%). If the percentage destinations for German tourists are examined (probably the most important market for Greece), 6% of Germans that

Greek tourism sector stagnates

[24] μ(μ(t0…tn);μ(t1…tn);…μ(tn-1…tn)), where
μ = mean,
t0 = first year of historical data,
tn = last year of historical data,
which means that the historic average is modified by applying more weight to recent years.

travel outside their country visit Greece, 6% Turkey[25] and 13% Spain. It is not considered possible to change these percentages in our favour in the foreseeable future. Furthermore, strong growth in internal tourism has only party compensated for the lost foreign tourists.

- 50b EURO of investments planned for Greece in the next six years that are 50% subsidised from the EU
- Convergence with Eurozone

Concluding from the above, it could be said that the cement life cycle in Greece is deep in the mature phase, whereas in Florida the corresponding description would be growth or shake-out phase.

Competitors

Competition from large global players

Concerning competitors, note that Martin Marietta (1,96b EURO sales), which is one the largest US cement producers, is headquartered in Raleigh, North Carolina, not very far from Roanoke factory in Virginia. Holcim (10,2b EURO sales) is also active in the area of North and South Carolina and Virginia with new projects under construction. Holcim is furthermore active in the Balkans and has just entered the Egyptian market with a new factory. The competitive advantage that such large companies have over Titan is that apart from being active in the areas were Titan is, they also have a strong presence everywhere else. E.g., Holcim has also a presence in Asia Pacific, South America, etc. Since the largest share of its operating profit is attributable to South America, Holcim can be a more aggressive competitor elsewhere. Future expansion prospects for Titan in the US, would be in the states of Texas and California since these are the two largest cement markets in the US, having excellent population growth and new home construction rates, and the main competitor in these markets would be Texas Industries (TXI) (1,45b EURO sales). Note that TXI only entered California three years ago, which might mean that the market is not yet saturated. On the other hand Taiheiyo Cement (8,66b EURO sales) who is nearly as large as Holcim, is also active in California with three factories. In the areas of Florida, the Carolinas and Virginia, Florida Rock (794,7m EURO sales) is also noteworthy.

Within Greece, Titan is the leading firm as already mentioned with over 60% market share in relation to the sum of sales from Titan, Hercules and Chalyps. On the other hand Chalyps has a very small market share (4,29%). Furthermore Hercules (34,51% market share) has suffered a cultural shock through the acquisition from Blue Circle. Lafarge, who acquired Blue Circle is now replacing all the British staff, appointed by Blue Circle, blaming them as unsuccessful. Hercules's effective tax rate was 2.265,5% in 1998 and 89,92% in 1999. These excess tax rates are mostly attributable to fines. Historically, theoretical minus effective tax rate is –14,88% even excluding 1998. Sales growth is often single digit in contrast to Titan's and (capex-dep'n)/EBIT, which is indicative of new investments as a percentage of operating profit, is 31,2% comparing to 55,7% for Titan.

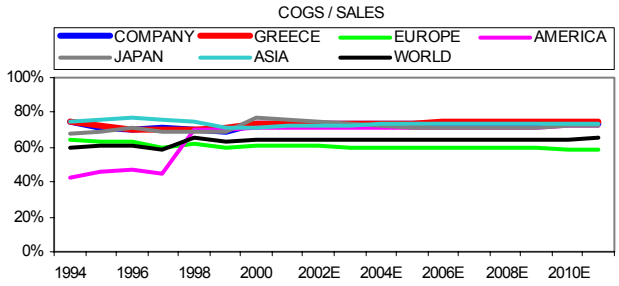
[25] Note that at the beginning of the 80s this percentage was negligible since in 1986 Turkey had fewer hotel beds than the island of Rhodes at the time

Sales growth
Titan's rank: 1st highest – 57,9%
Hercules rank: 43d highest – 4%
Highest: Titan – 57,9% (Greece)
Lowest: Sumitomo Osaka - -2% (Japan)

Actual sales figures are 982,9m EURO for Titan representing 1% in the universe of the companies examined, with global sales of 93,7b[26] EURO. Largest continent share goes to Europe with 60,8b EURO (64,8% share), followed by the US with 11,9b EURO (12,7%), Japan 10,1b EURO (10,7%), Mexico 8b EURO (8,6%) and Asia without Japan with 7,1b EURO (7,5%).

COGS/sales

COGS/sales is higher wrt subsidiaries. Furthermore, the ratio increases in years of acquisitions.



The ratio appears to be unstable. Even though it fluctuates around 70,4% displaying little volatility during 1996 – 2000, it was 74,2% in 1995 and has again suddenly increased to 73,4% (which is significantly above 3Q expectations of 68,8%) in 2001. Looking at the parent ratio it has a definite historical downward trend from 70,7% in 1995 to 65,3% in 2001. Comparing with the consolidated ratio it is evident that subsidiary companies have higher COGS. Furthermore, maximum deviation appears historically in 1995 (74,2% cons, 70,7% parent) the year of a quarry acquisition in West Attika and the beginning of the Roanoke modernization, and in 2001 (purchase of Tarmac) with 73,4% cons and 65,3% parent. Note that subsidiaries are very active in the area of ready-mix cement in contrast with the parent company. Ready-mix has lower operating margin, which explains the subsidiaries' higher COGS.

A straight comparison with international companies encompasses uncertainty since it was not possible to determine COGS homogeneously in all cases. COGS/sales is projected conservatively at 73,5% in 2002 and 74% from 2006 onwards. Attention should be paid to the drop in the cons ratio after the 1995 acquisition. If this happens again next year, it will be very positive for the overall operating margin.

Switching to pet-coke from other fuels grants the Group a cost competitive advantage everywhere but in the US due to higher quality standards there

A large part of COGS depends on coal and oil prices. Coal prices concern production cost, and oil prices mainly transportation cost. It is important that Titan mostly uses pet-coke instead of coal, natural gas etc because pet-coke is much cheaper. Some of the investments during 2000 and 2001 concern the change from other forms of fuel to pet-coke, like at the Usje (FYROM) and Plevenski (Bulgaria) factories. Note that cost cutting through the use of alternative fuel was a central point of the Holcim strategy during 2001. The drawback is that pet-coke affects adversely the quality of cement and for this reason it will not be possible to make such savings in the US due to higher quality standards.

Higher transportation cost over land than over sea

Wrt transportation cost, it is much higher over land than by sea. This means that factories that are far from the sea have a cost advantage and can claim easier local market share, which is the case with Roanoke factory (Virginia) and the three Balkan factories (Usje in FYROM, Plevenski in Bulgaria and Kosjeric in Serbia). On the other hand Pennsuco factory in Florida and Beni Suef in Egypt are close to the sea.

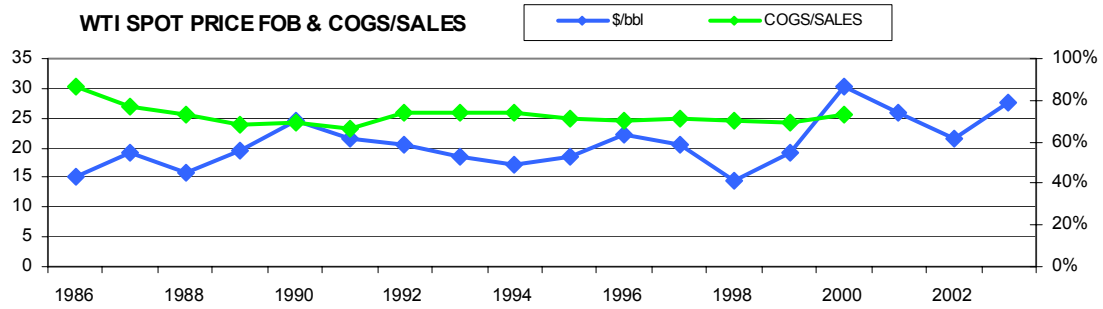
Note that oil is important not only concerning transportation but also production. Oil prices appear to be relatively stable since 1947 with the exception for the period 1979 – 1986 that was marked by price controls from OPEC, the Iran/Iraq war

[26] Forecasts are undertaken separately in every case on the basis of individual historic growth rates. Due to this method, a deviation has resulted between forecasted global sales and the sum of all continent sales. For this reason the added percentages come up to 104,7%.

etc. Current oil prices of 24,89 $/bbl are not close to the historic average of 19,27 USD for the period 1947 – 1998 and 18,63 USD during 1869–1994. Of course oil prices are affected more than anything from fear of war in the middle East etc. On the other hand coal prices appear to have a slightly declining trend since from 36,97 USD in 1991 they dropped to 35,63 in 1996 and 34,66 in 2000.

But the correlation we can look for is years of relatively high oil prices and the corresponding COGS/sales ratio. Such years are 1990 (Iraqi invasion in Kuwait) and 1996–1997. In both cases the aforementioned ratios were not affected. During 1990–1991 COGS/sales were 68,3% and 68,8% with an average of 73,2% during 1987–1992. Concerning 1996–1997, COGS/sales was at 70,8% and 70,1% with an average of 71,4% during 1995–2001.

The 1990 and 1996-1997 high oil prices did not have an adverse effect on COGS/sales



Other operating income/sales

Historic average annual other operating income is formed at 1,13% of sales with the largest fluctuation appearing in 2000 (2,65%), which was due to consolidation of profit from Tarmac. The ratio is forecasted in the future to be steady at its historic decaying average of 1,44%.

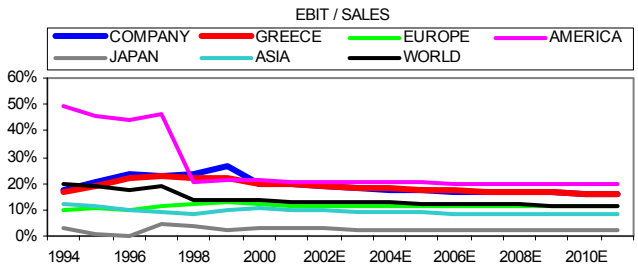
Operating expenses/sales, operating margin and EBIT growth

From 9,35% in 1995, operating expenses/sales were formed at 8,28% (8,25% forecast) in 2001. The ratio has steadily increased since 1997 (6,9%). It is projected at 8,3% in 2002, 10,22% until 2006 and 11,5% to perpetuity (2012). Again, subsidiary companies historically display higher operating cost. As in the case of COGS/sales, operating expense/sales fluctuated around 7,06% during 1997–2000. Once more the sudden increase in 2001 is attributed to the Tarmac consolidation and is related to ready-mix cement that not only has higher COGS in comparison to plain cement production but also higher operating cost.

Ready-mix cement, apart from COGS, also affects operating cost

Looking at EBIT/sales for 2001, it is 19,53% (23,25% 3Q forecast) with a drop from 26,38% from 2000. In international comparison, current EBIT/sales of 19,53% is much higher than global average of 13,27% with America being slightly higher at 20,82%, whereas Japan's operating margin is very low at 2,8%. Moreover, according to the aforementioned forecasts EBIT/sales is forecasted at 15,94% to perpetuity with a global forecast at 11,24%. Slightly higher is also the anticipated EBIT growth to perpetuity of 1,64% comparing to 1,31% globally.

EBIT/sales (19,53%) much higher than global average of 13,27%



Titan outmatches Hercules wrt operating margin and operating profit growth

Lastly, R&D levels are not noteworthy not only concerning Titan, but also the entire sample of companies.

Concerning national competition it should be noted that Lafarge who owns 53,17% of Hercules made an official comment concerning delays in cost savings in Greece. Note that Titan's historic average operating margin is 21,87% with only 19,51% for Hercules, and with historic average EBIT

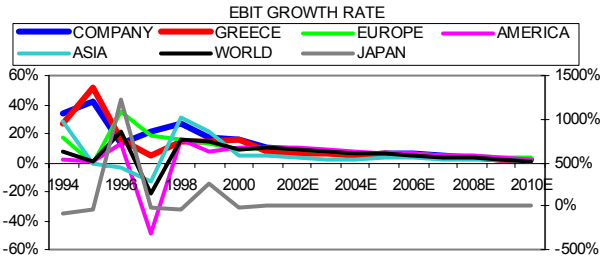
growth of 25,8% vs 15,3%. Furthermore, and contrary to Titan, Hercules's EBIT decreased in 1999 and 2000.

It should be noted that since the operating margin of subsidiary companies is on the average lower than the parent's, even though Greece accounts only for 39% of total sales, its EBITDA share is 58%.

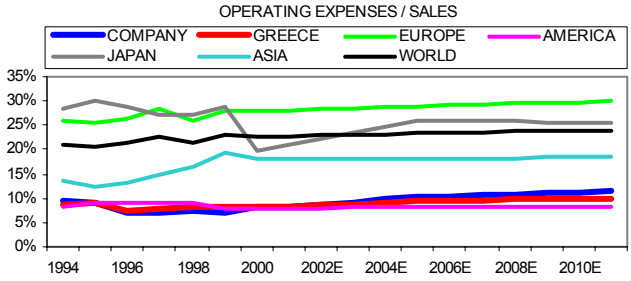
Examining the course of oil prices, in relation to COGS/sales from 1986 to present, EBIT/sales and sales growth, the following can be said: COGS/sales does not appear to be affected at all as already mentioned, but operating margin and sales growth appear to actually have a positive correlation with oil prices, which is not what one expects. It could be argued that when oil prices rise, investors shy away from other more risky investments and turn to real estate.

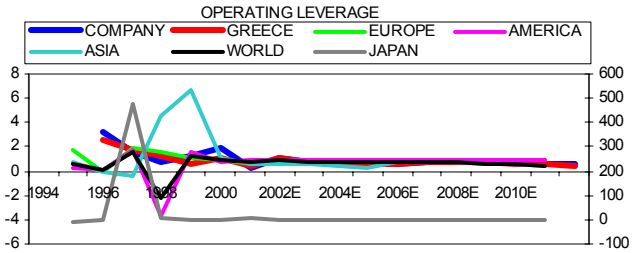
EBIT/(sales + oth. oper. income)
Titan's rank: 11th largest at 19,3%
Hercules rank: 14th largest at 18,2%
Highest: Apasco – 31,9% (Mexico)
Lowest: Assoc – 1,9% (India)

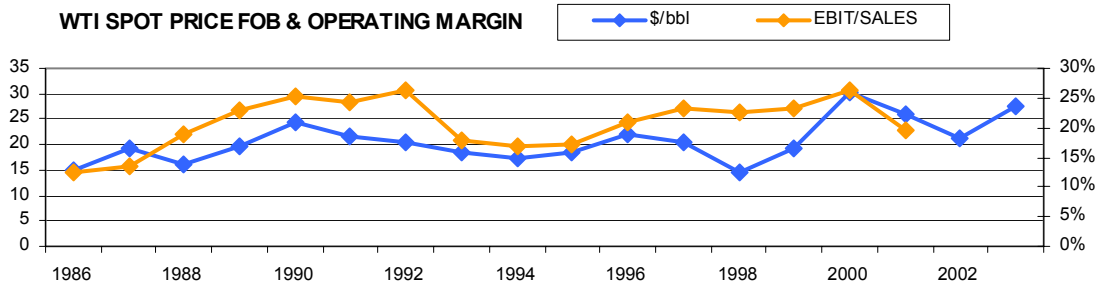
EBIT growth
Titan's rank: 8th largest at 16,9%
Hercules rank: 30th largest at 7,4%
Highest: Taiheiyo – 83,2%[27] (Japan)
Lowest: Texas Industries - -33,2% (USA)

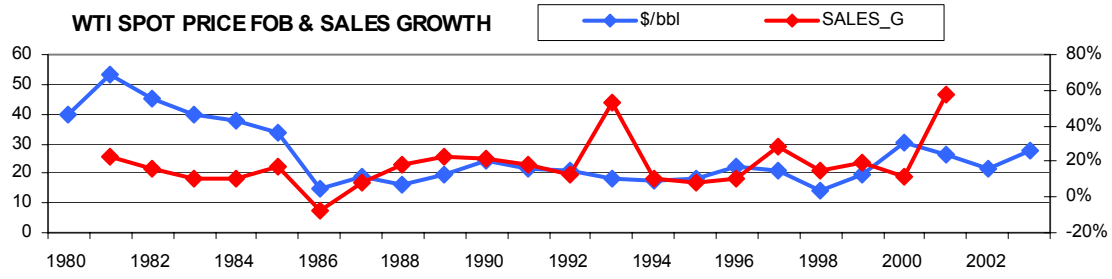


Sales and operating margin have been historically benefited from high oil prices

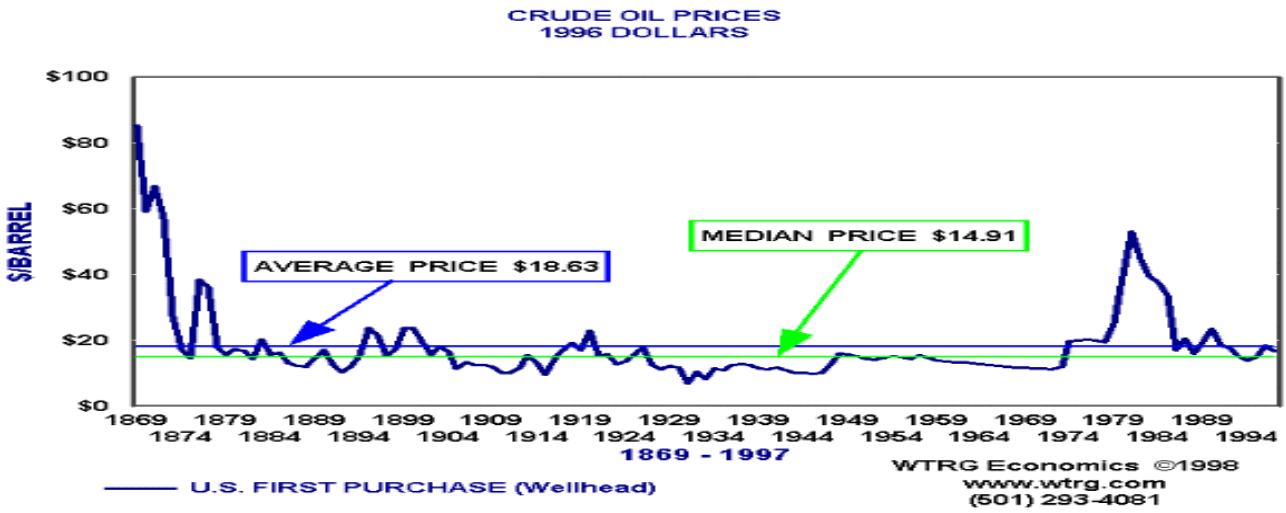


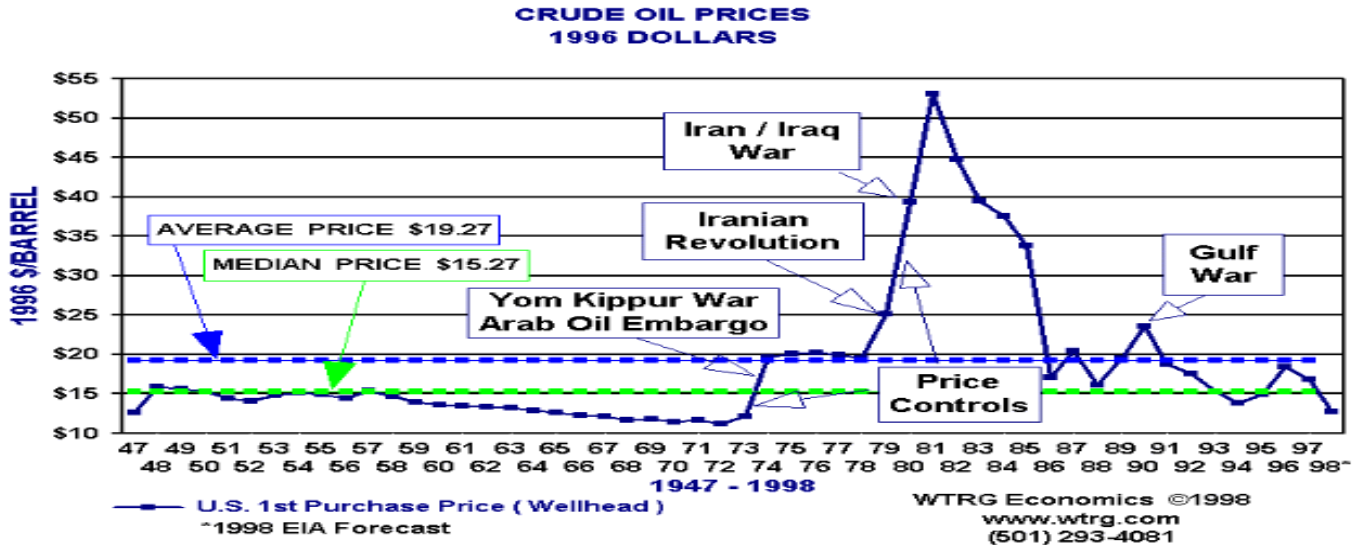






[27] Mainly attributed to reduction in operating cost.



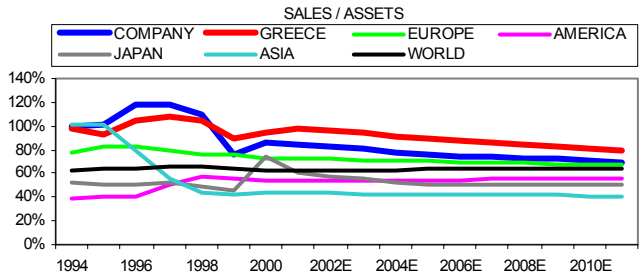


Asset turnover

As already discussed, acquisitions had a positive effect on sales growth, negative on operating margin and positive on asset turnover, because cons historical average asset turnover (101,2%) is much higher than the parent turnover of 80,6%. The 2001 ratio of 86,33% was much higher than expectations on 3Q of 67% and raises future expectations to 85% in 2002, 76% till 2006 and 70% to perpetuity. These expectations are seen in comparison with an average European ratio of 72,55%, a global average of 62,76% and a lower ratio (53,79%) in America that have nevertheless a rising trend. Lastly, Asian ratios decrease historically from around 100% in 1994-1995, to 43,78% in 2001.

Titan's rating: 10th highest – 86,33%
Hercules rating: 3d highest – 113,6%
Highest: US – 114,6%
Lowest: Taiwan Cement – 26,3%

Sales/assets recovered beyond expectations from 76,1% to 86,33%



Debt to capital

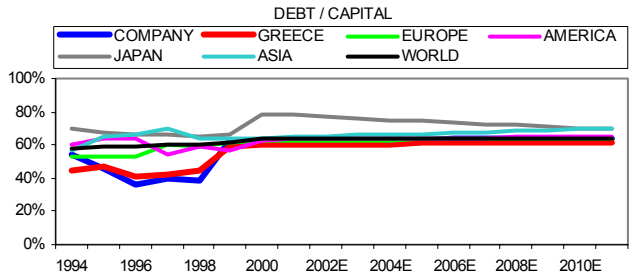
Cons D/C is historically and currently higher than parent D/C (1995 cons 54,2% - parent 47,83%, 2001 cons 62,38% - parent 47,11%). Since cons ROA–i(1-t) is historically without exception positive and currently 7,83% this raises ROE from 22,5% parent to 25,39% cons in 2001. The 2001 ratio of

Levels of debt/total liabilities are in line with global sector average, while ROA is higher than at COD

62,38% remained unchanged from 2000 and was slightly above expectations of 62,16%.

Forecasts are for a gradual increase to 64% to perpetuity taking into account that current global ratios fluctuate around 63% with the exception being Japanese ratios that are dangerously high at 78,52%.

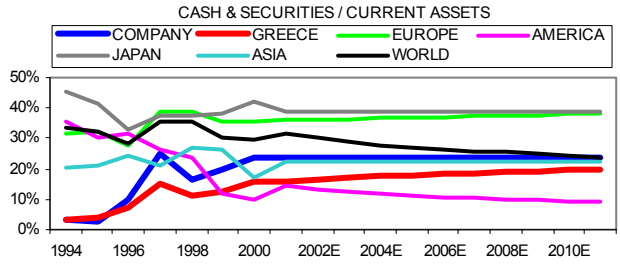
Titan's rank: 18th highest – 62,38%
Hercules rank: 28th highest – 58,5%
Highest: Taiheiyo Cement – 83,8% (Japan)
Lowest: Sichuan – 19,8% (China)



Current assets liquidity and financing period

Current assets liquidity has increased from 3,06% in 1995 to 23,72% (21% 3Q forecast) in 2001. Note that these ratios are much higher than parent ratios (0,45% 1995 - 15,81% 2001). The ratio is forecasted at 24% in the future. An international comparison is not very useful since ratios appear to have large differences in all continents.

Securities make up a relatively small part of this liquidity, with a historic average of 10,2%, and could be argued that the company is not efficient enough concerning the management of its liquidity (parent ratio is even smaller at 6,8%). On the other hand financing days have steadily decreased from 155,2 in 1995 to 69,9 in 2001 with receivables' days decreasing from 124,1 in 1995 to 71,3 in 2001, and inventory days from 84,1 to 51,3. The cause for concern is payables' days that do not historically increase, 53 in 1995 – 52,6 in 2001. Current ratio looks very good at a 1,57 historic average. The decaying historic average of questionable receivables is 3,32% and does not appear alarming with the maximum figure at 5,08% (1997) and minimum at 2,2% (2001).



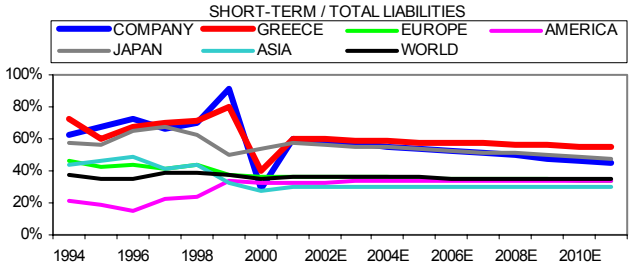
Current assets liquidity
Titan's rank: 19th lowest at 23,7%
Hercules rank: 6th lowest at 4,1%
Highest: Hanson – 69,7% (UK)
Lowest: Martin Mars – 1,7% (US)

Liabilities' structure

Short-term/long-term debt displayed un upward trend from 62,6% in 1995 to 91,1% in 2000. In relation to that, the 2001 forecast based on 3Q results was 66,6%, whereas the actual results were 29,3%. The large 2000 ratio was due to the financing of the Tarmac acquisition. It appears that during 2001 a small percentage of this debt was paid up and the rest transformed into a long-term obligation. The 2002 forecast is thus formed at 60% (66,6% previous) and the long-term forecast is lowered from 55% to 45%. International ratios were also taken into consideration with European and global ratios at 36,67% and 36,2% respectively and American at 32,99%. The much higher forecast for Titan is due to much higher historical ratios comparing to international ones. This recent change has a positive effect considering that long-term debt allows the company more scope for long-term investment plans, but it simultaneously has a negative effect because it raises the cost of debt and lowers 2002 theoretical values comparing with 2001.

A positive comment should be for the proportion of short-term liabilities that are interest bearing, which (with the exception of 2000 for reasons mentioned above) has decreased from 43,72% in 1995 to 14,68% in 2001.

The Tarmac acquisition was initially financed through short-term debt (2000) that was subsequently (2001) transformed into a long-term obligation



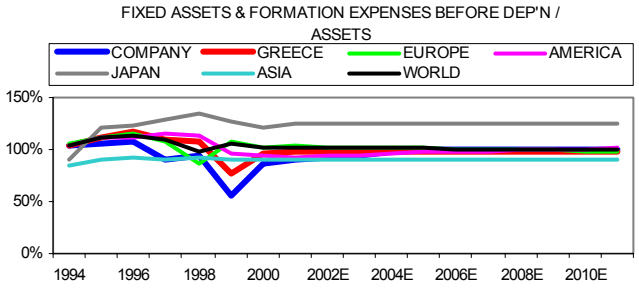
Short[28] / total debt

[28] Short term debt is modified concerning this comparative ratio because it includes liability provisions and accruals

Titan's rank: 32nd highest – 52,1%
Hercules rank: 47th highest – 84,2%
Highest: Chalyps – 98,6% (Greece)
Lowest: Martin Mars – 21,3% (US)

Capital intensity (tangible, non-tangible assets and formation expenses/assets)

Capital intensity has a decreasing trend historically from 104,7% in 1995 to 87,2% in 2001. By taking into consideration a global average of 102%, 103,43% for Europe, 93% for America, and a very high ratio (125,35%) only for Japan, the forecast is 90% for 2002 and 100% for 2006 onwards.

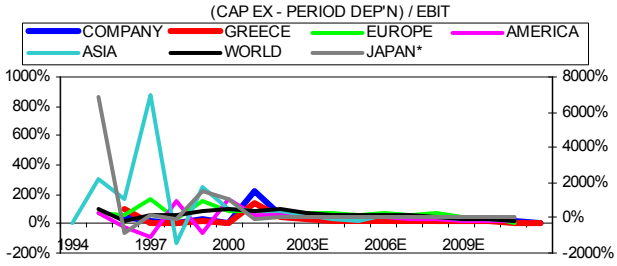


Titan's rank: 11th lowest – 87,2%
Hercules rank: 41st lowest – 123,6%
Highest: Cimpor – 175,1% (Portugal)
Lowest: Xinjiang – 45,9%[29] (China)

Capital and working capital investments

New capital investments, (capex-dep'n)/EBIT, have a decaying historic average of 77% with a corresponding 22,6% for EBIT growth. Concerning operating working capital Δ%, the average for the period 1996-1999[30] is 1,53%. (Capex-dep'n)/EBIT is forecasted at 54,8% for 2002 with a gradual decline to 7,9% to perpetuity. Correspondingly, Δ% in OWC is forecasted at an average of 2,1% for the period 2003[31]-2006, and to 2,6% for 2007-2012.

As already mentioned, dep'n figures are not very accurate wrt to international companies but as a general remark, it appears that Japanese companies undergo the largest capital investments followed by Asian companies. Titan's investments appear higher than Greek and American and European percentages but again this is partly due to the Tarmac acquisition.



Extraordinary results

The company displays historically negative extraordinary results with a historic decaying average of –5,47% (extraordinary results/results before extraordinary) and individual historic averages have a standard deviation of 1,4%. The ratio is forecasted at its decaying average of –5,47% in the future.

Internationally, Japanese and Asian companies exhibit historically large negative extraordinary results.

Concerning the 2001 extraordinary results/results before extraordinary these are –10,36%, which is the highest figure for the period 1995-2001. This increase was due to the devaluation of the Egyptian pound by 30% during 2001. It should be added that after initial investments in Egypt from many global cement companies, the market appears currently saturated with supply exceeding demand.

Lastly, large extraordinary losses are commonplace for internationally active cement companies since FX risks are not always easily hedged especially when it comes to 3d world currencies.

Large FX losses due to the depreciation of the Egyptian lira

[29] This is only a cement holding company

[30] Fiscal 2000 and 2001 were excluded from this average due to short-term borrowings for fiscal 2000 concerning the Tarmac acquisition. During 2000 OWC decreased by 69,8% since short-term bank borrowings increased from 14,6m EURO to 417,9m EURO. OWC increased for 2001 by 48,3% since some of the short-term borrowings were paid off and the rest turned into long-term debt, which increased form 21,6m EURO in 2000 to 364m EURO in 2001.

[31] When OWC is forecasted, extreme entries from the last historic years lead to an extreme estimate for the first forecasted year in order to bring OWC back to equilibrium. The forecast for 2002 is –25,9% and it is excluded since it would distort the average.

Other forecasts

Current payout of 21,7% consolidated (35,8% parent) is forecasted to gradually move to 100% to perpetuity for reasons explained in the methodology. This results to a DY of 2,13% for 2001 with a forecast of 2,77% for 2002 in relation to the current market price. Minority interests at earnings have a historic decaying average of 9,2%, which is also the future forecast and the corresponding ratio for minority interest in equity is 11,85% that is again the forecast. The proportion of profit cf/profit for distribution except dividends exhibits an average of 34,79% during 1998 – 2000, while the forecast is more conservative at 15% (10% on 3Q results) throughout the forecasted period. The ratio has increased from 17% in 1998, 30,9% (1999) to 45,8% (2000). Since it is formed again at 45,4% for 2001 there is more confidence to raise the forecast by 5% since this ratio affects valuation results directly and forecasts should therefore be relatively conservative.

Deferred tax/net profit bt of the previous period was on average 0,8% during 1998–2001 and is so forecasted, and taxed reserves for distribution/profit to be reserved from the previous period is 18,73% again during 1998 to 2001 and is forecasted at a more conservative manner at 15,84% (average of 2000-2001) in the future.

The ratio profit cf/profit for distribution except dividends has increased to 45% and remained at this level for 2nd consecutive year

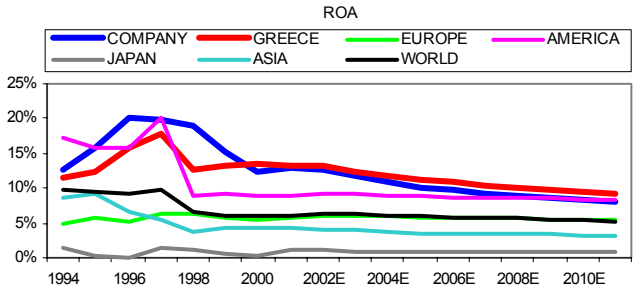
Financial highlights and conclusions

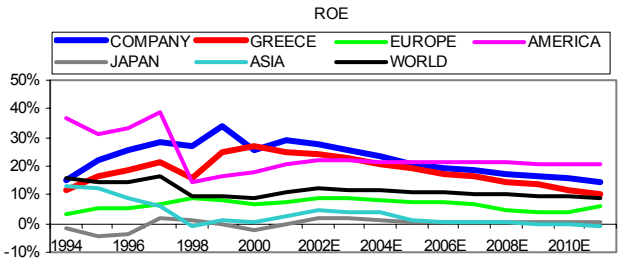
Strong credit rating, absence of tax fines, predictable double digit sales growth through increase in market share, geographical expansion and acquisitions. Increasingly less dependence on the Greek market. Historically, oil prices did not have an adverse effect on profits. Operating margin is higher than global average, sales/assets recovered[32] above expectations, D/C is at global average and ROA-i(1-t) is historically without exception positive, which justifies leverage.

Furthermore, ROA (12,41%) is double the global average (6,11%) and higher than the American (8,8%) that appears to have the highest ratio globally. The case for ROE is even better, 25,39% Titan comparing to 10,61% globally and 20,63% for America. ROE/ROA (2,05) is again higher than global average of 1,74 but the American ratio is now higher at 2,34.

Even more important than ROE/ROA are ratios that compare return with cost, i.e., ROA/WACC and ROE/COE. ROA/WACC (1,6) is much higher than global average of 0,9 and the same holds for ROE/COE that is 2,2 (1,52 global). Lastly ROIC/WACC is 2,82 (1,86 global). These ratios are forecasted to converge to global ratios to perpetuity.

Titan's ROA (12,41%) is twice the global average (6,11%)

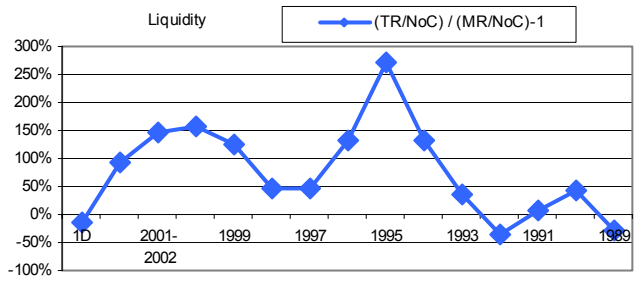




The stock's relative market liquidity

The stock's market liquidity has been historically examined in relation to mean market liquidity as explained in the methodology. As it can be seen from the graph, the stock's relative liquidity has historically decreased and this could be attributed to a more speculative current operation of the market relative to the period between 1989–1993, as well as to the fact that the Titan stock has become more a stock for medium- to long-term investment rather than shorter-term trading.

Relative liquidity has decreased diachronically



[32] During 2000 the ratio had been adversely affected due to new short-term debt wrt the Tarmac financing

Number of shares and share capital

No of shares are adjusted according to the methodology aforementioned from 41.871.012 to 41.482.367, thus reduced by –0,93%.

6. Theoretical values of Titan

Market price forecast

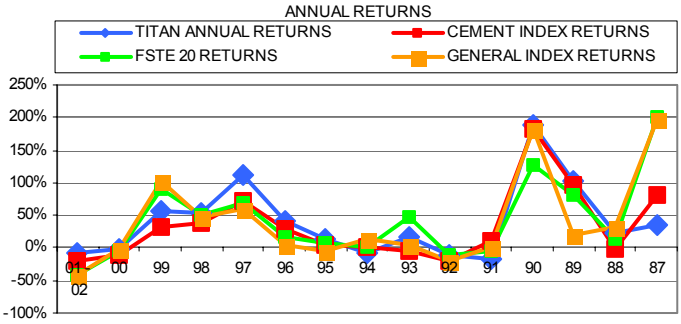
Recall that market price forecast is based on historic deviations of market prices from theoretical values. In total, theoretical values were derived from 29 model variations. The models whose historic deviations from average annual market prices demonstrate the lowest volatility, come under the grouping "value with goodwill", and are DDM and FCFE – levered for theoretical values derived from 3Q 2000, 2001 results and an IAS transformation scenario. Wrt the 2001 results, the DDM deviation volatility is 16,52% and for FCFE – levered 22,96%. Moreover the average deviation for DDM is -61,79%[33] and for FCFE – levered –55,2%.

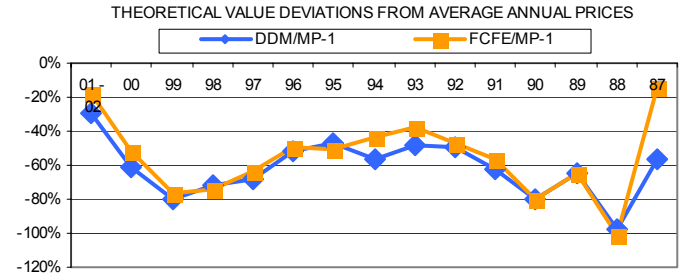
Observations of General Index (GI) past returns and historic Thp/Mp-1, i.e., theoretical value deviations from market prices appear to reach their maximum mainly during the bullish markets of 1999 and 1990 with deviations of approximately -80% both times. On the other hand it is observed that deviations lessen in years with small GI returns such as 1993 with deviations around 40%, whereas the minimum is reached regarding current theoretical values where DDM has a deviation of -29,82% and the FCFE – 17,12%. Concerning DDM the named deviation represents an all time low, whereas wrt FCFE – levered, we also observe a low deviation in 1987. Considering that financial statements had a different format before 1987 and were not transparent, it is prudent not to place much weight on that deviation. Regarding the average scenario, deviations of –61,79% and –55,2% were used for DDM and FCFE – levered respectively, wrt the conservative scenario –47,62% for DDM in 1995 and –37,43% for FCFE – levered in 1993. Finally, concerning the optimistic scenario –80,34% was used for DDM in 1999 and it should be noted that the observation for 1990 is nearly identical at –80,32%, a fact that strengthens the statistical confidence. Wrt FCFE – levered, -76,7% was used from the 1999 deviation, which is also similar to the 1990 deviation of –79,79%. Furthermore, during 1992–1996 when market returns were very low, DDM average deviation was –50,7% with a standard deviation of 3,6% and FCFE – levered average deviation of –45,7% and standard deviation of 5,3%. Therefore, using –47,62% for DDM should be prudent and –37,43% for FCFE – levered even more so.

According to the above, target price for the average scenario is 72,52 EUR (84,3% gain), 52,41 EURO (33,2% gain) for the conservative scenario, and 140,17 EURO (256,3% gain) for the optimistic scenario.

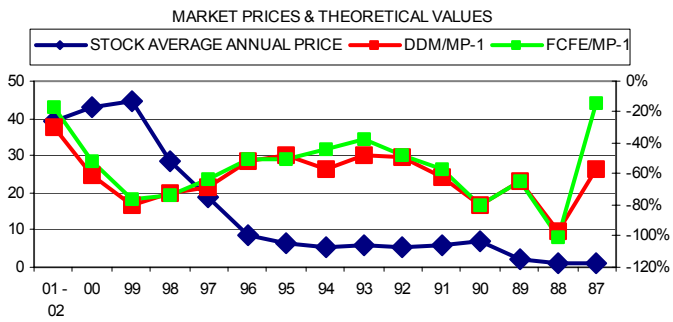
Concerning the conservative scenario, if the aforementioned averages during 1992–1996 are used, target price increases from 52,41 EURO, to 58,07 EURO. Of course if the market realises its worst case scenarios it might take a longer time to reach this more "optimistic" conservative target price.

Lowest historical deviation volatility of theoretical values/market prices observed is attributed to DDM (16,52%) and FCFE – levered (22,96%)





Conservative target is 52,41 EURO, average 72,52 and optimistic 140,17



[33] The minus sign means that theoretical values were lower than market values

Models with minimum deviation volatility of theoretical values from annual average market prices					
DDM			**FCFE (levered with goodwill)**		
Year	**Thp/Mp-1**	Deviation approaches average	**Year**	**Thp/Mp-1**	Deviation approaches average
01 - 02	-29,82%		01 - 02	-17,12%	
00	-61,04%	-61,04%	00	-51,86%	-51,86%
99	-80,34%		99	-76,70%	
98	-72,00%	-72,00%	98	-74,10%	
97	-68,60%	-68,60%	97	-63,66%	-63,66%
96	-52,07%	-52,07%	96	-49,95%	
95	-47,62%		95	-50,14%	
94	-56,36%	-56,36%	94	-44,04%	
93	-48,08%		93	-37,43%	
92	-49,55%		92	-47,17%	
91	-62,51%	-62,51%	91	-56,99%	-56,99%
90	-80,32%		90	-79,79%	
89	-65,07%	-65,07%	89	-64,42%	-64,42%
88	-97,21%		88	-100,76%	
87	-56,22%	-56,22%	87	-13,94%	
Average	-61,79%		Average	-55,20%	
Deviation volatility	16,52%		Deviation volatility	22,96%	
Maximum	-97,21%		Maximum	-100,76%	
Minimum	-29,82%		Minimum	-13,94%	

Annual stock and indices' return & deviations of theoretical values from annual average market prices						
	TITAN ANNUAL RETURN	CEMENT INDEX RETURN	FSTE 20 RETURN	GENERAL INDEX RETURN	DDM/MP-1	FCFE/MP-1
01 - 02	-7,9%	-18,9%	-42,6%	-41,2%	-29,8%	-17,1%
00	-2,9%	-10,0%	-4,1%	-3,0%	-61,0%	-51,9%
99	56,1%	30,9%	89,4%	101,5%	-80,3%	-76,7%
98	53,6%	37,3%	50,3%	47,9%	-72,0%	-74,1%
97	110,3%	72,2%	70,3%	58,3%	-68,6%	-63,7%
96	40,0%	28,0%	15,2%	5,2%	-52,1%	-49,9%
95	13,9%	3,8%	8,1%	-3,4%	-47,6%	-50,1%
94	-7,0%	1,3%	1,9%	14,2%	-56,4%	-44,0%
93	15,2%	-4,8%	48,1%	3,3%	-48,1%	-37,4%
92	-9,9%	-20,2%	-12,1%	-21,3%	-49,5%	-47,2%
91	-16,8%	9,2%	-5,1%	0,2%	-62,5%	-57,0%
90	189,1%	183,1%	126,9%	181,2%	-80,3%	-79,8%
89	103,3%	98,0%	79,7%	20,3%	-65,1%	-64,4%
88	23,4%	-0,8%	12,9%	33,1%	-97,2%	-100,8%
87	34,2%	81,7%	200,3%	199,1%	-56,2%	-13,9%
Averages	39,6%	32,7%	42,6%	39,7%	-61,8%	-55,2%

Current theoretical values

The above discussion concerned the setting of future long-term target prices. This unit discusses current theoretical values. Recall that all models exist in two variations, one with goodwill and another without goodwill and from the 29 variations used, 2 concern equilibrium values of all models with and without goodwill. Equilibrium value with goodwill is 41,58 (41,42 previous) EURO and this increases to 42,94 (42,65 previous) EURO if goodwill is not taken into consideration, which represents a difference of 3,3%. In relation to a market price of 39,34 EURO, value with goodwill is 5,7% higher than market price and value without goodwill 9,2% higher. Concerning the group of models with goodwill, their standard deviation is 30,2%. The lowest values (DDM: 27,61 EURO, FCFF without goodwill: 29,8 EURO) represent the worst case scenario of the company's value, and the highest values (theoretical PE – desired leverage with goodwill: 69,77 EURO and the same model at 70 EURO with goodwill) represent the best case scenario for the value of the

Theoretical value with goodwill is 41,58 EURO and without goodwill 42,94 EURO

Theoretical value range between 27,61 and 70 EURO on the basis of worst and best case scenarios

Downside risk is estimated at 31,57 EURO

company. Therefore, the range of the company's value is between 27,61 and 70 EURO. Concerning downside risk, the standard deviation of historic deviations of 16,52% for DDM and 22,96% for FCFE – levered is subtracted from current market price and averaged and the resulting value is 31,57 EURO. The current market price has been used concerning both models since their current deviations are at all time low[34]. Finally, wrt the highest current theoretical value of 70 EURO (theoretical PE – desired leverage without goodwill), this is very close to the final target price of the average scenario (72,52 EURO) and it should be considered that this target price lies within the fundamental value capabilities of the company.

Valuation Summary

Models	TV DFactor	Value with goodwill	TV %*	Value without goodwill	TV %*
DDM					
Projected dividends	12,3%	27,61	47,2%		
Convergence	8,3%	44,32	62,2%	44,62	61,9%
FCFE					
Desired leverage	12,3%	35,74	31,3%	35,86	36,6%
Levered	12,3%	32,61	36,6%	32,92	36,4%
Value driver					
My variation	8,3%	50,55	56,4%	50,65	56,3%
Standard	8,3%	44,32	62,2%	44,62	61,9%
Economic profit	8,3%	37,98	36,9%	38,30	37,1%
FCFF	8,3%	29,39	49,8%	29,80	49,6%
Theoretical PE					
Desired leverage	12,3%	69,77	19,0%	70,00	19,0%
Levered	12,3%	64,40	21,1%	65,02	21,0%
Theoretical PBV					
Desired leverage		34,70	14,4%	34,83	14,4%
Levered		31,18	16,4%	31,51	16,4%
Theoretical PS					
Desired leverage		41,91	14,6%	42,05	14,6%
Levered		37,66	16,7%	38,06	16,6%
Mean		**41,58**		**42,94**	
SD		**30,23%**		**28,92%**	
Market price			**39,34**		

How IAS might affect theoretical values

According to Titan spokesmen the most important changes that will go through due to the conversion to IAS (International Accounting Standards) starting from 1Q 2003, will be a significant change in the valuation of fixed assets, i.e., that fixed assets will triple because they will be valued at current instead of historic cost. The author carried out a scenario based on this assumption while keeping the ratio cumulative dep'n/fixed assets before dep'n as it was. The resulting fixed asset figures were considered to be extremely high because Titan would then be more capital intensive than the 2 largest Japanese cement producers (Taiheiyo and Sumitomo) who are amongst the most capital intensive in the world. Finally, fixed assets were multiplied by a factor of 2, while the 2001 observation by a factor of 1,5. The effects of these changes are adverse concerning cashflows, ROE, D/C etc. No changes have been made to the model concerning cost. Changes to cashflows emerge mainly from a larger deduction for investments. The effect of these changes was

It is estimated that fixed assets will increase by a factor of 2 due to the IAS conversion

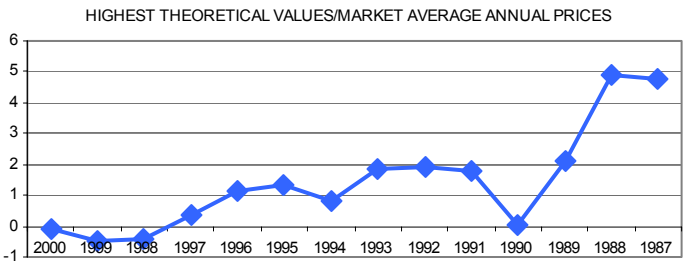
[34] Recall the exception of –13,94% for the FCFE – levered during 1987

noteworthy on current theoretical values. From equilibrium values of 41,58 EURO with goodwill and 42,94 EURO without goodwill these are reduced to 33,55 and 34,12. But if historical theoretical values are still taken into consideration, long-term target prices are only marginally reduced: 67,63 EURO from 72,52 for the average scenario, 48,53 from 52,41 for the conservative one and 129,73 from 140,17 for the optimistic scenario. Average downside risk has actually increased from 31,57 EURO to 31,84, but worst case scenario (based on the lowest current theoretical values amongst the 29 models) has decreased drastically from 27,61 EURO to 18,74. Considering this point it is important that the 27,61 value is based on DDM whose volatility of historical deviations is 16,52%. Furthermore, it is the model that displays the lowest deviation volatility, whereas the 18,74 value is based on FCFF whose volatility ranks 6th at 27,44%. The DDM value under the IAS scenario is actually higher than the 27,61 value at 28,31. But again the point of using numerous valuation models is to be able to grasp the largest possible range of the company's theoretical value. Moreover, the standard deviation of the goodwill models has only marginally increased under the IAS assumption from 30,2% to 31,1%. Much more important is the average downside risk, which is based on the current minimum deviation volatility models (DDM and FCFE levered), and the volatility of historic deviations while the current year's deviation is based on the IAS assumption. Once more the results are: average downside risk of 31,57 and 31,84 EURO under the IAS assumption.

Worst case scenario has decreased from 27,61 to 18,74 EURO, but average downside risk has marginally increased

Historic target prices, dates of achievement and high theoretical values/market prices

Recall from the methodology that theoretical values have been estimated from 1987 to present. Trying to forecast the necessary investment horizon wrt target prices, historical testing has been undertaken as already mentioned. In this respect it is important to keep in mind that during the testing period (1987 to 2000) the Greek market has experienced three bull markets. The optimistic scenario depends solely, and the average scenario to a certain extent on the reappearance of such phenomena. On the other hand the conservative scenario depends on deviations concerning 1995, 1993, 1992 and 1987. Now, stock market returns were flat in 1995, 1993 and 1992 and this means that these deviations should also be achieved in the future during flat markets but 1987 is a special case. During that year the general index return was 199,1% (200,3% - FTSE 20[35]) but Titan's return was only 34,2%. Since this is the only instance wrt to historical data testing that Titan's return does not correlate with market return, and since the 1987 deviation (-56,22%) is relatively close to the 1992 deviation (-49,55%), it is also considered a safe bet concerning the conservative scenario.



Hints that market prices move increasingly towards highest current theoretical values

At this point another parameter should also be discussed. The ratio of the highest theoretical value/average annual market price decreases during bull markets and increases during bear markets, but not to a great degree, because the 476,6% and 487,8% percentages from 1987 and 1988 never reappear and decreased for only one year (1990) to 6,7% but turned negative during 1998-2000 and had an average value of 146,7% during 1991-1996. Current deviation is 177,9% (39,34 market/70 high theoretical) and is very similar to the average deviation during 1991-1993, which are the three years after the 1990 bull market. Note lastly that historical average annual market prices exceed conservative theoretical

1 year worst case investment horizon for conservative targets and 3 years for the average scenario. The optimistic target requires 6 years maximum. In case of more than a decade without bull markets, time horizon might more than double.

[35] The FTSE 20 did not exist before 1994 and it is also not possible to exactly reconstruct it since many of the companies that constitute the index were not floated then. A simulation has been undertaken instead by including the 20 largest cap companies for every respectful year.

target prices for all years except 1993, 1992 and 1987 that were also met within their respective years.

Concluding, there is a relative reassurance from historical data that conservative target prices will be achieved within the year they are set even in bear markets. Furthermore, it has been observed that market values move favourably wrt the highest theoretical value potential. Concerning the average scenario, the longest achievement period was 3 years and this happened twice, 1992 average target – achieved on 21/09/95 and 1993 average target – achieved 01/07/96.

Lastly, the optimistic target of 1991 was achieved on 13/01/97. Furthermore, all consecutive targets going up to 1996 were also achieved in 1997. It could then be said that worse case scenario is 6 years but recall again the three bull markets during the testing period.

In extremely adverse market conditions such targets could need more than 12 years to be achieved since internationally there have been decades without bull markets. Note moreover that the estimated theoretical values and price targets that have ensued through the methodology aforementioned do not in any case represent an investment proposition but aim only at the presentation of scientific research.

7. Ranking Summary

From 51 accounts examined, Titan ranks 2nd, with first being the US, while the last 6 places are taken from Chinese and Indian companies.

Titan's best strong points are: ROA – 12,4% (5th), ROE – 25,4% (4th), ROE/ROA – 2,05 (4th), ROA/WACC – 1,6 (11th), ROE/COE – 2,2 (10th), ROIC - 21,9% (8th), ROIC/WACC – 2,8 (11th), ROA – COD at – 7,8% (8th), long-term credit rating - BBB (9th), short-term credit rating – BB (9th), sales growth – 57,9% (1st), operating margin – 19,3% (11th), EBIT growth – 16,9% (8th), profit ami growth – 23,7% (13th), sales / assets – 86,3% (10th), current ratio – 1,99 (4th), capital intensity – 87,2% (11th) and P/E for 2002 - 8,42 (19th).

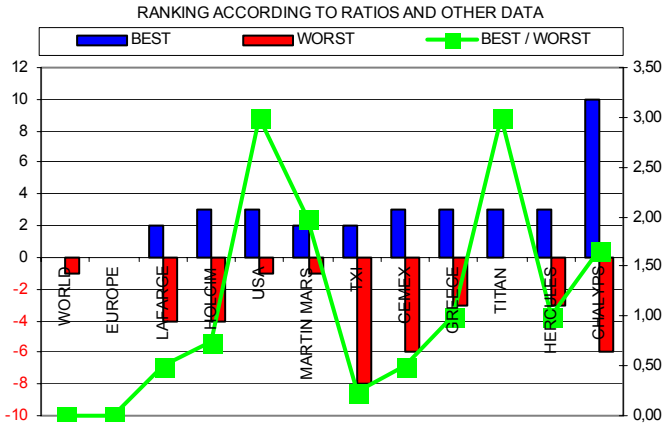
Weak points are: beta – 1,07 (44th), risk premium – 6,4% (33d), COE – 10,7% (33d), WACC – 7,8% (29th), sales/total – 1% (33d), assets/total – 0,8% (36th), P/BV - 3,26 (43d largest) and P/S – 1,44 (42nd largest).

Titan's average rank of 19,14 is only second to the US with 18,35.

In addition to the above, a comparison was made with a smaller set of accounts (12), determining best and worst ratios and other data. The set is based on the accounts of Lafarge, Holcim, Martin Mars, TXI, Taiheiyo, Cemex, Hercules, Chalyps and Titan. According to this comparison, Titan ranks 1st with 3 best and no worse ratios, whereas US ranks 2nd with 3 best and 1 worst ratio and Martin Mars 3d with 2 best and 1 worst.

Titan's strong points against the other companies are ROIC (21,9%), sales growth (57,9%) and large investments (219,3% of EBIT).

Titan ranks 2nd at a 51 financial statement comparison



	BEST	WORST	BEST / WORST
TITAN	3	0	3,00
USA	3	1	3,00
MARTIN MARS	2	1	2,00
CHALYPS	10	6	1,67
GREECE	3	3	1,00
HERCULES	3	3	1,00
HOLCIM	3	4	0,75
LAFARGE	2	4	0,50
CEMEX	3	6	0,50
TXI	2	8	0,25
WORLD	0	1	0,00
EUROPE	0	0	0,00

Conclusion

There exists a significant degree of statistical confidence concerning the achievement of conservative targets within the year they are set. In case of a long time period without bull markets, this period might lengthen to 2-3 years since the examined period includes 3 bull markets. Furthermore, there are hints that market prices are gradually moving favorably concerning the highest theoretical value of all models.

Moreover, historically the company has mostly positive cashflows, finances its expansion without equity public offerings, and has expanded geographically to the point that nearly half of its sales and profits come from outside Greece. There is an important competitive advantage in the form of cost savings relating to production cost, which historically has not been adversely affected from rising oil prices. This advantage is further verified through the comparison of the company's operating margin with the global average. Also, Titan comes out as the best and 2nd best company in 2 global ratio comparisons, while the fact that the US has the same ranking as Titan is positive since the Group has realized its largest investments in that country.

Lastly, the statistical significance of the results is strengthened from the fact that forecasts are based on comparisons of ratios, historic data and forecasts from 35 international companies.

Relative certainty concerning conservative targets

Deviations of historic average annual market prices and highest theoretical values gradually decrease

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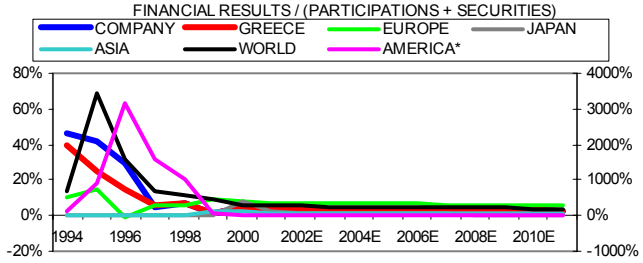
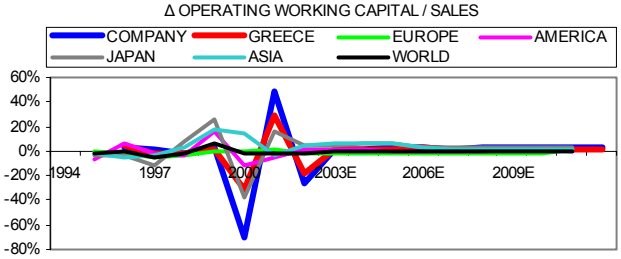
APPENDIX A – ADDITIONAL GRAPHS

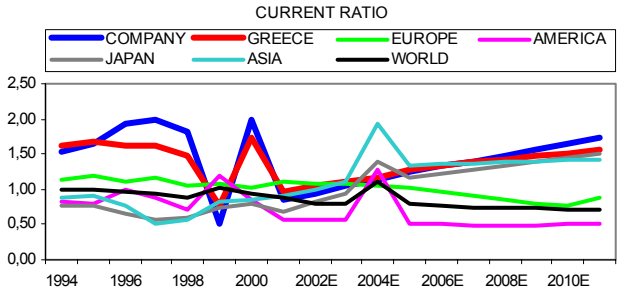
FINANCIAL RESULTS / (PARTICIPATIONS + SECURITIES)



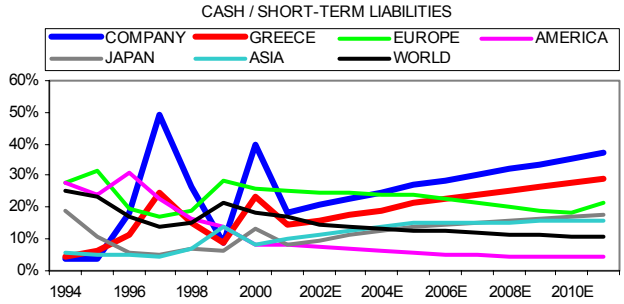
Δ OPERATING WORKING CAPITAL / SALES



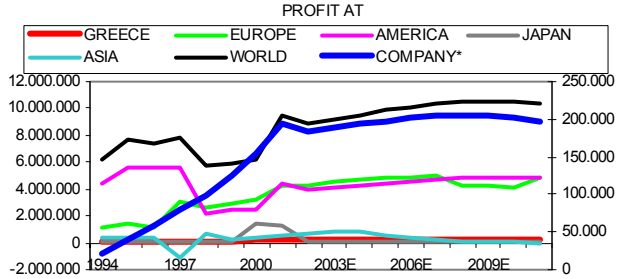
CURRENT RATIO



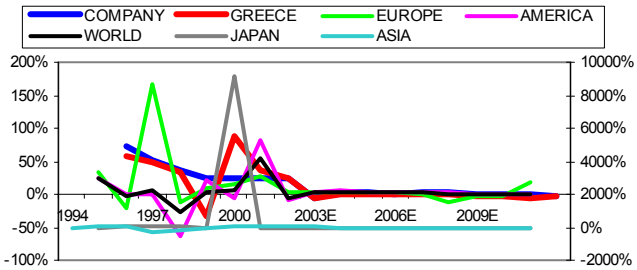
CASH / SHORT-TERM LIABILITIES



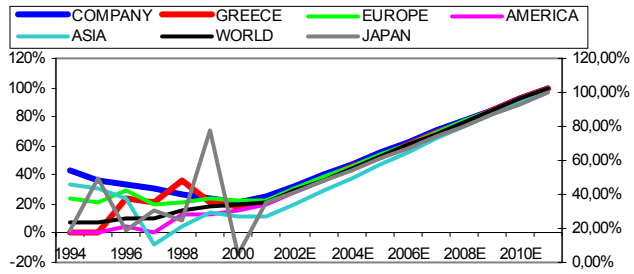
PROFIT AT



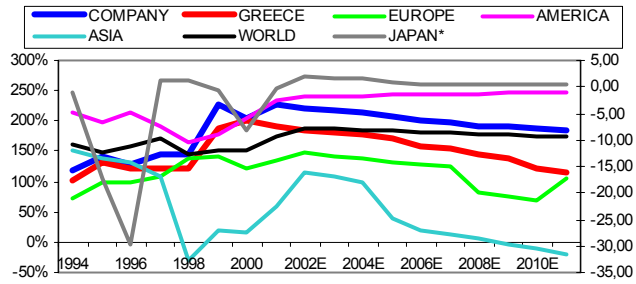
GROWTH RATE OF PROFIT AT+MI



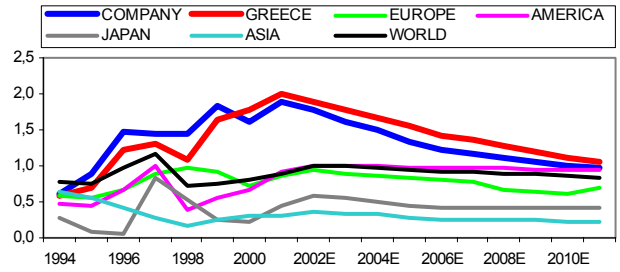
PAYOUT RATIO



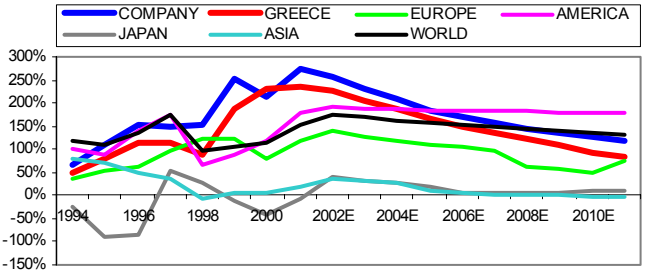
ROE / ROA



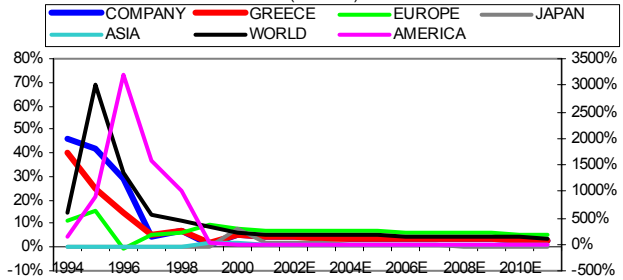
ROA / WACC



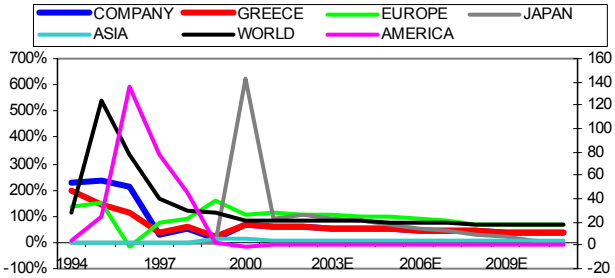
ROE / COE



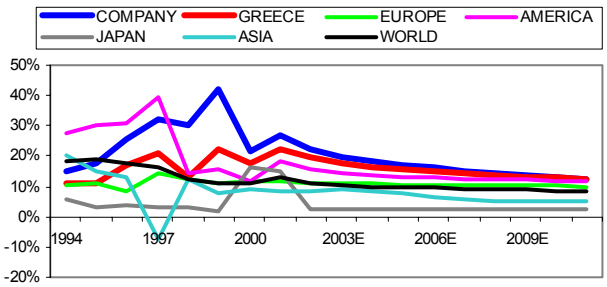
RETURN ON NON-OPERATING INVESTMENTS & SECURITIES (RONOA)



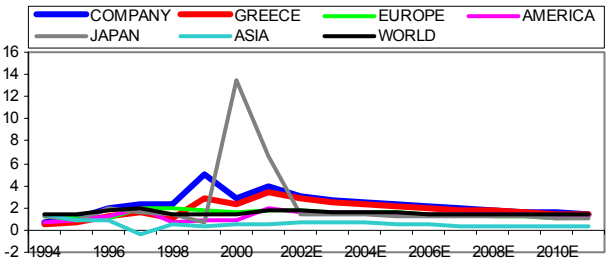
RONOA / WACC



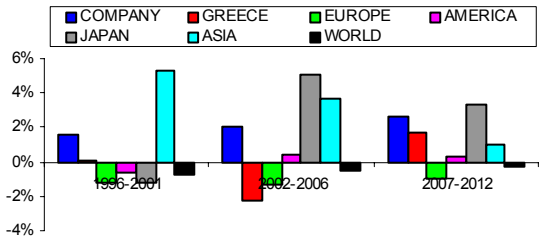
ROIC



ROIC / WACC



Δ% OPERATING WORKING CAPITAL / SALES



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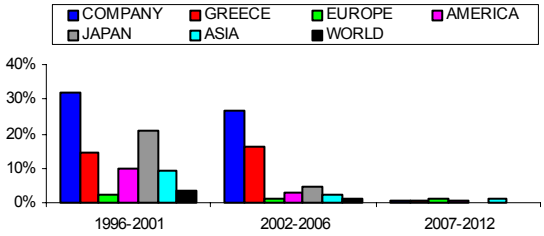
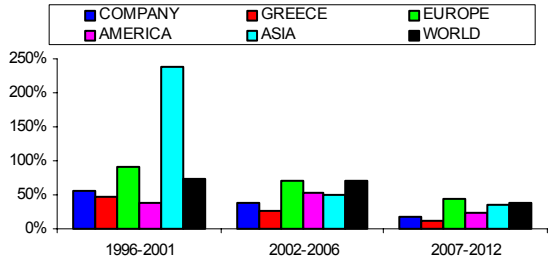


(CAP EX - PERIOD DEP'N) / EBIT



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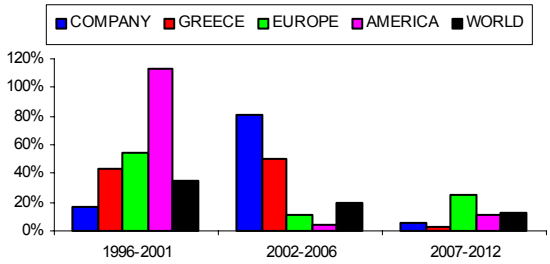
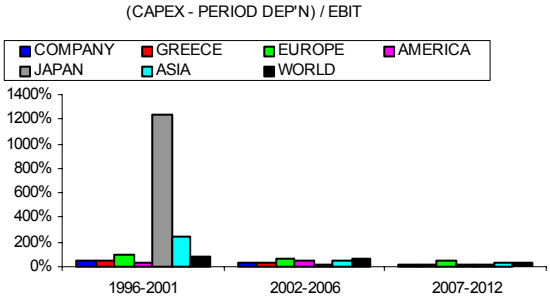
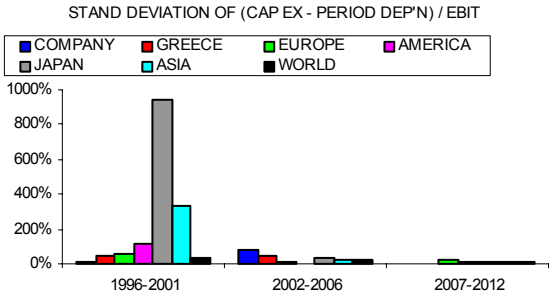
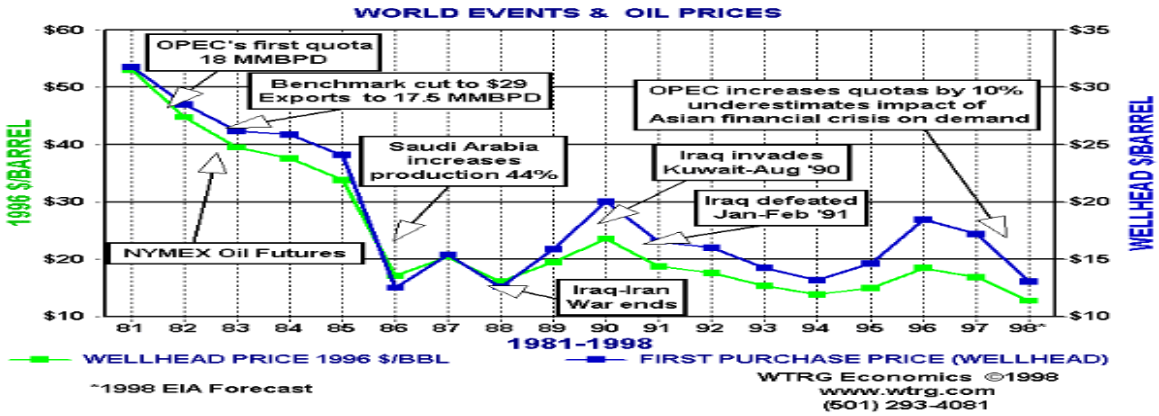


(CAPEX - PERIOD DEP'N) / EBIT



STAND DEVIATION OF (CAP EX - PERIOD DEP'N) / EBIT





APPENDIX B – ACCOUNTS, CASHFLOWS AND COST OF DEBT (1995 – 2012)

Financial Statements ('000 EUR)	1995	1996	1997	1998	1999	2000	2001	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	Perpetuity
Assets																		
R&D expenses before amort'n	2.144	3.076	3.872	4.606	5.797	602	886	4.813	5.818	6.941	8.134	9.363	10.247	11.112	11.940	12.712	13.406	14.006
Goodwill before amort'n	2.387	2.412	2.188	2.434	3.478	3.779	3.192	7.022	8.488	10.126	11.868	13.660	14.950	16.212	17.421	18.546	19.559	20.434
Net intangible assets	5.062	5.390	5.001	5.129	6.154	4.840	7.439	14.179	16.539	19.051	21.571	24.004	26.033	27.975	29.784	31.414	32.821	33.965
Net tangible assets	122.105	152.559	164.127	176.014	222.114	239.543	658.141	773.818	870.981	966.261	1.051.483	1.121.794	1.202.337	1.276.390	1.341.962	1.397.178	1.440.359	1.470.109
Participations	2.213	2.322	2.850	25.499	66.084	506.538	103.127	112.192	129.125	146.705	163.774	179.589	191.935	203.150	212.920	220.957	227.004	230.858
Net non-current assets & participations	**131.069**	**161.685**	**173.712**	**208.020**	**295.139**	**751.265**	**768.886**	**900.190**	**1.016.644**	**1.132.017**	**1.236.828**	**1.325.386**	**1.420.305**	**1.507.515**	**1.584.667**	**1.649.548**	**1.700.184**	**1.734.931**
Current assets																		
Inventories	49.267	51.737	59.373	54.949	70.424	80.808	122.065	92.947	118.417	148.120	181.209	216.909	243.912	271.590	299.434	326.869	353.270	377.987
Doubtful receivables	3.320	3.250	5.155	5.311	5.920	5.430	4.774	7.768	9.897	12.379	15.145	18.128	20.385	22.698	25.025	27.318	29.525	31.591
Receivables	97.943	111.277	101.395	121.309	164.523	166.784	217.021	233.905	297.999	372.748	456.017	545.858	613.811	683.465	753.535	822.576	889.015	951.216
Securities	812	779	620	410	3.979	5.333	16.762	10.152	12.933	16.178	19.792	23.691	26.640	29.663	32.704	35.701	38.584	41.284
Cash	3.827	4.021	16.540	58.230	41.191	54.650	88.667	93.065	118.566	148.307	181.438	217.183	244.220	271.933	299.813	327.282	353.717	378.465
Total current assets	**151.849**	**167.814**	**177.928**	**234.899**	**280.116**	**307.574**	**444.515**	**430.068**	**547.916**	**685.352**	**838.455**	**1.003.642**	**1.128.583**	**1.256.651**	**1.385.486**	**1.512.427**	**1.634.587**	**1.748.951**
Total assets	291.140	333.901	352.493	446.077	576.695	1.059.803	1.217.260	1.335.590	1.570.831	1.824.652	2.083.601	2.338.362	2.559.104	2.775.244	2.982.057	3.174.648	3.348.136	3.497.845
Liabilities																		
Minority interest	16.889	23.249	26.127	28.914	62.640	48.727	35.794	40.956	50.131	60.491	71.632	83.235	94.178	105.449	116.838	128.108	139.002	149.245
Total equity capital	**133.341**	**182.370**	**225.237**	**267.088**	**354.576**	**398.701**	**457.901**	**500.450**	**586.286**	**678.338**	**771.542**	**862.440**	**940.091**	**1.015.410**	**1.086.694**	**1.152.209**	**1.210.252**	**1.259.224**
Provisions	21.522	22.952	28.169	31.267	44.655	35.951	167.977	135.086	156.894	179.927	202.799	224.590	242.486	259.361	274.794	288.372	299.711	308.471
Long-term debt	**34.539**	**24.406**	**4.837**	**27.632**	**21.511**	**21.567**	**364.005**	**190.618**	**241.847**	**301.525**	**367.947**	**439.575**	**510.355**	**585.360**	**663.411**	**743.072**	**822.678**	**900.385**
Current liabilities																		
Banks - short term obligations	32.319	20.150	2.772	5.290	14.627	417.955	10.026	93.285	107.079	121.312	135.015	147.571	157.168	165.731	173.008	178.769	182.818	185.003
Current part of long-term debt	10.885	15.410	1.463	7.809	7.964	8.481	22.694	58.838	67.538	76.515	85.158	93.078	99.131	104.532	109.122	112.756	115.309	116.688
Accounts payable (purchases' proxy)	31.038	31.318	41.857	47.162	65.621	104.405	103.697	157.032	180.604	205.007	228.609	250.357	267.157	282.263	295.233	305.661	313.195	317.560
Total current liabilities	**98.817**	**101.969**	**91.875**	**118.916**	**154.426**	**601.963**	**222.819**	**501.084**	**575.959**	**653.399**	**728.193**	**796.998**	**849.982**	**897.515**	**938.204**	**970.771**	**994.116**	**1.007.379**
Short- and long-term interest bearing	**77.743**	**59.966**	**9.073**	**40.730**	**44.102**	**448.004**	**396.725**	**342.741**	**416.464**	**499.352**	**588.120**	**680.224**	**766.654**	**855.623**	**945.541**	**1.034.596**	**1.120.805**	**1.202.076**
Total debt	**157.799**	**151.531**	**127.256**	**178.989**	**222.119**	**661.102**	**759.359**	**835.140**	**984.545**	**1.146.314**	**1.312.059**	**1.475.923**	**1.619.012**	**1.759.834**	**1.895.362**	**2.022.439**	**2.137.884**	**2.238.621**
Total liabilities	**291.140**	**333.901**	**352.493**	**446.077**	**576.695**	**1.059.803**	**1.217.260**	**1.335.590**	**1.570.831**	**1.824.652**	**2.083.601**	**2.338.362**	**2.559.104**	**2.775.244**	**2.982.057**	**3.174.648**	**3.348.136**	**3.497.845**
Income Statement																		
Sales	288.049	317.654	407.236	469.047	557.796	622.678	982.901	1.135.251	1.299.863	1.468.845	1.630.418	1.777.155	1.919.328	2.053.681	2.176.901	2.285.747	2.377.176	2.448.492
COGS	-213.859	-225.007	-285.623	-335.956	-392.767	-430.893	-721.651	-834.410	-957.024	-1.083.273	-1.204.471	-1.315.095	-1.420.302	-1.519.724	-1.610.907	-1.691.452	-1.759.111	-1.811.884
Income after COGS	74.190	92.647	121.614	133.091	165.029	191.784	261.251	300.842	342.839	385.572	425.947	462.060	499.025	533.957	565.994	594.294	618.066	636.608
Other operating income	2.189	2.531	1.062	6.307	4.815	16.523	12.158	16.366	18.739	21.175	23.504	25.619	27.669	29.606	31.382	32.951	34.269	35.297
In after other operating income	76.380	95.177	122.676	139.398	169.844	208.307	273.409	317.207	361.578	406.747	449.451	487.680	526.694	563.563	597.377	627.245	652.335	671.905
Operating expenses (ex R&D)	-26.935	-28.909	-28.092	-32.953	-40.435	-44.067	-81.422	-94.226	-114.128	-136.015	-158.803	-181.625	-200.250	-218.649	-236.411	-253.108	-268.304	-281.577
In after operating expenses (ex R&D)	**49.444**	**66.268**	**94.584**	**106.445**	**129.409**	**164.241**	**191.987**	**222.982**	**247.450**	**270.732**	**290.648**	**306.055**	**326.444**	**344.914**	**360.965**	**374.137**	**384.031**	**390.329**
R&D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBIT	49.444	66.268	94.584	106.445	129.409	164.241	191.987	222.982	247.450	270.732	290.648	306.055	326.444	344.914	360.965	374.137	384.031	390.329
Total financial results	1.406	1.307	1.015	1.149	4.804	4.953	5.973	5.223	5.884	6.540	7.137	7.646	7.944	8.166	8.304	8.351	8.305	8.164
In after financials	50.850	67.576	95.598	107.594	134.213	169.193	197.960	228.204	253.334	277.271	297.785	313.700	334.388	353.080	369.269	382.488	392.336	398.493
Interest expense	**-10.994**	**-7.216**	**-4.852**	**-2.312**	**-3.141**	**-11.822**	**-25.983**	**-14.540**	**-19.441**	**-23.733**	**-28.433**	**-34.960**	**-42.252**	**-47.764**	**-55.872**	**-61.706**	**-67.455**	**-72.984**
In after interest expense	**39.856**	**60.360**	**90.746**	**105.282**	**131.072**	**157.371**	**171.977**	**213.664**	**233.893**	**253.538**	**269.353**	**278.741**	**292.136**	**305.317**	**313.397**	**320.782**	**324.881**	**325.509**
Total extraordinary results	**-2.746**	**-1.936**	**-6.945**	**2.278**	**-4.289**	**-8.396**	**-17.809**	**-11.681**	**-12.787**	**-13.861**	**-14.726**	**-15.239**	**-15.971**	**-16.692**	**-17.133**	**-17.537**	**-17.761**	**-17.796**
Total income bt & dep'n difference	**37.109**	**58.423**	**83.801**	**107.560**	**126.782**	**148.975**	**154.169**	**201.983**	**221.106**	**239.677**	**254.627**	**263.502**	**276.165**	**288.625**	**296.263**	**303.245**	**307.120**	**307.713**
Total net income before taxes	**34.536**	**56.371**	**82.451**	**107.233**	**126.101**	**148.350**	**153.593**	**200.837**	**219.339**	**237.452**	**251.954**	**260.404**	**274.264**	**286.623**	**294.198**	**301.163**	**305.076**	**305.767**
Appropriation Account																		
Total tax	-8.761	-14.473	-22.567	-27.130	-32.025	-36.723	-40.582	-51.549	-57.162	-62.818	-67.647	-70.941	-75.797	-80.342	-83.624	-86.790	-89.119	-91.730
Profit for distribution b.m.i.	**25.775**	**41.898**	**64.124**	**87.858**	**111.977**	**141.425**	**164.221**	**213.361**	**201.969**	**208.148**	**214.715**	**216.606**	**221.596**	**225.580**	**225.783**	**225.155**	**222.276**	**215.900**
Minority interest	**-3.295**	**-3.174**	**-5.045**	**-7.248**	**-12.655**	**-16.584**	**-9.806**	**-19.553**	**-18.509**	**-19.075**	**-19.677**	**-19.850**	**-20.308**	**-20.673**	**-20.691**	**-20.634**	**-20.370**	**-19.786**
Profit for distribution a.m.i.	22.480	38.724	59.079	80.611	99.322	124.841	154.415	193.808	183.460	189.072	195.038	196.756	201.288	204.907	205.091	204.521	201.906	196.114
Dividends	9.825	14.123	19.649	24.562	27.018	29.474	33.497	48.360	59.546	75.557	92.578	108.160	125.757	143.396	158.917	173.823	186.754	196.114
Profit after dividends	12.655	24.601	39.429	56.049	72.304	95.367	120.918	145.448	123.914	113.516	102.460	88.596	75.531	61.511	46.175	30.698	15.153	0

Financial Statements annual Δ% ('000 EUR)	*Δ 95-96*	*Δ 96-97*	*Δ 97-98*	*Δ 98-99*	*Δ 99-00*	*Δ 00-01*	*Δ 01-02*	*Δ 02-03*	*Δ 03-04*	*Δ 04-05*	*Δ 05-06*	*Δ 06-07*	*Δ 07-08*	*Δ 08-09*	*Δ 09-10*	*Δ 10-11*	*Δ 11-Per*
Assets																	
R&D expenses before amort'n	*43,5%*	*25,9%*	*18,9%*	*25,9%*	*-89,6%*	*47,2%*	*443,4%*	*20,9%*	*19,3%*	*17,2%*	*15,1%*	*9,4%*	*8,4%*	*7,5%*	*6,5%*	*5,5%*	*4,5%*
Goodwill before amort'n	*1,0%*	*-9,3%*	*11,2%*	*42,9%*	*8,7%*	*-15,5%*	*120,0%*	*20,9%*	*19,3%*	*17,2%*	*15,1%*	*9,4%*	*8,4%*	*7,5%*	*6,5%*	*5,5%*	*4,5%*
Net intangible assets	*6,5%*	*-7,2%*	*2,6%*	*20,0%*	*-21,3%*	*53,7%*	*90,6%*	*16,6%*	*15,2%*	*13,2%*	*11,3%*	*8,5%*	*7,5%*	*6,5%*	*5,5%*	*4,5%*	*3,5%*
Net tangible assets	*24,9%*	*7,6%*	*7,2%*	*26,2%*	*7,8%*	*174,7%*	*17,6%*	*12,6%*	*10,9%*	*8,8%*	*6,7%*	*7,2%*	*6,2%*	*5,1%*	*4,1%*	*3,1%*	*2,1%*
Participations	*4,9%*	*22,7%*	*794,8%*	*159,2%*	*666,5%*	*-79,6%*	*8,8%*	*15,1%*	*13,6%*	*11,6%*	*9,7%*	*6,9%*	*5,8%*	*4,8%*	*3,8%*	*2,7%*	*1,7%*
Net non-current assets & participations	***23,4%***	***7,4%***	***19,8%***	***41,9%***	***154,5%***	***2,3%***	***17,1%***	***12,9%***	***11,3%***	***9,3%***	***7,2%***	***7,2%***	***6,1%***	***5,1%***	***4,1%***	***3,1%***	***2,0%***
Current assets																	
Inventories	*5,0%*	*14,8%*	*-7,5%*	*28,2%*	*14,7%*	*51,1%*	*-23,9%*	*27,4%*	*25,1%*	*22,3%*	*19,7%*	*12,4%*	*11,3%*	*10,3%*	*9,2%*	*8,1%*	*7,0%*
Doubtful receivables	*-2,1%*	*58,6%*	*3,0%*	*11,5%*	*-8,3%*	*-12,1%*	*62,7%*	*27,4%*	*25,1%*	*22,3%*	*19,7%*	*12,4%*	*11,3%*	*10,3%*	*9,2%*	*8,1%*	*7,0%*
Receivables	*13,6%*	*-8,9%*	*19,6%*	*35,6%*	*1,4%*	*30,1%*	*7,8%*	*27,4%*	*25,1%*	*22,3%*	*19,7%*	*12,4%*	*11,3%*	*10,3%*	*9,2%*	*8,1%*	*7,0%*
Securities	*-4,1%*	*-20,4%*	*-33,8%*	*869,8%*	*34,0%*	*214,3%*	*-39,4%*	*27,4%*	*25,1%*	*22,3%*	*19,7%*	*12,4%*	*11,3%*	*10,3%*	*9,2%*	*8,1%*	*7,0%*
Cash	*5,1%*	*311,4%*	*252,1%*	*-29,3%*	*32,7%*	*62,2%*	*5,0%*	*27,4%*	*25,1%*	*22,3%*	*19,7%*	*12,4%*	*11,3%*	*10,3%*	*9,2%*	*8,1%*	*7,0%*
Total current assets	***10,5%***	***6,0%***	***32,0%***	***19,2%***	***9,8%***	***44,5%***	***-3,2%***	***27,4%***	***25,1%***	***22,3%***	***19,7%***	***12,4%***	***11,3%***	***10,3%***	***9,2%***	***8,1%***	***7,0%***
Total assets	*14,7%*	*5,6%*	*26,5%*	*29,3%*	*83,8%*	*14,9%*	*9,7%*	*17,6%*	*16,2%*	*14,2%*	*12,2%*	*9,4%*	*8,4%*	*7,5%*	*6,5%*	*5,5%*	*4,5%*
Liabilities																	
Minority interest	*37,7%*	*12,4%*	*10,7%*	*116,6%*	*-22,2%*	*-26,5%*	*14,4%*	*22,4%*	*20,7%*	*18,4%*	*16,2%*	*13,1%*	*12,0%*	*10,8%*	*9,6%*	*8,5%*	*7,4%*
Total equity capital	***36,8%***	***23,5%***	***18,6%***	***32,8%***	***12,4%***	***14,8%***	***9,3%***	***17,2%***	***15,7%***	***13,7%***	***11,8%***	***9,0%***	***8,0%***	***7,0%***	***6,0%***	***5,0%***	***4,0%***
Provisions	*6,6%*	*22,7%*	*11,0%*	*42,8%*	*-19,5%*	*367,2%*	*-19,6%*	*16,1%*	*14,7%*	*12,7%*	*10,7%*	*8,0%*	*7,0%*	*6,0%*	*4,9%*	*3,9%*	*2,9%*
Long-term debt	***-29,3%***	***-80,2%***	***471,2%***	***-22,2%***	***0,3%***	***1587,8%***	***-47,6%***	***26,9%***	***24,7%***	***22,0%***	***19,5%***	***16,1%***	***14,7%***	***13,3%***	***12,0%***	***10,7%***	***9,4%***
Current liabilities																	
Banks - short term obligations	*-37,7%*	*-86,2%*	*90,8%*	*176,5%*	*2757,5%*	*-97,6%*	*830,4%*	*14,8%*	*13,3%*	*11,3%*	*9,3%*	*6,5%*	*5,4%*	*4,4%*	*3,3%*	*2,3%*	*1,2%*
Current part of long-term debt	*41,6%*	*-90,5%*	*433,6%*	*2,0%*	*6,5%*	*167,6%*	*159,3%*	*14,8%*	*13,3%*	*11,3%*	*9,3%*	*6,5%*	*5,4%*	*4,4%*	*3,3%*	*2,3%*	*1,2%*
Accounts payable (purchases' proxy)	*0,9%*	*33,6%*	*12,7%*	*39,1%*	*59,1%*	*-0,7%*	*51,4%*	*15,0%*	*13,5%*	*11,5%*	*9,5%*	*6,7%*	*5,7%*	*4,6%*	*3,5%*	*2,5%*	*1,4%*
Total current liabilities	***3,2%***	***-9,9%***	***29,4%***	***29,9%***	***289,8%***	***-63,0%***	***124,9%***	***14,9%***	***13,4%***	***11,4%***	***9,4%***	***6,6%***	***5,6%***	***4,5%***	***3,5%***	***2,4%***	***1,3%***
Short- and long-term interest bearing	***-22,9%***	***-84,9%***	***348,9%***	***8,3%***	***915,8%***	***-11,4%***	***-13,6%***	***21,5%***	***19,9%***	***17,8%***	***15,7%***	***12,7%***	***11,6%***	***10,5%***	***9,4%***	***8,3%***	***7,3%***
Total debt	***-4,0%***	***-16,0%***	***40,7%***	***24,1%***	***197,6%***	***14,9%***	***10,0%***	***17,9%***	***16,4%***	***14,5%***	***12,5%***	***9,7%***	***8,7%***	***7,7%***	***6,7%***	***5,7%***	***4,7%***
Total liabilities	***14,7%***	***5,6%***	***26,5%***	***29,3%***	***83,8%***	***14,9%***	***9,7%***	***17,6%***	***16,2%***	***14,2%***	***12,2%***	***9,4%***	***8,4%***	***7,5%***	***6,5%***	***5,5%***	***4,5%***
Income Statement																	
Sales	*10,3%*	*28,2%*	*15,2%*	*18,9%*	*11,6%*	*57,9%*	*15,5%*	*14,5%*	*13,0%*	*11,0%*	*9,0%*	*8,0%*	*7,0%*	*6,0%*	*5,0%*	*4,0%*	*3,0%*
COGS	*5,2%*	*26,9%*	*17,6%*	*16,9%*	*9,7%*	*67,5%*	*15,6%*	*14,7%*	*13,2%*	*11,2%*	*9,2%*	*8,0%*	*7,0%*	*6,0%*	*5,0%*	*4,0%*	*3,0%*
Income after COGS	*24,9%*	*31,3%*	*9,4%*	*24,0%*	*16,2%*	*36,2%*	*15,2%*	*14,0%*	*12,5%*	*10,5%*	*8,5%*	*8,0%*	*7,0%*	*6,0%*	*5,0%*	*4,0%*	*3,0%*
Other operating income	*15,6%*	*-58,0%*	*494,0%*	*-23,7%*	*243,2%*	*-26,4%*	*34,6%*	*14,5%*	*13,0%*	*11,0%*	*9,0%*	*8,0%*	*7,0%*	*6,0%*	*5,0%*	*4,0%*	*3,0%*
In after other operating income	*24,6%*	*28,9%*	*13,6%*	*21,8%*	*22,6%*	*31,3%*	*16,0%*	*14,0%*	*12,5%*	*10,5%*	*8,5%*	*8,0%*	*7,0%*	*6,0%*	*5,0%*	*4,0%*	*3,0%*
Operating expenses (ex R&D)	*7,3%*	*-2,8%*	*17,3%*	*22,7%*	*9,0%*	*84,8%*	*15,7%*	*21,1%*	*19,2%*	*16,8%*	*14,4%*	*10,3%*	*9,2%*	*8,1%*	*7,1%*	*6,0%*	*4,9%*
In after operating expenses (ex R&D)	***34,0%***	***42,7%***	***12,5%***	***21,6%***	***26,9%***	***16,9%***	***16,1%***	***11,0%***	***9,4%***	***7,4%***	***5,3%***	***6,7%***	***5,7%***	***4,7%***	***3,6%***	***2,6%***	***1,6%***
EBIT	*34,0%*	*42,7%*	*12,5%*	*21,6%*	*26,9%*	*16,9%*	*16,1%*	*11,0%*	*9,4%*	*7,4%*	*5,3%*	*6,7%*	*5,7%*	*4,7%*	*3,6%*	*2,6%*	*1,6%*
Total financial results	*-7,0%*	*-22,4%*	*13,2%*	*318,1%*	*3,1%*	*20,6%*	*-12,6%*	*12,7%*	*11,1%*	*9,1%*	*7,1%*	*3,9%*	*2,8%*	*1,7%*	*0,6%*	*-0,6%*	*-1,7%*
In after financials	*32,9%*	*41,5%*	*12,5%*	*24,7%*	*26,1%*	*17,0%*	*15,3%*	*11,0%*	*9,4%*	*7,4%*	*5,3%*	*6,6%*	*5,6%*	*4,6%*	*3,6%*	*2,6%*	*1,6%*
Interest expense	***-34,4%***	***-32,8%***	***-52,4%***	***35,9%***	***276,4%***	***119,8%***	***-44,0%***	***33,7%***	***22,1%***	***19,8%***	***23,0%***	***20,9%***	***13,0%***	***17,0%***	***10,4%***	***9,3%***	***8,2%***
In after interest expense	***51,4%***	***50,3%***	***16,0%***	***24,5%***	***20,1%***	***9,3%***	***24,2%***	***9,5%***	***8,4%***	***6,2%***	***3,5%***	***4,8%***	***4,5%***	***2,6%***	***2,4%***	***1,3%***	***0,2%***
Total extraordinary results	***-29,5%***	***258,7%***	***-132,8%***	***-288,3%***	***95,7%***	***112,1%***	***-34,4%***	***9,5%***	***8,4%***	***6,2%***	***3,5%***	***4,8%***	***4,5%***	***2,6%***	***2,4%***	***1,3%***	***0,2%***
Total income bt & dep'n difference	***57,4%***	***43,4%***	***28,4%***	***17,9%***	***17,5%***	***3,5%***	***31,0%***	***9,5%***	***8,4%***	***6,2%***	***3,5%***	***4,8%***	***4,5%***	***2,6%***	***2,4%***	***1,3%***	***0,2%***
Total net income before taxes	***63,2%***	***46,3%***	***30,1%***	***17,6%***	***17,6%***	***3,5%***	***30,8%***	***9,2%***	***8,3%***	***6,1%***	***3,4%***	***5,3%***	***4,5%***	***2,6%***	***2,4%***	***1,3%***	***0,2%***
Appropriation Account																	
Total tax	*65,2%*	*55,9%*	*20,2%*	*18,0%*	*14,7%*	*10,5%*	*27,0%*	*10,9%*	*9,9%*	*7,7%*	*4,9%*	*6,8%*	*6,0%*	*4,1%*	*3,8%*	*2,7%*	*2,9%*
Profit for distribution b.m.i.	***62,6%***	***53,0%***	***37,0%***	***27,5%***	***26,3%***	***16,1%***	***29,9%***	***-5,3%***	***3,1%***	***3,2%***	***0,9%***	***2,3%***	***1,8%***	***0,1%***	***-0,3%***	***-1,3%***	***-2,9%***
Minority interest	***-3,7%***	***59,0%***	***43,7%***	***74,6%***	***31,0%***	***-40,9%***	***99,4%***	***-5,3%***	***3,1%***	***3,2%***	***0,9%***	***2,3%***	***1,8%***	***0,1%***	***-0,3%***	***-1,3%***	***-2,9%***
Profit for distribution a.m.i.	*72,3%*	*52,6%*	*36,4%*	*23,2%*	*25,7%*	*23,7%*	*25,5%*	*-5,3%*	*3,1%*	*3,2%*	*0,9%*	*2,3%*	*1,8%*	*0,1%*	*-0,3%*	*-1,3%*	*-2,9%*
Dividends	*43,8%*	*39,1%*	*25,0%*	*10,0%*	*9,1%*	*13,6%*	*44,4%*	*23,1%*	*26,9%*	*22,5%*	*16,8%*	*16,3%*	*14,0%*	*10,8%*	*9,4%*	*7,4%*	*5,0%*
Profit after dividends	*94,4%*	*60,3%*	*42,2%*	*29,0%*	*31,9%*	*26,8%*	*20,3%*	*-14,8%*	*-8,4%*	*-9,7%*	*-13,5%*	*-14,7%*	*-18,6%*	*-24,9%*	*-33,5%*	*-50,6%*	*-100,0%*

Cashflows	***1996***	***1997***	***1998***	***1999***	***2000***	***2001***	***2002E***	***2003E***	***2004E***	***2005E***	***2006E***	***2007E***	***2008E***	***2009E***	***2010E***	***2011E***	***Perpetuity***
Cashfow to equity for a levered firm (with goodwill)																	
Net income a.m.i.	*38.724*	*59.079*	*80.611*	*99.322*	*124.841*	*154.415*	*193.808*	*183.460*	*189.072*	*195.038*	*196.756*	*201.288*	*204.907*	*205.091*	*204.521*	*201.906*	*196.114*
Cap ex - dep'n	*-30.375*	*-11.556*	*-11.754*	*-46.851*	*-16.101*	*-420.920*	*-123.004*	*-100.118*	*-98.512*	*-88.571*	*-73.665*	*-83.117*	*-76.547*	*-67.931*	*-57.380*	*-45.096*	*-31.362*
ΔWC	*-9.915*	*-3.119*	*7.582*	*-21.386*	*434.325*	*-474.856*	*294.291*	*-13.652*	*-25.613*	*-39.792*	*-54.598*	*-40.588*	*-48.283*	*-55.601*	*-62.202*	*-67.742*	*-71.891*
Δnon-operating investments	*-110*	*-527*	*-22.649*	*-40.585*	*-440.453*	*403.411*	*-9.065*	*-16.933*	*-17.580*	*-17.069*	*-15.815*	*-12.346*	*-11.215*	*-9.771*	*-8.036*	*-6.048*	*-3.854*
ΔLong-term debt	*-10.133*	*-19.568*	*22.794*	*-6.120*	*56*	*342.438*	*-173.386*	*51.228*	*59.679*	*66.422*	*71.628*	*70.780*	*75.004*	*78.051*	*79.661*	*79.606*	*77.707*
Cashflow to equity for a levered firm (with goodwill)	***-11.808***	***24.308***	***76.583***	***-15.621***	***102.669***	***4.487***	***182.643***	***103.985***	***107.046***	***116.027***	***124.305***	***136.018***	***143.867***	***149.840***	***156.563***	***162.627***	***166.715***
Cashfow to equity for a levered firm (without goodwill)																	
Net income a.m.i.	*38.724*	*59.079*	*80.611*	*99.322*	*124.841*	*154.415*	*193.808*	*183.460*	*189.072*	*195.038*	*196.756*	*201.288*	*204.907*	*205.091*	*204.521*	*201.906*	*196.114*
Cap ex - dep'n	*-30.351*	*-11.780*	*-11.508*	*-45.807*	*-15.800*	*-421.507*	*-119.174*	*-98.652*	*-96.874*	*-86.830*	*-71.873*	*-81.827*	*-75.285*	*-66.723*	*-56.255*	*-44.083*	*-30.487*
ΔWC	*-9.915*	*-3.119*	*7.582*	*-21.386*	*434.325*	*-474.856*	*294.291*	*-13.652*	*-25.613*	*-39.792*	*-54.598*	*-40.588*	*-48.283*	*-55.601*	*-62.202*	*-67.742*	*-71.891*
Δnon-operating investments	*-110*	*-527*	*-22.649*	*-40.585*	*-440.453*	*403.411*	*-9.065*	*-16.933*	*-17.580*	*-17.069*	*-15.815*	*-12.346*	*-11.215*	*-9.771*	*-8.036*	*-6.048*	*-3.854*
ΔLong-term debt	*-10.133*	*-19.568*	*22.794*	*-6.120*	*56*	*342.438*	*-173.386*	*51.228*	*59.679*	*66.422*	*71.628*	*70.780*	*75.004*	*78.051*	*79.661*	*79.606*	*77.707*
Cashflow to equity for a levered firm (without goodwill)	***-11.784***	***24.084***	***76.829***	***-14.576***	***102.970***	***3.900***	***186.473***	***105.452***	***108.684***	***117.769***	***126.098***	***137.308***	***145.129***	***151.048***	***157.688***	***163.641***	***167.589***
Cashfow to equity for a levered firm at desired level (with goodwill)																	
Net income a.m.i.	*38.724*	*59.079*	*80.611*	*99.322*	*124.841*	*154.415*	*193.808*	*183.460*	*189.072*	*195.038*	*196.756*	*201.288*	*204.907*	*205.091*	*204.521*	*201.906*	*196.114*
(1-δ)(cap ex - dep'n)	*-16.590*	*-7.384*	*-7.038*	*-28.806*	*-6.057*	*-158.339*	*-46.090*	*-37.368*	*-36.623*	*-32.797*	*-27.169*	*-30.533*	*-28.007*	*-24.755*	*-20.826*	*-16.301*	*-11.290*
(1-δ)ΔWC	*-5.415*	*-1.993*	*4.540*	*-13.149*	*163.394*	*-178.628*	*110.272*	*-5.095*	*-9.522*	*-14.735*	*-20.137*	*-14.910*	*-17.666*	*-20.262*	*-22.576*	*-24.487*	*-25.881*
(1-δ)Δnon-operating investments	*-60*	*-337*	*-13.561*	*-24.953*	*-165.700*	*151.753*	*-3.397*	*-6.320*	*-6.536*	*-6.321*	*-5.833*	*-4.535*	*-4.103*	*-3.561*	*-2.917*	*-2.186*	*-1.387*
Cashflow to equity for a levered firm at desired level (with goodwill)	***16.659***	***49.365***	***64.551***	***32.414***	***116.479***	***-30.800***	***254.593***	***134.678***	***136.392***	***141.185***	***143.617***	***151.310***	***155.131***	***156.515***	***158.203***	***158.933***	***157.556***
Cashfow to equity for a levered firm at desired level (without goodwill)																	
Net income a.m.i.	*38.724*	*59.079*	*80.611*	*99.322*	*124.841*	*154.415*	*193.808*	*183.460*	*189.072*	*195.038*	*196.756*	*201.288*	*204.907*	*205.091*	*204.521*	*201.906*	*196.114*
(1-δ)(cap ex - dep'n)	*-16.577*	*-7.527*	*-6.891*	*-28.164*	*-5.944*	*-158.560*	*-44.655*	*-36.820*	*-36.014*	*-32.152*	*-26.508*	*-30.059*	*-27.545*	*-24.314*	*-20.417*	*-15.935*	*-10.975*
(1-δ)ΔWC	*-5.415*	*-1.993*	*4.540*	*-13.149*	*163.394*	*-178.628*	*110.272*	*-5.095*	*-9.522*	*-14.735*	*-20.137*	*-14.910*	*-17.666*	*-20.262*	*-22.576*	*-24.487*	*-25.881*
(1-δ)Δnon-operating investments	*-60*	*-337*	*-13.561*	*-24.953*	*-165.700*	*151.753*	*-3.397*	*-6.320*	*-6.536*	*-6.321*	*-5.833*	*-4.535*	*-4.103*	*-3.561*	*-2.917*	*-2.186*	*-1.387*
Cashflow to equity for a levered firm at desired level (without goodwill)	***16.672***	***49.222***	***64.699***	***33.056***	***116.592***	***-31.021***	***256.028***	***135.225***	***137.001***	***141.830***	***144.278***	***151.784***	***155.593***	***156.955***	***158.611***	***159.299***	***157.871***
Cashflow to the firm (with goodwill)																	
Net income a.m.i. + cr. int.	*45.940*	*63.931*	*82.922*	*102.463*	*136.663*	*180.398*	*208.348*	*202.901*	*212.806*	*223.470*	*231.716*	*243.541*	*252.671*	*260.963*	*266.227*	*269.361*	*269.098*
Cap ex - dep'n	*-30.375*	*-11.556*	*-11.754*	*-46.851*	*-16.101*	*-420.920*	*-123.004*	*-100.118*	*-98.512*	*-88.571*	*-73.665*	*-83.117*	*-76.547*	*-67.931*	*-57.380*	*-45.096*	*-31.362*
ΔWC	*-9.915*	*-3.119*	*7.582*	*-21.386*	*434.325*	*-474.856*	*294.291*	*-13.652*	*-25.613*	*-39.792*	*-54.598*	*-40.588*	*-48.283*	*-55.601*	*-62.202*	*-67.742*	*-71.891*
Δnon-operating investments	*-110*	*-527*	*-22.649*	*-40.585*	*-440.453*	*403.411*	*-9.065*	*-16.933*	*-17.580*	*-17.069*	*-15.815*	*-12.346*	*-11.215*	*-9.771*	*-8.036*	*-6.048*	*-3.854*
Cashflow to the firm (with goodwill)	***5.541***	***48.729***	***56.101***	***-6.359***	***114.435***	***-311.968***	***370.570***	***72.198***	***71.100***	***78.038***	***87.637***	***107.490***	***116.626***	***127.661***	***138.609***	***150.476***	***161.992***
Cashflow to the firm (without goodwill)																	
Net income a.m.i. + cr. int.	*45.940*	*63.931*	*82.922*	*102.463*	*136.663*	*180.398*	*208.348*	*202.901*	*212.806*	*223.470*	*231.716*	*243.541*	*252.671*	*260.963*	*266.227*	*269.361*	*269.098*
Cap ex - dep'n	*-30.351*	*-11.780*	*-11.508*	*-45.807*	*-15.800*	*-421.507*	*-119.174*	*-98.652*	*-96.874*	*-86.830*	*-71.873*	*-81.827*	*-75.285*	*-66.723*	*-56.255*	*-44.083*	*-30.487*
ΔOWC	*-9.915*	*-3.119*	*7.582*	*-21.386*	*434.325*	*-474.856*	*294.291*	*-13.652*	*-25.613*	*-39.792*	*-54.598*	*-40.588*	*-48.283*	*-55.601*	*-62.202*	*-67.742*	*-71.891*
Δnon-operating investments	*-110*	*-527*	*-22.649*	*-40.585*	*-440.453*	*403.411*	*-9.065*	*-16.933*	*-17.580*	*-17.069*	*-15.815*	*-12.346*	*-11.215*	*-9.771*	*-8.036*	*-6.048*	*-3.854*
Cashflow to the firm (without goodwill)	***5.565***	***48.505***	***56.347***	***-5.315***	***114.736***	***-312.555***	***374.400***	***73.665***	***72.738***	***79.780***	***89.429***	***108.779***	***117.889***	***128.869***	***139.734***	***151.489***	***162.866***

Cost of debt (COD)

Long-term debt		1995	1996	1997	1998	1999	2000	2001	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	Perpetuity
1. Pretax interest coverage	EBIT / interest expense	4,50	9,18	19,49	46,05	41,20	13,89	7,39	15,34	12,73	11,41	10,22	8,75	7,73	7,22	6,46	6,06	5,69	5,35
Rating		BBB	AA	AAA	AAA	AAA	AA	A	AA	AA	AA	AA	AA	A	A	A	A	A	A
2. EBITDA interest coverage	EBITDA / interest expense	N/A	11,59	23,02	54,50	50,42	16,80	9,48	22,41	20,52	19,10	17,62	15,45	11,00	10,16	8,96	8,26	7,60	6,98
Rating		N/A	AA	AAA	AAA	AAA	AA	A	AAA	AAA	AA	AA	AA	A	A	A	A	A	BBB
3. Funds from operations / total debt	(Net operating income + dep'n) / total debt	N/A	40,4%	64,7%	54,4%	55,4%	22,5%	23,2%	30,9%	32,5%	31,8%	30,7%	29,2%	21,2%	20,1%	18,9%	17,7%	16,5%	15,2%
Rating		N/A	A	AA	AA	AA	BB	BB	BBB	BBB	BBB	BBB	BBB	BB	BB	BB	BB	BB	BB
4. FOCF / debt	(Funds from operations - capex - ΔWC) / debt	N/A	2,3%	39,7%	41,2%	11,8%	80,7%	-101,9%	39,2%	5,6%	5,1%	4,9%	4,7%	5,1%	5,1%	5,0%	5,1%	5,2%	5,3%
Rating		N/A	BB	AA	AA	A	AAA	CCC	AA	BBB	BB	BB	BB	BB	BB	BB	BB	BB	BB
5. Pretax return on permanent capital	EBIT / average assets	34,0%	21,2%	27,6%	26,7%	25,3%	20,1%	16,9%	17,5%	17,0%	15,9%	14,9%	13,8%	13,3%	12,9%	12,5%	12,2%	11,8%	11,4%
Rating		AAA	AA	AA	AA	AA	A	A	A	A	BBB	BBB	BBB	BBB	BBB	BB	BB	BB	BB
6. Operating income / sales	(EBIT + dep'n) / sales	N/A	26,12%	27,36%	26,50%	28,15%	31,07%	24,75%	28,30%	30,25%	30,43%	30,29%	29,96%	23,86%	23,28%	22,66%	21,99%	21,27%	20,50%
Rating		N/A	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA	AA	AA	AA	AA	AA
7. Long-term debt / capital	Long-term debt / (long-term debt + equity)	20,6%	11,8%	2,1%	9,4%	5,7%	5,1%	44,3%	27,6%	29,2%	30,8%	32,3%	33,8%	35,2%	36,6%	37,9%	39,2%	40,5%	41,7%
Rating		AAA	AAA	AAA	AAA	AAA	AAA	BBB	AA	AA	AA	A	A	A	A	A	BBB	BBB	BBB
8. Total debt / capitalization	Total debt / (total debt + equity)	54,2%	45,4%	36,1%	40,1%	38,5%	62,4%	62,4%	62,5%	62,7%	62,8%	63,0%	63,1%	63,3%	63,4%	63,6%	63,7%	63,9%	64,0%
Rating		BBB	A	AA	A	AA	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Long-term debt (final weighting)		A	AA	AAA	AAA	AAA	AA	BBB	AA	A	A	A	A	BBB	BBB	BBB	BBB	BBB	BBB
Long-term debt (supplementary ratios)		**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002E**	**2003E**	**2004E**	**2005E**	**2006E**	**2007E**	**2008E**	**2009E**	**2010E**	**2011E**	**Perpetuity**
1. EBITDA / (interest + dividends)	EBITDA / (interest expense + dividends)	N/A	3,92	4,56	4,69	5,25	4,81	4,14	5,18	5,05	4,57	4,14	3,77	2,77	2,54	2,33	2,16	2,02	1,89
Rating		N/A	BBB	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	BB	BB	BB	B	B	B	B
2. Discretionary cash-flow / debt	(Funds from operations - capex - dwc - div) / liabilities	N/A	-7,0%	24,3%	27,5%	-0,3%	76,2%	-106,3%	33,4%	-0,4%	-1,5%	-2,2%	-2,6%	-2,7%	-3,1%	-3,4%	-3,5%	-3,5%	-3,4%
Rating		N/A	CCC	AA	AAA	BB	AAA	CCC	AAA	BB	B	B	B	B	B	B	B	B	B
3. Total debt / EBITDA		2,5	1,8	1,1	1,4	1,4	3,3	3,1	2,6	2,5	2,5	2,6	2,7	3,5	3,6	3,8	4,0	4,2	4,4
Rating		BBB	A	AA	A	A	BB	BB	BBB	BBB	BBB	BBB	BBB	BB	BB	BB	BB	BB	B
4. Debt / equity		118,3%	83,1%	56,5%	67,0%	62,6%	165,8%	165,8%	166,9%	167,9%	169,0%	170,1%	171,1%	172,2%	173,3%	174,4%	175,5%	176,6%	177,8%
Rating		AAA	AAA	AAA	AAA	AAA	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
5. EBITDA / assets		22,1%	25,0%	31,7%	28,2%	27,5%	18,7%	20,2%	24,4%	25,4%	24,8%	24,0%	23,1%	18,2%	17,5%	16,8%	16,1%	15,3%	14,6%
Rating		AA	AAA	AAA	AAA	AAA	A	AA	AAA	AAA	AAA	AAA	AA	A	A	A	BBB	BBB	BBB
6. Debt / MV of equity	Debt / (minority interest + market cap)	56,62%	38,89%	15,95%	14,75%	11,62%	35,94%	47,10%	49,92%	58,53%	67,73%	77,02%	86,05%	93,80%	101,29%	108,38%	114,91%	120,72%	125,68%
Rating		BBB	BBB	A	AA	AA	BBB	BBB	BBB	BBB	BBB	BB	BB	BB	BB	B	B	B	B
7. Debt / MV cap	Debt / (debt + minority interest + market cap)	36,2%	28,0%	13,8%	12,9%	10,4%	26,4%	32,0%	33,3%	36,9%	40,4%	43,5%	46,3%	48,4%	50,3%	52,0%	53,5%	54,7%	55,7%
Rating		BBB	BBB	A	AA	AA	BBB	BBB	BBB	BBB	BBB	BB	BB	BB	BB	B	B	B	B
8. Sales (mil $)		255,2	281,6	359,1	418,0	494,8	562,1	875,1	1.012,7	1.159,6	1.310,3	1.454,5	1.585,4	1.712,2	1.832,0	1.942,0	2.039,1	2.120,6	2.184,2
Rating		B	B	B	B	B	B	BB	BB	BB	BB	BB	BB	BB	BBB	BBB	BBB	BBB	BBB
9. Equity (mil $)		117,3	160,4	198,1	234,9	311,8	350,6	402,7	440,1	515,6	596,5	678,5	758,4	826,7	893,0	955,6	1.013,3	1.064,3	1.107,4
Rating		B	B	BB	BB	BB	BB	BB	BB	BB	BB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
10. Total assets (mil $)		256,0	293,6	310,0	392,3	507,1	932,0	1.070,5	1.174,5	1.381,4	1.604,6	1.832,3	2.056,4	2.250,5	2.440,5	2.622,4	2.791,8	2.944,4	3.076,0
Rating		CCC	CCC	CCC	CCC	B	BB	BB	BB	BB	BB	BB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
Long-term debt supplemental ratios (final weighting)		BBB	BBB	AA	AA	AA	A	A	AA	A	A	A	BBB	BBB	BBB	BBB	BBB	BBB	BB
Long-term debt final rating		**A**	**AA**	**AAA**	**AAA**	**AAA**	**AA**	**BBB**	**AA**	**A**	**A**	**A**	**A**	**BBB**	**BBB**	**BBB**	**BBB**	**BBB**	**BBB**
Short-term debt final rating		**BBB**	**BBB**	**AAA**	**AA**	**AA**	**A**	**BB**	**A**	**BBB**	**BBB**	**BBB**	**BB**	**BB**	**BB**	**B**	**B**	**B**	**B**
Total theoretical COD at		**17,72%**	**14,79%**	**7,92%**	**5,75%**	**5,68%**	**5,13%**	**5,31%**	**4,49%**	**4,91%**	**4,97%**	**5,02%**	**5,33%**	**5,67%**	**5,70%**	**6,02%**	**6,04%**	**6,06%**	**6,03%**
Real COD AT		**10,55%**	**7,81%**	**10,33%**	**6,84%**	**5,53%**	**3,60%**	**4,58%**	**3,15%**	**3,45%**	**3,50%**	**3,54%**	**3,74%**	**3,99%**	**4,02%**	**4,23%**	**4,25%**	**4,26%**	**4,25%**
Deviation		-40,45%	-47,22%	30,45%	18,96%	-2,69%	-29,77%	-13,82%	-29,81%	-29,68%	-29,61%	-29,55%	-29,78%	-29,63%	-29,56%	-29,78%	-29,71%	-29,64%	-29,57%

APPENDIX C – COMPARISON OF RATIOS AND FIGURES

Global Sector - 36 Companies

Company	*Beta*	*Risk premium*	*COE*	*WACC*	*ROA*	*ROE*	*RONOA*	*ROE/ROA*	*ROA/WACC*	*ROE/COE*	*ROIC*	*ROIC/WACC*	*RONOA / COD at*	*Risk free rate*	*ROA-COD at*	*Real COD at 2001*	*Theoretical COD at 2002*	*Long-term debt credit rating*	*Long-term debt credit rating*
Global	0,64	4,9%	7,0%	6,8%	6,1%	10,6%	5,5%	1,7	0,9	1,5	12,7%	1,9	1,6	3,9%	2,6%	3,5%	3,2%	BB	5
America	0,73	6,6%	11,6%	9,6%	8,8%	20,6%	0,0%	2,3	0,9	1,8	18,4%	1,9	0,0	6,7%	6,9%	1,9%	1,8%	BBB	4
US	0,64	5,5%	5,6%	3,4%	11,7%	26,4%	N/A	2,3	3,5	4,7	9,5%	2,8	N/A	2,1%	10,7%	0,9%	0,9%	BBB	4
Centex	0,97	5,5%	7,4%	4,4%	9,2%	18,6%	N/A	2,0	2,1	2,5	15,3%	3,5	N/A	2,1%	8,7%	0,5%	0,6%	BBB	4
Florida Rock	0,31	5,5%	3,8%	2,9%	8,1%	14,1%	N/A	1,7	2,8	3,7	21,3%	7,5	N/A	2,1%	7,3%	0,8%	0,8%	BBB	4
Martin Mars	0,79	5,5%	6,4%	4,0%	6,3%	12,4%	0,0%	2,0	1,6	2,0	8,5%	2,1	0,0	2,1%	5,2%	1,1%	1,0%	BBB	4
TXI	0,50	5,5%	4,8%	3,5%	3,2%	3,9%	0,0%	1,2	0,9	0,8	4,9%	1,4	0,0	2,1%	0,4%	2,8%	2,7%	BB	5
Mexico	0,83	7,8%	17,8%	16,1%	7,7%	16,9%	100,0%	2,2	0,5	1,0	18,4%	1,1	36,9	11,4%	5,0%	2,7%	2,6%	BB	5
Apasco	0,66	7,8%	16,5%	13,1%	11,6%	20,9%	0,0%	1,8	0,9	1,3	25,3%	1,9	0,0	11,4%	10,2%	1,5%	1,4%	A	3
Cemex	1,00	7,8%	19,2%	16,1%	8,8%	12,6%	159,5%	1,4	0,5	0,7	16,8%	1,0	29,44	11,4%	3,4%	5,42%	5,2%	BBB	4
Australia (Adelaide)	1,18	5,0%	11,6%	9,2%	55,0%	99,7%	20,0%	1,8	6,0	8,6	120,4%	13,1	1,9	5,8%	44,6%	10,4%	10,2%	BB	5
Europe	0,61	5,2%	6,6%	6,6%	5,7%	7,7%	7,3%	1,3	0,9	1,2	12,0%	1,8	1,6	3,3%	1,2%	4,5%	4,4%	BB	5
UK	0,21	6,3%	0,0%	10,9%	5,5%	4,9%	0,0%	0,9	0,5	0,4	19,4%	1,8	0,0	6,3%	-0,4%	5,9%	5,2%	BB	5
BPB	1,40	4,2%	12,2%	8,8%	10,0%	16,8%	0,0%	1,7	1,1	1,4	24,9%	2,8	0,0	6,3%	6,5%	3,4%	3,3%	A	3
Hanson	0,68	4,2%	9,2%	15,1%	6,5%	4,0%	0,0%	0,6	0,4	0,4	18,8%	1,2	0,0	6,3%	-1,3%	7,8%	6,2%	B	6
Marshalls	1,49	4,2%	12,6%	10,5%	10,8%	11,2%	0,0%	1,0	1,0	0,9	21,1%	2,0	0,0	6,3%	0,9%	9,9%	9,9%	A	3
RMC	1,12	4,2%	11,0%	9,8%	3,3%	-1,8%	0,0%	-0,5	0,3	-0,2	12,2%	1,2	0,0	6,3%	-3,3%	6,5%	8,0%	B	6
France	0,98	5,4%	9,3%	7,0%	6,8%	7,7%	5,5%	1,1	1,0	0,8	12,2%	1,8	0,9	3,9%	0,5%	6,3%	4,3%	BB	5
Ciments Francais	0,98	5,4%	9,3%	6,8%	6,0%	10,6%	-30,0%	1,8	0,9	1,1	11,6%	1,7	-10,8	3,9%	3,2%	2,8%	1,8%	BB	5
Lafarge	0,98	5,4%	9,1%	6,7%	5,6%	4,9%	6,5%	0,9	0,8	0,5	11,4%	1,7	1,1	3,7%	-0,4%	6,1%	5,9%	BB	5
Switzerland	0,62	4,4%	5,5%	4,8%	6,4%	4,5%	8,0%	0,7	1,3	0,8	12,6%	2,6	1,1	2,8%	-1,2%	7,6%	7,2%	BBB	4
Cementia	0,62	4,4%	5,5%	5,2%	4,0%	0,1%	16,2%	0,0	0,8	0,0	23,9%	4,6	1,5	2,8%	-6,5%	10,5%	9,9%	BBB	4
Holcim	0,62	4,4%	5,5%	4,8%	6,6%	5,1%	5,3%	0,8	1,4	0,9	12,0%	2,5	0,7	2,8%	-0,8%	7,5%	5,1%	BB	5
Germany	0,18	4,8%	5,1%	7,1%	4,1%	1,1%	15,3%	0,3	0,6	0,2	10,8%	1,5	2,8	4,2%	-1,3%	5,4%	4,0%	B	6
Dyckerhoff	0,23	4,8%	5,3%	7,2%	3,6%	0,7%	15,0%	0,2	0,5	0,1	7,8%	1,1	3,4	4,2%	-0,9%	4,5%	3,9%	B	6
Heidelberger	0,14	4,8%	4,9%	6,1%	4,5%	3,7%	14,0%	0,8	0,7	0,8	11,7%	1,9	2,9	4,2%	-0,4%	4,8%	4,3%	B	6

Global Sector - 36 Companies

Company	*Beta*	*Risk premium*	*COE*	*WACC*	*ROA*	*ROE*	*RONOA*	*ROE/ROA*	*ROA/WACC*	*ROE/COE*	*ROIC*	*ROIC/WACC*	*RONOA / COD at*	*Risk free rate*	*ROA-COD at*	*Real COD at 2001*	*Theoretical COD at 2002*	*Long-term debt credit rating*	*Long-term debt credit rating*
Italy	0,27	6,0%	5,2%	4,2%	5,8%	8,7%	10,5%	1,5	1,4	1,7	9,5%	2,3	2,9	3,6%	2,2%	3,6%	3,3%	BBB	4
Buzzi	0,28	6,0%	5,2%	4,1%	10,7%	16,4%	11,8%	1,5	2,6	3,2	20,2%	4,9	2,8	3,6%	6,5%	4,3%	4,2%	A	3
Italcementi	0,27	6,0%	5,2%	3,8%	5,3%	8,4%	9,4%	1,6	1,4	1,6	8,1%	2,1	3,0	3,6%	2,2%	3,1%	3,0%	BB	5
Italmobiliare	0,27	6,0%	5,2%	4,9%	4,4%	3,9%	10,9%	0,9	0,9	0,8	10,2%	2,1	2,3	3,6%	-0,3%	4,7%	3,0%	BBB	4
Spain (Cementos Portland)	0,02	5,5%	4,9%	5,1%	9,4%	13,4%	17,9%	1,4	1,8	2,7	24,7%	4,9	3,1	4,8%	3,6%	5,8%	5,5%	BB	5
Portugal (Cimpor)	0,62	6,0%	7,5%	5,0%	7,5%	14,5%	8,0%	1,9	1,5	1,9	11,5%	2,3	3,7	3,7%	5,3%	2,2%	2,0%	BBB	4
Greece	1,05	6,4%	10,6%	7,6%	13,4%	26,7%	4,9%	2,0	1,8	2,3	18,0%	2,4	1,1	3,9%	8,9%	4,5%	5,2%	A	3
Chalyps	1,05	6,4%	10,6%	8,5%	14,6%	19,8%	349,4%	1,4	1,7	1,7	18,6%	2,2	56,7	3,9%	8,5%	6,2%	3,4%	AA	2
Hercules	1,03	6,4%	10,5%	7,1%	13,2%	24,9%	-0,4%	1,9	1,8	2,2	6,5%	0,9	-0,1	3,9%	8,3%	2,8%	4,8%	A	3
Titan	1,07	6,4%	10,7%	7,8%	12,4%	25,4%	5,0%	2,0	1,6	2,2	21,9%	2,8	1,09	3,9%	7,8%	4,6%	3,2%	BBB	4
Japan	0,76	5,5%	4,9%	2,3%	1,0%	-0,4%	2,0%	-0,4	0,5	-0,1	15,3%	6,7	1,4	0,7%	-0,4%	1,5%	0,7%	B	6
Sumitomo Osaka Cement	0,79	5,5%	5,0%	2,5%	2,0%	3,1%	0,0%	1,5	0,8	0,6	2,2%	0,9	0,0	0,7%	0,6%	1,4%	1,4%	BB	5
Taiheiyo	0,79	5,5%	5,0%	1,9%	2,1%	8,8%	-6,0%	4,3	1,1	1,8	14,5%	7,7	-7,9	0,7%	1,3%	0,8%	2,3%	B	6
Asia without Japan	1,02	6,9%	12,6%	14,1%	4,2%	2,4%	1,1%	0,6	0,3	0,2	8,6%	0,6	0,2	5,6%	-1,0%	5,2%	3,8%	B	6
India	1,61	8,4%	23,2%	24,2%	4,9%	-7,5%	3,5%	-1,5	0,2	-0,3	27,9%	1,2	0,3	9,7%	-8,4%	13,4%	11,7%	B	6
Assoc	1,61	8,4%	23,2%	25,9%	1,3%	-22,0%	0,0%	-17,4	0,0	-1,0	2,0%	0,1	0,0	9,7%	-12,6%	13,8%	10,9%	B	6
Grasim	1,61	8,4%	23,2%	24,9%	6,7%	-2,0%	10,6%	-0,3	0,3	-0,1	38,5%	1,5	0,8	9,7%	-6,5%	13,3%	10,7%	BB	5
Malaysia (Malayan)	0,41	6,6%	6,2%	5,5%	3,1%	2,2%	0,0%	0,7	0,6	0,4	7,4%	1,3	0,0	3,5%	-2,0%	5,2%	4,9%	BB	5
Thailand (Siam)	1,01	6,6%	11,9%	11,6%	5,7%	1,8%	0,0%	0,3	0,5	0,2	7,5%	0,6	0,0	5,3%	-1,3%	7,0%	5,9%	B	6
China	1,01	6,9%	12,3%	10,2%	5,8%	7,4%	0,0%	1,3	0,6	0,6	8,2%	0,8	0,0	5,4%	2,7%	3,0%	2,5%	BBB	4
Shaanxi Qinling	1,02	6,9%	12,4%	10,5%	7,3%	9,6%	0,0%	1,3	0,7	0,8	20,0%	1,9	0,0	5,4%	4,3%	3,1%	2,5%	BBB	4
Sichuan	1,04	6,9%	12,5%	11,1%	9,1%	10,4%	0,0%	1,1	0,8	0,8	18,2%	1,6	0,0	5,4%	5,2%	3,9%	4,0%	A	3
Tangshan Jidong	1,02	6,9%	12,4%	0,104554	4,8%	5,3%	0,0%	1,1	0,5	0,4	5,1%	0,5	0,0	5,4%	1,0%	3,9%	3,3%	BBB	4
Xinjiang	1,02	6,9%	12,4%	9,7%	5,2%	8,5%	0,0%	1,6	0,5	0,7	21,6%	2,2	0,0	5,4%	2,7%	2,5%	2,6%	BB	5
Taiwan (Taiwan cement)	1,01	5,9%	10,3%	10,9%	1,0%	-2,1%	0,0%	-2,2	0,1	-0,2	2,6%	0,2	0,0	4,3%	-1,6%	2,5%	2,4%	B	6

Global Sector - 36 Companies

Company	*Short-term debt credit rating*	*Short-term debt credit rating*	*D/C*	*Long term / total interest bearing debt*	*Long-term / total debt*	*Short-term / total debt*	*Effective tax rate*	*Sales growth*	*COGS / sales*	*Oth op inc / sales*	*Op exp / sales*	*(Op exp + COGS) /(sales + oth op inc)*	*EBIT / (sales+ oth oper income)*	*Efficiency*	*Op leverage*	*R&D / sales*
Global	B	6	63,4%	78,0%	58,2%	41,8%	25,5%	13,0%	64,1%	0,6%	22,8%	86,8%	13,2%	90,2%	0,68	0,0%
America	BB	5	63,3%	78,2%	65,2%	34,8%	21,0%	11,0%	71,3%	0,0%	7,9%	79,2%	20,8%	81,7%	0,92	0,0%
US	BB	5	58,0%	81,3%	44,8%	55,2%	33,6%	15,2%	82,1%	0,0%	3,4%	85,5%	14,5%	86,7%	1,02	0,0%
Centex	BB	5	51,9%	100,0%	38,7%	61,3%	36,1%	8,5%	76,1%	0,0%	1,9%	78,0%	22,0%	79,1%	1,35	0,0%
Florida Rock	BB	5	45,4%	98,6%	60,1%	39,9%	35,5%	11,6%	77,4%	0,0%	10,6%	87,9%	12,1%	85,8%	0,61	0,0%
Martin Mars	B	6	53,7%	94,0%	78,7%	21,3%	34,3%	11,7%	79,0%	0,0%	9,5%	88,5%	11,5%	88,9%	-0,32	0,0%
TXI	B	6	61,7%	98,9%	71,1%	28,9%	31,3%	-4,1%	84,5%	2,1%	8,9%	93,3%	6,7%	96,2%	15,60	0,0%
Mexico	B	6	65,2%	77,5%	77,0%	23,0%	11,7%	5,9%	56,6%	0,0%	13,9%	70,5%	29,5%	74,8%	0,70	0,0%
Apasco	BBB	4	47,7%	91,3%	78,3%	21,7%	32,0%	4,4%	59,0%	0,0%	9,0%	68,1%	31,9%	67,5%	0,10	0,0%
Cemex	BB	5	52,1%	58,6%	45,8%	54,2%	10,6%	14,8%	56,4%	0,0%	20,0%	76,4%	23,7%	82,3%	-0,52	0,0%
Australia (Adelaide)	B	6	49,5%	79,3%	65,9%	34,1%	23,3%	3,0%	N/A	0,0%	88,0%	88,0%	12,0%	98,0%	0,66	0,0%
Europe	B	6	62,8%	80,2%	54,4%	45,6%	30,8%	14,0%	60,6%	0,8%	28,0%	88,3%	11,7%	91,1%	0,67	0,0%
UK	B	6	61,8%	72,3%	53,4%	46,6%	21,0%	13,1%	67,9%	0,7%	23,2%	90,7%	9,3%	90,1%	0,87	0,0%
BPB	BB	5	51,0%	81,0%	42,7%	57,3%	33,7%	1,6%	61,8%	0,6%	22,8%	84,0%	16,0%	84,4%	0,95	0,0%
Hanson	CCC	7	66,3%	61,0%	52,5%	47,5%	-13,1%	18,0%	67,7%	0,0%	20,6%	88,3%	11,7%	89,9%	0,77	0,0%
Marshalls	BBB	4	29,3%	99,9%	30,1%	69,9%	29,9%	7,5%	31,2%	1,4%	56,1%	86,8%	13,2%	86,2%	0,24	0,0%
RMC	B	6	60,7%	90,3%	57,0%	43,0%	30,6%	4,6%	72,8%	1,1%	22,8%	95,1%	4,9%	92,3%	-0,94	0,0%
France	B	6	62,9%	96,4%	59,2%	40,8%	31,3%	15,0%	65,0%	0,0%	21,3%	86,3%	13,7%	91,1%	0,93	0,0%
Ciments Francais	B	6	58,6%	88,9%	60,0%	40,0%	42,4%	8,7%	55,0%	0,0%	29,1%	84,1%	15,9%	86,5%	1,05	0,0%
Lafarge	B	6	63,1%	96,7%	57,0%	43,0%	31,3%	12,1%	67,6%	0,0%	18,3%	85,9%	14,1%	91,3%	1,22	0,0%
Switzerland	B	6	61,4%	77,1%	52,6%	47,4%	26,2%	9,8%	61,7%	0,0%	24,6%	86,3%	13,7%	91,3%	0,86	0,0%
Cementia	BB	5	37,2%	86,9%	56,0%	44,0%	20,3%	12,2%	80,6%	0,0%	10,2%	90,9%	9,1%	95,0%	0,83	0,0%
Holcim	B	6	61,6%	76,6%	50,5%	49,5%	26,6%	0,9%	52,5%	0,0%	33,3%	85,8%	14,2%	90,3%	-3,72	0,0%
Germany	CCC	7	69,8%	79,7%	57,0%	43,0%	33,6%	7,4%	41,0%	3,5%	52,0%	91,2%	8,8%	94,7%	-0,25	0,0%
Dyckerhoff	CCC	7	76,1%	86,8%	55,1%	44,9%	39,1%	14,2%	45,3%	5,3%	47,0%	90,4%	9,6%	95,3%	0,99	0,0%
Heidelberger	CCC	7	67,2%	76,4%	61,2%	38,8%	31,6%	15,3%	39,9%	2,9%	53,2%	91,8%	8,2%	94,4%	0,03	0,0%

Global Sector - 36 Companies

Company	*Short-term debt credit rating*	*Short-term debt credit rating*	*D/C*	*Long term / total interest bearing debt*	*Long-term / total debt*	*Short-term / total debt*	*Effective tax rate*	*Sales growth*	*COGS / sales*	*Oth op inc / sales*	*Op exp / sales*	*(Op exp + COGS) /(sales + oth op inc)*	*EBIT / (sales+ oth oper income)*	*Efficiency*	*Op leverage*	*R&D / sales*
Italy	B	6	56,9%	76,5%	63,4%	36,6%	38,7%	11,1%	63,3%	0,0%	22,0%	85,3%	14,7%	89,2%	0,90	0,0%
Buzzi	BBB	4	46,8%	76,6%	50,0%	50,0%	38,2%	19,7%	54,8%	0,0%	22,9%	77,7%	22,3%	80,5%	1,08	0,0%
Italcementi	B	6	58,9%	81,3%	66,8%	33,2%	47,0%	10,0%	73,8%	0,0%	11,9%	85,8%	14,2%	90,1%	1,17	0,0%
Italmobiliare	B	6	58,3%	72,8%	60,4%	39,6%	41,9%	5,8%	56,2%	0,0%	30,1%	86,3%	13,7%	91,3%	1,54	0,0%
Spain (Cementos Portland)	B	6	52,6%	92,7%	69,5%	30,5%	26,1%	21,5%	21,4%	0,0%	56,2%	77,6%	22,4%	83,6%	0,92	0,0%
Portugal (Cimpor)	B	6	56,7%	54,6%	14,1%	85,9%	37,0%	12,0%	51,0%	0,0%	25,7%	76,7%	23,3%	82,1%	0,95	0,4%
Greece	BBB	4	60,1%	91,2%	37,8%	62,2%	26,8%	32,3%	73,0%	0,9%	8,4%	80,7%	19,3%	80,7%	0,48	0,1%
Chalyps	AA	2	37,9%	17,4%	1,4%	98,6%	40,2%	17,4%	63,3%	1,0%	9,1%	71,6%	28,4%	68,3%	2,66	0,0%
Hercules	A	3	58,5%	66,7%	15,8%	84,2%	35,7%	4,0%	73,5%	0,3%	8,4%	81,8%	18,2%	83,9%	1,86	0,2%
Titan	BB	5	62,4%	97,5%	47,9%	52,1%	26,4%	57,9%	73,4%	1,2%	8,3%	80,7%	19,3%	79,7%	0,30	0,0%
Japan	B	6	77,7%	56,5%	42,5%	57,5%	38,1%	-0,7%	76,0%	0,0%	21,2%	97,2%	2,8%	100,8%	9,31	0,0%
Sumitomo Osaka Cement	CCC	7	65,1%	59,2%	41,9%	58,1%	35,0%	-2,0%	64,2%	0,0%	29,4%	93,7%	6,3%	99,1%	4,03	0,0%
Taiheiyo	CCC	7	83,8%	63,4%	39,2%	60,8%	24,1%	0,0%	79,7%	0,0%	16,1%	95,7%	4,3%	104,4%	N/A	0,0%
Asia without Japan	B	6	64,6%	81,2%	69,6%	30,4%	5,8%	9,5%	72,0%	0,2%	18,1%	90,1%	9,9%	97,3%	0,58	0,0%
India	CCC	7	59,7%	62,4%	53,3%	46,7%	10,4%	7,0%	54,2%	0,5%	39,5%	93,4%	6,6%	98,3%	0,45	0,0%
Assoc	CCC	7	64,9%	74,5%	56,1%	43,9%	9,1%	-2,0%	55,7%	0,0%	42,4%	98,1%	1,9%	102,5%	1,79	0,0%
Grasim	CCC	7	57,3%	55,8%	47,6%	52,4%	9,7%	11,7%	53,9%	0,8%	38,2%	91,7%	8,3%	96,4%	0,19	0,0%
Malaysia (Malayan)	B	6	31,7%	87,5%	42,3%	57,7%	19,5%	29,0%	71,5%	0,4%	18,8%	89,6%	10,4%	93,2%	0,43	0,0%
Thailand (Siam)	CCC	7	74,6%	84,8%	64,8%	35,2%	10,4%	13,3%	76,9%	0,0%	10,6%	87,5%	12,5%	99,7%	0,70	0,0%
China	BB	5	37,9%	32,4%	26,2%	73,8%	15,7%	27,8%	62,4%	1,4%	20,8%	82,9%	17,1%	81,4%	0,65	0,0%
Shaanxi Qinling	BBB	4	34,3%	16,8%	2,1%	97,9%	16,6%	20,0%	58,0%	0,0%	23,1%	81,1%	18,9%	81,5%	0,87	0,0%
Sichuan	BBB	4	19,8%	29,1%	7,3%	92,7%	26,1%	20,0%	65,8%	2,5%	19,2%	84,2%	15,8%	83,1%	0,54	0,0%
Tangshan Jidong	BB	5	32,3%	34,7%	33,2%	66,8%	15,7%	8,7%	61,2%	2,1%	21,1%	81,5%	18,5%	83,2%	0,74	0,0%
Xinjiang	BB	5	55,3%	33,3%	21,8%	78,2%	8,0%	32,3%	66,0%	0,3%	16,3%	82,1%	17,9%	76,9%	0,90	0,0%
Taiwan (Taiwan cement)	CCC	7	66,1%	84,5%	74,3%	25,7%	6,2%	8,5%	91,6%	0,0%	4,2%	95,7%	4,3%	93,7%	0,42	0,0%

Global Sector - 36 Companies

Company	*EBIT growth*	*Profit ami growth*	*Sales / assets*	*(Cash + securities) / current assets*	*Receivables' days*	*Inventories' days*	*Payables' days*	*Financing days*	*Securities / (sec + cash)*	*Doubtful receiv / receivables*	*Current ratio*	*Aver op WorCapΔ% / sales*	*Non-op invest / assets*	*(Gross fixed, intang assets + formation exp) / assets*	*(capex-dep'n) / EBIT*	*Gross intan / (gross tang + intan)*	*Extr / results bef extr*
Global	8,6%	6,2%	62,8%	31,6%	47,2	58,1	N/A	N/A	33,0%	0,2%	0,88	-0,4%	5,7%	101,3%	91,8%	5,9%	5,5%
America	10,1%	-5,7%	53,8%	14,3%	35,7	73,4	82,6	26,5	1,8%	0,0%	0,58	1,5%	0,7%	93,5%	54,5%	22,9%	0,0%
US	15,5%	1,1%	114,6%	4,3%	56,0	97,9	56,6	97,3	0,0%	0,0%	1,53	7,0%	1,3%	66,2%	21,8%	0,0%	3,2%
Centex	11,4%	-45,1%	73,4%	28,1%	34,6	26,9	N/A	N/A	0,0%	0,0%	-0,04	-0,4%	0,0%	104,0%	61,2%	0,0%	0,0%
Florida Rock	7,0%	28,2%	102,4%	3,2%	41,3	20,1	N/A	N/A	0,0%	0,0%	0,89	2,6%	0,0%	124,1%	41,4%	0,0%	8,7%
Martin Mars	-3,7%	-6,8%	77,3%	1,7%	45,9	60,8	46,9	59,8	N/A	0,0%	1,96	12,2%	1,8%	98,5%	113,7%	0,0%	3,0%
TXI	-33,2%	-52,2%	68,2%	2,5%	22,8	85,9	57,6	51,1	0,0%	0,0%	1,05	-2,4%	3,5%	122,0%	208,6%	6,5%	0,0%
Mexico	4,1%	-7,6%	30,5%	29,9%	27,5	49,3	N/A	N/A	2,4%	0,0%	0,28	-6,1%	0,6%	102,2%	4,3%	27,6%	-2,8%
Apasco	0,4%	16,4%	51,2%	53,4%	36,6	43,4	75,7	4,3	9,2%	0,0%	2,03	3,0%	0,1%	118,7%	19,2%	0,0%	-5,5%
Cemex	-7,7%	-4,6%	42,7%	25,8%	36,9	68,5	N/A	N/A	0,0%	0,0%	0,61	6,0%	1,3%	99,3%	28,8%	0,0%	-10,4%
Australia (Adelaide)	2,0%	-96,2%	44,5%	N/A	N/A	N/A	N/A	N/A	0,0%	0,0%	-0,76	5,6%	4,8%	123,7%	52,4%	8,6%	-10,5%
Europe	9,0%	13,7%	72,6%	36,0%	48,6	53,8	N/A	N/A	29,3%	0,2%	1,11	-2,0%	9,6%	102,7%	88,8%	0,6%	4,7%
UK	11,1%	8,6%	74,8%	45,4%	58,2	45,8	N/A	N/A	29,7%	0,0%	1,22	1,2%	2,1%	79,6%	9,1%	0,0%	69,7%
BPB	1,7%	43,5%	91,9%	31,6%	63,5	41,6	N/A	N/A	48,9%	0,0%	1,08	-0,6%	1,2%	114,5%	19,7%	0,0%	4,4%
Hanson	13,8%	-23,8%	47,9%	69,7%	53,6	53,2	N/A	N/A	31,0%	0,0%	1,13	N/A	1,0%	56,4%	130,5%	0,0%	60,0%
Marshalls	1,6%	6,9%	113,6%	16,2%	36,5	209,4	N/A	38,6	0,0%	0,0%	1,96	1,3%	0,5%	97,0%	1,9%	0,0%	1,4%
RMC	-3,8%	55,7%	98,6%	18,2%	57,0	34,3	N/A	N/A	4,8%	0,0%	1,06	2,2%	2,9%	100,4%	-89,7%	0,0%	42,7%
France	13,9%	13,4%	78,6%	28,6%	44,5	52,5	N/A	N/A	0,0%	0,0%	0,99	-4,0%	11,7%	96,4%	74,4%	0,0%	0,0%
Ciments Francais	9,1%	0,2%	73,7%	7,1%	64,0	71,2	N/A	N/A	0,0%	0,0%	1,23	0,0%	8,3%	124,1%	34,7%	0,0%	0,1%
Lafarge	14,8%	14,1%	52,4%	29,3%	93,5	101,4	157,3	37,6	0,0%	0,0%	1,96	-4,2%	7,8%	95,5%	56,2%	0,0%	10,2%
Switzerland	8,4%	5,6%	66,7%	33,4%	35,6	49,1	N/A	N/A	40,3%	0,0%	0,66	-2,9%	12,7%	115,9%	118,0%	0,0%	-0,1%
Cementia	10,1%	-20,6%	53,4%	53,0%	31,1	42,3	N/A	N/A	5,0%	0,0%	1,34	-3,7%	32,4%	85,2%	111,7%	0,0%	-2,4%
Holcim	-3,2%	-3,4%	50,5%	35,0%	73,6	83,0	N/A	N/A	32,9%	0,0%	0,82	-2,9%	10,3%	119,6%	41,6%	0,0%	0,0%
Germany	-1,5%	12,3%	78,6%	27,6%	35,7	84,1	N/A	N/A	38,9%	0,0%	0,74	-2,8%	13,1%	124,2%	-9,6%	1,2%	2,5%
Dyckerhoff	10,7%	-36,5%	64,8%	13,5%	13,4	36,1	N/A	N/A	51,9%	0,0%	-0,01	-10,1%	7,2%	119,4%	186,6%	3,5%	-0,8%
Heidelberger	0,4%	37,4%	86,0%	31,7%	40,5	91,6	N/A	N/A	37,3%	0,0%	1,12	-0,3%	15,7%	126,6%	3,5%	0,0%	3,0%

Global Sector - 36 Companies

Company	*EBIT growth*	*Profit ami growth*	*Sales / assets*	*(Cash + securities) / current assets*	*Receivables' days*	*Inventories' days*	*Payables' days*	*Financing days*	*Securities / (sec + cash)*	*Doubtful receiv / receivables*	*Current ratio*	*Aver op WorCapΔ% / sales*	*Non-op invest / assets*	*(Gross fixed, intang assets + formation exp) / assets*	*(capex-dep'n) / EBIT*	*Gross intan / (gross tang + intan)*	*Extr / results bef extr*
Italy	10,0%	47,1%	69,5%	34,4%	72,7	55,8	N/A	N/A	68,0%	0,0%	1,75	-1,1%	9,8%	123,9%	89,6%	1,3%	-2,3%
Buzzi	21,3%	35,0%	71,8%	52,1%	65,0	52,2	N/A	N/A	41,1%	0,0%	1,88	N/A	2,4%	123,8%	50,9%	9,1%	5,9%
Italcementi	11,7%	18,2%	78,7%	15,0%	83,5	55,7	90,7	48,5	76,2%	0,0%	2,22	0,8%	6,6%	141,6%	14,6%	0,0%	-1,9%
Italmobiliare	8,9%	107,0%	60,9%	41,9%	85,0	74,1	131,9	27,2	75,4%	0,0%	1,95	-3,2%	14,0%	110,6%	13,6%	0,0%	-1,2%
Spain (Cementos Portland)	19,9%	7,0%	49,2%	26,5%	64,7	188,5	N/A	N/A	64,6%	0,0%	1,31	1,0%	10,6%	69,9%	101,5%	29,3%	0,1%
Portugal (Cimpor)	11,4%	18,8%	52,1%	25,2%	34,2	47,8	N/A	N/A	21,2%	0,0%	0,14	-14,3%	3,8%	175,1%	76,1%	23,1%	0,0%
Greece	15,0%	35,2%	94,1%	15,8%	91,0	51,8	51,0	91,8	14,3%	3,5%	1,73	0,1%	6,5%	97,0%	139,2%	0,9%	-17,5%
Chalyps	44,5%	35,3%	85,3%	3,6%	222,0	53,0	59,4	215,6	0,0%	0,3%	1,94	7,3%	0,2%	82,6%	14,1%	0,0%	-7,7%
Hercules	7,4%	N/A	113,6%	4,1%	109,7	52,5	47,3	114,9	0,0%	6,0%	1,36	0,5%	2,7%	123,6%	10,3%	1,1%	-33,1%
Titan	16,9%	23,7%	86,3%	23,7%	71,3	51,3	52,6	69,9	15,9%	2,2%	1,99	-2,6%	8,5%	87,2%	219,3%	0,9%	-10,4%
Japan	-6,4%	N/A	60,0%	38,9%	90,3	34,4	N/A	N/A	60,7%	1,2%	0,68	-4,0%	4,0%	121,9%	-61,5%	0,0%	5,0%
Sumitomo Osaka Cement	-8,1%	364,0%	49,5%	36,3%	81,8	37,0	N/A	N/A	75,6%	0,0%	0,56	3,6%	2,9%	158,8%	5,9%	0,0%	-45,2%
Taiheiyo	83,2%	-36,6%	64,8%	35,2%	87,1	32,1	N/A	N/A	39,8%	6,0%	0,60	-5,6%	11,8%	120,1%	20,5%	0,0%	-701,7%
Asia without Japan	5,5%	41,8%	43,8%	22,7%	50,7	78,6	65,5	63,8	43,8%	0,0%	0,90	5,0%	3,7%	90,6%	87,9%	0,0%	25,4%
India	3,1%	6,5%	86,9%	30,4%	50,7	72,4	N/A	N/A	78,7%	0,0%	0,91	-1,2%	7,2%	91,0%	83,4%	0,0%	94,0%
Assoc	-3,6%	-203,5%	78,4%	43,5%	33,7	68,2	N/A	N/A	91,3%	0,0%	0,73	-1,2%	4,2%	94,3%	-65,2%	0,0%	-40,0%
Grasim	2,1%	16,3%	92,6%	2,5%	35,0	39,5	N/A	N/A	0,1%	0,0%	0,01	-1,1%	11,8%	89,1%	400,9%	0,0%	32,2%
Malaysia (Malayan)	12,6%	N/A	32,3%	46,3%	56,2	62,8	N/A	N/A	45,5%	0,0%	1,00	17,7%	3,1%	70,1%	-27,7%	0,0%	10,0%
Thailand (Siam)	9,3%	-100,9%	47,2%	15,0%	48,2	110,1	N/A	N/A	9,6%	0,0%	1,00	7,4%	3,0%	102,2%	4,6%	0,0%	-40,0%
China	17,3%	4,7%	37,2%	30,2%	99,9	128,2	196,9	31,1	19,9%	0,0%	0,98	4,9%	1,7%	80,7%	195,9%	0,0%	-40,0%
Shaanxi Qinling	17,3%	9,1%	45,7%	44,7%	56,7	80,5	N/A	N/A	0,0%	0,0%	0,47	N/A	0,1%	95,8%	178,7%	0,0%	8,6%
Sichuan	9,8%	43,8%	71,3%	60,2%	4,3	29,2	N/A	N/A	0,0%	0,0%	0,72	N/A	1,4%	116,4%	102,7%	0,0%	2,2%
Tangshan Jidong	5,6%	-11,7%	29,7%	20,9%	204,6	152,5	N/A	165,4	53,9%	0,0%	1,60	8,7%	0,6%	93,8%	-22,1%	0,0%	16,9%
Xinjiang	28,9%	3,5%	31,7%	14,5%	107,0	239,5	N/A	N/A	0,3%	0,0%	0,60	17,2%	5,6%	45,9%	216,8%	0,0%	80,0%
Taiwan (Taiwan cement)	3,6%	-56,2%	26,3%	38,6%	41,7	19,7	N/A	N/A	49,3%	0,0%	0,27	7,8%	6,0%	81,1%	-734,8%	0,0%	50,0%

Global Sector - 36 Companies

Company	Payout	Minority inter at profits	Sales	Sales / total	Profit ami	Profit ami / total	Assets	Assets / total	P/E 2001	P/BV 2001	P/S 2001	Market Price	Theoretical Price	Theoretical Price (no goodwill)	Theoretical / market price	Theoretical (no goodwill) / market price
Global	21,0%	11,4%	93.732.678	100%	9.539.165	100%	149.345.450	100%	7,33	1,07	0,62	5,08	7,41	8,17	1,46	1,61
America	20,0%	5,4%	19.933.862	21,3%	4.389.652	46,0%	37.056.610	24,8%	3,69	0,98	0,66	21,45	56,10	57,54	2,62	2,68
US	9,9%	10,7%	11.938.262	12,7%	626.569	6,6%	10.421.653	7,0%	9,62	1,00	0,37	42,92	37,17	33,19	0,87	0,77
Centex	0,0%	0,0%	553.590	0,6%	77.217	0,8%	754.566	0,5%	8,25	1,79	1,18	39,18	97,10	96,96	2,48	2,47
Florida Rock	14,2%	0,0%	794.733	0,8%	122.158	1,3%	775.968	0,5%	14,98	2,27	1,18	36,11	73,17	73,97	2,03	2,05
Martin Mars	20,0%	13,5%	1.960.979	2,1%	120.805	1,3%	2.538.484	1,7%	14,62	1,76	1,05	48,83	45,78	45,15	0,94	0,92
TXI	21,4%	0,0%	1.448.672	1,5%	38.608	0,4%	2.148.729	1,4%	19,72	0,98	0,55	40,70	10,14	2,81	0,25	0,07
Mexico	12,3%	5,7%	8.039.645	8,6%	3.103.321	32,5%	26.348.777	17,6%	5,66	1,02	1,16	17,08	30,30	31,91	1,77	1,87
Apasco	14,0%	0,0%	1.150.259	1,2%	405.864	4,3%	2.244.991	1,5%	5,55	0,98	1,03	4,64	8,55	8,97	1,84	1,93
Cemex	20,0%	7,6%	7.873.941	8,4%	1.298.799	13,6%	18.440.143	12,3%	6,41	0,92	1,05	5,94	6,81	7,16	1,15	1,20
Australia (Adelaide)	20,0%	1,9%	374.054	0,4%	548.718	5,8%	547.682	0,4%	0,81	0,75	0,55	0,45	9,10	9,54	20,33	21,31
Europe	23,0%	18,2%	60.752.821	64,8%	4.200.464	44,0%	83.737.345	56,1%	8,88	1,10	0,57	18,46	16,04	29,28	0,87	1,59
UK	36,2%	5,3%	16.856.765	18,0%	1.717.662	18,0%	22.531.791	15,1%	7,47	1,25	0,62	11,23	19,05	19,47	1,70	1,73
BPB	49,9%	0,9%	2.312.277	2,5%	376.734	3,9%	2.514.724	1,7%	7,92	1,49	0,79	4,04	7,19	7,48	1,78	1,85
Hanson	29,8%	0,0%	5.712.920	6,1%	668.777	7,0%	11.928.213	8,0%	10,53	1,33	0,96	42,67	25,50	26,20	0,60	0,61
Marshalls	44,9%	8,4%	511.429	0,5%	60.617	0,6%	450.339	0,3%	14,22	1,80	1,13	3,70	2,98	3,05	0,81	0,83
RMC	40,1%	11,4%	7.646.990	8,2%	312.862	3,3%	7.754.474	5,2%	69,60	0,93	0,36	10,93	0,07	-0,04	0,01	-0,00
France	1,5%	29,0%	14.511.763	15,5%	678.309	7,1%	18.470.365	12,4%	7,36	0,84	0,40	42,91	63,56	46,62	1,48	1,09
Ciments Francais	33,7%	5,6%	437.827	0,5%	41.355	0,4%	594.297	0,4%	65,54	7,02	3,89	48,00	7,95	5,20	0,17	0,11
Lafarge	15,0%	11,9%	13.697.801	14,6%	750.089	7,9%	26.140.841	17,5%	18,20	1,05	0,71	24,60	15,81	10,42	0,64	0,42
Switzerland	28,2%	21,0%	11.405.570	12,2%	649.381	6,8%	17.109.548	11,5%	35,14	1,48	0,85	265,39	315,30	281,58	1,19	1,06
Cementia	17,0%	14,6%	1.038.964	1,1%	155.142	1,6%	1.945.167	1,3%	9,98	0,71	0,83	749,79	1238,02	1130,19	1,65	1,51
Holcim	43,5%	23,3%	10.213.853	10,9%	490.943	5,1%	14.953.598	10,0%	15,08	1,69	0,88	249,47	214,63	185,79	0,86	0,74
Germany	16,5%	19,4%	9.980.629	10,6%	361.719	3,8%	12.699.252	8,5%	8,75	1,00	0,37	38,14	59,45	41,42	1,56	1,09
Dyckerhoff	30,3%	9,5%	2.795.363	3,0%	90.348	0,9%	4.314.670	2,9%	6,24	0,65	0,23	17,38	41,18	34,98	2,37	2,01
Heidelberger	11,8%	22,9%	7.897.321	8,4%	303.501	3,2%	9.183.836	6,1%	9,50	1,05	0,39	55,00	99,17	71,66	1,80	1,30

Global Sector - 36 Companies

Company	*Payout*	*Minority inter at profits*	*Sales*	*Sales / total*	*Profit ami*	*Profit ami / total*	*Assets*	*Assets / total*	*P/E 2001*	*P/BV 2001*	*P/S 2001*	*Market Price*	*Theoretical Price*	*Theoretical Price (no goodwill)*	*Theoretical / market price*	*Theoretical (no goodwill) / market price*
Italy	27,5%	50,4%	5.223.343	5,6%	309.365	3,2%	7.517.049	5,0%	22,25	1,48	0,91	11,02	12,54	9,97	1,14	0,90
Buzzi	12,3%	30,1%	824.454	0,9%	127.991	1,3%	1.148.495	0,8%	11,95	1,67	1,19	7,39	21,50	22,24	2,91	3,01
Italcementi	38,9%	46,0%	-1.450.651	-1,5%	103.255	1,1%	2.751.303	1,8%	29,48	1,97	1,03	8,50	5,07	2,98	0,60	0,35
Italmobiliare	31,5%	61,8%	2.164.172	2,3%	87.669	0,9%	3.552.679	2,4%	17,92	0,85	0,58	35,30	36,78	21,61	1,04	0,61
Spain (Cementos Portland)	17,6%	2,7%	526.385	0,6%	150.043	1,6%	1.069.701	0,7%	8,26	1,44	1,38	30,00	130,20	132,07	4,34	4,40
Portugal (Cimpor)	25,0%	4,1%	1.473.942	1,6%	191.000	2,0%	2.831.585	1,9%	12,61	2,00	1,64	20,07	30,48	31,12	1,52	1,55
Greece	17,9%	5,0%	1.605.973	1,9%	187.258	3,0%	1.806.010	1,2%	32,78	10,39	4,24	58,18	15,10	15,64	0,26	0,27
Chalyps	36,0%	-0,2%	68.924	0,1%	10.787	0,2%	88.490	0,1%	5,10	2,52	1,80	6,72	7,35	7,59	1,09	1,13
Hercules	71,9%	0,4%	554.147	0,7%	14.821	0,2%	500.260	0,3%	28,67	3,55	1,37	11,64	0,69	0,61	0,06	0,05
Titan	21,7%	6,0%	982.901	1,0%	154.415	1,6%	1.217.260	0,8%	8,42	3,26	1,44	39,34	41,58	42,94	1,06	1,09
Japan	34,9%	-0,3%	10.057.952	10,7%	1.242.069	13,0%	16.763.253	11,2%	16,76	0,49	0,20	1,57	-1,88	-2,29	-1,20	-1,46
Sumitomo Osaka Cement	100,0%	0,0%	1.438.050	1,5%	8.807	0,1%	2.905.698	1,9%	34,02	0,62	0,43	1,45	1,13	1,17	0,78	0,81
Taiheiyo	5,1%	-6,5%	8.660.194	9,2%	888.337	9,3%	13.278.255	8,9%	1,59	0,62	0,16	1,62	-0,46	-0,86	-0,29	-0,53
Asia without Japan	11,1%	5,9%	7.056.836	7,5%	500.912	5,3%	16.119.018	10,8%	7,39	0,86	0,69	0,77	-0,18	-0,20	-0,23	-0,26
India	7,4%	0,0%	1.816.424	1,9%	267.653	2,8%	2.091.411	1,4%	9,20	1,32	0,58	4,29	3,39	3,61	0,79	0,84
Assoc	41,7%	0,0%	528.563	0,6%	-37.079	-0,4%	674.606	0,5%	-49,86	2,99	1,28	3,91	-2,22	-2,37	-0,57	-0,61
Grasim	2,1%	0,0%	1.294.272	1,4%	320.089	3,4%	1.397.457	0,9%	3,30	1,01	0,43	6,70	10,40	11,11	1,55	1,66
Malaysia (Malayan)	-7,4%	15,5%	587.276	0,6%	37.578	0,4%	1.816.829	1,2%	35,15	0,56	1,20	0,29	-0,21	-0,21	-0,72	-0,74
Thailand (Siam)	5,6%	19,4%	3.549.611	3,8%	2.964	0,0%	7.521.081	5,0%	51,03	0,66	0,36	11,62	152,93	165,17	13,16	14,21
China	39,2%	0,6%	328.649	0,4%	44.128	0,5%	883.001	0,6%	80,69	4,65	7,78	1,54	0,14	0,14	0,09	0,09
Shaanxi Qinling	25,7%	0,0%	62.618	0,1%	17.258	0,2%	137.146	0,1%	55,19	6,79	9,03	1,57	0,41	0,42	0,26	0,27
Sichuan	32,0%	3,1%	70.225	0,1%	12.640	0,1%	98.476	0,1%	38,80	4,15	4,32	1,14	0,40	0,41	0,35	0,36
Tangshan Jidong	93,5%	0,0%	93.768	0,1%	9.913	0,1%	316.147	0,2%	53,57	3,69	8,46	0,97	0,16	0,16	0,16	0,16
Xinjiang	7,2%	1,0%	79.710	0,1%	30.806	0,3%	251.593	0,2%	52,32	8,84	12,03	3,12	0,63	0,65	0,20	0,21
Taiwan (Taiwan cement)	9,7%	10,9%	975.667	1,0%	6.609	0,1%	3.706.232	2,5%	-43,48	0,58	0,66	0,29	-0,28	-0,30	-0,94	-1,01

Company ranking	*Beta*	*Risk premium*	*COE*	*WACC*	*ROA*	*ROE*	*RONOA*	*ROE/ ROA*	*ROA/ WACC*	*ROE/ COE*	*ROIC*	*ROIC/ WACC*	*RONOA / COD at*	*Risk free rate*	*ROA-COD at*	*Real COD at 2001*	*Theoretical COD at 2002*	*Long-term debt credit rating*	*Short-term debt credit rating*	*D/C*	*Long term / total interest bearing debt*	*Long-term / total debt*	*Effective tax rate*	*Sales growth*
US	19	18	18	5	6	3	N/A	3	2	2	38	9	N/A	4	2	4	4	9	9	30	19	35	35	13
Titan	44	33	33	29	5	4	22	5	10	9	8	10	19	21	8	29	21	9	9	18	5	32	24	1
Spain (Cementos	1	17	4	16	11	15	5	22	6	5	6	6	6	31	18	36	40	24	20	36	9	7	21	6
Greece	42	33	31	28	3	2	23	7	8	7	20	14	18	21	4	27	38	2	3	24	11	42	26	3
America	22	39	35	33	15	7	27	2	21	12	17	24	27	45	10	9	8	9	9	14	26	10	17	28
Apasco	20	46	46	44	7	6	27	12	25	19	4	23	27	49	3	7	7	2	3	41	10	2	34	42
Florida Rock	10	18	2	4	16	14	N/A	14	3	3	10	3	N/A	4	9	3	3	9	9	43	4	15	40	26
Buzzi	9	27	13	9	9	12	10	20	4	4	12	5	11	14	12	25	30	2	3	42	30	31	45	9
BPB	47	1	38	31	10	11	27	16	17	18	5	11	27	40	11	20	23	2	9	39	22	36	37	45
Italy	6	27	10	10	28	24	13	21	13	15	37	16	8	14	24	22	22	9	20	32	32	12	46	27
Centex	28	18	23	11	12	9	N/A	6	5	6	23	8	N/A	4	5	1	1	9	9	38	1	41	42	35
Portugal (Cimpor)	15	31	24	15	18	13	16	9	12	11	33	15	4	18	13	10	10	9	20	33	45	48	43	23
Mexico	27	46	47	47	17	10	3	4	42	22	18	41	2	49	16	13	16	24	20	9	28	3	10	39
Taiheiyo	24	23	7	1	47	23	47	1	18	13	24	2	47	1	26	2	11	40	41	1	38	40	19	47
Global	18	11	22	22	26	19	20	15	23	17	25	27	15	20	23	21	20	24	20	13	27	18	20	20
Chalyps	42	33	31	30	2	8	1	24	9	14	16	18	1	21	6	39	25	1	1	45	50	51	48	11
Martin Mars	25	18	20	8	25	17	27	8	11	10	40	19	27	4	14	5	5	9	20	35	8	1	38	25
Heidelberger	2	8	6	19	38	38	9	36	32	31	31	25	9	27	35	31	32	40	41	6	33	13	33	12
France	29	14	27	24	20	27	19	30	20	26	27	30	22	25	31	40	31	24	20	16	7	17	32	14
Europe	13	13	21	20	30	28	17	25	27	20	29	28	14	12	27	28	33	24	20	17	23	25	29	17
Cemex	32	46	48	48	14	16	2	23	37	33	21	43	3	49	19	34	37	9	9	37	42	34	9	15
Holcim	16	5	16	12	22	31	21	37	15	23	30	13	24	9	38	43	36	24	20	21	31	30	25	46
Lafarge	31	14	25	21	32	32	18	35	28	36	34	32	20	18	36	38	42	24	20	15	6	21	30	22
Italcementi	8	27	12	7	34	26	14	18	14	16	42	20	7	14	25	19	18	24	20	26	20	8	51	29
Italmobiliare	7	27	11	14	39	36	11	33	24	30	36	21	12	14	33	30	19	9	20	29	35	14	49	40
Australia (Adelaide)	46	12	36	32	1	1	4	11	1	1	1	1	13	39	1	47	48	24	20	40	25	9	18	44

Company ranking	*Beta*	*Risk premium*	*COE*	*WACC*	*ROA*	*ROE*	*RONOA*	*ROE/ ROA*	*ROA/ WACC*	*ROE/ COE*	*ROIC*	*ROIC/ WACC*	*RONOA / COD at*	*Risk free rate*	*ROA-COD at*	*Real COD at 2001*	*Theoretical COD at 2002*	*Long-term debt credit rating*	*Short-term debt credit rating*	*D/C*	*Long term / total interest bearing debt*	*Long-term / total debt*	*Effective tax rate*	*Sales growth*
Switzerland	14	5	15	13	24	34	15	38	16	27	26	12	21	9	41	44	44	9	20	22	29	28	23	30
Dyckerhoff	5	8	14	27	43	44	8	44	40	44	43	42	5	27	39	26	27	40	41	3	16	24	47	16
Germany	3	8	9	25	41	43	7	43	34	41	35	35	10	27	44	35	28	40	41	5	24	20	36	37
Cementia	17	5	17	17	42	45	6	45	31	45	7	7	16	9	48	48	47	9	9	46	15	23	15	21
UK	4	32	1	40	33	33	27	34	39	37	14	29	27	40	34	37	39	24	20	19	36	26	16	19
Japan	23	23	5	2	50	46	25	47	44	46	22	4	17	1	37	8	2	40	20	2	43	37	44	48
Marshalls	48	1	44	37	8	18	27	32	19	24	11	22	27	40	29	46	46	2	3	50	2	44	27	36
Hercules	40	33	30	26	4	5	46	10	7	8	46	44	46	21	7	16	34	2	2	28	37	47	41	43
TXI	12	18	3	6	45	37	27	28	22	28	48	36	27	4	32	14	17	24	20	20	3	5	31	51
Hanson	21	1	26	46	23	35	27	40	45	38	15	38	27	40	42	45	43	40	41	7	40	29	1	10
Ciments Francais	30	14	28	23	27	20	48	13	26	21	32	31	48	25	20	15	9	24	20	27	13	16	50	33
Sumitomo Osaka Cement	26	23	8	3	48	39	27	19	30	34	50	45	27	1	30	6	6	24	41	10	41	39	39	49
Asia without Japan	37	40	45	45	40	40	26	41	47	42	39	48	26	38	40	33	26	40	20	12	21	6	2	31
RMC	45	1	34	35	44	47	27	48	46	48	28	39	27	40	47	41	45	40	20	23	12	19	28	41
China	34	41	39	36	29	29	27	27	36	35	41	46	27	33	21	17	14	9	9	44	48	45	12	5
Thailand (Siam)	33	37	37	43	31	42	27	42	41	43	44	47	27	32	43	42	41	40	41	4	17	11	8	18
Grasim	50	49	50	50	21	48	12	46	48	47	2	34	23	46	49	49	49	24	41	31	44	33	6	24
Xinjiang	36	41	40	34	35	25	27	17	38	32	9	17	27	33	22	11	15	24	9	34	47	46	4	2
Sichuan	41	41	43	42	13	21	27	29	29	25	19	33	27	33	15	24	29	2	3	51	49	49	22	7
Shaanxi Qinling	39	41	42	39	19	22	27	26	33	29	13	26	27	33	17	18	13	9	3	47	51	50	13	7
Malaysia (Malayan)	11	37	19	18	46	41	27	39	35	40	45	37	27	13	46	32	35	24	20	49	14	38	14	4
Tangshan Jidong	38	41	41	38	37	30	27	31	43	39	47	49	27	33	28	23	24	9	9	48	46	43	11	32
India	49	49	49	49	36	50	24	49	49	50	3	40	25	46	50	50	51	40	41	25	39	27	7	38
Taiwan (Taiwan	35	26	29	41	51	49	27	50	50	49	49	50	27	30	45	12	12	40	41	8	18	4	3	34
Assoc	51	49	51	51	49	51	27	51	51	51	51	51	27	46	51	51	50	40	41	11	34	22	5	49

Company ranking	*COGS / sales*	*Oth op inc / sales*	*Op exp / sales*	*(Op exp + COGS) /(sales + oth op inc)*	*EBIT / (sales+ oth oper income)*	*Efficiency*	*Op leverage*	*EBIT growth*	*Profit ami growth*	*Sales / assets*	*(Cash + securities) / current assets*	*Securities / (sec + cash)*	*Current ratio*	*Aver op WorCapΔ % / sales*	*Non-op invest / assets*	*(Gross fixed, intang assets + formation exp) / assets*	*(capex-dep'n) / EBIT*	*Extr / results bef extr*	*Payout*
US	48	24	2	21	21	22	38	9	31	1	7	38	13	40	39	3	21	33	42
Titan	38	9	5	11	11	6	10	8	13	10	19	27	3	13	13	11	50	10	24
Spain (Cementos	1	24	50	6	6	16	33	5	24	39	22	7	16	28	9	4	38	27	32
Greece	37	12	6	10	10	8	14	10	10	6	14	28	11	25	19	22	44	7	31
America	33	24	4	9	9	11	32	21	35	32	10	34	42	31	43	15	28	20	27
Apasco	17	24	9	1	1	1	7	41	16	36	48	30	2	34	48	35	18	12	37
Florida Rock	44	24	13	31	31	19	17	31	12	4	4	38	31	33	50	45	24	40	36
Buzzi	10	24	33	7	7	7	40	4	11	22	46	15	9	N/A	34	43	26	38	39
BPB	21	16	30	17	17	18	36	39	6	8	30	12	22	20	41	32	19	34	4
Italy	23	24	29	20	20	24	31	22	4	24	34	6	10	18	11	44	36	15	20
Centex	42	24	1	8	8	5	43	16	43	20	24	38	50	21	50	30	30	20	50
Portugal (Cimpor)	6	24	37	5	5	12	35	17	14	35	20	25	47	1	26	51	32	20	22
Mexico	15	24	16	2	2	3	22	34	37	49	27	33	45	3	44	28	10	13	38
Taiheiyo	46	24	17	49	49	51	N/A	1	42	27	36	17	40	4	6	38	20	1	47
Global	25	17	32	28	28	28	21	28	27	29	31	20	32	22	21	26	37	37	26
Chalyps	24	11	10	3	3	2	47	2	9	12	5	38	8	41	47	9	16	11	12
Martin Mars	45	24	11	35	35	23	4	46	36	17	1	N/A	6	45	36	23	41	32	27
Heidelberger	3	3	48	43	43	38	6	42	8	11	32	19	20	23	2	48	9	31	40
France	27	24	28	25	25	31	34	12	20	15	25	38	27	6	8	20	31	25	49
Europe	18	13	38	34	34	30	20	26	19	21	37	24	21	15	12	29	35	35	23
Cemex	14	24	23	4	4	13	3	49	34	45	21	38	39	39	40	24	22	9	27
Holcim	7	24	42	23	23	29	1	44	33	37	35	21	33	10	10	37	25	20	6
Lafarge	30	24	20	24	24	32	42	11	18	34	26	38	5	5	15	18	29	42	35
Italcementi	40	24	15	22	22	27	41	15	15	13	12	3	1	27	18	49	17	16	10
Italmobiliare	13	24	41	26	26	33	44	27	2	30	41	5	7	9	3	31	15	17	16
Australia (Adelaide)	N/A	24	51	32	32	45	19	38	46	43	N/A	37	51	38	23	42	27	8	27

Company ranking	*COGS / sales*	*Oth op inc / sales*	*Op exp / sales*	*(Op exp + COGS) /(sales + oth op inc)*	*EBIT / (sales+ oth oper income)*	*Efficiency*	*Op leverage*	*EBIT growth*	*Profit ami growth*	*Sales / assets*	*(Cash + securities) / current assets*	*Securities / (sec + cash)*	*Current ratio*	*Aver op WorCapΔ % / sales*	*Non-op invest / assets*	*(Gross fixed, intang assets + formation exp) / assets*	*(capex-dep'n) / EBIT*	*Extr / results bef extr*	*Payout*
Switzerland	20	24	36	27	27	34	27	29	28	26	33	16	38	11	5	33	42	19	19
Dyckerhoff	5	1	46	38	38	41	37	19	41	28	9	10	49	2	17	36	46	18	17
Germany	4	2	47	41	41	39	5	43	21	14	23	18	34	12	4	47	7	30	34
Cementia	47	24	12	40	40	40	26	20	39	33	47	31	15	8	1	10	40	14	33
UK	32	15	35	39	39	26	28	18	23	18	44	23	18	29	35	6	13	49	11
Japan	41	24	27	50	50	49	49	48	N/A	31	40	8	37	7	25	39	4	36	13
Marshalls	2	7	49	29	29	20	9	40	25	2	15	38	4	30	46	21	8	28	5
Hercules	39	21	7	14	14	17	46	30	N/A	3	6	38	14	26	33	41	14	6	3
TXI	49	6	8	44	44	42	50	51	44	25	3	38	24	14	28	40	48	20	25
Hanson	31	24	24	33	33	25	25	13	40	40	50	22	19	N/A	42	2	43	48	18
Ciments Francais	11	24	39	18	18	21	39	25	32	19	8	38	17	24	14	46	23	26	14
Sumitomo Osaka Cement	26	24	40	46	46	47	48	50	1	38	38	4	43	35	32	50	12	2	1
Asia without Japan	35	22	19	37	37	44	16	33	7	44	18	14	30	37	27	13	34	44	41
RMC	36	10	31	47	47	35	2	47	3	5	16	32	23	32	31	25	2	46	8
China	22	8	25	16	16	9	18	7	29	46	28	26	28	36	37	7	47	3	9
Thailand (Siam)	43	24	14	30	30	48	23	24	47	41	13	29	25	42	30	27	11	3	46
Grasim	8	14	43	42	42	43	8	37	17	7	2	36	48	19	7	12	51	45	48
Xinjiang	29	20	18	15	15	4	30	3	30	48	11	35	41	46	22	1	49	50	45
Sichuan	28	4	22	19	19	14	15	23	5	23	49	38	36	N/A	38	34	39	29	15
Shaanxi Qinling	16	23	34	12	12	10	29	6	22	42	43	38	44	N/A	49	19	45	39	21
Malaysia (Malayan)	34	19	21	36	36	36	12	14	N/A	47	45	13	26	47	29	5	5	41	51
Tangshan Jidong	19	5	26	13	13	15	24	32	38	50	17	9	12	44	45	16	6	43	2
India	9	18	44	45	45	46	13	36	26	9	29	2	29	17	16	14	33	51	44
Taiwan (Taiwan	50	24	3	48	48	37	11	35	45	51	39	11	46	43	20	8	1	47	43
Assoc	12	24	45	51	51	50	45	45	48	16	42	1	35	16	24	17	3	3	7

Company ranking	*Minority inter at profits*	*Sales*	*Sales / total*	*Profit ami*	*Profit ami / total*	*Assets*	*Assets / total*	*P/E 2001*	*P/BV 2001*	*P/S 2001*	*Theoreti cal / market price*	*Theoretical (no goodwill) / market price*	*Average rank*	*Rank of average rank*
US	33	N/A	N/A	N/A	N/A	N/A	N/A	24	19	6	28	30	18,35	1
Titan	29	33	33	28	28	36	36	19	43	42	24	21	19,14	2
Spain (Cementos	20	41	41	29	29	38	38	18	29	41	3	3	19,39	3
Greece	23	N/A	N/A	N/A	N/A	N/A	N/A	40	51	46	37	37	19,92	4
America	25	N/A	N/A	N/A	N/A	N/A	N/A	6	17	20	5	5	20,10	5
Apasco	14	31	31	17	17	29	29	8	16	30	9	9	20,79	6
Florida Rock	5	36	36	31	31	40	40	31	40	35	8	7	20,93	7
Buzzi	48	35	35	30	30	37	37	27	33	37	4	4	21,11	8
BPB	17	22	22	18	18	28	28	16	32	23	11	11	21,64	9
Italy	50	N/A	N/A	N/A	N/A	N/A	N/A	37	30	27	22	26	21,92	10
Centex	5	39	39	36	36	41	41	17	36	36	6	6	22,17	11
Portugal (Cimpor)	22	27	27	25	26	25	25	28	39	43	17	16	22,20	12
Mexico	27	N/A	N/A	N/A	N/A	N/A	N/A	9	21	34	12	10	22,24	13
Taiheiyo	1	12	12	8	8	13	13	4	4	1	47	47	22,35	14
Global	35	N/A	N/A	N/A	N/A	N/A	N/A	12	24	18	19	14	22,48	15
Chalyps	3	49	48	46	45	51	51	7	41	44	23	20	22,61	16
Martin Mars	38	24	24	32	32	27	27	30	35	31	26	25	22,87	17
Heidelberger	45	14	14	23	23	17	17	23	22	8	10	18	23,05	18
France	47	N/A	N/A	N/A	N/A	N/A	N/A	13	10	9	18	22	23,24	19
Europe	41	N/A	N/A	N/A	N/A	N/A	N/A	21	25	14	27	15	23,36	20
Cemex	30	15	15	6	6	8	8	11	13	32	21	19	23,52	21
Holcim	46	9	9	16	16	12	12	32	34	26	29	31	23,59	22
Lafarge	37	6	6	9	9	5	5	35	23	22	33	34	23,70	23
Italcementi	49	51	51	33	33	26	26	39	38	29	35	36	23,80	24
Italmobiliare	51	23	23	35	35	23	23	34	11	16	25	33	23,86	25
Australia (Adelaide)	19	44	44	14	14	44	44	3	9	13	1	1	24,24	26

Company ranking	*Minority inter at profits*	*Sales*	*Sales / total*	*Profit ami*	*Profit ami / total*	*Assets*	*Assets / total*	*P/E 2001*	*P/BV 2001*	*P/S 2001*	*Theoretical / market price*	*Theoretical (no goodwill) / market price*	*Average rank*	*Rank of average rank*
Switzerland	44	N/A	N/A	N/A	N/A	N/A	N/A	42	31	25	20	24	24,80	27
Dyckerhoff	32	21	21	34	34	21	21	10	6	3	7	8	24,82	28
Germany	42	N/A	N/A	N/A	N/A	N/A	N/A	20	18	7	15	23	25,26	29
Cementia	39	32	32	27	27	32	32	25	8	24	14	17	25,36	30
UK	24	N/A	N/A	N/A	N/A	N/A	N/A	15	26	17	13	12	25,38	31
Japan	2	10	10	7	7	10	10	33	1	2	51	51	25,62	32
Marshalls	31	42	42	37	37	46	46	29	37	33	30	28	26,59	33
Hercules	15	38	37	44	43	45	45	38	44	40	44	44	26,78	34
TXI	5	28	28	40	40	30	30	36	15	12	39	43	26,93	35
Hanson	5	18	18	11	11	15	15	26	28	28	34	32	27,16	36
Ciments Francais	26	43	43	39	39	43	43	49	49	45	41	41	28,05	37
Sumitomo Osaka Cement	5	29	29	48	48	24	24	41	5	11	32	29	28,11	38
Asia without Japan	28	17	17	15	15	11	11	14	12	21	46	46	28,41	39
RMC	36	16	16	21	21	18	18	50	14	5	45	45	28,73	40
China	16	45	45	38	38	39	39	51	47	48	43	42	28,80	41
Thailand (Siam)	43	20	20	50	50	19	19	45	7	4	2	2	28,98	42
Grasim	5	30	30	20	20	35	35	5	20	10	16	13	29,38	43
Xinjiang	18	47	47	42	42	48	48	46	50	51	40	39	29,57	44
Sichuan	21	48	49	45	46	50	50	44	46	47	36	35	29,85	45
Shaanxi Qinling	5	50	50	43	44	49	49	48	48	50	38	38	30,20	46
Malaysia (Malayan)	40	37	38	41	41	33	33	43	2	38	49	49	30,42	47
Tangshan Jidong	4	46	46	47	47	47	47	47	45	49	42	40	30,91	48
India	5	25	25	24	25	31	31	22	27	15	31	27	31,27	49
Taiwan (Taiwan	34	34	34	49	49	22	22	2	3	19	50	50	31,41	50
Assoc	5	40	40	51	51	42	42	1	42	39	48	48	35,64	51

Global historical data and assumptions	*2000*						*2001*						*2002*						*2006*						*2012 (Perpetuity)*					
	Titan	*World*	*Europe*	*America*	*Asia*	*Japan*	*Titan*	*World*	*Europe*	*America*	*Asia*	*Japan*	*Titan*	*World*	*Europe*	*America*	*Asia*	*Japan*	*Titan*	*World*	*Europe*	*America*	*Asia*	*Japan*	*Titan*	*World*	*Europe*	*America*	*Asia*	*Japan*
Beta	1,159	0,639	0,612	0,730	1,005	0,786	1,110	0,639	0,612	0,730	1,005	0,786	1,069	0,639	0,614	0,731	1,020	0,763	1,072	0,638	0,622	0,736	1,086	0,686	1,071	0,635	0,633	0,740	1,181	0,614
Risk premium	6,4%	4,8%	5,4%	7,0%	7,0%	5,3%	6,1%	4,9%	5,2%	6,6%	6,9%	5,5%	6,4%	4,9%	5,2%	6,6%	6,9%	5,5%	6,4%	4,9%	5,2%	6,6%	6,9%	5,5%	6,4%	4,9%	5,2%	6,6%	6,9%	5,5%
COE	13,5%	7,9%	8,1%	15,4%	13,8%	4,9%	11,8%	7,0%	6,4%	11,6%	12,5%	5,0%	10,7%	7,0%	6,6%	11,6%	12,6%	4,9%	11,4%	7,0%	7,1%	11,6%	13,1%	4,5%	12,3%	6,9%	7,8%	11,6%	13,7%	4,1%
Risk free rate	6,1%	4,8%	4,8%	10,3%	6,1%	0,8%	5,0%	3,9%	3,3%	6,7%	3,5%	0,7%	3,9%	3,9%	3,4%	6,7%	3,7%	0,7%	4,5%	3,9%	3,9%	6,7%	4,3%	0,7%	5,5%	3,9%	4,5%	6,7%	5,1%	0,7%
Cost of debt at (COD)	3,6%	4,2%	4,7%	3,5%	6,2%	0,9%	4,6%	3,5%	4,5%	1,9%	5,2%	1,5%	4,5%	3,2%	4,4%	1,8%	3,8%	0,7%	5,3%	3,1%	4,8%	1,7%	4,9%	1,0%	6,0%	3,1%	5,3%	1,7%	4,9%	1,0%
Long-term debt credit rating	AA	BB	BB	BBB	B	B	BBB	BB	BB	BBB	B	B	AA	BB	BB	BBB	BB	BB	A	BB	BB	BBB	B	BB	BBB	BB	BB	BBB	B	B
Long-term debt credit rating	6	3	3	4	2	2	4	3	3	4	2	2	6	3	3	4	3	3	5	3	3	4	2	3	4	3	3	4	2	2
Short-term debt credit rating	A	B	B	BB	B	CCC	BB	B	B	BB	B	B	A	B	B	BB	B	BB	BB	B	B	BB	B	B	B	B	B	BB	CCC	B
WACC	8,3%	7,4%	7,5%	13,0%	14,4%	1,2%	7,8%	6,8%	6,6%	9,6%	14,1%	2,3%	6,8%	6,4%	6,6%	9,1%	11,5%	1,7%	7,5%	6,3%	7,1%	9,0%	13,8%	1,9%	8,3%	6,2%	7,8%	8,9%	14,0%	2,0%
ROA	15,1%	5,9%	5,4%	8,8%	4,2%	0,3%	12,4%	6,1%	5,7%	8,8%	4,2%	1,0%	13,0%	6,4%	6,1%	9,2%	4,1%	1,0%	10,1%	5,9%	5,7%	8,7%	3,5%	0,8%	8,0%	5,2%	5,4%	8,3%	3,2%	0,8%
ROE	34,2%	8,9%	6,5%	17,9%	0,7%	-2,1%	25,4%	10,6%	7,7%	20,6%	2,4%	-0,4%	29,4%	12,1%	9,1%	22,1%	4,8%	2,0%	20,9%	10,7%	7,4%	21,3%	0,7%	0,3%	14,6%	9,1%	5,7%	20,7%	-0,6%	0,4%
ROIC	42,2%	10,7%	11,8%	11,7%	8,7%	16,4%	21,9%	12,7%	12,0%	18,4%	8,6%	15,3%	26,7%	10,8%	11,3%	15,3%	8,7%	2,6%	16,9%	9,4%	10,3%	13,0%	6,6%	2,4%	12,5%	8,4%	9,7%	11,5%	4,8%	2,2%
RONOA (NOA=nonop.	1,0%	6,3%	7,9%	-11,0%	1,9%	7,6%	5,0%	5,5%	7,3%	0,0%	1,1%	2,0%	4,3%	5,4%	7,1%	0,0%	1,1%	1,8%	3,8%	4,8%	6,4%	0,0%	1,1%	1,0%	3,0%	4,0%	5,5%	0,0%	1,1%	0,0%
ROE/ROA	2,26	1,50	1,21	2,03	0,16	-8,14	2,05	1,74	1,35	2,34	0,58	-0,41	2,26	1,89	1,48	2,40	1,16	1,91	2,08	1,82	1,28	2,43	0,19	0,36	1,83	1,74	1,05	2,48	-0,19	0,43
ROA/WACC	1,83	0,80	0,71	0,68	0,29	0,21	1,60	0,90	0,86	0,91	0,30	0,45	1,90	1,01	0,94	1,01	0,36	0,59	1,33	0,93	0,81	0,97	0,25	0,41	0,96	0,84	0,69	0,94	0,23	0,41
ROE/COE	2,53	1,12	0,80	1,16	0,05	-0,43	2,15	1,52	1,19	1,78	0,19	-0,08	2,74	1,74	1,39	1,91	0,38	0,40	1,84	1,53	1,04	1,83	0,05	0,06	1,19	1,32	0,73	1,78	-0,05	0,09
RONOA/WACC	0,12	0,85	1,05	-0,84	0,13	6,27	0,64	0,81	1,11	0,00	0,08	0,89	0,63	0,84	1,09	0,00	0,10	1,06	0,50	0,75	0,90	0,00	0,08	0,52	0,36	0,64	0,70	0,00	0,08	0,00
RONOA/COD	0,27	1,49	1,69	-3,11	0,31	8,48	1,09	0,82	1,09	0,00	0,07	1,35	0,95	0,89	1,09	0,00	0,10	2,33	0,71	0,80	0,90	0,00	0,08	0,98	0,50	0,69	0,70	0,00	0,08	0,00
ROIC/WACC	5,10	1,46	1,56	0,90	0,61	13,44	2,82	1,86	1,82	1,92	0,61	6,71	3,92	1,69	1,72	1,68	0,76	1,49	2,23	1,49	1,45	1,44	0,48	1,24	1,50	1,35	1,24	1,30	0,34	1,11
Retention ratio (b)	76,4%	79,5%	77,0%	83,9%	88,1%	95,5%	78,3%	79,0%	77,0%	80,0%	88,9%	65,1%	75,0%	71,1%	69,3%	72,0%	80,0%	58,6%	45,0%	39,5%	38,5%	40,0%	44,5%	32,5%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
bROE	26,1%	7,1%	5,0%	15,0%	0,6%	-2,0%	19,9%	8,4%	5,9%	16,5%	2,2%	-0,3%	22,1%	8,6%	6,3%	15,9%	3,8%	1,1%	9,4%	4,2%	2,8%	8,5%	0,3%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
bROA	11,5%	4,7%	4,1%	7,4%	3,7%	0,2%	9,7%	4,8%	4,4%	7,0%	3,7%	0,7%	9,7%	4,6%	4,3%	6,6%	3,3%	0,6%	4,5%	2,3%	2,2%	3,5%	1,6%	0,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Effective tax rate	24,8%	25,3%	31,0%	20,9%	6,7%	88,1%	26,4%	25,5%	30,8%	21,0%	5,8%	38,1%	25,7%	25,7%	30,7%	21,4%	5,8%	37,9%	27,2%	26,6%	30,4%	22,8%	5,8%	37,0%	30,0%	28,0%	30,0%	25,0%	5,8%	35,8%
Sales G	11,6%	15,2%	15,8%	11,3%	20,6%	142,9%	57,9%	13,0%	14,0%	11,0%	9,5%	-0,7%	15,5%	12,0%	11,0%	11,0%	8,0%	6,3%	9,0%	7,2%	6,3%	7,2%	4,5%	3,7%	3,0%	3,0%	3,0%	3,0%	2,0%	2,0%
COGS / sales	69,2%	64,0%	60,7%	71,2%	71,7%	77,1%	73,4%	64,1%	60,6%	71,3%	72,0%	76,0%	73,5%	64,2%	60,4%	71,3%	72,4%	74,9%	74,0%	64,6%	59,8%	71,6%	73,4%	71,6%	74,0%	65,0%	59,0%	72,0%	73,4%	72,0%
Other op income / sales	2,7%	0,6%	0,8%	0,0%	0,2%	0,0%	1,2%	0,2%	0,4%	0,0%	0,1%	0,0%	1,4%	0,2%	0,4%	0,0%	0,1%	0,0%	1,4%	0,2%	0,4%	0,0%	0,1%	0,0%	1,4%	0,2%	0,4%	0,0%	0,1%	0,0%
Op expense (incl dep'n) /	7,1%	22,7%	27,8%	7,8%	18,2%	19,9%	8,3%	22,8%	28,0%	7,9%	18,1%	21,2%	8,3%	23,0%	28,2%	8,0%	18,1%	22,4%	10,2%	23,5%	29,1%	8,4%	18,1%	25,9%	11,5%	24,0%	30,0%	8,4%	18,5%	25,5%
EBIT / sales	26,4%	13,8%	12,3%	21,0%	10,3%	3,0%	19,5%	13,3%	11,7%	20,8%	9,9%	2,8%	19,6%	13,0%	11,7%	20,6%	9,6%	2,7%	17,2%	12,2%	11,4%	20,0%	8,7%	2,5%	15,9%	11,2%	11,4%	19,6%	8,2%	2,5%
R&D expense / sales	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Sales / assets	76,1%	62,6%	73,2%	53,6%	44,2%	73,8%	86,3%	62,8%	72,6%	53,8%	43,8%	60,0%	85,0%	62,9%	71,9%	54,0%	43,3%	57,5%	76,0%	63,4%	69,6%	54,7%	41,8%	50,0%	70,0%	63,9%	67,0%	56,0%	41,0%	50,0%
Debt / Assets	62,4%	63,4%	62,7%	63,1%	64,1%	78,5%	62,4%	63,4%	62,8%	63,3%	64,6%	77,7%	62,5%	63,5%	63,0%	63,5%	65,2%	76,9%	63,1%	63,7%	63,4%	64,1%	67,3%	73,7%	64,0%	64,0%	64,0%	65,0%	70,0%	69,6%
(Cash + securities) / current assets	19,5%	29,4%	35,6%	10,1%	16,9%	42,4%	23,7%	31,6%	36,0%	14,3%	22,7%	38,9%	24,0%	30,4%	36,3%	13,5%	22,7%	38,9%	24,0%	26,3%	37,2%	10,6%	22,7%	38,9%	24,0%	24,0%	38,0%	9,0%	22,7%	38,9%
Securities / (cash + securities)	8,9%	33,0%	29,3%	1,8%	43,8%	60,7%	15,9%	38,5%	36,9%	1,6%	50,8%	69,3%	9,8%	38,5%	36,9%	1,6%	50,8%	69,3%	9,8%	38,5%	36,9%	1,6%	50,8%	69,3%	9,8%	38,5%	36,9%	1,6%	50,8%	69,3%
Receivables / current assets	54,2%	38,4%	38,4%	34,5%	39,6%	44,6%	48,8%	39,3%	38,4%	37,7%	36,2%	47,4%	54,4%	39,3%	38,1%	38,0%	36,2%	47,4%	54,4%	39,3%	36,7%	39,0%	36,2%	47,2%	54,4%	39,3%	35,5%	39,0%	36,2%	47,2%
Days of receivables	97,10	55,62	53,25	54,61	50,72	67,95	71,26	47,23	48,64	35,72	50,68	90,31	72,49	41,46	46,46	29,11	54,51	94,91	102,88	38,66	41,89	27,35	84,42	157,54	137,16	35,56	34,57	27,90	95,11	169,94
Days of inventories	64,05	67,07	58,17	92,64	76,18	26,20	51,31	58,14	53,82	73,41	78,63	34,42	47,03	48,77	51,47	52,06	85,58	36,55	55,25	52,12	49,53	49,14	130,72	64,82	73,66	50,79	43,54	51,42	147,28	69,52
Days of payables	72,01	112,71	126,18	86,80	81,11	82,20	52,63	99,86	110,95	82,64	65,48	113,69	57,03	96,21	107,15	86,85	52,16	111,74	66,47	94,02	106,45	92,20	56,10	122,52	63,53	90,86	103,46	98,11	60,23	102,60
Financing days	89,14	9,98	-14,76	60,46	45,79	11,95	69,94	5,52	-8,49	26,49	63,83	11,04	62,49	-5,98	-9,23	-5,68	87,93	19,73	91,67	-3,23	-15,03	-15,71	159,04	99,84	147,29	-4,50	-25,35	-18,80	182,15	136,86
Δ op work cap / sales	-69,8%	-1,4%	0,5%	-11,5%	13,9%	-37,9%	48,3%	-1,4%	0,7%	-5,9%	-4,1%	15,2%	-25,9%	-2,1%	-1,4%	0,8%	4,9%	5,3%	3,1%	-0,2%	-1,8%	0,1%	2,3%	3,7%	2,9%	-0,2%	1,7%	0,5%	1,5%	3,1%
Liabilities' provision / total	5,4%	3,0%	5,0%	0,0%	0,4%	0,0%	22,1%	3,1%	5,2%	0,0%	0,2%	0,0%	16,2%	3,1%	5,1%	0,0%	0,2%	0,0%	15,2%	3,1%	4,6%	0,0%	0,2%	0,0%	13,8%	3,1%	4,0%	0,0%	0,2%	0,0%
Non-op investments / total	47,8%	6,6%	10,2%	1,3%	3,9%	8,5%	8,5%	5,7%	9,6%	0,7%	3,7%	4,0%	8,4%	6,1%	9,9%	0,8%	3,7%	4,0%	7,7%	7,7%	10,8%	1,1%	3,7%	4,0%	6,6%	9,6%	12,0%	1,5%	3,7%	4,0%
(PPE + intangibles + formation expenses) before cum dep'n / assets	56,5%	101,3%	102,7%	93,5%	90,6%	121,9%	87,2%	102,0%	103,4%	93,0%	90,9%	125,3%	90,0%	101,8%	102,8%	94,1%	90,9%	125,3%	100,0%	100,8%	100,6%	97,9%	90,9%	125,3%	100,0%	100,0%	98,5%	101,0%	90,9%	125,3%
(CAPEX - period dep'n) / EBIT	9,5%	104,7%	82,2%	161,7%	101,4%	1031,6%	219,3%	91,8%	88,8%	54,5%	87,9%	-61,5%	54,8%	104,7%	84,0%	61,2%	80,8%	0,1%	23,8%	53,6%	67,0%	41,4%	57,1%	20,0%	7,9%	22,8%	0,0%	12,3%	21,7%	10,0%
Intangibles before dep'n / (PPE + intangibles +	1,1%	5,9%	0,6%	22,9%	0,0%	0,0%	0,9%	5,7%	0,5%	19,6%	0,0%	0,0%	1,5%	5,7%	0,5%	19,6%	0,0%	0,0%	1,5%	5,7%	0,5%	19,6%	0,0%	0,0%	1,5%	5,7%	0,5%	19,6%	0,0%	0,0%
Goodwill before dep'n / intangibles before dep'n	59,1%	132,7%	2337,2%	3,5%	#DIV/0!	#DIV/0!	34,5%	152,7%	6722,3%	2,5%	0,0%	#DIV/0!	39,0%	152,7%	6722,3%	2,5%	0,0%	#DIV/0!	39,0%	152,7%	6722,3%	2,5%	0,0%	#DIV/0!	39,0%	152,7%	6722,3%	2,5%	0,0%	#DIV/0!
Extraordinary results / results before extraordinary items	-5,3%	5,7%	12,2%	8,2%	43,9%	-56,0%	-10,4%	5,5%	4,7%	0,0%	25,4%	5,0%	-5,5%	5,5%	4,7%	0,0%	25,4%	5,0%	-5,5%	5,5%	4,7%	0,0%	25,4%	5,0%	-5,5%	5,5%	4,7%	0,0%	25,4%	5,0%
Doubtful receivables /	3,3%	0,1%	0,2%	0,0%	0,0%	4,4%	2,2%	0,2%	0,2%	0,0%	0,0%	1,2%	3,3%	0,2%	0,2%	0,0%	0,0%	1,2%	3,3%	0,2%	0,2%	0,0%	0,0%	1,2%	3,3%	0,2%	0,2%	0,0%	0,0%	1,2%
P+L provisions / doubtful receivables	70,4%	352,4%	323,1%	#DIV/0!	#DIV/0!	23,7%	92,8%	1907,4%	96,9%	#DIV/0!	#DIV/0!	-0,4%	45,5%	2161,9%	98,9%	#DIV/0!	#DIV/0!	-1,0%	25,4%	2069,0%	102,6%	#DIV/0!	#DIV/0!	-0,3%	17,0%	2062,3%	101,4%	#DIV/0!	#DIV/0!	-0,2%
Payout	23,6%	20,5%	23,0%	16,1%	11,9%	4,5%	21,7%	21,0%	23,0%	20,0%	11,1%	34,9%	25,0%	28,9%	30,7%	28,0%	20,0%	41,4%	55,0%	60,5%	61,5%	60,0%	55,5%	67,5%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Minority interest in profit / profit before minority interest	11,7%	10,9%	14,5%	6,3%	8,2%	-1,0%	6,0%	11,4%	18,2%	5,4%	5,9%	-0,3%	9,2%	11,5%	18,2%	5,7%	5,9%	-0,3%	9,2%	12,2%	18,2%	7,2%	5,9%	-0,3%	9,2%	13,0%	18,2%	9,0%	5,9%	-0,3%

Historical data and assumptions	2000			2001			2002			2006			2012 (Perpetuity)		
	Titan	Hercules	Chalyps	Titan	Hercules	Chalyps	Titan	Hercules	Chalyps	Titan	Hercules	Chalyps	Titan	Hercules	Chalyps
Beta	1,159	1,071	1,115	1,110	1,052	108,1%	1,069	1,034	1,052	1,072	1,086	1,101	1,071	1,179	1,193
Risk premium	6,4%	6,4%	6,4%	6,1%	6,1%	6,1%	6,4%	6,4%	6,4%	6,4%	6,4%	6,4%	6,4%	6,4%	6,4%
COE	13,5%	12,9%	13,2%	11,8%	11,5%	11,6%	10,7%	10,5%	10,6%	11,4%	11,4%	11,5%	12,3%	13,0%	13,1%
Risk free rate	6,1%	6,1%	6,1%	5,0%	5,0%	5,0%	3,9%	3,9%	3,9%	4,5%	4,5%	4,5%	5,5%	5,5%	5,5%
Cost of debt at (COD)	3,6%	-243,5%	8,3%	4,6%	2,8%	6,2%	4,5%	3,1%	2,8%	5,3%	3,5%	3,6%	6,0%	5,3%	5,1%
Long-term debt credit rating	AA	BBB	AA	BBB	A	AA	AA	A	AA	A	A	AA	BBB	BBB	A
Long-term debt	6	4	6	4	5	6	6	5	6	5	5	6	4	4	5
Short-term debt credit rating	A	BBB	AA	BB	A	AA	A	BBB	AA	BB	BBB	A	B	B	BBB
WACC	8,3%	5,9%	10,0%	7,8%	7,1%	8,5%	6,8%	6,1%	7,6%	7,5%	6,8%	8,4%	8,3%	8,4%	9,6%
ROA	15,1%	2,0%	12,2%	12,4%	13,2%	14,6%	13,0%	9,3%	13,9%	10,1%	8,9%	12,8%	8,0%	8,6%	12,7%
ROE	34,2%	331,2%	14,2%	25,4%	24,9%	19,8%	29,4%	15,6%	20,4%	20,9%	13,6%	18,5%	14,6%	8,9%	17,7%
ROIC	42,2%	4,7%	15,2%	21,9%	6,5%	18,6%	26,7%	10,2%	41,6%	16,9%	6,6%	13,9%	12,5%	7,8%	13,5%
RONOA (NOA=nonop. assets)	0,01	0,17	5,28	0,05	0,00	3,49	0,04	0,07	0,75	0,04	0,06	0,48	0,03	0,04	0,08
ROE/ROA	2,26	167,76	1,17	2,05	1,89	1,35	2,26	1,68	1,47	2,08	1,54	1,44	1,83	1,04	1,39
ROA/WACC	1,83	0,33	1,22	1,60	1,85	1,72	1,90	1,51	1,82	1,33	1,31	1,54	0,96	1,03	1,32
ROE/COE	2,53	25,64	1,08	2,15	2,18	1,70	2,74	1,48	1,92	1,84	1,19	1,60	1,19	0,69	1,35
RONOA/WACC	0,12	2,93	52,70	0,64	-0,05	41,13	0,63	1,11	9,85	0,50	0,84	5,77	0,36	0,48	0,83
RONOA/COD	0,27	-0,07	63,63	1,09	-0,13	56,66	0,95	2,23	26,82	0,71	1,61	13,39	0,50	0,75	1,56
ROIC/WACC	510,0%	79,8%	152,1%	281,9%	91,0%	219,5%	391,8%	165,8%	546,8%	223,3%	98,4%	166,2%	150,4%	93,7%	139,8%
Retention ratio (b)	76,4%	100,0%	56,4%	78,3%	28,1%	64,0%	75,0%	80,0%	80,0%	45,0%	48,0%	48,0%	0,0%	0,0%	0,0%
bROE	26,1%	331,2%	8,0%	19,9%	7,0%	12,7%	22,1%	12,4%	16,3%	9,4%	6,5%	8,9%	0,0%	0,0%	0,0%
bROA	11,5%	2,0%	6,9%	9,7%	3,7%	9,4%	9,7%	7,4%	11,1%	4,5%	4,3%	6,2%	0,0%	0,0%	0,0%
Effective tax rate	24,8%	89,9%	40,3%	26,4%	35,7%	40,2%	25,7%	53,0%	44,1%	27,2%	48,3%	39,0%	30,0%	40,0%	30,0%
Sales G	11,6%	13,3%	23,4%	57,9%	4,0%	17,4%	15,5%	8,9%	17,1%	9,0%	5,0%	8,0%	3,0%	2,5%	3,0%
COGS / sales	69,2%	73,2%	68,5%	73,4%	73,5%	63,3%	73,5%	74,0%	63,0%	74,0%	74,5%	66,1%	74,0%	75,0%	66,1%
Other op income / sales	2,7%	0,3%	1,6%	1,2%	0,3%	1,0%	1,4%	0,3%	1,1%	1,4%	0,3%	1,1%	1,4%	0,3%	1,1%
Op expense (incl dep'n) / sales	7,1%	9,3%	9,7%	8,3%	8,4%	9,1%	8,3%	8,7%	10,0%	10,2%	9,0%	11,5%	11,5%	9,5%	13,0%
EBIT / sales	26,4%	17,5%	23,3%	19,5%	18,1%	28,7%	19,6%	17,4%	28,1%	17,2%	16,6%	23,5%	15,9%	15,6%	22,0%
R&D expense / sales	0,0%	0,3%	0,1%	0,0%	0,2%	0,0%	0,0%	0,2%	0,0%	0,0%	0,2%	0,0%	0,0%	0,2%	0,0%
Sales / assets	76,1%	111,8%	87,7%	86,3%	113,6%	85,3%	85,0%	107,1%	86,0%	76,0%	100,0%	86,0%	70,0%	90,0%	80,9%
Debt / Assets	62,4%	57,3%	34,2%	62,4%	58,5%	37,9%	62,5%	58,7%	38,3%	63,1%	59,2%	40,2%	64,0%	60,0%	43,0%
(Cash + securities) / current assets	19,5%	5,6%	1,7%	23,7%	4,1%	3,6%	24,0%	4,9%	2,4%	24,0%	4,9%	2,4%	24,0%	4,9%	2,4%
Securities / (cash + securities)	8,9%	0,0%	0,0%	15,9%	0,0%	0,0%	9,8%	0,0%	0,0%	9,8%	0,0%	0,0%	9,8%	0,0%	0,0%
Receivables / current assets	0,54	0,70	0,85	0,49	0,70	0,84	0,54	0,69	0,80	0,54	0,69	0,80	0,54	0,69	0,80
Days of receivables	97,10	106,16	192,25	71,26	109,71	221,97	72,49	114,01	212,48	102,88	138,48	227,48	137,16	172,14	262,97
Days of inventories	64,05	54,13	54,50	51,31	52,55	53,00	47,03	56,52	62,18	55,25	68,84	77,61	73,66	85,00	89,72
Days of payables	72,01	68,80	45,26	52,63	47,33	59,39	57,03	53,26	65,53	66,47	52,35	50,66	63,53	50,59	39,28
Financing days	89,1	91,5	201,5	69,9	114,9	215,6	62,5	117,3	209,1	91,7	155,0	254,4	147,3	206,5	313,4
Δ op work cap / sales	-69,8%	11,0%	8,0%	48,3%	-4,1%	5,9%	-25,9%	5,7%	4,3%	3,1%	2,9%	5,3%	2,9%	3,2%	3,9%
Liabilities' provision / total debt	5,4%	26,0%	12,5%	22,1%	22,9%	12,9%	16,2%	22,9%	14,8%	15,2%	22,9%	13,9%	13,8%	22,9%	12,7%
Non-op investments / total assets	47,8%	2,3%	0,2%	8,5%	2,7%	0,2%	8,4%	2,2%	0,3%	7,7%	2,2%	0,3%	6,6%	2,2%	0,3%
(PPE + intangibles + formation expenses)	56,5%	122,7%	89,6%	87,2%	123,6%	82,6%	90,0%	123,8%	95,9%	100,0%	123,8%	95,9%	100,0%	123,8%	95,9%
(CAPEX - period dep'n) / EBIT	9,5%	-13,6%	1,6%	219,3%	10,3%	14,1%	54,8%	5,9%	8,4%	23,8%	9,8%	6,0%	7,9%	3,3%	2,7%
Intangibles before dep'n / (PPE +	1,1%	1,0%	0,0%	0,9%	1,1%	0,0%	1,5%	1,4%	0,1%	1,5%	1,4%	0,1%	1,5%	1,4%	0,1%
Intangibles' dep'n / total dep'n	0,4%	1,0%	0,0%	0,5%	1,3%	0,0%	0,9%	1,2%	0,0%	0,9%	1,2%	0,0%	0,9%	1,2%	0,0%
Goodwill before dep'n / intangibles before	59,1%	0,0%	#DIV/0!	34,5%	0,0%	#DIV/0!	39,0%	0,0%	0,0%	39,0%	0,0%	0,0%	39,0%	0,0%	0,0%
Goodwill dep'n / total dep'n	62,9%	0,0%	#DIV/0!	47,8%	0,0%	#DIV/0!	42,6%	0,0%	0,0%	42,6%	0,0%	0,0%	42,6%	0,0%	0,0%
R&D before dep'n / intangibles before dep'n	9,4%	73,3%	#DIV/0!	9,6%	75,6%	#DIV/0!	26,7%	57,6%	0,0%	26,7%	57,6%	0,0%	26,7%	57,6%	0,0%
R&D dep'n / intangibles' dep'n	1,8%	88,4%	#DIV/0!	18,2%	83,8%	#DIV/0!	28,0%	72,8%	0,0%	28,0%	72,8%	0,0%	28,0%	72,8%	0,0%
Extraordinary results / results before	-5,3%	-58,7%	-1,7%	-10,4%	-33,1%	-7,7%	-5,5%	-24,0%	-11,8%	-5,5%	-24,0%	-11,8%	-5,5%	-24,0%	-11,8%
Provisions within extraordinary results /	45,5%	91,6%	113,5%	24,9%	18,0%	95,7%	30,3%	57,6%	96,9%	30,3%	57,6%	96,9%	30,3%	57,6%	96,9%
Doubtful receivables / receivables	3,3%	6,8%	0,3%	2,2%	6,0%	0,3%	3,3%	6,6%	0,9%	3,3%	6,6%	0,9%	3,3%	6,6%	0,9%
P+L provisions / doubtful receivables	70,4%	376,7%	239,0%	92,8%	53,7%	1219,9%	45,5%	94,7%	607,8%	25,4%	75,4%	444,2%	17,0%	49,8%	341,1%
Payout	23,6%	0,0%	43,6%	21,7%	71,9%	36,0%	25,0%	20,0%	20,0%	55,0%	52,0%	52,0%	100,0%	100,0%	100,0%
Minority interest in profit / profit before minority interest	11,7%	22,1%	-0,3%	6,0%	0,4%	-0,2%	9,2%	4,5%	-0,1%	9,2%	4,5%	-0,1%	9,2%	4,5%	-0,1%

Global Sector - Best / Worst comparison

	Beta	*Risk premium*	*COE*	*WACC*	*ROA*	*ROE*	*RONOA*	*ROE/ROA*	*ROA/WACC*	*ROE/COE*	*ROIC*	*ROIC/WACC*	*RONOA / COD at*	*Risk free rate*	*ROA-COD at*	*Real COD at 2000*	*Theoretical COD at 2001*	*Long-term debt credit rating*		*Short-term debt credit rating*		*D/C*
World	0,82	6,0%	9,4%	8,6%	5,6%	8,8%	11,2%	1,6	0,6	0,9	12,3%	144,0%	1,4	4,5%	1,9%	8,1%	5,0%	BB	5	B	6	63,4%
Europe	0,84	5,0%	7,6%	6,0%	5,2%	5,9%	8,5%	1,1	0,9	0,8	10,2%	169,1%	1,7	3,4%	0,4%	5,1%	4,7%	BB	5	B	6	63,4%
Lafarge	0,98	5,4%	9,1%	6,7%	5,6%	4,9%	6,5%	0,9	0,8	0,5	11,4%	169,5%	1,1	3,7%	-0,4%	6,1%	5,9%	BB	5	B	6	63,1%
Holcim	0,62	4,4%	5,5%	4,8%	6,6%	5,1%	5,3%	0,8	1,4	0,9	12,0%	249,5%	0,7	2,8%	-0,8%	7,5%	5,1%	BB	5	B	6	61,6%
USA	0,64	5,5%	6,2%	5,3%	4,8%	7,7%	0,0%	1,6	0,9	1,2	6,9%	129,9%	0,0	2,7%	2,1%	4,7%	3,6%	BB	5	B	6	57,6%
Martin Mars	0,79	5,5%	6,4%	4,0%	6,3%	12,4%	0,0%	2,0	1,6	2,0	8,5%	212,2%	0,0	2,1%	5,2%	1,1%	1,0%	BBB	4	B	6	53,7%
TXI	0,50	5,5%	4,8%	3,5%	3,2%	3,9%	0,0%	1,2	0,9	0,8	4,9%	139,2%	0,0	2,1%	0,4%	2,8%	2,7%	BB	5	B	6	61,7%
Japan	0,79	5,5%	5,0%	1,9%	2,1%	8,8%	-6,0%	4,3	1,1	1,8	14,5%	773,7%	-7,9	0,7%	1,3%	0,8%	2,3%	B	6	CCC	7	83,8%
Mexico	1,00	7,8%	19,2%	16,1%	8,8%	12,6%	159,5%	1,4	0,5	0,7	16,8%	104,1%	29,4	11,4%	3,4%	5,4%	5,2%	BBB	4	BB	5	52,1%
Greece	1,05	6,4%	10,6%	7,6%	13,4%	26,7%	4,9%	2,0	1,8	2,3	18,0%	2,4	1,1	3,9%	8,9%	4,5%	5,2%	A	3	BBB	4	60,1%
Titan	1,07	6,4%	10,7%	7,8%	12,4%	25,4%	5,0%	2,0	1,6	2,2	21,9%	2,8	1,1	3,9%	7,8%	4,6%	3,2%	BBB	4	BB	5	62,38%
Hercules	1,03	6,4%	10,5%	7,1%	13,2%	24,9%	-0,4%	1,9	1,8	2,2	6,5%	0,9	-0,1	3,9%	8,3%	2,8%	4,8%	A	3	A	3	58,5%
Chalyps	1,05	6,4%	10,6%	8,5%	14,6%	19,8%	349,4%	1,4	1,7	1,7	18,6%	2,2	56,7	3,9%	8,5%	6,2%	3,4%	AA	2	AA	2	37,9%
Lowest	0,50	4,4%	4,8%	1,9%	2,1%	3,9%	-6,0%	0,8	0,5	0,55	0,05	0,91	-7,91	0,7%	-0,8%	0,8%	1,0%		2		2	37,9%
	TXI	Holcim	TXI	Japan (Taiheiyo)	Japan (Taiheiyo)	TXI	Japan (Taiheiyo)	Holcim	Mexico (Cemex)	Lafarge	TXI	Hercules	Japan (Taiheiyo)	Japan (Taiheiyo)	Holcim	Japan (Taiheiyo)	Martin Mars		Chalyps		Chalyps	Chalyps
Highest	1,07	7,8%	19,2%	16,1%	14,6%	26,7%	349,4%	4,3	1,8	2,30	0,22	7,74	56,66	11,4%	8,9%	8,1%	5,9%		6		7	83,8%
	Titan	Mexico (Cemex)	Mexico (Cemex)	Mexico (Cemex)	Chalyps	Greece	Chalyps	Japan (Taiheiyo	Hercules	Greece	Titan	Japan (Taiheiyo	Chalyps	Mexico (Cemex)	Greece	Global	Lafarge		Japan (Taiheiyo		Japan (Taiheiy	Japan (Taiheiyo
Positive		Holcim	TXI	Japan (Taiheiyo)	Chalyps	Greece	Chalyps	Japan (Taiheiyo	Hercules	Greece	Titan	Japan (Taiheiyo	Chalyps	Japan (Taiheiyo)	Greece	Japan (Taiheiyo)	Martin Mars		Chalyps		Chalyps	Chalyps
Negative		Mexico (Cemex)	Mexico (Cemex)	Mexico (Cemex)	Japan (Taiheiyo)	TXI	Japan (Taiheiyo)	Holcim	Mexico (Cemex)	Lafarge	TXI	Hercules	Japan (Taiheiyo)	Mexico (Cemex)	Holcim	Global	Lafarge		Japan (Taiheiyo		N/A	Japan (Taiheiyo

	Long term / total interest bearing debt	*Long-term / total debt*	*Effective tax rate*	*Sales growth*	*COGS / sales*	*Op exp / sales*	*(Op exp + COGS) /(sales + oth op inc)*	*Efficiency*	*R&D / sales*	*EBIT growth*	*Profit ami growth*	*Sales / assets*	*(Cash + securities) / current assets*	*Securities / (sec + cash)*	*Doubtful receiv / receivables*	*Current ratio*	*Aver op WorCapΔ% / sales*	*Non-op invest / assets*	*(Gross fixed, intang assets + formation exp) /*
World	79,3%	53,0%	23,3%	9,8%	67,0%	0,0%	87,0%	-0,3%	0,0%	0,0%	1,1%	52,8%	28,2%	23,4%	0,7%	1,2	-5,0%	6,3%	106,1%
Europe	82,4%	45,2%	30,0%	6,0%	63,0%	0,1%	86,9%	-84,9%	0,0%	-5,1%	8,4%	53,1%	33,0%	13,9%	-0,4%	0,9	-3,6%	11,0%	101,7%
Lafarge	96,7%	57,0%	31,3%	12,1%	67,6%	0,0%	85,9%	121,8%	0,0%	14,8%	14,1%	52,4%	29,3%	0,0%	0,0%	2,0	-4,2%	7,8%	95,5%
Holcim	76,6%	50,5%	26,6%	0,9%	52,5%	0,0%	85,8%	-372,0%	0,0%	-3,2%	-3,4%	50,5%	35,0%	32,9%	0,0%	0,8	-2,9%	10,3%	119,6%
USA	97,0%	83,0%	34,4%	8,0%	81,5%	0,0%	90,5%	-154,8%	0,0%	-12,4%	-36,8%	72,7%	3,6%	0,0%	0,0%	4,1	7,1%	2,1%	107,0%
Martin Mars	94,0%	78,7%	34,3%	11,7%	79,0%	0,0%	88,5%	-31,9%	0,0%	-3,7%	-6,8%	77,3%	1,7%	N/A	0,0%	2,0	12,2%	1,8%	98,5%
TXI	98,9%	71,1%	31,3%	-4,1%	84,5%	2,1%	93,3%	1560,3%	0,0%	-33,2%	-52,2%	68,2%	2,5%	0,0%	0,0%	1,1	-2,4%	3,5%	122,0%
Japan	63,4%	39,2%	24,1%	0,0%	79,7%	0,0%	95,7%	N/A	0,0%	83,2%	-36,6%	64,8%	35,2%	39,8%	6,0%	0,6	-5,6%	11,8%	120,1%
Mexico	58,6%	45,8%	10,6%	14,8%	56,4%	0,0%	76,4%	-52,2%	0,0%	-7,7%	-4,6%	42,7%	25,8%	0,0%	0,0%	0,6	6,0%	1,3%	99,3%
Greece	91,2%	37,8%	26,8%	32,3%	73,0%	0,9%	80,7%	47,8%	0,1%	15,0%	35,2%	94,1%	15,8%	14,3%	3,5%	1,7	0,1%	6,5%	97,0%
Titan	97,5%	47,9%	26,4%	57,9%	73,4%	1,2%	80,7%	30,3%	0,0%	16,9%	23,7%	86,3%	23,7%	15,9%	2,2%	2,0	-2,6%	8,5%	87,2%
Hercules	66,7%	15,8%	35,7%	4,0%	73,5%	0,3%	81,8%	185,9%	0,2%	7,4%	N/A	113,6%	4,1%	0,0%	6,0%	1,4	0,5%	2,7%	123,6%
Chalyps	17,4%	1,4%	40,2%	17,4%	63,3%	1,0%	71,6%	265,7%	0,0%	44,5%	35,3%	85,3%	3,6%	0,0%	0,3%	1,9	7,3%	0,2%	82,6%
Lowest	17,4% Chalyps	1,4% Chalyps	10,6% Mexico (Cemex)	-4,1% TXI	52,5% Holcim	0,0% FALSE	71,6% Chalyps	-372,0% Holcim	0,0% FALSE	-33,2% TXI	-52,2% TXI	0,43 Mexico (Cemex)	1,7% Martin Mars	0,0% FALSE	-0,4% Europe	0,60 Japan (Taiheiyo)	-5,6% Japan (Taiheiyo)	0,2% Chalyps	82,6% Chalyps
Highest	98,9% TXI	83,0% USA	40,2% Chalyps	57,9% Titan	84,5% TXI	2,1% TXI	95,7% Japan (Taiheiyo	1560,3% TXI	0,2% Hercules	83,2% Japan (Taiheiyo	35,3% Chalyps	1,14 Hercules	35,2% Japan (Taiheiyo	39,8% Japan (Taiheiyo	6,0% Hercules	4,10 USA	12,2% Martin Mars	0,12 Japan (Taiheiy	123,6% Hercules
Positive	TXI	USA	Mexico (Cemex)	Titan	Holcim	FALSE	Chalyps	Holcim	Hercules	Japan (Taiheiyo	Chalyps	Hercules	Martin Mars	Japan (Taiheiyo	N/A	USA	Japan (Taiheiyo)	Chalyps	Chalyps
Negative	Chalyps	Chalyps	Chalyps	TXI	TXI	TXI	Japan (Taiheiyo	TXI	N/A	TXI	TXI	Mexico (Cemex)	Japan (Taiheiyo	N/A	Hercules	Japan (Taiheiyo)	Martin Mars	Japan (Taiheiy	Hercules

	(capex-dep'n) / EBIT	Extr / results bef extr	Payout	Minority inter at profits	Sales	Sales / total	Profit ami	Profit ami / total	Assets	Assets / total	P/E 2001	P/BV 2001	P/S 2001	Market Price	Theoretical Price	Theoretical Price (no goodwill)	Theoretical / market price	Theoretical (no goodwill) / market price
World	0,7%	-1,1%	4,9%	13,4%	45.419.089	100,0%	4.192.786	100,0%	86.021.002	100,0%	9,3	1,1	0,7	11,9	10,5	9,3	0,88	0,78
Europe	43,7%	-1,7%	13,2%	19,0%	23.923.861	52,7%	1.424.270	34,0%	45.071.328	52,4%	14,8	1,4	0,9	38,4	40,0	34,4	1,04	0,90
Lafarge	56,2%	10,2%	15,0%	11,9%	13.697.801	30,2%	750.089	17,9%	26.140.841	30,4%	18,2	1,1	0,7	24,6	15,8	10,4	0,64	0,42
Holcim	41,6%	0,0%	43,5%	23,3%	10.213.853	22,5%	490.943	11,7%	14.953.598	17,4%	15,1	1,7	0,9	249,5	214,6	185,8	0,86	0,74
USA	-189,2%	8,0%	15,0%	8,0%	3.528.279	7,8%	132.959	3,2%	4.853.204	5,6%	16,6	1,5	0,9	46,4	28,1	27,0	0,61	0,58
Martin Mars	113,7%	3,0%	20,0%	13,5%	1.960.979	4,3%	120.805	2,9%	2.538.484	3,0%	14,6	1,8	1,0	48,8	45,8	45,1	0,9	0,9
TXI	208,6%	0,0%	21,4%	0,0%	1.448.672	3,2%	38.608	0,9%	2.148.729	2,5%	19,7	1,0	0,5	40,7	10,1	2,8	0,2	0,1
Japan	20,5%	-701,7%	5,1%	-6,5%	8.660.194	19,1%	888.337	21,2%	13.278.255	15,4%	1,6	0,6	0,2	1,6	-0,5	-0,9	-0,3	-0,5
Mexico	28,8%	-10,4%	20,0%	7,6%	7.873.941	17,3%	1.298.799	31,0%	18.440.143	21,4%	6,4	0,9	1,1	5,9	6,8	7,2	1,1	1,2
Greece	139,2%	-17,5%	17,9%	5,0%	1.605.973	3,5%	187.258	4,5%	1.806.010	2,1%	32,8	10,4	4,2	58,2	15,1	15,6	0,3	0,3
Titan	219,3%	-10,4%	21,7%	6,0%	982.901	2,2%	154.415	3,7%	1.217.260	1,4%	8,4	3,3	1,4	39,3	41,6	42,9	1,1	1,1
Hercules	10,3%	-33,1%	71,9%	0,4%	554.147	1,2%	14.821	0,4%	500.260	0,6%	28,7	3,6	1,4	11,6	0,7	0,6	0,1	0,1
Chalyps	14,1%	-7,7%	36,0%	-0,2%	68.924	0,2%	10.787	0,3%	88.490	0,1%	5,1	2,5	1,8	6,7	7,4	7,6	1,1	1,1
Lowest	-189,2% USA	-701,7% Japan (Taiheiyo)	4,9% Global	-6,5% Japan (Taiheiyo)	68.924 Chalyps	0,2% Chalyps	10.787 Chalyps	0,3% Chalyps	88.490 Chalyps	0,1% Chalyps	1,6 Japan (Taiheiyo	0,6 Japan (Taiheiyo)	0,2 Japan (Taiheiy	1,6 Japan (Taiheiyo)			-0,29 Japan (Taiheiyo)	-0,53 Japan (Taiheiyo)
Highest	219,3% Titan	10,2% Lafarge	71,9% Hercules	23,3% Holcim	13.697.801 Lafarge	30,2% Lafarge	1.298.799 Mexico (Cemex)	31,0% Mexico (Cemex)	26.140.841 Lafarge	30,4% Lafarge	32,8 Greece	10,4 Greece	4,2 Greece	249,5 Holcim			1,15 Mexico (Cemex)	1,20 Mexico (Cemex)
Positive	Titan	Japan (Taiheiyo)		Japan (Taiheiyo)		Lafarge		Mexico (Cemex)		Lafarge	Japan (Taiheiyo	Japan (Taiheiyo)	Japan (Taiheiy	Japan (Taiheiyo)			Mexico (Cemex)	
Negative	USA	Lafarge		Holcim		Chalyps		Chalyps		Chalyps	Greece	Greece	Greece	Holcim			Japan (Taiheiyo)	

APPENDIX D – TABLES OF VALUATION AND INVESTMENT HORIZON

Model		Annual average market prices (Mp) and deviations of theoretical values from market prices (Thp/Mp-1)															
		01 - 02		00		99		98		97		96		95		94	
		Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1
	Average annual price	39,34		43,17		44,58		28,56		18,60		8,83		6,31		5,54	
Value with Goodwill	Equilibrium	41,58	5,70%	28,87	-33,13%	15,54	-65,14%	12,61	-55,8%	11,09	-40,4%	7,94	-10,1%	5,94	-5,9%	5,51	-0,6%
DDM	Projected dividends	27,61	-29,82%	16,82	-61,04%	8,77	-80,34%	8,00	-72,0%	5,84	-68,6%	4,23	-52,1%	3,31	-47,6%	2,42	-56,4%
Convergence		44,32	12,67%	33,22	-23,03%	16,22	-63,62%	12,82	-55,1%	8,42	-54,7%	5,39	-39,0%	3,57	-43,4%	3,35	-39,5%
FCFE	Desired leverage	35,74	-9,15%	20,47	-52,57%	11,04	-75,22%	7,62	-73,3%	6,78	-63,6%	4,87	-44,9%	3,73	-40,9%	3,15	-43,2%
FCFE	Levered	32,61	-17,12%	20,78	-51,86%	10,39	-76,70%	7,40	-74,1%	6,76	-63,7%	4,42	-49,9%	3,15	-50,1%	3,10	-44,0%
Value driver	Author's variation	50,55	28,51%	36,56	-15,31%	19,50	-56,25%	15,98	-44,0%	8,67	-53,4%	5,91	-33,1%	4,15	-34,2%	2,68	-51,6%
	Standard	44,32	12,67%	33,22	-23,03%	16,22	-63,62%	12,82	-55,1%	8,42	-54,7%	5,39	-39,0%	3,57	-43,4%	3,35	-39,5%
Economic profit		37,98	-3,46%	29,44	-31,79%	13,39	-69,96%	10,48	-63,3%	7,76	-58,3%	5,19	-41,2%	3,24	-48,6%	2,77	-50,0%
FCFF		29,39	-25,29%	24,33	-43,63%	12,87	-71,12%	10,00	-65,0%	5,82	-68,7%	4,13	-53,2%	2,23	-64,6%	2,81	-49,2%
Theoretical PE	Desired leverage	69,77	77,36%	37,93	-12,13%	23,33	-47,66%	16,93	-40,7%	25,40	36,6%	18,72	112,0%	14,81	134,7%	8,66	56,3%
	Levered	64,40	63,70%	38,09	-11,77%	22,46	-49,63%	16,23	-43,2%	24,74	33,0%	16,33	84,9%	12,23	93,8%	8,25	48,9%
Theoretical PBV	Desired leverage	34,70	-11,78%	28,04	-35,05%	16,35	-63,32%	16,17	-43,4%	12,56	-32,5%	9,84	11,4%	7,89	25,0%	10,19	84,1%
	Levered	31,18	-20,75%	27,95	-35,26%	15,35	-65,56%	15,38	-46,2%	12,19	-34,5%	8,56	-3,1%	6,52	3,4%	9,63	74,0%
Theoretical PS	Desired leverage	41,91	6,52%	28,69	-33,54%	16,35	-63,32%	13,72	-51,9%	11,10	-40,3%	9,67	9,5%	8,08	28,1%	8,57	54,7%
	Levered	37,66	-4,26%	28,60	-33,75%	15,32	-65,63%	13,05	-54,3%	10,84	-41,7%	8,51	-3,7%	6,70	6,1%	8,16	47,3%
Value without Goodwill	Equilibrium	42,94	9,15%	29,92	-30,68%	16,15	-63,77%	13,03	-54,4%	11,51	-38,1%	8,22	-7,0%	6,15	-2,5%	5,74	3,7%
Convergence		44,62	13,41%	33,33	-22,78%	16,30	-63,44%	12,87	-54,9%	8,42	-54,8%	5,37	-39,2%	3,57	-43,4%	3,35	-39,5%
FCFE	Desired leverage	35,86	-8,86%	20,53	-52,43%	11,09	-75,13%	7,65	-73,2%	6,78	-63,6%	4,86	-45,0%	3,73	-40,8%	3,15	-43,2%
FCFE	Levered	32,92	-16,32%	20,90	-51,57%	10,47	-76,52%	7,45	-73,9%	6,76	-63,6%	4,40	-50,2%	3,15	-50,0%	3,10	-44,0%
Value driver	Author's variation	50,65	28,74%	36,62	-15,15%	19,55	-56,14%	16,01	-43,9%	8,68	-53,3%	5,91	-33,1%	4,15	-34,2%	2,68	-51,6%
	Standard	44,62	13,41%	33,33	-22,78%	16,30	-63,44%	12,87	-54,9%	8,42	-54,8%	5,37	-39,2%	3,57	-43,4%	3,35	-39,5%
Economic profit		38,30	-2,64%	29,57	-31,50%	13,48	-69,76%	10,54	-63,1%	7,75	-58,3%	5,17	-41,5%	3,25	-48,5%	2,77	-50,0%
FCFF		29,80	-24,24%	24,52	-43,20%	12,98	-70,88%	10,07	-64,7%	5,84	-68,6%	4,11	-53,4%	2,24	-64,5%	2,81	-49,2%
Theoretical PE	Desired leverage	70,00	77,94%	38,05	-11,85%	23,42	-47,46%	16,99	-40,5%	25,44	36,8%	18,73	112,0%	14,82	134,9%	8,66	56,3%
	Levered	65,02	65,27%	38,33	-11,19%	22,63	-49,24%	16,35	-42,8%	24,82	33,4%	16,35	85,1%	12,25	94,2%	8,25	48,9%
Theoretical PBV	Desired leverage	34,83	-11,47%	28,13	-34,84%	16,42	-63,18%	16,23	-43,2%	12,58	-32,4%	9,85	11,5%	7,90	25,1%	10,19	84,1%
	Levered	31,51	-19,90%	28,13	-34,83%	15,48	-65,27%	15,49	-45,8%	12,23	-34,2%	8,56	-3,0%	6,54	3,6%	9,63	74,0%
Theoretical PS	Desired leverage	42,05	6,89%	28,78	-33,33%	16,42	-63,17%	13,77	-51,8%	11,11	-40,3%	9,66	9,4%	8,09	28,1%	8,57	54,7%
	Levered	38,06	-3,24%	28,78	-33,31%	15,45	-65,33%	13,14	-54,0%	10,86	-41,6%	8,50	-3,8%	6,71	6,3%	8,16	47,3%

Model		93		92		91		90		89		88		87		Average deviation		Stdev of aver deviation	
		Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1	Mp	Thp/Mp-1		Rank		Rank
	Average annual price	5,96		5,17		5,74		6,92		2,40		1,18		0,95					
Value with Goodwill	Equilibrium	8,27	38,8%	7,16	38,4%	6,88	19,8%	3,53	-49,0%	3,14	31,2%	0,11	-90,2%	2,01	111,1%	-7,0%	16	51,2%	16
DDM	Projected dividends	3,09	-48,1%	2,61	-49,5%	2,15	-62,5%	1,36	-80,3%	0,84	-65,1%	0,03	-97,2%	0,42	-56,2%	-61,8%	1	**16,52%**	1
Convergence		4,80	-19,4%	3,67	-29,0%	3,55	-38,3%	1,75	-74,7%	0,78	-67,6%	-0,40	-134,4%	0,17	-82,4%	-50,1%	12	33,6%	9
FCFE	Desired leverage	3,89	-34,8%	2,94	-43,1%	2,55	-55,6%	1,55	-77,6%	0,89	-62,8%	0,00	-99,6%	0,74	-22,1%	-53,2%	8	23,2%	4
FCFE	Levered	3,73	-37,4%	2,73	-47,2%	2,47	-57,0%	1,40	-79,8%	0,85	-64,4%	-0,01	-100,8%	0,82	-13,9%	-55,2%	6	**22,96%**	2
Value driver	Author's variation	4,29	-27,9%	3,77	-27,2%	3,52	-38,6%	1,97	-71,5%	0,91	-62,0%	-0,38	-132,0%	-0,38	-139,9%	-50,6%	10	41,9%	15
	Standard	4,80	-19,4%	3,67	-29,0%	3,55	-38,3%	1,75	-74,7%	0,78	-67,6%	-0,40	-133,8%	0,17	-82,4%	-50,1%	13	33,5%	8
Economic profit		4,16	-30,3%	3,12	-39,7%	2,81	-51,1%	1,08	-84,4%	0,42	-82,5%	-0,65	-155,2%	0,49	-48,9%	-57,2%	4	34,0%	12
FCFF		4,39	-26,3%	3,47	-32,9%	3,48	-39,3%	1,62	-76,5%	0,74	-69,0%	-0,40	-134,2%	0,17	-82,4%	-60,1%	2	27,4%	6
Theoretical PE	Desired leverage	11,76	97,3%	11,09	114,4%	10,28	78,9%	5,79	-16,3%	6,22	159,5%	6,02	411,5%	5,48	475,4%	109,1%	28	150,3%	23
	Levered	11,29	89,4%	10,32	99,4%	9,97	73,6%	5,13	-25,8%	6,07	153,4%	6,91	487,8%	5,49	476,6%	105,0%	26	163,8%	29
Theoretical PBV	Desired leverage	16,82	182,2%	15,06	191,1%	15,85	175,9%	7,38	6,7%	7,51	213,4%	-3,20	-372,3%	3,19	234,9%	37,8%	24	154,6%	25
	Levered	16,18	171,5%	14,07	172,0%	15,49	169,7%	6,62	-4,3%	7,37	207,5%	-3,56	-402,6%	3,16	231,6%	27,8%	20	158,1%	27
Theoretical PS	Desired leverage	13,55	127,4%	12,26	137,0%	10,45	82,0%	6,29	-9,1%	5,38	124,5%	-1,14	-196,6%	4,11	331,3%	33,7%	22	120,1%	19
	Levered	13,02	118,4%	11,45	121,2%	10,21	77,7%	5,67	-18,0%	5,27	120,0%	-1,22	-204,0%	4,13	333,5%	26,6%	18	120,8%	21
Value without Goodwill	Equilibrium	8,67	45,4%	7,51	45,2%	7,24	26,1%	3,69	-46,6%	3,32	38,6%	0,12	-89,6%	2,13	123,9%	-2,7%	17	54,3%	17
Convergence		4,80	-19,4%	3,67	-29,0%	3,55	-38,3%	1,75	-74,7%	0,78	-67,6%	-0,40	-133,8%	0,17	-82,4%	-50,0%	14	33,6%	10
FCFE	Desired leverage	3,89	-34,8%	2,94	-43,1%	2,55	-55,6%	1,55	-77,6%	0,89	-62,8%	0,00	-99,6%	0,74	-22,1%	-53,2%	9	23,2%	5
FCFE	Levered	3,73	-37,4%	2,73	-47,2%	2,47	-57,0%	1,40	-79,8%	0,85	-64,4%	-0,01	-100,8%	0,82	-13,9%	-55,1%	7	23,0%	3
Value driver	Author's variation	4,29	-27,9%	3,77	-27,2%	3,52	-38,6%	1,97	-71,5%	0,91	-62,0%	-0,37	-131,5%	-0,38	-139,9%	-50,5%	11	41,8%	14
	Standard	4,80	-19,4%	3,67	-29,0%	3,55	-38,3%	1,75	-74,7%	0,78	-67,6%	-0,40	-133,8%	0,17	-82,4%	-50,0%	14	33,6%	10
Economic profit		4,16	-30,3%	3,12	-39,7%	2,81	-51,1%	1,08	-84,4%	0,42	-82,5%	-0,65	-155,2%	0,49	-48,9%	-57,2%	5	34,2%	13
FCFF		4,39	-26,3%	3,47	-32,9%	3,48	-39,3%	1,62	-76,5%	0,74	-69,0%	-0,40	-134,2%	0,17	-82,4%	-60,0%	3	27,5%	7
Theoretical PE	Desired leverage	11,76	97,3%	11,09	114,4%	10,28	78,9%	5,79	-16,3%	6,22	159,5%	6,02	411,5%	5,48	475,4%	109,3%	29	150,3%	22
	Levered	11,29	89,4%	10,32	99,4%	9,97	73,6%	5,13	-25,8%	6,07	153,4%	6,91	487,8%	5,49	476,6%	105,2%	27	163,6%	28
Theoretical PBV	Desired leverage	16,82	182,2%	15,06	191,1%	15,85	175,9%	7,38	6,7%	7,51	213,4%	-3,20	-372,3%	3,19	234,9%	37,8%	25	154,6%	24
	Levered	16,18	171,5%	14,07	172,0%	15,49	169,7%	6,62	-4,3%	7,37	207,5%	-3,56	-402,6%	3,16	231,6%	28,0%	21	158,0%	26
Theoretical PS	Desired leverage	13,55	127,4%	12,26	137,0%	10,45	82,0%	6,29	-9,1%	5,38	124,5%	-1,14	-196,6%	4,11	331,3%	33,8%	23	120,1%	18
	Levered	13,02	118,4%	11,45	121,2%	10,21	77,7%	5,67	-18,0%	5,27	120,0%	-1,22	-204,0%	4,13	333,5%	26,7%	19	120,7%	20

Final valuation summary

	Based on 3Q results	Based on 2001 results	Δ%	Based on 2001 IAS	Δ%	Based on 3Q results	Based on 2001 results	Δ% from 3Q results	***Final average expectation***	Based on IAS results	Δ% from 2001	***Final average expectation***	Δ% from 2001 results
DDM value	29,61	27,61	-6,76%	28,30	2,48%				***Optimum gain***				
FCFE levered	31,60	32,61	3,18%	26,91	-17,47%				***%***	***Target price***		***%***	***Target price (IAS)***
	Average long-term expectation of optimal Thp/Mp-1									***Average scenario***			
DDM	-61,45%	-61,79%	0,55%	-61,67%	-0,19%	95,2%	83,7%	-12,2%	**84,3%**	**72,52**	87,7%	4,8%	**71,9%**	**67,61**	-6,8%
FCFE levered	-55,37%	-55,20%	-0,31%	-56,17%	1,75%	80,0%	85,0%	6,3%			56,1%	-34,1%			
	Conservative long-term expectation optimal Thp/Mp-1									***Conservative scenario***			
DDM	-47,62%	-47,62%	0,00%	-47,62%	0,00%	43,7%	34,0%	-22,2%	**33,2%**	**52,41**	37,3%	9,8%	**23,3%**	**48,51**	-7,4%
FCFE levered	-37,43%	-37,43%	0,00%	-37,43%	0,00%	28,4%	32,5%	14,4%			9,3%	-71,3%			
	Optimistic long-term expectation optimal Thp/Mp-1									***Optimistic scenario***			
DDM	-80,34%	-80,34%	0,00%	-80,34%	0,00%	282,8%	257,0%	-9,1%	**256,3%**	**140,17**	265,8%	3,4%	**229,7%**	**129,69**	-7,5%
FCFE levered	-76,70%	-76,70%	0,00%	-76,70%	0,00%	244,7%	255,6%	4,5%			193,5%	-24,3%			
		Volatility of annual deviations													
DDM	17,26%	16,52%	-4,28%	16,76%	1,48%										
FCFE levered	22,67%	22,96%	1,30%	21,50%	-6,35%										

Company's range of value based on current theoretical values

Worst case scenario	*Average down-side risk*	*Equilibrium goodwill*	*Equilibrium no goodwill*	*Best case scenario*
27,61	**31,57**	**41,58**	**42,94**	**70,00**

Company's range of value based on current theoretical values IAS

Worst case scenario	*Average down-side risk*	*Equilibrium goodwill*	*Equilibrium no goodwill*	*Best case scenario*
18,69	**31,81**	**33,53**	**34,09**	**58,08**

Average historical target prices, dates of achievement and highest annual theoretical values

Year	*DDM value*	*Aver optim Thp/Mp-1 (DDM)*	*Aver target price (DDM)*	*Market/aver target (DDM)*	*FCFE lev value*	*Aver optim Thp/Mp-1 (FCFE lev)*	*Aver target price (FCFE lev)*	*Market/aver target (FCFE lev)*	*Aver target price*	*Market/aver target*	*Date target price achieved*	*Price*	*Aver annual market price*	*Annual market return*	*Highest current theor value*	*Theor value stand dev*	*Highest cur theor / aver target pr*	*Highest cur theor / aver ann mark pr*
2000	16,82	-64,1%	46,81	-7,8%	20,78	-57,9%	49,38	-12,6%	48,10	-10,3%	03/01/00	59,94	43,17	-3,2%	38,33	21,2%	-20,3%	-11,2%
1999	8,77	-64,3%	24,55	81,6%	10,39	-58,4%	24,97	78,5%	24,76	80,0%	*exceeded*		44,58	56,1%	23,42	25,6%	-5,4%	-47,5%
1998	8,00	-63,0%	21,59	32,3%	7,40	-56,9%	17,15	66,5%	19,37	47,4%	*exceeded*		28,56	53,5%	16,99	26,0%	-12,3%	-40,5%
1997	5,84	-62,1%	15,43	20,6%	6,76	-55,3%	15,12	23,0%	15,28	21,8%	*exceeded*		18,60	110,6%	25,44	56,3%	66,5%	36,8%
1996	4,23	-61,5%	11,00	-19,7%	4,42	-54,5%	9,71	-9,0%	10,35	-14,7%	07/01/97	10,87	8,83	40,0%	18,73	56,7%	80,9%	112,0%
1995	3,31	-62,5%	8,83	-28,5%	3,15	-55,0%	6,99	-9,7%	7,91	-20,2%	19/01/96	8,08	6,31	14,0%	14,82	62,6%	87,5%	134,9%
1994	2,42	-64,4%	6,79	-18,5%	3,10	-55,6%	6,98	-20,6%	6,88	-19,5%	07/01/94	7,13	5,54	-7,1%	10,19	55,2%	48,1%	84,1%
1993	3,09	-65,6%	8,98	-33,7%	3,73	-57,2%	8,71	-31,6%	8,85	-32,7%	01/07/96	8,96	5,96	15,2%	16,82	60,8%	90,0%	182,2%
1992	2,61	-68,5%	8,28	-37,5%	2,73	-60,5%	6,92	-25,3%	7,60	-31,9%	21/09/95	7,64	5,17	-9,9%	15,06	66,0%	98,1%	191,1%
1991	2,15	-72,3%	7,76	-26,0%	2,47	-63,2%	6,71	-14,4%	7,24	-20,6%	26/02/91	7,42	5,74	-17,0%	15,85	70,5%	119,0%	175,9%
1990	1,36	-74,7%	5,38	28,5%	1,40	-64,7%	3,96	74,6%	4,67	48,0%	*exceeded*		6,92	188,6%	7,38	67,1%	58,0%	6,7%
1989	0,84	-72,8%	3,08	-22,2%	0,85	-59,7%	2,12	13,2%	2,60	-7,8%	30/08/89	2,74	2,40	103,7%	7,51	90,4%	189,0%	213,4%
1988	0,02	-76,7%	0,10	1045,7%	-0,02	-57,3%	-0,04	-2907,9%	0,03	3770,7%	*exceeded*		1,18	23,4%	6,91	2651,7%	22652,5%	487,8%
1987	0,42	-56,2%	0,95	0,0%	0,82	-13,9%	0,95	0,0%	0,95	0,0%	03/07/87	1,09	0,95		5,49	104,2%	476,6%	476,6%

Optimistic historical target prices and dates of achievement

Year	*Optimistic optimal Thp/Mp-1 (DDM)*	*Optimistic target price (DDM)*	*Market/optimistic target (DDM)*	*Optimistic optimal Thp/Mp-1 (FCFE lev)*	*Optimistic target price (FCFE lev)*	*Market/optimistic target (FCFE lev)*	*Optimistic target price*	*Market/optimistic target*	*Date target price achieved*	*Price*
2000	-80,34%	85,54	-49,5%	-76,7%	89,16	-51,6%	87,35	-50,6%	*NO*	
1999	-80,34%	44,58	0,0%	-76,7%	44,58	0,0%	44,58	0,0%	05/07/99	45,26
1998	-80,32%	40,62	-29,7%	-79,8%	36,61	-22,0%	38,61	-26,0%	21/04/98	40,88
1997	-80,32%	29,67	-37,3%	-79,8%	33,46	-44,4%	31,56	-41,1%	27/03/98	34,07
1996	-80,32%	21,51	-58,9%	-79,8%	21,88	-59,6%	21,69	-59,3%	14/05/97	21,79
1995	-80,32%	16,80	-62,4%	-79,8%	15,57	-59,5%	16,18	-61,0%	07/04/97	16,37
1994	-80,32%	12,28	-54,9%	-79,8%	15,34	-63,9%	13,81	-59,9%	30/01/97	13,84
1993	-80,32%	15,72	-62,1%	-79,8%	18,45	-67,7%	17,09	-65,1%	06/05/97	17,95
1992	-80,32%	13,26	-61,0%	-79,8%	13,53	-61,8%	13,40	-61,4%	29/01/97	13,58
1991	-80,32%	10,94	-47,5%	-79,8%	12,23	-53,0%	11,58	-50,4%	13/01/97	11,97
1990	-80,32%	6,92	0,0%	-79,8%	6,92	0,0%	6,92	0,0%	10/04/90	7,53
1989	-80,32%	4,25	-43,6%	-79,8%	4,22	-43,2%	4,24	-43,4%	02/10/89	4,36
1988	-80,32%	0,12	868,4%	-79,8%	-0,09	-1430,3%	0,02	7020,8%	*exceeded*	
1987	-80,32%	2,12	-55,0%	-79,8%	4,06	-76,5%	3,09	-69,2%	12/09/89	3,17

Conservative historical target prices and dates of achievement

Year	*Conserv optimal Thp/Mp-1 (DDM)*	*Conserv target price (DDM)*	*Market/conserv target (DDM)*	*Conserv optimal Thp/Mp-1 (FCFE lev)*	*Conserv target price (FCFE lev)*	*Market/conserv target (FCFE lev)*	*Conserv target price*	*Market/conserv target*	*Date target price achieved*	*Price*
2000	-47,6%	32,10	34,5%	-37,4%	33,21	30,0%	32,66	32,2%	*exceeded*	
1999	-47,6%	16,73	166,4%	-37,4%	16,60	168,5%	16,67	167,5%	*exceeded*	
1998	-47,6%	15,26	87,1%	-37,4%	11,82	141,6%	13,54	110,9%	*exceeded*	
1997	-47,6%	11,15	66,8%	-37,4%	10,80	72,2%	10,98	69,5%	*exceeded*	
1996	-47,6%	8,08	9,3%	-37,4%	7,07	25,0%	7,57	16,6%	*exceeded*	
1995	-47,6%	6,31	0,0%	-37,4%	5,03	25,5%	5,67	11,3%	*exceeded*	
1994	-48,1%	4,65	19,0%	-37,4%	4,95	11,8%	4,80	15,3%	*exceeded*	
1993	-48,1%	5,96	0,0%	-37,4%	5,96	0,0%	5,96	0,0%	03/02/93	5,96
1992	-49,5%	5,17	0,0%	-47,2%	5,17	0,0%	5,17	0,0%	24/01/92	5,22
1991	-56,2%	4,92	16,8%	-57,0%	5,74	0,0%	5,33	7,7%	*exceeded*	
1990	-56,2%	3,11	122,4%	-64,4%	3,93	76,1%	3,52	96,6%	*exceeded*	
1989	-56,2%	1,91	25,3%	-64,4%	2,40	0,0%	2,15	11,2%	*exceeded*	
1988	-56,2%	0,05	2053,9%	-13,9%	-0,02	-5765,6%	0,02	6849,8%	*exceeded*	
1987	-56,2%	0,95	0,0%	-13,9%	0,95	0,0%	0,95	0,0%	03/07/87	1,09

APPENDIX E – COMPARATIVE LIQUIDITY AND STOCK MARKET DATA

Liquidity

	Market mean liquidity (MML)	*Titan liquidity (TL)*	*MML/TL-1*	*Market rank (MR)*	*Titan rank (TR)*	*MR/NoC**	*TR/NoC*	*(TR/NoC) / (MR/NoC)-1*	*No of companies*
1D	*0,149*	*0,171*	*-12,4%*	*70*	*60*	*20,8%*	*17,9%*	*-14,3%*	*336*
1M	*0,223*	*0,081*	*174,9%*	*95*	*182*	*26,7%*	*51,1%*	*91,6%*	*356*
2001-2002	*0,277*	*0,106*	*162,6%*	*102*	*250*	*27,1%*	*66,3%*	*145,1%*	*377*
2000	*0,430*	*0,120*	*259,9%*	*123*	*316*	*32,8%*	*84,3%*	*156,9%*	*375*
1999	*0,981*	*0,306*	*220,1%*	*132*	*296*	*39,1%*	*87,6%*	*124,2%*	*338*
1998	*0,456*	*0,299*	*52,6%*	*113*	*167*	*35,6%*	*52,7%*	*47,8%*	*317*
1997	*0,331*	*0,218*	*51,7%*	*115*	*167*	*38,5%*	*55,9%*	*45,2%*	*299*
1996	*0,310*	*0,081*	*282,9%*	*94*	*218*	*31,9%*	*73,9%*	*131,9%*	*295*
1995	*0,437*	*0,106*	*313,7%*	*43*	*160*	*15,6%*	*58,2%*	*272,1%*	*275*
1994	*0,285*	*0,058*	*389,3%*	*84*	*194*	*32,2%*	*74,3%*	*131,0%*	*261*
1993	*0,192*	*0,121*	*57,8%*	*63*	*86*	*29,9%*	*40,8%*	*36,5%*	*211*
1992	*0,069*	*0,102*	*-33,0%*	*73*	*47*	*36,9%*	*23,7%*	*-35,6%*	*198*
1991	*0,081*	*0,075*	*7,8%*	*68*	*73*	*36,8%*	*39,5%*	*7,4%*	*185*
1990	*0,205*	*0,144*	*42,8%*	*48*	*69*	*28,1%*	*40,4%*	*43,8%*	*171*
1989	*0,059*	*0,087*	*-32,0%*	*40*	*28*	*35,1%*	*24,6%*	*-30,0%*	*114*

*NoC = Number of companies - total number of listed companies during every respectful period

Stock Statistics

Stock name	No. of listed shares 31/05/2002	Equity MV (MVE) ('000 EUR) 31/05/2002	% Stock MVE / sector MVE	% Stock MVE / market MVE	Trading volume in no of shares 31/05/2002	Stock liquidity in % 31/05/2002	Deviation of stock liquidity from market liquidity	Value of transactions 31/05/2002	Δ% in transactions' value between 31/05/2002 & previous	Stock transactions / sector transactions	Value of stock transactions / Value of sector transactions	Book value 31/05/2002	P/BV 2000	Div yield 2000	P/E 2000
Titan	38.086.532	1.509.750	57,25	2,04	33.494	0,0879	-0,13	1.326.314	513,78	82,36	1,03	11,04	3,44	0,02	10,21
Hercules	71.082.707	831.668	31,53	1,12	5.833	0,0082	-0,21	67.820	-75,38	4,21	0,05	2,92	3,68	0,01	51,57
Chalyps	18.582.956	134.912	5,12	0,18	0	0,0000	-0,22	0	-99,93	0,00	0,00	2,54	2,29	0,03	11,66
Sums & averages	127.752.195	2.476.330	93,90	1,12	39.327	0,0320	-0,19	1.394.134	338,46	86,57	1,08	16,49	3,14	0,02	24,48

Stock name	Extreme stock prices 2001 Low	2001 High	2000 Low	2000 High	Closing prices 31/05/2002	Previous day	Price deviation 31/05/2002 & 2000 low %	31/05/2002 & 2000 high %	Price Δ% 31/05/2002 & previous %		Closing before 1 week	Weekly Δ%	Closing before 15 days	Closing before 1 month	Closing before 3 months	Closing before 6 months	Closing before 1 year	Annual Δ%	Closing before 5 years
Titan	30,04	44,85	37,03	61,17	39,64	38,70	31,96	-11,62	0,94	2,43	39,66	-0,05	39,98	39,98	39,74	39,05	40,55	-2,25	19,97
Hercules	7,94	13,40	10,38	27,00	11,70	11,50	47,33	-12,69	0,20	1,74	11,62	0,69	12,24	11,40	11,82	11,26	10,66	9,76	12,17
Chalyps	3,88	8,12	4,96	23,18	7,26	7,26	87,11	-10,59	0,00	0,00	7,16	1,40	7,10	6,92	6,82	6,24	5,74	26,48	3,17
Sums & averages	13,95	22,12	17,46	37,12	19,53	19,15	55,47	-11,63	0,38	1,39	19,48	0,68	19,77	19,43	19,46	18,85	18,98	11,33	11,77