

QUALITATIVE AND QUANTITATIVE ANALYSIS OF BASF SE

Authors (Universitat de Barcelona):

Jaume Bargalló Alemany

Daniel Miravet Campos

Albert Torra Nonell

EDITOR: Jordi Martí Pidelaserra

(Dpt. Comptabilitat, Universitat Barcelona)



QUALITATIVE ANALYSIS

INDEX

- Introduction 2
- General presentation 2
- Areas of activity 2
- Business by regions 7
- Stakeholders 9
- Competitors 16
- Organizational structure 17
- Mergers, acquisitions and investments of the last 4 years 23
- Conclusions 25

INTRODUCTION

What is the first thing that comes to your mind when you hear the word BASF? Probably some of the readers will have a broad knowledge about this firm, others may have heard or read something at some time of their life, and others will have no idea about it...

Well, our report is basically focused on the second and third scope of people I have mentioned, since our main purpose is to make a broad analysis of the firm and that after our exposition everyone has a global idea of what this company is, what kind of products they offer, in which sectors does it operate, as well as its stakeholders, internal structure and other more specific aspects which are also indispensable to understand the situation and position of BASF in the contemporary world. However, this analysis will consist of qualitative aspects rather than quantitative ones.

GENERAL PRESENTATION

BASF, German company which was founded on 6 April 1865 in Mannheim, is one of the world's leading chemical companies.

With about 113,000 employees, six "Verbund" sites and approximately 380 additional production sites worldwide; BASF serves customers and partners in almost all countries of the world. As an important accounting data, BASF posted in 2012 sales of €78.7 billion and income before special items of approximately €8.9 billion. The firm combines economic success, social responsibility and environmental protection. Through science and innovation BASF enables its customers in almost all industries to meet the current and future needs of society. Products and system solutions contribute to conserving resources, ensuring healthy food and nutrition and helping to improve quality of life. These contributions build up the corporate purpose of the company: They don't just make chemicals, they "*create chemistry*" for a sustainable future. BASF has a very clear idea of why they do what they do, and they are very conscious that in the future more than nine billion people will live on our planet. The world population and its demands will keep growing, while the planet's resources are finite. If nothing changes, we will need the resources of almost three times our planet to meet the demands of the population. This will pose huge global challenges. There are basically three major areas in which innovations based on BASF's chemistry will play a key role.

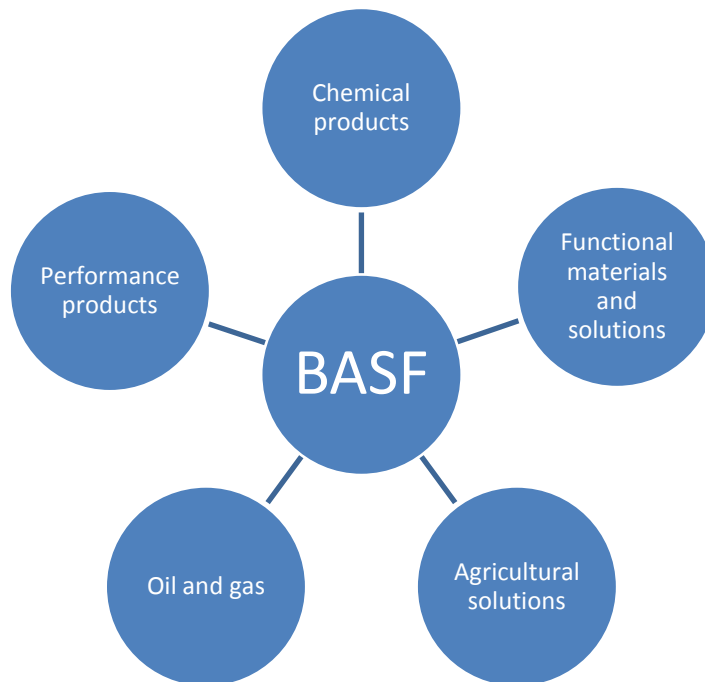
- ✓ **Resources, environment and climate**
- ✓ **Food and nutrition**
- ✓ **Quality of life**

Talking about the day a day life of the company, its most important business sectors will be introduced in the following section.

AREAS OF ACTIVITY

BASF is one of the most important chemical companies in the world. They combine economic success, social responsibility and environmental protection. Through science and innovation they enable their customers in almost all industries to meet the current and future needs of society. Their products and system solutions contribute to conserving resources, ensuring healthy food and nutrition and helping to improve quality of life.

BASF operates in a high variety of segments, as chemical products, performance products, functional materials and solutions, agricultural solutions and oil and gas.



Chemical products

BASF manufactures and supplies products to customers. Those products range from basic chemicals, glues and electronic chemicals for the semiconductor and solar cell industries, amines, plasticizers and large-volume monomers, as well as starting materials for detergents, plastics, textile fibers, industrial gases, cosmetics, paints and coatings, and pharmaceuticals.

They produce special paints with polymer dispersions, which protect the facades from the weather, ultraviolet radiation and pollution.



BASF has introduced their line of biodegradable plastics with the addition of a grade that can be used in the manufacture of mulch films for agriculture. Unlike conventional agricultural films, films made by BASF can be simply plowed under after the harvest without needing to be laboriously collected, cleaned, disposed of or recycled.

The most important customers for this segment are the pharmaceutical, construction, textile and automotive industries.

Performance products

The success of the Performance Products segment is driven by product innovations.

BASF produces a range of performance chemicals, coatings and functional polymers. These include raw materials for detergents, textile and leather chemicals, pigments and raw materials for adhesives, paper chemicals, and also vitamins and food additives, such as vitamins, sterols, enzymes and organic acids. BASF also produces active ingredients and excipients for the pharmaceutical industry, like caffeine or ibuprofens. Other Performance Products



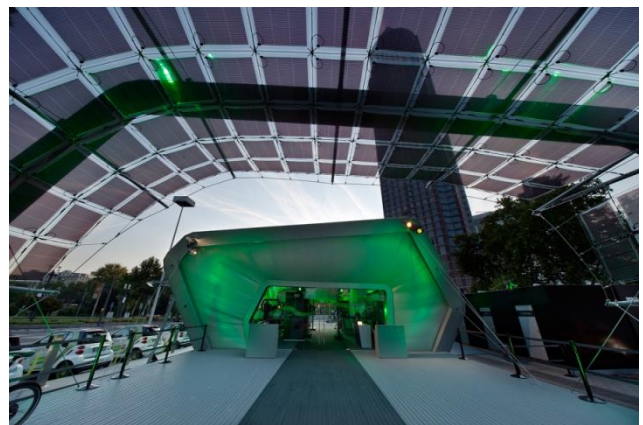
improve processes in the paper industry, oil and gas production, mining and water treatment. They can also enhance the efficiency of fuels and lubricants, the effectiveness of adhesives and coatings, and the stability of plastics.

BASF also produces a system that converts large quantities of dirty water – for example, from puddles, rain barrels or rivers – into drinking water entirely without the use of electricity and can thus supply entire villages with clean water.

Customers of this range can be the automotive, oil, paper, food and feed, packaging, textile, sanitary products, detergents, plastics processing, construction materials, coatings, printing and leather industries.

Functional materials and solutions

This segment comprises the Catalysts, Construction Chemicals, Coatings and Performance Materials divisions. Catalysts include battery materials, energy storage, precious metals services or temperature sensing. BASF also look for solutions for air protection, for the production of fuels, chemicals, plastics and battery materials.



Regarding the construction, BASF offers a multitude of products for improving the performance of the materials, complying with the stringent demands of

large civil engineering projects, in which the stability and durability are critical. They help their customers in the construction industry to enhance the value of buildings and the quality of life of their occupants with sustainable raw materials, innovative formulations and systems. BASF also offers a wide range of thermal insulation materials made from polystyrene foam and polyurethane and facade systems, which permits to reduce a high amount of energy into the buildings and particular houses.

The company produces some aerospace materials, including a broad portfolio of products and technologies that can provide unique solutions across a wide range of applications: cabin interiors, structural materials, seating components, fuel and lubricant solutions, coatings & specialty pigments, as well as flame retardants & fire protection. These and other innovations can make aircraft safer and more economical while offering higher levels of sustainability as well as passenger comfort.

BASF has also opted for the renewable energies. They are developing and supplying key products for the efficient manufacturing of modern wind turbines. With its top-quality products and services combined with high reliability, BASF contributes to the making of various wind turbine components such as blades, base and tower.

These divisions develop innovative, customer-specific products and system solutions, in particular for the automotive, chemical, steel, electronic and construction industries.

Agricultural solutions

BASF manufactures some products that help in the protection of cultivations, as herbicides, fungicides and insecticides.

They also invest in biotechnology, especially in that concerned with vegetal plants, investigating to achieve better efficiencies in agriculture, healthier nutrition and renewable energies.

The research and development does not stop when the product reaches their customers. BASF is constantly talking to farmers to hear about their opinions and experiences with their products. These messages from the farmers are then feedback to their scientists, in order to improve existing products and develop new ones.



Oil and gas

BASF is the larger producer of oil and gas in Germany and one of the largest in Europe. They focus on the exploration and production of oil and gas above all in the Northern Africa, South America and Russia. Their research and development activities focus on reducing risks in exploration activities, increasing the recovery factor from reservoirs and developing technologies for reservoirs with harsh development and production conditions.

Through its subsidiary firm Wintershall, they also take part in the transport, storage and trading of natural gas in Europe, collaborating with the Russian firm Gazprom, which is the largest extractor of gas in the world.










Contribution of each segment

Segment overview (million €)

| | Sales | |
|------------------------|---------------|---------------|
| | 2012 | 2011 |
| Chemicals | 13,824 | 12,958 |
| Plastics | 11,402 | 10,990 |
| Performance Products | 15,871 | 15,697 |
| Functional Solutions | 11,460 | 11,361 |
| Agricultural Solutions | 4,679 | 4,165 |
| Oil & Gas | 16,700 | 12,051 |
| Other ¹ | 4,793 | 6,275 |
| | 78,729 | 73,497 |

Contributions to total sales by segment

| | | |
|------------------------|-----|---|
| Chemicals | 18% |  |
| Plastics | 14% |  |
| Performance Products | 20% |  |
| Functional Solutions | 15% |  |
| Agricultural Solutions | 6% |  |
| Oil & Gas | 21% |  |
| Other | 6% |  |

Although all these segments are important for BASF, they do not play all the same role, especially referring to their contribution to the total sales or income of the company.

In absolute terms, the segment that includes chemical products and plastics is the one that generates more activity. Their sales represent a third of the total sales of the company, and they have increased considerably regarding to the previous year.

Sales – Functional Solutions (million €)

| | | |
|------|--------|---|
| 2012 | 11,460 |  |
| 2011 | 11,361 |  |
| 2010 | 9,703 |  |

Sales – Oil & Gas (million €)

| | | |
|------|--------|---|
| 2012 | 16,700 |  |
| 2011 | 12,051 |  |
| 2010 | 10,791 |  |

Sales – Performance Products (million €)

| | | |
|------|--------|---|
| 2012 | 15,871 |  |
| 2011 | 15,697 |  |
| 2010 | 12,288 |  |

Sales – Chemicals (million €)

| | | |
|------|--------|---|
| 2012 | 13,824 |  |
| 2011 | 12,958 |  |
| 2010 | 11,377 |  |

Sales – Agricultural Solutions (million €)

| | | |
|------|-------|---|
| 2012 | 4,679 |  |
| 2011 | 4,165 |  |
| 2010 | 4,033 |  |

Although all these segments are important for BASF, they do not play all the same role, especially referring to their contribution to the total sales or income of the company.

In absolute terms, the segment that includes chemical products and plastics is the one that generates more activity. Their sales represent a third of the total sales of the company, and they have increased considerably regarding to the previous year.

Performance products and functional materials and solutions are two segments that also contribute greatly, representing a 20 and 15% respectively of the total sales. Their sales, though, have barely risen relative to 2011.

On the other hand, the oil&gas segment is the one that has achieved a higher growth relative to the previous year. Concretely, this segment has increased their sales in a 38%. Regarding to the total sales, this segment has also increased their contribution, from a 16 to a 21% of them.

Finally, the agricultural solutions segment, which is the one with less weight in the total sales, representing only a 6% of them, has also achieved a high growth, becoming one of the emerging industries that will play an increasingly more important role in the future.

BUSINESS BY REGIONS

BASF has subsidiaries in more than eighty countries and supplies products to a large number of business partners in nearly every part of the world. In 2012, they achieved 58% of their sales with customers in Europe. More concretely, their main market is the national in Germany, which represents a 42% of the total sales. In addition, 18% of sales were generated in North America; 18% in Asia Pacific; and 6% in South America, Africa, Middle East.

In 2012, companies headquartered in Europe recorded a significant increase in sales compared with the strong previous year. They grew by 11% to €45,665 million.

At €14,599 million, sales for companies headquartered in North America were 1% below the level of 2011- In local-currency terms, sales were 8% lower than in the previous year.

More, companies headquartered in the Asia Pacific region increased sales by 5% to €13,916 million in 2012. In local-currency terms, sales declined by 3%.

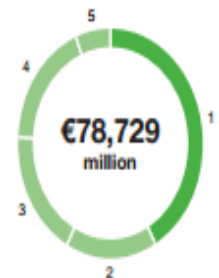
Finally, the last region, that includes South America, Africa and Middle East, increased their sales by a 3% respect the previous year, to €4,549 million.

Regions (million €)

| | Sales by location of company | | |
|------------------------------------|------------------------------|---------------|-------------|
| | 2012 | 2011 | Change in % |
| Europe | 45,665 | 41,036 | 11 |
| Thereof Germany | 32,718 | 28,816 | 14 |
| North America | 14,599 | 14,727 | (1) |
| Asia Pacific | 13,916 | 13,316 | 5 |
| South America, Africa, Middle East | 4,549 | 4,418 | 3 |
| | 78,729 | 73,497 | 7 |

Sales by region (by location of company)

| | | |
|---|------------------------------------|-----|
| 1 | Germany | 42% |
| 2 | Europe (excl. Germany) | 16% |
| 3 | North America | 18% |
| 4 | Asia Pacific | 18% |
| 5 | South America, Africa, Middle East | 6% |



Until the end of 2012, BASF's five segments contained 15 divisions which bore operational responsibility and managed their 70 global and regional business units. The divisions develop strategies for their approximately 80 strategic business units and are organized according to sectors or products. The regional divisions contribute to the local development of their business and help to exploit market potential. They are also responsible for optimizing the infrastructure for their business. For financial reporting purposes, their divisions are grouped into the following four regions: Europe; North America; Asia Pacific; and South America, Africa, Middle East.

In 2012, economic growth was once again considerably more vigorous in the emerging markets than in the industrialized countries. Against the backdrop of the weak global economy, however, many emerging markets – including China, India and Brazil – also posted a decline in growth rates compared with the strong dynamic of previous years. This was partly due to the lower demand from Europe for exports as well as to dampened domestic investing activities.

Sales in emerging markets (% of sales¹)

| | | |
|------|-----|-----|
| 2020 | 55% | 45% |
| 2012 | 65% | 35% |
| 2002 | 78% | 22% |

■ Industrialized countries² ■ Emerging markets

¹ BASF Group sales excluding Oil & Gas

² Comprises EU15, Norway, Switzerland, North America, Japan, Australia, New Zealand

Since it is a multinational company, BASF operates in all over the world. That implies that they also produce in all over the world, having 111.000 employees around the world.

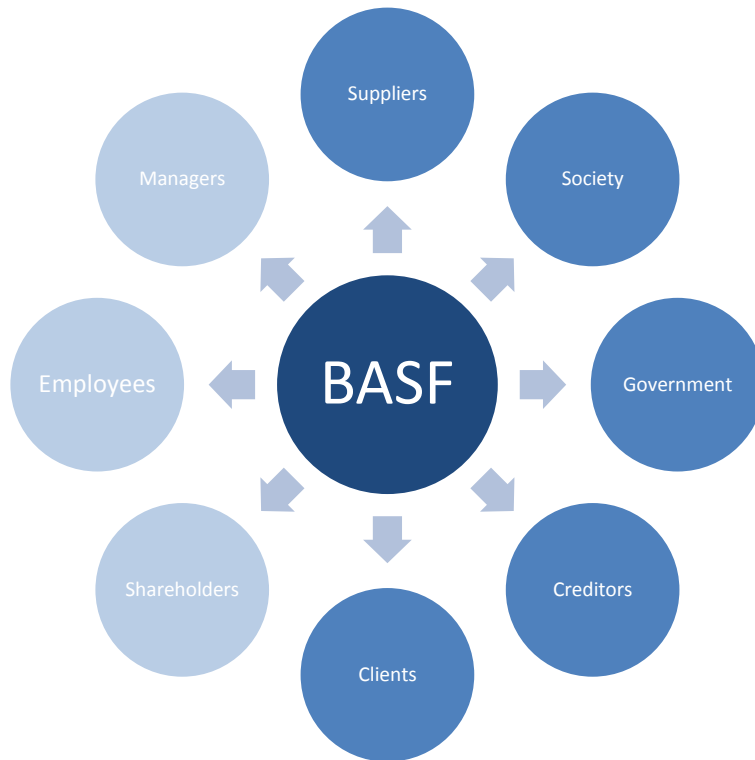
The BASF's main factory is in Ludwigshafen, a town in Germany near Frankfurt. This factory, which was the first one of the company, set up in 1866, has become the largest integrated chemical complex in the world, with an area of 10 square kilometres, and work on it more than 33.000 employees.

BASF has an important presence in Spain. Tarragona is the largest production centre of BASF in Spain and Portugal. It has 6 manufacturing plants and work on it more than 700 people.



STAKEHOLDERS

Stakeholders are persons or groups whose interests are interlinked with those of a company in a variety of ways. BASF's stakeholders include shareholders, business partners, employees, neighbors and society among others.



SOCIETY

BASF takes on social responsibility: The firm is involved in diverse projects worldwide, especially in the communities in which its sites are located. The main focus is on access to education. This way, innovative capacity and future viability are promoted.

In 2012, the BASF Group spent a total of €49.2 million on supporting projects. They support initiatives that reach out to as many people as possible and have long-lasting impact.

BASF fosters education, science, social projects, sports and cultural events in the communities around its sites. On a regional level, the firm works together with universities, schools and nonprofit organizations.

Furthermore, BASF has been a strategic partner for the United Nations Human Settlements Programme, UN-HABITAT, since 2005.

BASF Group donations, sponsorship and own projects in 2012 (Million €)

1. Education 27.5 (56.0%)
2. Culture 7.6 (15.4%)
3. Social projects 4.5 (9.2%)
4. Science 4.3 (8.7%)
5. Sports 3.1 (6.3%)
6. Other 2.2 (4.4%)



Focus on education



In 2012, 64,440 children and young people in 35 countries visited BASF's Kids' Labs and Teens' Labs. Turkey's Corporate Social Responsibility Association honored BASF's Kids' Lab project with its Best Practice Award. In Germany, these student labs were chosen in their fifteenth year of existence as a "Selected Landmark" in the "Germany – Land of Ideas" initiative. BASF was recognized by the Public Relations Society in North America in 2012 for its scientific education program, in which approximately 15,000 students have taken part since 2010. With further collaborations and initiatives, BASF tries to maintain this image of "inspiring futures".

International projects

The BASF Stiftung supports youth development projects worldwide through UN-HABITAT's Urban Youth Fund. They both together have worked on several projects such as helping to prevent the threatening unemployment in Africa, fighting against the hunger in Cambodia, donating money to the victims of the Hurricane Sandy, among others.

GOVERNMENT

Political dialog is part of sustainable governance at BASF

The world is changing at a growing pace, and that process helps determine the environment in which BASF and its customers do business. For BASF, dialog with politics and society is an opportunity to take a constructive part in shaping the change process. An important political task is to create favorable conditions for business activities and thus promote business success. The key concern is to ensure that those conditions promote competitiveness and innovation; BASF and its customers need to be competitive and innovative to stay successful. They therefore consider dialog with politicians to be the right and duty of "Citizen BASF" – and part of sustainable corporate governance. That is why BASF takes an active part in constructive dialog with politicians, business associations, and labor unions, as well as non-government organizations, in the quest for sustainable solutions.

Memberships of associations and BASF liaison offices

BASF conducts political dialog in cooperation with the relevant interest groups. The firm is involved in numerous industry associations all over the world. BASF SE alone is a member of more than 1000 associations. In support of local political dialog, BASF has its own coordination offices in Berlin, Brussels, Washington and Beijing. In accordance with applicable legal requirements, BASF supports the registration of lobbyists with political institutions, for example with the European Parliament and in the United States. BASF welcomes the EU initiative for more transparency in politics and supports the move for a voluntary registry for lobbyists with the EU Commission.

BASF supports the social commitment of company employees

BASF believes in the importance of communication between industry and politics. The framework conditions for voluntary civic and social commitment on the part of the employees as private persons are set forth for BASF SE in the regulations governing office holders. BASF pursues no corporate interests whatsoever in connection with the voluntary work of company staff.

Nevertheless, even if the relation with the government is supposed to be good, it is BASF policy not to fund political parties and members of parliament. The same applies to electoral candidates.

Exchange of staff with international organizations, governments, ministries and public administration

BASF welcomes staff exchange. It promotes transfer of knowledge and experience between disciplines and thus fosters a better understanding of the specific political and corporate interactions, structures and processes. In that respect, it represents a training and qualification measure on both sides, which in most cases does not exceed a six month period. The exchanges are documented in contracts designed by the Human Resources department, controlled by the Communications & Government Relations department and published in a transparent manner on the BASF website, without mentioning actual names. An equivalent information policy is encouraged on the part of the public organizations.

SUPPLIERS

As an internationally deployed company, BASF has suppliers all over the world. Suppliers are an important component of the company's value chain. For the firm, sustainability-oriented management of suppliers is a significant factor for growth and added value. Together with the suppliers, it is possible to create value and minimize risks.

Strategy

Both new and existing suppliers are selected and evaluated not only on the basis of economic criteria, but also on environmental, social and corporate governance (ESG) standards. Its Supplier Code of Conduct is based on internationally recognized guidelines, such as the principles of the United Nations' Global Compact Initiative, the International Labor Organization (ILO) conventions and Responsible Care. The Code of Conduct comprises environmental protection and compliance with human and labor rights, as well as antidiscrimination and anticorruption policies.

In 2012, BASF purchased a total of around 30,000 different raw materials from more than 6,000 suppliers.

Supplier audits

Depending on risk potential, BASF conducts on-site supplier audits. Risk matrices help to identify high-risk suppliers based on country and product risks. Based on this risk analysis, the group

| | | Supplier risk | | |
|--------------|---|---------------|----------------|---------------------------|
| | | 1 | 2 | 3 |
| Product risk | A | Safe region I | | |
| | B | | Safe region II | Minor risk |
| | C | | | Potentially elevated risk |

conducted onsite audits of a total of 210 raw material suppliers in 2012 to assess environmental, health and safety issues. If any need for improvement is detected, there will be a call for corrective actions. A follow-up audit takes also place a few months later. If there is any improvement registered, business relationship with this supplier will finish. This occurred in six cases in 2012. To check their compliance with international labor and social

standards, new suppliers from non-OECD countries are required to submit a self-assessment. A total of around 750 suppliers received our questionnaire for this purpose in 2012, and it was completed by around 70%. In order to do business with the firm, a company must complete and sign the questionnaire, and no key issues – such as the elimination of child labor – may remain unresolved.

If certain products show room for improvement in the area of sustainability, the supply chain is subject to an intense analysis. This enables to provide suppliers with concrete recommendations. BASF participates in the "Together for Sustainability" initiative of the leading chemical companies to standardize suppliers' self-assessments and auditing worldwide. The initiative has developed a globally uniform supplier questionnaire, as well as standardized criteria for supplier audits and

examination processes, in order to simplify the retrieval of sustainability-related information, especially for suppliers.

EMPLOYEES

Obviously, as in any modern firm in the world, employees are one of the most indispensable people for a company, since human resources are, in a certain way, the maximum responsible to create value and to improve the performance of the firm.

Employees are fundamental to achieving the goals of their “*We create chemistry*” strategy. They want to attract the right employees and support them in their development within our company. To do so, the firm cultivates a working environment that inspires and connects people. It is founded on inclusive leadership based on mutual trust, respect and dedication to top performance.

BASF follows the “Best Team Strategy” which is derived from its corporate strategy and simultaneously contributes to its implementation. The goal is to form the best team. To do so, there are three strategic directions emphasized: excellent people, excellent place to work and excellent leaders. Keep improving BASF's attractiveness on the labor market is one of their constant goals, as well as emphasizing the focus on employee development and life-long learning in all regions.



Besides, at the end of 2012, BASF had 113,262 employees (2011: 111,141). Of these, 2,809 were apprentices and vocational trainees; so we see that this company really takes the young people into account, and not only chemists' students, but they also incorporate students of areas such as finance, accounting, audits, etc.

Acquisitions were one of the ways through which BASF gained new employees (we will analyze this point in a more detailed way later)

Personnel expenses, compensation and social benefits

In addition to market-oriented pay, BASF's total package also comprises social benefits, individual opportunities for development and a good working environment. The compensation of employees worldwide is based on objective criteria. Compensation includes remuneration with fixed and variable components as well as social benefits that often exceed the legal requirements. These include company pension benefits, supplementary health insurance and share programs. In 2012, the BASF Group spent €9,128 million on wages and salaries, social security contributions and expenses for pensions and assistance (2011: €8,576 million). Personnel expenses rose by 6.4%, particularly as a result of the higher number of employees, increased wages and salaries and higher additions to provisions for the share-price-based compensation program.

An analysis of all management-represented employees at the site in Ludwigshafen has shown that there is no systematic difference in compensation of women and men, provided the jobs and qualifications are comparable. The difference in income was found to be less than 1%.

| Million € | 2012 | 2011 | Change in % |
|--|--------------|--------------|-------------|
| Wages and salaries | 7,355 | 6,856 | 7.3 |
| Social security contributions and expenses for pensions and assistance | 1,734 | 1,720 | 0.8 |
| Thereof for pension benefits | 427 | 465 | (8.2) |
| Total personnel expenses | 9,089 | 8,576 | 6.0 |

SHAREHOLDERS

Nowadays, the registered capital of the company is divided into 918.478.694 shares, all of which have participation and voting rights. In general terms, Basf is owned by a total of 440.000 of shareholders.

Share details

The Initial Public Offering of Basf was made the January 30 of 1952. Since then, the capital structure has evolved until today, when the Major shareholders (3% or more) are BlackRock Inc., with a 4,57% of the capital.

In reference to the stock market, 3,3 million shares of Basf are average daily traded. Its market capitalization is around 67 billion € and the dividend is paid at 2,60€ what means an increase of a 4% respect the previous year; this dividend payment will be held on Monday, April 29, 2013.

Share buybacks were stopped in the fourth quarter of 2008 due to the financial and economic crisis. Since the start of this program in 1999 until September 2008 BASF has repurchased approx. 29 % of the shares outstanding. The repurchased shares were cancelled and the share capital of BASF SE reduced accordingly

Basf shares are traded in the following stock exchange markets: Deutsche Börse, London Stock Exchange, Swiss Exchange and in the OTC trading platform: Pink Sheets. Its Market Capitalization is 67.058M €.

BASF shares are included in a number of internationally important indices with the following weightings*: DAX 30: 9.6%, MSCI World Index: 0.3%, DJ Chemicals: 7.2%. In 2011, BASF was again included in the Dow Jones Sustainability World Index (DJSI World). The company received special recognition by the analysts for Risk & Crisis Management, Environmental Policy and Reporting and Climate Strategy. The DJSI World is the most important sustainability index and represents the top 10 percent of the largest 2,500 companies in each industry included in the Dow Jones Global Index

As we can see in the next chart, since July 2012 the stock price has followed a bullish trend and the current price of a share is between 70 and 75 €.



Major Shareholders

A reflect of the power and size of Basf is some names we can find in the top 20 shareholders list. Looking to that list, they come up some names like BlackRock Inc., Allianz, Deutsche Bank, Government of Norway, Société Générale, BNP Paribas, AXA or JP Morgan Chase & CO. All these companies invest in Basf as they think it is a reliable company that transmits confidence and security.

| | |
|--|-------|
| 1. PUBLIC | 94.65 |
| 2. BLACKROCK, INC. via its funds | 4.57 |
| 3. ALLIANZ LEBENSVERSICHERUNGS- AKTIENGESELLSCHAFT | 2.34 |
| 4. GOVERNMENT OF NORWAY via its funds | 2.28 |
| 5. DEUTSCHE BANK AG via its funds | 1.83 |
| 6. STATE STREET CORPORATION via its funds | 1.48 |
| 7. ALLIANZ SE via its funds | 1.26 |
| 8. CAPITAL GROUP COMPANIES, INC., THE via its funds | 1.24 |
| 9. UNION ASSET MANAGEMENT HOLDING AG via its funds | 1.05 |
| 10. VANGUARD GROUP, INC. THE via its funds | 0.96 |
| 11. SOCIÉTÉ GÉNÉRALE via its funds | 0.94 |
| 12. FMR LLC via its funds | 0.84 |
| 13. DEKABANK DEUTSCHE GIROZENTRALE via its funds | 0.72 |
| 14. STICHTING PENSIOENFONDS ABP via its funds | 0.57 |
| 15. BPCE SA via its funds | 0.55 |
| 16. SAS RUE LA BOETIE via its funds | 0.53 |
| 17. BNP PARIBAS via its funds | 0.52 |
| 18. COMMERZBANK AG via its funds | 0.48 |
| 19. JP MORGAN CHASE & CO. via its funds | 0.36 |
| 20. AXA via its funds | 0.35 |

In the top 20 shareholders of BASF we can find some important companies that we can group in different categories.

The main group of shareholders is composed by minor investors and represents the 94.65% of the company capital.

Another important group is the one of mutual funds or investment corporations, with 8 members in the shareholders' top 20.

The following category is the banks, with 6 names in the top 20.

Although the group of Insurance companies only has 4 components in this list, some of them like Allianz have an important participation in the company capital.

Finally, we can find a government, the one of Norway, with several shares of BASF.

Some of these organizations are so important in BASF that they have representatives in the Supervisory Board.

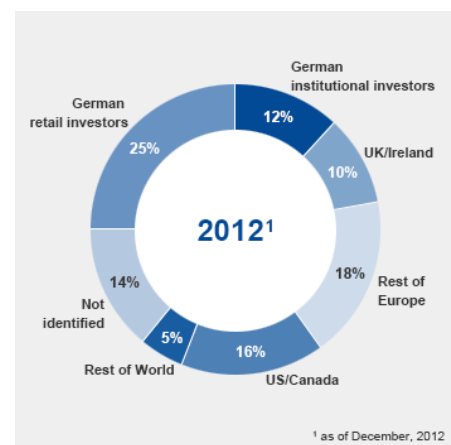
Broad base of international shareholders

With over 440.000 shareholders, BASF is one of the largest publicly owned companies with a high free float.

At nearly 16% of share capital, the United States and Canada make up the largest regional group of institutional investors. Institutional investors from Germany accounted for 12%. Shareholders from the United Kingdom and Ireland hold around 10% of BASF shares, while institutional investors from the rest of Europe hold a further 18% of capital. Approximately 25% of the company's share capital is held by private investors, most of whom are resident in Germany. BASF is therefore one of the DAX 30 companies with the largest percentage of private shareholders in Germany.

Around 6% of all investors live in the greater Ludwigshafen area.

With one quarter of its shares held by private investors, BASF has the second-largest percentage of private shareholders among the DAX 30 companies.



Employee participation in the company's success

With variable compensation components, employees participate in the company's success and are rewarded for their individual performance. The same basic principles apply to all employees. The variable component is determined by the economic success of the BASF Group – measured by the return on assets – and the employee's individual performance. The bonus payment for 2012 will once again reach a high level. In numerous Group companies, employees are able to purchase shares in BASF SE. The "plus" share program

promotes the long-term participation of the employees in the company through incentive shares, allowing them to invest part of their compensation in BASF shares. In 2012, 20.362 employees around the world purchased 773.640 shares under the “plus” program.

Since 1999, BASF has offered its senior executives the opportunity to participate in a stock-price-based compensation program. This long-term incentive (LTI) program ties a proportion of their compensation to the long-term performance of BASF shares. In 2012, 92% of the approximately 1.200 senior executives eligible worldwide participated in the LTI program, investing up to 30% of their variable compensation.

CUSTOMERS

BASF’s customer portfolio ranges from major global customers and medium-sized regional businesses to local workshops. They align their business models and sales channels to the respective customer groups and market segments.

In the classical chemicals business, Basf mostly sell the chemicals produced in Verbund in large quantities. These include basic products from the Chemicals and Plastics segments, such as sulfuric acid, plasticizers, caprolactam, TDI and products from the steam cracker. Marketing is carried out partly via e-commerce.

In the Performance Products segment in particular, the company manufactures a broad range of customized products – from vitamins, personal care ingredients and color pigments to paper chemicals and plastic additives. In joint projects, Basf works closely together with their customers from an early stage in order to develop new products or formulations for a specific industry.

The company offers functionalized materials and solutions tailored to the customers’ requirements primarily in the Plastics, Functional Solutions and Agricultural Solutions segments. These include, for example, engineering plastics, concrete additives, coatings and crop protection products. They enter into close partnerships with customers to develop innovations together which help them optimize their processes and applications.

Industry orientation

Basf serves customers from many different sectors with a broad portfolio of diverse competencies, processes, technologies and products. That way, industry teams pool skills, knowledge and customer contacts across units to systematize and structure enhancement of the industry focus.

For example, the company grouped battery activities together to form a new global business unit. By bundling expertise and resources, they position themselves as a solution-oriented system provider for battery materials.

Specific Industries and Customers

The main industries Basf is related with or sells to are: Aerospace, Agriculture, Automotive, Construction, Packaging, Personal care, Pharmaceutical, Wind Energy and so on.

In all these sectors the company has important clients.

Some concrete names of their customers are: American PolySteel LLC, Astaris LLC, Composatron Composite Technology, Cooper Wiring Devices, Creatherm LLC, Cultured Containers, Doral, Dresick Farms Inc., Latex Systems Inc., Monotech, Segway LLC, Styrotech, Woods Run Forest Products Inc, Prime Time International, Pacific Corporation (LP), Herman Miller, Inc., Knoll, Inc., Fransyl Ltée, etc.

CREDITORS

With “A+/A-1/outlook stable” from rating agency Standard & Poor’s and “A1/P-1/outlook stable” from Moody’s, BASF has good credit ratings, especially in comparison with competitors in the chemical industry.

At the end of 2012, the financial indebtedness of the BASF Group was around €13.4 billion with liquid funds of approximately €1.8 billion. The average maturity of their financial indebtedness was 3.4 years. The company's medium to long-term debt financing is based on corporate bonds with a balanced maturity profile. For short-term debt financing, BASF has a commercial paper program with an issuing volume of up to \$12.5 billion. As backup for the commercial paper program, there are committed, broadly syndicated credit lines of €3 billion and \$2.25 billion available.

BASF prefers to access external financing via the capital markets. A commercial paper program is used for short-term financing, while corporate bonds are used for financing in the medium and long-term. These are issued in euros and other currencies with different maturities. This ensures a balanced maturity profile, a diverse range of investors and more advantageous financing conditions for BASF. In 2012, BASF issued a six-year €750 million bond and a ten-year €1 billion bond. As part of its interest rate risk management, BASF pursues a strategy of reducing the Group's interest expense by turning selected capital market liabilities with fixed interest into variable rate receiver swaps.

In the last years, BASF has worked with the following banks: Deutsche Bundesbank, Commerzbank AG, Deutsche Bank and Deutsche Postbank.

AUDITORS

Nowadays, KPMG is auditing BASF's financial statements. Previously, they were audited by Deloitte&Touch. The corporation has as well internal auditing processes to make sure that all the business segments are achieving their best.

COMPETITORS

As BASF is a multinational company, they compete against companies of the whole world. Their competence is quite extensive, because they operate in a high variety of industries. In chemical products, for example, one of their strongest competitors is the American company DuPont, founded in 1802 and known for being the creator of such important materials like neoprene, nylon or Plexiglas. They currently employ more than 70.000 people.

Another American company, called Dow Chemical, is the third largest chemical company in the world, after BASF and DuPont. Dow Chemical is a provider of plastics, chemicals, and agricultural products with a presence in about 160 countries and employing about 50,000 people worldwide. BASF also competes against Sigma-Aldrich, an American life science and high technology company with over 7,600 employees and operations in 40 countries. They also produce chemical and biochemical products.

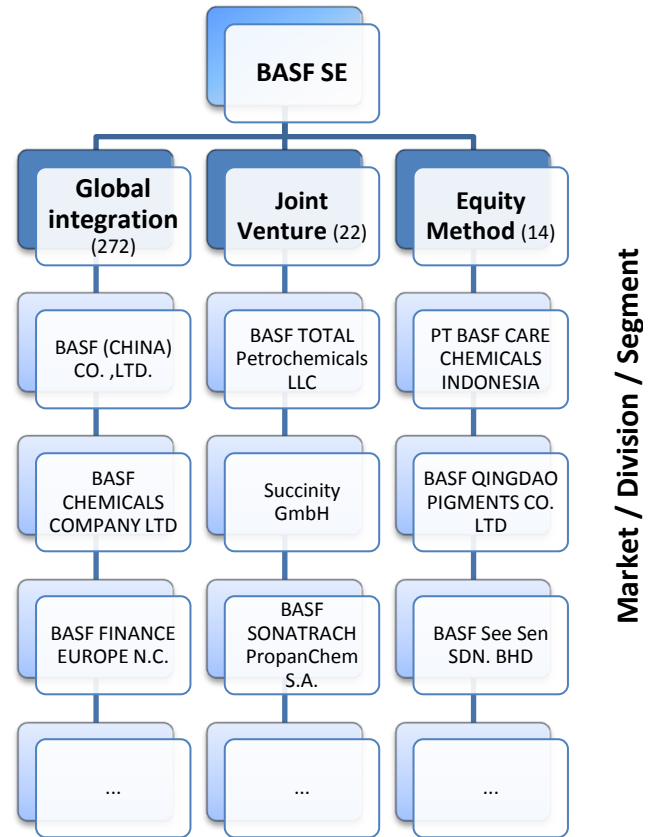
Regarding to some specific products like detergents, shampoos, hair colorants or adhesives, their main competitor is Henkel, which is also a German company, which employs 50.000 people around the world.

BASF also operates in the pharmaceutical industry. There, they have many competitors, both in the national market in Germany and outside. In Germany and Europe, their main competitor is Bayer, founded in 1863. This company, that employs more than 110.000 people around the world, is specially known because they produce the Aspirin.

In an international view, the most important pharmaceutical companies, and consequently the main competitors of BASF are Johnson&Johnson, founded in 1886 and with more than 118.000 employees, and Pfizer, founded in 1849 and employing 104.000 workers. Both companies are American.

ORGANIZATIONAL STRUCTURE

As the publicly traded parent company, BASF SE takes a central position: Directly or indirectly, it holds the shares in the companies belonging to the BASF Group, and is also the largest operating company. The majority of Group companies cover a broad spectrum of the business. Some concentrate on specific business areas: the Wintershall Group companies, for example, focus on oil and gas activities. In the BASF Group Consolidated Financial Statements, 308 companies including BASF SE are fully consolidated. They consolidate 22 jointly controlled entities with one or more partners on a proportional basis. The company also includes 14 companies using the equity method.



BASF GROUP

Organization of the BASF Group

Until the end of 2012, BASF's six segments contained 15 divisions which bore operational responsibility and managed 70 global and regional business units. The divisions develop strategies for approximately 80 strategic business units and are organized according to sectors or products. The regional divisions contribute to the local development of the business and help to exploit market potential. They are also responsible for optimizing the infrastructure of the business. For financial reporting purposes, the divisions are grouped into the following four regions: Europe; North America; Asia Pacific; and South America, Africa, Middle East. Three central divisions, six corporate departments and eleven competence centers provide Group-wide services such as finance, investor relations, communications, human resources, research, engineering, site management and environment, health and safety.

| Segments | Chemicals | Performance Products | Functional Materials & Solutions | Agricultural Solutions | Oil & Gas |
|-----------|----------------|------------------------|----------------------------------|------------------------|-----------|
| Divisions | Intermediates | Dispersions & Pigments | Catalysts | Crop Protection | Oil & Gas |
| | Monomers | Care Chemicals | Construction Chemicals | | |
| | Petrochemicals | Nutrition & Health | Coatings | | |
| | | Paper Chemicals | Performance Materials | | |
| | | Performance Chemicals | | | |

Optimization of organizational structure

Since January 2013, BASF has introduced some changes in the organizational structure that can make improve the achievement of the firm's goals. Now, there is a sharper focus on customer industries and operational and technological excellence. Newness is that product lines which share the same business model have been combined and the Plastics segment has been dissolved. On the other hand, a new Performance Materials division in Functional Materials & Solutions has been created. This division bundles innovative plastics from former divisions of Plastic segment. The remaining activities from Plastics segment are integrated into Monomers and Petrochemical divisions.

BASF SE

As previously mentioned, BASF SE takes a central position in the BASF group as it is in the top of the organization and it holds all the subsidiaries.

BASF has the legal form of a European Company (Societas Europaea, SE). The legal foundations of its corporate constitution are primarily the SE Council Regulation of the European Union, the German SE Implementation Act and the German Stock Corporation Act. The fundamental elements of BASFSE's corporate governance system correspond to the proven principal components of the German Aktiengesellschaft's corporate constitution: these are the two-tier system consisting of BASF's Board of Executive Directors and the Supervisory Board, the equal representation of shareholders and employees in the Supervisory Board and the shareholders' rights of co-administration and supervision at the Shareholders' Meeting.



German Corporate Governance Code

BASF accords great importance to good corporate governance. Therefore, BASF supports the German Corporate Governance Code, which is regarded as an important tool in the capital market-focused continuing development of corporate governance and control, and advocates responsible corporate governance that focuses on sustainably increasing the value of the company.

BASF SE follows all recommendations of the German Corporate Governance Code in its most recently revised version of May 2012. This also applies to the Code's new recommendations regarding the independence and compensation of the Supervisory Board. The objective for the composition of the Supervisory Board is for seats to be filled exclusively by persons considered independent according to the regulations and criteria of the Code. The Supervisory Board of BASF SE receives annual compensation made up of fixed and performance-related components. The Supervisory Board's performance-related compensation component is aligned with the sustainable growth of the company insofar as the earnings per share required to attain the same variable compensation increase annually. This creates an incentive to devote particular attention to the company's long-term development and sustainably increase its enterprise value in the shareholders' interests.

Direction and management by the Board of Executive Directors

Under the two-tier management system of BASFSE, the Board of Executive Directors is responsible for the management of the company, and represents BASF SE in business undertakings with third parties. BASF's Board of Executive Directors is strictly separated from the Supervisory Board: A member of the Board of Executive Directors cannot simultaneously be a member of the Supervisory Board. The Board of Executive Directors agrees on the BASF Group's corporate goals and strategic alignment. It also manages and monitors the business units of the BASF Group through the planning and setting of the corporate budget, the allocation of resources and management capacities, the monitoring and decision-making regarding significant individual measures and the control of the operational management. The Board's actions and decisions are aligned with the company's best interests. Among the Board's responsibilities is the preparation of the consolidated and individual financial statements of BASF SE. Furthermore, it must ensure that the company's activities comply with legal requirements and internal corporate directives. Members of the Board of Executive Directors are authorized to make decisions individually in their assigned areas of responsibility. The Board can set up Board Committees to consult and decide on individual issues; these must include at least three members of the Board of Executive Directors.

The Board of Executive Directors informs the Supervisory Board regularly of all issues important to the company with regard to planning, business development, risk situation, risk management and compliance. Furthermore, the Board of Executive Directors coordinates the company's strategic approach with the Supervisory Board. The Statutes of BASFSE define certain transactions that require the Board of Executive Directors to obtain the Supervisory Board's approval prior to their conclusion. Such cases include the acquisition and disposal of enterprises and parts of enterprises, the issue of bonds or comparable financial instruments; however, this is only necessary if the acquisition or disposal price or the amount of the issue in an individual case exceeds 3% of the equity reported in the last approved Consolidated Financial Statements of the BASF Group.

Board of Executive Directors

There were eight members on the **Board of Executive Directors of BASF SE** as of December 31, 2012

| | | | | | | | | | | | |
|---|--|-----------|-------|-----------|------------------|-----------|-----------------|-----------|-------|-----------|---|
| <p>Dr. Kurt Bock Chairman of the Board of Executive Directors Degree: Business Administration; 54 years old; 22 years at BASF Responsibilities: Legal, Taxes & Insurance; Strategic Planning & Controlling; Communications & Government Relations; Global Executive Human Resources; Investor Relations; Compliance First appointed: 2003 Term expires: 2016</p> <table border="1"> <tbody> <tr> <td>Wages</td> <td>1,044,000</td> </tr> <tr> <td>Bonus</td> <td>2,948,000</td> </tr> <tr> <td>Total short term</td> <td>3,992,000</td> </tr> <tr> <td>Other long term</td> <td>1,261,000</td> </tr> <tr> <td>Total</td> <td>5,253,000</td> </tr> </tbody> </table> | Wages | 1,044,000 | Bonus | 2,948,000 | Total short term | 3,992,000 | Other long term | 1,261,000 | Total | 5,253,000 | <p>Michael Heinz Degree: Business Administration (MBA); 48 years old; 27 years at BASF Responsibilities: Dispersions & Pigments; Care Chemicals; Nutrition & Health; Paper Chemicals; Performance Chemicals; Advanced Materials & Systems Research; Perspectives First appointed: 2011 Term expires: 2014 Internal memberships: BASF Coatings GmbH (member of the Supervisory Board) BASF Personal Care and Nutrition GmbH (Chairman of the Supervisory Board)</p> |
| Wages | 1,044,000 | | | | | | | | | | |
| Bonus | 2,948,000 | | | | | | | | | | |
| Total short term | 3,992,000 | | | | | | | | | | |
| Other long term | 1,261,000 | | | | | | | | | | |
| Total | 5,253,000 | | | | | | | | | | |
| <p>Dr. Martin Bruder Müller Vice Chairman of the Board of Executive Directors Degree: Chemistry; 51 years old; 25 years at BASF Responsibilities: Performance Materials; Market & Business Development Asia Pacific; Regional Functions & Country Management Asia Pacific; Corporate Technology & Operational Excellence First appointed: 2006 Term expires: 2016 Comparable German and non-German controlling bodies: Styrolution Holding GmbH (Vice Chairman of the Advisory Board)</p> | <p>Dr. Andreas Kreimeyer Degree: Biology; 57 years old; 27 years at BASF Responsibilities: Crop Protection; Coatings; Biological & Effect Systems Research; Plant Science; BASF New Business; Region South America First appointed: 2003 Term expires: 2015 Internal memberships as defined in Section 100 (2) of the German Stock Corporation Act: Stock Corporation Act: BASF Coatings GmbH (Chairman of the Supervisory Board since April 28, 2012) Wintershall Holding GmbH (member of the Supervisory Board until April 27, 2012)</p> | | | | | | | | | | |
| <p>Dr. Harald Schwager Degree: Chemistry; 52 years old; 25 years at BASF Responsibilities: Oil & Gas; Construction Chemicals; Procurement; Region Europe First appointed: 2008 Term expires: 2016 Internal memberships as defined in Section 100 (2) of the German Stock Corporation Act: Wintershall Holding GmbH (Chairman of the Supervisory Board) Wintershall AG (Chairman of the Supervisory Board) Comparable German and non-German controlling bodies: Nord Stream AG (member of the Shareholders' Committee) South Stream Transport Services AG (until December 5, 2012: South Stream Transport AG) (member of the Administrative Council since April 12, 2012) South Stream Transport B.V. (member of the Board of Directors since November 14, 2012)</p> | <p>Dr. Hans-Ulrich Engel Degree: Law; 53 years old; 24 years at BASF Responsibilities: Finance; Catalysts; Corporate Controlling; Corporate Audit; Information Services & Supply Chain Management; Market & Business Development North America; Regional Functions North America First appointed: 2008 Term expires: 2016 Internal memberships as defined in Section 100 (2) of the German Stock Corporation Act: BASF Personal Care and Nutrition GmbH (member of the Supervisory Board)</p> | | | | | | | | | | |
| <p>Margret Suckale Degrees: Law, Business Administration (MBA); 56 years old; 4 years at BASF Responsibilities: Human Resources; Engineering & Maintenance; Environment, Health & Safety; Verbund Site Management Europe</p> | <p>Wayne T. Smith (since April 27, 2012) Degrees: Chemical Engineering, Business Administration (MBA); 52 years old; 9 years at BASF Responsibilities: Petrochemicals; Monomers; Intermediates;</p> | | | | | | | | | | |

| | |
|--|--|
| First appointed: 2011 Term expires: 2014 Comparable German and non-German controlling bodies: BASF Antwerpen N.V. (Chairwoman of the Administrative Council) | Process Research & Chemical Engineering First appointed: 2012 Term expires: 2015 |
|--|--|

Supervision of company management by the Supervisory Board

The Supervisory Board appoints the members of the Board of Executive Directors and supervises and advises the Board on management issues. Members of the Supervisory Board cannot simultaneously be members of the Board of Executive Directors. Structurally, this ensures a high level of autonomy with regard to the supervision of the Board of Executive Directors. Together with the SE Council Regulation, the relevant statutory foundations for the size and composition of the Supervisory Board are the Statutes of BASF SE and the Agreement Concerning the Involvement of Employees in BASF SE (Employee Participation Agreement).

The Supervisory Board of BASF SE comprises twelve members. Six members are elected by the shareholders at the Shareholders' Meeting. The remaining six members are elected by the BASF Europa Betriebsrat (European works council), the European employee representation body of the BASF Group, as agreed to in the Employee Participation Agreement.

On October 21, 2010, the Supervisory Board agreed upon objectives for the composition of the Supervisory Board in accordance with Section 5.4.1 of the German Corporate Governance Code: the Board of Executive Directors and the Supervisory Board, are appropriately filled according to the following criteria: professional and personal qualifications (the members as a group possess knowledge, ability and expert experience), the diversity of the members (the Supervisory Board shall consider a variety of professional and international experience as well as the participation of women; at least two women shall belong to the Supervisory Board) and the independence of the Supervisory Board (they have don't have conflict of interest)

BASF SE's Supervisory Board has established a total of three Supervisory Board Committees: the Personnel Committee, the Audit Committee and the Nomination Committee. Each of them carries out a particular function in relation with finance, relationships with the Board of Executive Directors, advice and so on.

Shareholders' rights

Shareholders exercise their rights of co-administration and supervision at the Shareholders' Meeting. The Shareholders' Meeting elects half of the members of the Supervisory Board and, in particular, decides on the formal discharge of the Board of Executive Directors and the Supervisory Board, the distribution of profits, capital measures, the authorization of share buybacks, changes to the Statutes and the selection of the auditor. Each BASF SE share represents one vote. There is no limit to the number of shares that can be registered to one shareholder. Listed shareholders may exercise their voting rights at the Shareholders' Meeting either personally, through a representative of their choice or through a company-appointed proxy authorized by the shareholders to vote according to their instructions.

Share ownership by Members of the Board of Executive Directors and the Supervisory Board

No member of the Board of Executive Directors or the Supervisory Board owns shares in BASF SE and related options or other derivatives that account for 1% or more of the share capital. Furthermore, the total volume of BASF SE shares and related financial instruments held by members of the Board of Executive Directors and the Supervisory Board accounts for less than 1% of the shares issued by the company.

Supervisory Board of BASF SE

| | |
|--|--|
| <p>Dr. h.c. Eggert Voscherau, Wachenheim, Germany Chairman of the Supervisory Board of BASF SE Former Vice Chairman of the Board of Executive Directors of BASF SE Supervisory Board memberships (excluding internal memberships): Hochtief AG (member of the Supervisory Board until June 30, 2012) Comparable German and non-German controlling bodies: Zentrum für Europäische Wirtschaftsforschung GmbH (Centre for European Economic Research) (ZEW) (Vice Chairman of the Supervisory Board)</p> | <p>Max Dietrich Kley, Heidelberg, Germany Lawyer Supervisory Board memberships (excluding internal memberships): SGL Carbon SE (Chairman of the Supervisory Board) HeidelbergCement AG (member of the Supervisory Board)</p> |
| <p>Michael Diekmann, Munich, Germany Vice Chairman of the Supervisory Board of BASF SE Chairman of the Board of Management of Allianz SE Supervisory Board memberships (excluding internal memberships): Linde AG (Vice Chairman of the Supervisory Board) Siemens AG (member of the Supervisory Board) Internal memberships as defined in Section 100 (2) of the German Stock Corporation Act: Allianz Deutschland AG (member of the Supervisory Board) Allianz Asset Management AG (Chairman of the Supervisory Board) Comparable German and non-German controlling bodies: Allianz France S.A. (Vice Chairman of the Administrative Council) Allianz S.p.A. (member of the Administrative Council)</p> | <p>Anke Schäferkordt, Cologne, Germany Member of the Executive Board of Bertelsmann SE & Co. KGaA Chief Executive Officer of RTL Television GmbH Supervisory Board memberships (excluding internal memberships): Software AG (member of the Supervisory Board)</p> |
| <p>Prof. Dr. François Diederich, Zurich, Switzerland Professor at the Swiss Federal Institute of Technology, Zurich</p> | <p>Robert Oswald, Altrip, Germany Vice Chairman of the Supervisory Board of BASF SE Chairman of the Works Council of the Ludwigshafen site of BASF SE and Chairman of the Joint Works Council of the BASF Group</p> |
| <p>Franz Fehrenbach, Stuttgart, Germany Chairman of the Supervisory Board of Robert Bosch GmbH Supervisory Board memberships (excluding internal memberships): Stihl AG (member of the Supervisory Board since July 1, 2012) Comparable German and non-German controlling bodies: Robert Bosch Corporation (member of the Board of Directors)</p> | <p>Ralf-Gerd Bastian, Neuhofen, Germany Member of the Works Council of the Ludwigshafen site of BASF SE</p> <p>Wolfgang Daniel, Heidelberg, Germany Vice Chairman of the Works Council of the Ludwigshafen site of BASF SE</p> <p>Ralf Sikorski, Wiesbaden, Germany Regional manager of the Rhineland-Palatinate/Saarland branch of the Mining, Chemical and Energy Industries Union Supervisory Board memberships (excluding internal memberships): Villeroy & Boch AG (member of the Supervisory Board) Villeroy & Boch Fliesen GmbH (member of the Supervisory Board) Steag Power Saar GmbH (Vice Chairman of the Supervisory Board) Steag New Energies GmbH (Vice Chairman of the Supervisory Board) KSBG Kommunale Verwaltungsgesellschaft mbH (Vice Chairman of the Supervisory Board)</p> |

| | |
|--|---|
| Denise Schellemans, Kalmthout, Belgium Full-time trade union delegate | Michael Vassiliadis, Hannover, Germany Chairman of the Mining, Chemical and Energy Industries Union Supervisory Board memberships (excluding internal memberships): K+S Aktiengesellschaft (Vice Chairman of the Supervisory Board) Henkel AG & Co. KGaA (member of the Supervisory Board) Steag GmbH (Vice Chairman of the Supervisory Board) Evonik Industries AG (Vice Chairman of the Supervisory Board since September 1, 2012) |
|--|---|

Relationships Members/BASF/Other companies

Many of these members represent companies that own BASF in an important percentage or companies which work in common projects with BASF. Other ones are Chairmen of BASF subsidiaries.

Some examples of that situation are these ones:

Michael Vassiliadis: member of BASF's supervisory board and member of Henkel AG's supervisory board. These two companies work very close as the chemical one is an important supplier of Henkel.

Michael Diekmann: member of BASF's supervisory board and integrated in Allianz organizational structure. Allianz is one of the major shareholders of BASF.

Max Dietrich Kley: member of BASF's supervisory board and chairman of SGL Carbon SE 's supervisory board. This company is a subsidiary of BASF.

INVESTMENTS & ACQUISITIONS

BASF received €106 million worth of tangible fixed assets in 2012 by way of acquisitions. Additions to intangible assets including goodwill amounted to €1,073 million.

Investments and acquisitions 2012 (million €)

| | Investments | Acquisitions | Total |
|-------------------------------|--------------|--------------|--------------|
| Intangible assets | 109 | 1,073 | 1,182 |
| Thereof goodwill | - | 586 | 586 |
| Property, plant and equipment | 4,109 | 106 | 4,215 |
| Total | 4,218 | 1,179 | 5,397 |

The largest individual acquisition in the reporting period was of Becker Underwood. The company is one of the leading global providers of technologies for biological seed treatment and seed treatment colours and polymers, as well as products in the areas of biological crop protection, turf and horticulture, animal nutrition and landscape design. With this transaction, BASF has considerably strengthened their position on the market, particularly in the area of seed treatment. Through this acquisition, they will further expand their strategic partnerships with seed companies, also benefiting from the technological competence of BASF Plant Science. They work together with various divisions within BASF to develop solutions that go beyond conventional crop protection measures, helping farmers to secure and increase their yields.

BASF has also strengthened their business in the strategic growth field Batteries for Mobility by means of several acquisitions. They acquired Sion Power, the market leader in lithium-sulfur battery development, in December 2011, and afterwards, they acquired the Ovonic Battery Company, which is a license provider for

nickel metal hydride (NiMH) battery technologies, in February 2012. The purchase of Ovonic provides BASF with a leadership position in NiMH battery technology.

BASF also expanded their business with electrolyte formulations for lithium-ion batteries with the acquisition of the American firm Novolyte Technologies. This transaction included the development, production and marketing of high-performance electrolyte formulations with production sites in the United States and in China. Moreover, BASF also acquired Merck's electrolyte activities. This acquisition included a complete line of finished electrolyte formulations as well as a variety of additives for electrolytes used in producing lithium-ion batteries. Merck's research portfolio for novel electrolytes and additives is also part of the acquisition.

In total, BASF spent around €230 million on acquisitions in the area of Batteries to Mobility in 2012.

BASF also wanted to take part in the highly concentrated Omega-3 fatty acids, which is a growing market that increases consumer awareness of their positive health effects. Regarding to that, the company acquired both the British firm Equateq Ltd and the Norwegian firm Pronova BioPharma ASA.

BASF wanted to increase their production presence in such an important emerging market as Brazil with the acquisition of the Mazzaferro's Group's polyamide. This transaction included production facilities as well as compounds for engineering plastics, which enables BASF to supply their South American customers with locally manufactured products faster and more flexibly.

In the year 2011, BASF spend 149 million in acquisitions. The company acquired Inge Water Technologies AG and Inge GmbH, a specialist for ultrafiltration technology, which gave BASF access to the technology and market for ultrafiltration, a method of treating drinking water, process water, wastewater and seawater using special membranes.

Together with the Chinese company Ji Ning Hock Mining & Engineering Equipment Company Limited, BASF founded BASF Hock Mining Chemical Company Limited, which acts in the area of chemical injection and cavity filling products for coal mining and other underground applications.

Additionally, on November 2011, BASF completed its acquisition of 50% of Zandvliet Power N.V., which is a jointly controlled entity with the Belgian company Electrabel and runs the gas and steam turbine power plant at the BASF site in Antwerp, Belgium.

Looking a little earlier, the most important acquisitions of 2009 and 2010 were Ciba businesses and Cognis, respectively. With the acquisition of Cognis (December 9, 2010), BASF was able to expand its portfolio and expand the range of products based on renewable raw materials in the fields of cosmetic industry, human nutrition, detergents, etc. All these specialty chemicals were integrated in performance products segment.

The same year BASF established a Joint Venture with INEOS, owing each one the 50% of the new company, Styrolution. With this alliance, the company was introduced in the field of styrenic materials.

The previous year, on April 9, 2009, BASF took control of Ciba Holding AG. Almost all of the Ciba businesses were integrated into the Performance Products segment. To prepare for the realization of the integration, some reorganizations were carried out, creating new divisions. With this acquisition, BASF increased its presence in the markets of paper chemicals, binders and kaolin minerals, plastic additives, water treatment chemicals and care chemicals among others. It is expected that with this strategic movement, 350 million of Euros are saved annually.

CONCLUSIONS

BASF is one of the most important chemical companies in the world with more than 100.000 employees and almost 400 sites worldwide. Despite being one of the biggest companies in the world, they claim to not putting business ahead of everything: they affirm caring about environmental issues. More, their slogan is “We don’t just make chemicals; we create chemistry for a sustainable future”.

The company operates in a high variety of industries, very different between them. They divide their activities in five segments: chemical products and plastics, performance products, functional materials and solutions, agricultural solutions, and oil and gas. As a multinational company, BASF operates in all over the world, which means that they sell, but also produce in the five continents. Their main market, however, is still the European, especially the national one in Germany. It’s remarkable that they are exploiting the boom of the emerging markets to increase considerably their activities there. Their biggest plant is also located in Germany. One important fact is that one of their most important plants in the world is located in Tarragona.

Apart of operating in the mentioned industries, BASF is involved in several social projects, especially in the poorest regions worldwide. The majority of them are focused on the access to education. Besides, although they are a private and independent company, BASF takes an active part in having constructive dialogue with politicians, business associations and labour unions around the whole world, in order to maintain the best relationships as possible.

We can affirm that BASF has suppliers all over the world, even though is remarkable that they make supplier audits in order to check out if the company does respect the entire environmental, social and working issues that BASF has.

Regarding the relationship with their own employees, BASF tries to follow a “Best Team Strategy”, which means that they always want to have the most competitive workers. The company also has a mentality inspired to the future, forming their employees to adapt them to the continuous changes of the environment, and also incorporating plenty of apprentices and vocational trainees from several study fields, not only chemic students.

BASF, as a worldwide company, has their shareholders spread all around the world, but they are above all in Germany and USA. The objective of the firm is to share with their shareholders the bullish behavior in last times in stock markets. Major shareholders like BlackRock, Allianz, Government of Norway or some banks appear in a large number of important companies, and BASF couldn’t be an exception. They control the firm as they have members in the Supervisory Board and the Board of Executive Directors.

Internally, the company is managed by the Board of Executive Directors, which is composed by 8 members who have to inform of certain measures to the Supervisory Board. This governance body is formed by 12 members, 6 named by the shareholders and 6 representing the employees. That means that theoretically the employees and minor shareholders should have some power; however, actually they will hardly have influence in the corporation governance.

The BASF group is integrated by 309 companies, commanded by BASF SE which is on the top of the organizational structure. This company has subsidiaries above all by global integration, but also has Joint Ventures and other subsidiaries by Equity Method.

The corporation has grown much in the last years. One of the reasons of that growth has been its multiple acquisitions done recently. They have allowed the company to increase their presence in the industries they

were exploiting before, to enter new industries and also to increase their participation in some emerging markets. Using these strategies means that, although it is one of the most important chemical companies in the world, BASF still has much growth potential.



RISK AND FINANCIAL ANALYSIS

Jaume Bargalló Alemany

Daniel Miravet Campos

Albert Torra Nonell

EUS Group

Financial statements analysis

INDEX OF RISK ANALYSIS

- Introduction30
- Overall assessment30
- Risk management process30
- General opportunities and risks32
- Financial risks34
- Ratio analysis of risk38
- Stock Market evaluation42
- Analysis of net income variation and dividend payout45
- Conclusions47

Introduction

Risk Management is a key factor to identify threats as early as possible to take appropriate measures and limit business losses. Understand risk to as any event that can negatively impact the goals of the company.

Risk is affected by many factors: financial, environmental, demand, global economy, prices of raw materials, etc and this report tries to break down all of them analyze the risk of the company we are talking about.

To carry out this analysis, we will use some indicators such as volatility analysis, different ratios, change indicators, charts and so on and finally we will extract the more important conclusions trying to reflect if BASF is a corporation with a high or low risk and if they are capable to manage it or not.

Overall assessment

The global economy is expected to continue to grow in the next two years. However, the sovereign debt crises in Europe and the United States as well as possibly decelerating economic growth in China all pose considerable risks. A new global economic crisis could result if market uncertainty continues or demand is impaired more strongly than anticipated by extensive fiscal austerity measures. Important opportunities and risks for the company earnings are also associated with uncertainty regarding the development of key customer industries and raw material prices, as well as volatility in foreign currency exchange rates and margins.

At first sight, there are not individual risks that pose a threat to the continued existence of the BASF Group. The same applies to the sum of individual risks, even in the case of another global economic crisis.

Risk management process

The BASF Group's risk management process is based on the international risk management standard COSO II Enterprise Risk Management – Integrated Framework.

The Risk management process is an integrated process with standardized tools for identifying, assessing and reporting opportunities and risks. It is decentralized management of specific risks aggregated at Group level. It has regular reporting on operational and strategic opportunity/risk exposure

The process has the following key features:

Organization and responsibilities

–Risk management is the responsibility of the Board of Executive Directors, which also determines the processes for approving investments, acquisitions and divestitures.

–The Board of Executive Directors is supported by the corporate divisions Finance, Strategic Planning & Controlling and Legal, Taxes & Insurance, as well as the Corporate Controlling unit and the Chief Compliance Officer. They coordinate the risk management process at Group level and provide the structure and appropriate methodology. Opportunity and risk management is thus integrated in the strategy, planning and budgeting processes.

–A network of risk managers in the business and central units advances the implementation of appropriate risk management practices in daily operations.

–The management of specific opportunities and risks is largely delegated to the business units and is steered at a local level. Risks relating to exchange rates and raw material prices are an exception. In this case, there is an initial consolidation at a Group-wide level before derivative hedging instruments, for example, are used.

–The internal auditing unit is responsible for regularly auditing the risk management system to be established by the Board of Executive Directors in accordance with Section 91 (2) of the German Stock Corporation Act. Furthermore, as part of its monitoring of the Board of Executive Directors, the Supervisory Board considers the effectiveness of the risk management system. An external auditor evaluates the establishment and suitability of an early detection system for risks.

Short and long-term effects on earnings of key opportunity and risk factors

| Possible variations related to: | Operative planning – 2013 + | Strategic goals – 2020 + |
|---|--------------------------------|-----------------------------|
| Business environment and sector | | |
| Demand | | |
| Raw material prices | | |
| Product prices | | |
| Regulation/policy | | |
| Company-specific opportunities and risks | | |
| Purchasing/supply chain | | |
| Investments/production | | |
| Research & development | | |
| Personnel | | |
| Acquisitions/cooperations | | |
| Information technology | | |
| Law | | |
| Finance | | |
| Exchange rate volatility | | |
| Other financial opportunities and risks | | |

In this table are shown some key factors and the influence they could have in the company earnings if they fluctuate. As we can observe, the factors that would have a greater impact are the demand, product prices and the exchange rate volatility.

Instruments

The Risk Management Process Manual, applicable throughout the Group, forms the framework for risk management and is adapted by the business units to suit their particular business conditions. A catalog of risk categories helps to identify all relevant risks as comprehensively as possible.

Standardized evaluation and reporting tools are available for the identification and evaluation of risks. The aggregation of opportunities, risks and sensitivities at the division and Group level using a Monte Carlo simulation helps the company to identify effects and trends across the organization.

Company management is informed about operational risks (observation period of up to one year) in the monthly management report produced by the Corporate Controlling unit. In addition, the corporate divisions Strategic Planning & Controlling and Finance provide information twice a year about the aggregated opportunity/risk exposure of the BASF Group. Furthermore, if a new individual risk is identified which bears reputational risks or has a more than €10 million impact on earnings, it must be immediately reported.

As part of the strategy development, the Strategic Planning unit conducts strategic opportunity/risk analyses with a ten year assessment period. These analyses are annually reviewed during the course of the strategic controlling and are adapted if necessary.

General opportunities and risks

Demand fluctuation due to volatility in market growth

The development of BASF's sales markets is one of the strongest drivers of opportunities and risks. In accordance with this baseline scenario, the company is planning to achieve volume growth in chemicals business in nearly all segments. Considering some scenarios, the company includes, for example, an intensification of the sovereign debt crises in Europe and the United States, which would dampen private demand and limit the ability of businesses to get refinancing. There could also be strong negative effects on consumer and industrial demand from extensive fiscal austerity measures in the form of tax increases and cuts to government spending. In these risk scenarios, a demand-driven decline in oil prices can be expected; the dollar/euro exchange rate would remain at a similar level to that in the baseline scenario as both the United States and Europe are exposed to similar debt-related risks.

Gas consumption can fluctuate due to colder or warmer winter weather, which has positive or negative effects on the performance of our gas trading business. Similarly, growing seasons that are wet and warm, or dry and cold, have positive or negative effects on the crop protection business.

Margin volatility due to fluctuating raw material prices and/or product oversupply/shortage Basf anticipates stable margins in 2013. For some products and value chains, however, there is likely to be pressure on margins, which would have a negative effect on the company earnings.

The average oil price (Brent crude) in 2012 was around \$11 per barrel, slightly higher than in the previous year. For 2013, they anticipate an average oil price of \$110 per barrel. They therefore expect the price level of the raw materials and petrochemical basic products that are important to our business to remain high. If there were a considerable decline in demand, this could lead to significant narrowing of company margins and the need to write down inventories. The influence of the oil price is reduced through the contribution of the Oil & Gas business. Earnings in this business rise by around €30 million for every \$1 increase in the average annual barrel price of Brent crude.

Regulation and political risks

Due to the European chemicals regulation REACH, which came into force in 2007, BASF and its European customers face the risk of being placed at a disadvantage to their non-European competitors due to the cost-intensive test and registration procedures.

Other risks for BASF include further regulation, for example, for the use of chemicals as well as the intensification of geopolitical tensions, the destabilization of political systems and the imposition of trade barriers (for example, Chinese restrictions on exports of rare earths or OPEC quotas for oil production).

Delivery bottlenecks resulting from interruptions in production or the supply chain and raw material shortages: BASF tries to prevent unscheduled plant shutdowns by adhering to high technical standards and continuously improving its plants. They limit the effects of unscheduled shutdowns through diversification within their global production Verbund.

The company minimizes procurement risks through its broad portfolio, its global purchasing activities and the purchase of additional quantities of raw materials on spot markets. If possible, they avoid procuring raw materials from a single supplier. They continuously monitor the credit risk of important business partners, both customers as well as suppliers.

Information technology risks

BASF relies on a number of IT systems in order to carry out its day-to-day operations. The non availability of critical IT systems and applications can have a direct impact on production and logistic processes. If data are lost or manipulated, this can negatively affect process safety and the accuracy of our financial reporting. Unauthorized access to sensitive data, such as personnel records, competition-related information or research results, can result in legal consequences or jeopardize the competitive advantage. To minimize such risks, BASF has implemented measures such as stable and redundantly designed IT systems, backup processes, virus and access protection and encryption systems as well as integrated, Group-wide standardized IT infrastructure and applications. The systems used for information security are continuously tested and updated. In addition, employees receive regular training on information and data protection. IT-related risk management is conducted using Group-wide regulations for organization and application, as well as an internal control system based on these regulations.

Economic environment in 2013

The current economic environment, as is known for all, is bad and it's full of uncertainty, which involves a high risk for the majority of the companies of the world.

BASF expects that, despite the crisis, the global economy is going to grow around a 2.4% this year. This growth, though, won't be the same around the world. Thus, they expect that the austerity measures in the European Union, where they have their main market, will cause a less growth than in other areas.

Outlook for gross domestic product 2013
(Real change compared with previous year)

| | | |
|--------------------|------|--|
| World | 2.4% | |
| European Union | 0.3% | |
| United States | 1.8% | |
| Asia (excl. Japan) | 6.5% | |
| Japan | 1.0% | |
| South America | 3.7% | |

Other areas, like United States, South America or, above all, Asia, will have a much higher growth.

Regarding the chemical industry, BASF expects that the situation will be better than the one there were in 2012, when it only grew a 0.9%. Thus, the expect growth of the industry is going to be a 3.4%. However, this growth, again, will be unequal around the world. While Europe will experiment a slight growth, United States, South America (above all Brazil) and Asia will grow faster due to stimulus primarily from construction, automotive, electronics and consumer goods industries.

Outlook chemical production 2013 (excl. pharmaceuticals)
(Real change compared with previous year)

| | | |
|--------------------|--------|--|
| World | 3.6% | |
| European Union | 0.3% | |
| United States | 1.9% | |
| Asia (excl. Japan) | 8.1% | |
| Japan | (0.6%) | |
| South America | 3.7% | |

Litigation and claims

In order to assess the risks from current legal disputes and proceedings and any potential need to recognize provisions, BASF prepares an own analysis and assessment of the circumstances and claims considered. In addition, in individual cases, they consider the results of comparable proceedings and independent legal opinions. Furthermore, they make assumptions regarding the probability of claims being successful and their potential financial impact. The actual costs can deviate from these estimates. They use an internal control system to limit risks from potential wrongdoing or legal infringements.

In last times, the corporation has been involved in some cases that have implied losses. An example is the case that BASF SE and BASF Corporation were accused of violating antitrust laws on price fixing of polyurethane sales. This proceeding concluded in 2012 with a settlement of more than 100 million.

Currently, BASF has open trial processes that could make lose money and reputation to the company. For example, BASF S.A., Brazil, and Shell are defendants in several individual lawsuits and one class action lawsuit regarding existing and potential health damage to former employees and contractors' employees, their families and descendants due to their employment at a site in Paulinia, Brazil, which was significantly contaminated by the production of crop protection products.

In addition, BASF SE and its affiliated companies are defendants in or parties to further judicial, arbitrational and regulatory proceedings. Based on the current state of knowledge, these proceedings will have no material influence on the economic situation of BASF.

Financial risks

Market Risk

Foreign currency risks: Changes in exchange rates could lead to negative changes in the value of financial instruments and adverse changes in future cash flows from planned transactions. Foreign currency risks from financial instruments result from the translation at the closing rate of financial receivables, loans, securities, cash and financial liabilities into the functional currency of the respective Group Company. **Foreign currency contracts in a variety of currencies** are used to hedge foreign exchange risks from primary financial instruments and planned transactions.

The foreign currency risk exposure corresponds to the net amount of the nominal volume of the primary and the derivative financial instruments which are exposed to currency risks. In addition, planned purchase and sales transactions of the respective following year are included, if they fall under the currency risk management system. Opposite positions in the same currency are offset against each other.

Exposure and sensitivity by currency (million €)

| | Exposure 2012 | Sensitivity 2012 | Exposure 2011 | Sensitivity 2011 |
|--------------|------------------|---------------------|------------------|---------------------|
| U.S. dollar | 1,540 | (149) | 1,706 | (237) |
| Other | 308 | (50) | (132) | (11) |
| Total | 1,848 | (199) | 1,574 | (248) |

This table shows a sensitive analysis simulating a 10% depreciation in all currencies against the respective functional currency. Due to the **use of options to hedge currency risks**, the sensitivity analysis is not a linear function of the assumed changes in exchange rates.

Interest rate risks: Interest rate risks result from changes in prevailing market interest rates, which can cause a change in the fair value of fixed-rate instruments, and changes in the interest payments of variable-rate instruments. To hedge these risks, **interest rate swaps and combined interest rate and currency derivatives** are used. While these risks are relevant to the financing activities of BASF, they are not of material significance for BASF's operating activities.

The variable interest exposure, which also includes fixed rate bonds set to mature in the following year, amounted to minus €3,787 million as of December 31, 2012, compared with minus €4,070 million as of December 31, 2011. An increase in all relevant interest rates by one percentage point would have raised income before taxes and minority interests by €8 million as of December 31, 2012 and reduced income before taxes and minority interests by €10 million as of December 31, 2011.

The sensitivity of the equity of the shareholders of BASF SE to changes in interest rates is not material.

Carrying amount of non-derivative interest-bearing financial instruments (million €)

| | 2012 | |
|------------------------|------------------------|---------------------------|
| | Fixed interest rate | Variable interest rate |
| Loans | 229 | 26 |
| Securities | 52 | 6 |
| Financial indebtedness | 10,743 | 2,612 |

Nominal and fair value of interest rate and combined interest and cross currency swaps (mil

| | 2012 | |
|---|---------------|-------------|
| | Nominal value | Fair value |
| Interest rate swaps | 1,000 | (41) |
| Thereof payer swaps | 1,000 | (41) |
| receiver swaps | - | - |
| Combined interest and cross currency swaps | 797 | 94 |
| Thereof fixed rate | 797 | 94 |

Options for disposal of participations: BASF and INEOS have agreed upon options for BASF's withdrawal from the joint venture Styrolution. These options are classified as derivatives according to IAS 39. A significant

risk variable which is decisive for the valuation of both options is the value of the company. An additional negative impact on earnings of €45 million would have resulted had the value of Styrolution been 10% higher as of December

Commodity price risks: Some of BASF's divisions are exposed to strong fluctuations in raw material prices. These result primarily from the following raw materials: naphtha, propylene, benzene, lauric oils, titanium dioxide, cyclohexane, methanol, natural gas, butadiene, LPG condensate, ammonia and precious metals. BASF takes the following measures to reduce price risks associated with the purchase of raw materials:

–BASF uses **commodity derivatives** to hedge the risks from the volatility of raw material prices. These are primarily **options and swaps on crude oil, oil products and natural gas**.

–In order to secure margins, the **Oil & Gas segment uses commodity derivatives, primarily swaps on oil products**, in the Natural Gas Trading business sector. Risks to margins arise in volatile markets when purchase and sales contracts are priced differently.

–The Catalysts division enters into both short-term and longterm purchase contracts with precious metal producers. It also buys precious metals on spot markets from a variety of business partners. The price risk from **precious metals** purchased to be sold on to third parties, or for use in the production of catalysts, is **hedged using derivative instruments**. This is mainly done using **forward contracts** which are settled by either entering into offsetting contracts or by delivering the precious metals.

–In the **Crop Protection** division, the sales prices of products are sometimes coupled to the price of certain agricultural commodities. To hedge the resulting risks, **derivatives on agricultural commodities** are concluded.

–Furthermore, BASF utilizes electricity derivatives on a limited scale. In addition, BASF holds limited unhedged precious metal and oil product positions, which can also include derivatives, for Trading on its own account. The value of these positions is exposed to market price volatility and is subject to constant monitoring. In connection with **CO₂ emissions trading**, various types of CO₂ certificates are purchased and sold using **forward contracts**. The goal of these transactions is to benefit from market price differences. These deals are settled by physical delivery. As of December 31, 2012, there were no deals outstanding.

By holding commodity derivatives and precious metal trading positions, BASF is exposed to price risks. The valuation of commodity derivatives and precious metal trading positions at fair value means that adverse changes in market prices could negatively affect the earnings and equity of BASF.

| | Exposure to commodity derivatives (million €) | | | |
|---|---|---------------|--------------|---------------|
| | 2012 | | 2011 | |
| | Exposure | Value at Risk | Exposure | Value at Risk |
| Crude oil, oil products and natural gas | (212) | (2) | (259) | 13 |
| Precious metals | 33 | 1 | 31 | 2 |
| CO ₂ emission certificates | – | – | 4 | 1 |
| Electricity | 24 | . | – | – |
| Agricultural commodities | (148) | . | (209) | 1 |
| | (303) | (1) | (433) | 17 |

BASF performs value-at-risk analyses for all commodity derivatives and precious metals trading positions. Using the **value-at-risk analysis**, we continually quantify market risk and forecast the maximum possible loss within a given confidence interval over a defined period. The value-at-risk calculation is based on a confidence interval of

95% and a holding period of one day. A confidence interval of 95% means that there is a 95% probability that the maximum loss does not exceed the value at risk within a one-day period. The value-at-risk calculation for precious metals is based on a confidence interval of 99%. BASF uses the variance-covariance approach.

BASF uses value at risk as a supplement to other risk management tools and also sets volume-based, exposure and stop loss limits.

Default and credit risk: Default and credit risks arise when counterparties do not fulfill their contractual obligations. BASF regularly analyzes the creditworthiness of each significant debtor and grants credit limits on the basis of this analysis. Due to the global activities and diversified customer structure of the BASF Group, there is **no significant concentration of default risk**. The carrying amount of all receivables, loans and interest-bearing securities plus the nominal value of contingent liabilities excluding potential warranty obligations represents the maximum default risk for BASF.

The most important tool that BASF uses to hedge this risk is **credit insurances**. Others are reduction of credit risks through credit checks and transaction limits, bank guarantees and so on.

Liquidity risks: BASF promptly recognizes any risks from cash flow fluctuations as part of the liquidity planning. BASF has ready access to sufficient liquid funds from their ongoing **commercial paper program** and confirmed lines of **credit from banks**.

Derivative instruments and hedge accounting

The use of derivative instruments: The Company is exposed to foreign-currency, interest-rate and commodity-price risks during the normal course of business. In addition, publicly listed financial assets are also exposed to share price risks. These risks are hedged through a centrally determined strategy employing derivative instruments. In addition, derivative instruments are used to replace primary financial instruments, such as fixed-interest securities. Hedging is only employed for underlying positions from the operating business, cash investments, financing and the net investment in a foreign operation as well as for planned sales and raw material purchases. The risks from the underlying transactions and the derivatives are constantly monitored. Where derivatives have a positive market value, the Company is exposed to credit risks in the event of nonperformance of their counterparts. To minimize the default risk on derivatives with positive market values, transactions are exclusively conducted with creditworthy banks and partners and are subject to predefined credit limits.

To ensure effective risk management, risk positions are centralized at BASF SE and certain Group companies. Contracting and execution of derivative financial instruments for hedging purposes is conducted according to internal guidelines, and is subject to strict control mechanisms.

The fair values of derivative financial instruments are calculated using valuation models which use input parameters observable on the market. Exceptions to this are some commodity derivatives, whose valuation is based directly on market prices and the options agreed upon with INEOS, whose fair values are determined based on parameters not observable on the market.

Cash flow hedge accounting: Some of the planned purchases of naphtha are hedged using swaps and options on oil and oil products. Gains and losses from hedges are included in cost of sales at the point in time at which the hedged item is recognized in the consolidated statement of income.

Cash flow hedge accounting is applied in the Natural Gas Trading business sector for swaps on crude oil concluded in order to hedge price risks from purchase contracts for natural gas. The purchase contracts have variable prices and the price formula is coupled with the oil price. This hedging is attributable to the disposal group for the natural gas trading business. Furthermore, cash flow hedge accounting is used to a minor extent for natural gas purchases.

Fair value hedge accounting: In order to hedge interest rate risks, BASF converted the 3.75% fixed-interest rate euro bond of BASF SE (nominal volume €1,350 million) into a variable-rate bond using interest rate swaps. The bond and the derivatives were designated as a fair value hedge. The bond and the hedge both matured in October 2012. In 2011, a gain of €8 million resulted from the hedging instrument. The book value of the bond was adjusted in 2011 for €8 million of interest rate-related losses. These effects were completely reversed in 2012.

Hedge of a net investment in a foreign operation: The currency translation risk from an investment in a foreign operation are hedged using foreign currency forward contracts.

Ratio Analysis of Risk

Working Capital

This ratio indicates whether a company has enough short term assets to cover its short term debt.

Working Capital = Current Assets – Current Liabilities

BASF has a positive Working Capital. In 2012, their Working Capital was 11457 million Euros, while in 2011 it had been 10611 million Euros. As the ratio is positive, we can conclude that their current assets are higher, remarkably, than their current liabilities. That means that the company is able to meet its payment obligations in the short term, so, in this regard, BASF shows a good solvency.

Liquidity Ratio

Also known as Current Ratio and Working Capital Ratio, this ratio is also used to determine a company's ability to pay off its short-term debts obligations. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover short-term debts.

Liquidity Ratio = Current Assets / Current Liabilities

BASF obtained a Liquidity Ratio of 1.66 in 2012, slightly higher than the one they had obtained one year before, in 2011, when the ratio was equal to 1.64. Acceptable current ratios vary from industry to industry and are generally between 1.5 and 3 for healthy businesses. The chemical industry also follows those parameters, having an averaged ratio of 1.8.

If a company's current ratio is in this range, then it generally indicates good short-term financial strength. If current liabilities exceed current assets, which causes a ratio below 1, then the company may have problems meeting its short-term obligations. If the current ratio is too high, then the company may not be efficiently using its current assets or its short-term financing facilities.

Acid-Test Ratio

Also known as Quick Test, this ratio is linked with the two ratios explained before. It's a stringent indicator that determines if a firm has enough short-term assets to cover its immediate liabilities without selling inventory. The acid-test ratio is far more strenuous than the working capital ratio, primarily because the working capital ratio allows for the inclusion of inventory assets.

Acid-Test Ratio: $(\text{Current Assets} - \text{Inventories}) / \text{Current Liabilities}$

BASF obtained an Acid-Test Ratio of 1.08 in 2012, which was a little higher than the one they got in 2011, which was 1.03. Companies with ratios of less than 1 cannot pay their current liabilities and should be looked at with extreme caution. Furthermore, if the acid-test ratio is much lower than the liquidity ratio, it means that current assets are highly dependent on inventory.

In the chemical industry, the averaged Acid-Test Ratio is 1.20, so in that aspect, BASF is in a less good position, although their ratio is higher than 1, which makes possible to affirm again that BASF is in a solvent financial situation in the short term.

Cash Ratio

Also linked with the previous ratios, it allows checking if a company can cover its short term liabilities only with the most available resources. It only takes into account the cash and some equivalents.

Cash Ratio: $(\text{Cash} + \text{Cash equivalents}) / \text{Current Liabilities}$

In the last two years, BASF has got such a similar Cash Ratio, with values of 0.10 in 2012 and 0.12 in 2011 respectively. There isn't a general rule about which should be the best value of this ratio. If the ratio is below 1, it means that the company hasn't got enough cash to pay its liabilities, so it has to pay their creditors using other ways.

Debt Ratio

It indicates the percentage of a company's assets that are provided via debt.

Debt Ratio = $\text{Total Liabilities} / \text{Total Assets}$

In 2012, BASF had a Debt Ratio of 0.59, almost the same than one year before, when the ratio had been 0.58. If the ratio is less than 0.5, most of the company's assets are financed through equity. If the ratio is greater than 0.5, most of the company's assets are financed through debt. Companies with high debt ratios are said to be "highly leveraged" and this situation may be dangerous. Although being higher than 0.5, the Debt Ratio of BASF is not so high to claim that the company is highly leveraged.

Return on Equity

Commonly known as ROE, it's the amount of net income returned as a percentage of shareholders equity. It measures a corporation's profitability by revealing how much profit a company generates with the money that shareholders have invested.

Return on Equity = $\text{Net Income} / \text{Equity}$

In 2012, the Return on Equity of BASF was equal to 0.19, also said a 19%. One year before it had been equal to 0.24 or 24%. Those values are quite consistent with the chemical manufacturing industry, whose companies have an average Return on Equity of around a 20%.

We can decompose the formula of ROE to:

$$\text{ROE} = \text{Net Income} / \text{Equity} = (\text{Net Income} / \text{Sales}) * (\text{Sales} / \text{Assets}) * (\text{Assets} / \text{Equity})$$

Margin Ratio

Also known as Profit Margin, it measures how much out of every monetary unit of sales a company actually keeps in earnings.

$$\text{Margin Ratio} = \text{Net Income} / \text{Sales}$$

BASF obtained a Margin Ratio of 0.06 (6%) in 2012, while one year before they had obtained a ratio of 0.08 (8%). It is a low margin, because BASF products are oriented to the whole population, so they aren't exclusive products with very high prices. In the chemical industry, the averaged Margin Ratio is a 7%.

Turnover Ratio

Also known as Asset Turnover Ratio, it's the amount of sales generated for every monetary unit's worth of assets. It measures a firm's efficiency using its assets in generating sales or revenues.

$$\text{Turnover Ratio} = \text{Sales} / \text{Assets}$$

The Turnover Ratio of BASF in 2012 was equal to 1.22, which means that for every Euro of the company's assets, BASF generated 1.22 Euros of revenues. This value was slightly higher than the one they obtained one year before, in 2011, when the ratio was equal to 1.20. Low-margin industries tend to have higher asset turnover ratios than high-margin industries because low-margin industries must offset lower per-unit profits with higher unit-sales volume.

Financial Leverage Ratio

It is a measure of how much assets a company holds relative to its equity. A high financial leverage ratio means that the company is using debt and other liabilities to finance its assets, so it's more risky than a company with lower leverage. The level of leverage depends on a lot of factors such as availability of collateral, strength of operating cash flow and tax treatments

$$\text{Financial Leverage Ratio} = \text{Assets} / \text{Equity}$$

BASF assets at the end of 2012 were equal to 64327 million Euros. Its equity was equal to 25804 million Euros, so its liabilities were equal to 38523 million Euros. That caused a Financial Leverage Ratio of 2.49, while in 2011 it had been equal to 2.40.

In the chemical industry, the averaged Financial Leverage Ratio is equal to 2.86.

We can also calculate this ratio with the following formula:

$$\text{Financial Leverage Ratio} = 1 + (\text{Liabilities} / \text{Equity})$$

Average Collection Period

It's the approximate amount of time that it takes for a company to receive payments owed, in terms of receivable, from its customers and clients.

$$\text{Average Collection Period} = (\text{Receivables}/\text{Sales}) * 365$$

BASF improved in this ratio from 2011 to 2012. Thus, while in 2011 the company had an Average Collection Period of 72 days, one year after they reduced it to 63 days.

Average Payment Period

It's the approximate amount of time that it takes for a company in making payments to its creditors. Most companies try to decrease the APP to maintain the confidence of their larger suppliers and possibly taking advantage of trade discounts.

$$\text{Average Payment Period} = (\text{Payables}/\text{Purchases}) * 365$$

The Average Payment Period of BASF in 2012 was the same than one year later, being 32 days.

Inventory Conversion Period

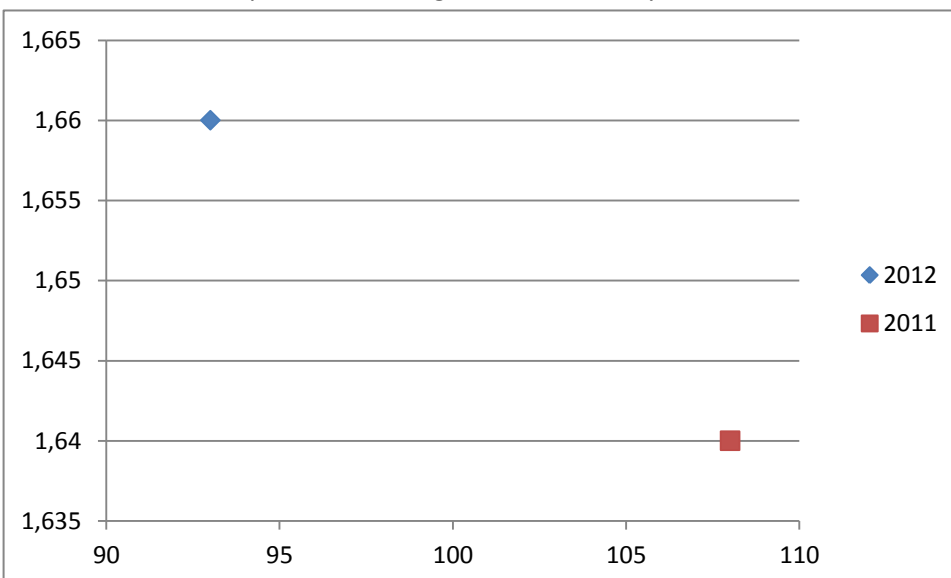
It's the time required to obtain materials for a product, manufacture it and sell it.

$$\text{Inventory Conversion Period} = (\text{Inventories}/\text{Cost of Goods Sold}) * 365$$

BASF managed to improve this ratio from 2011 to 2011. Thus, while in 2011 the company had obtained an Inventory Conversion Period of 68 days, one year after the ratio was equal to 62 days.

Cash Conversion Cycle

It's a metric that expresses the length of time, in days, that it takes for a company to convert resource inputs into cash flows.



$$\text{Cash Conversion Cycle} = \text{Inventory Conversion Period} + \text{Average Collection Period} - \text{Average Payment Period}$$

Improving in each step, BASF managed to improve in the whole cycle, decreasing the Cash Conversion Cycle from 108 days in 2011 to 93 days in 2012.

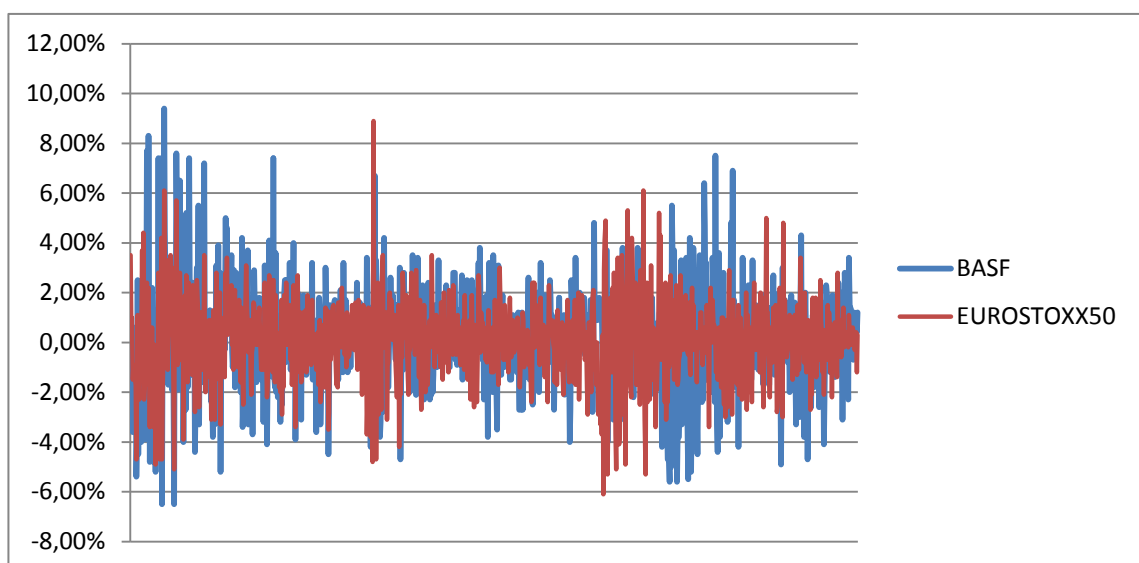
This graph links liquidity ratio with cash conversion cycle. As we can observe, year presents a shorter cash conversion cycle (X axis) but a larger liquidity ratio (Y axis). The opposite happens with the year 2011.

Stock Market evaluation

Here we can find a comparison between the BASF SE stock and the EUROSTOXX50 index. These data corresponds to the last four years.

| EUROSTOXX50 | | BASF SE | |
|--|-------------|--|-------------|
| standard deviation | 277,3756428 | standard deviation | 12,96953545 |
| Mean | 2.601 | mean | 51,41 |
| Variance | 76937,24722 | variance | 168,2088498 |
| variance coefficient | 0,106626755 | variance coefficient | 0,252276511 |
| Rank | 1258 | rank | 52,38 |
| var. Day | 0,019% | var. Day | 0,103% |
| Total variation | 19,60% | Total variation | 114,30% |
| Std dev for negative values of daily return | 0,012842 | Std dev for negative values of daily return | 0,010788 |

As we can see in these data, BASF's quotation in the past 4 years presents a higher deviation than the EUROSTOXX 50. However, it has a higher variance coefficient so it is more volatile than this index. Besides, its value has increased much more than Eurostoxx 50 and so its daily variation: a 0,103% in front of a 0,019%. The standard deviation for negative values of daily return is an important value as it shows that in Eurostoxx 50 the negative values have more importance than in BASF SE.



This graph corresponds to the comparison of the daily variations. As we have mentioned, BASF's stock has higher daily variations in general terms, with more extreme values (+/- 6%) than the EUROSTOXX 50.

Sharpe Ratio

This ratio is an important measure of asset performance. It measures how well the return of an asset compensates the investor for the risk taken. So the higher the Sharpe ratio the better.

When comparing two assets each with the same return, higher Sharpe ratio gives more return for the same risk.

$$Sh = \frac{E(R-R_f)}{\sigma} = k * \frac{\text{daily return}}{\text{std dev (daily return)}} \quad \text{where } k \text{ is } \sqrt{250} \text{ for daily returns}$$

So carrying out the corresponding calculus, we obtain the following values:

Sharpe ratio for BASF SE: 0,834606551

Sharpe ratio for EUROSTOXX 50: 0,163727273

With these results we can conclude that, regarding to this ratio, BASF SE is a better investment because with the same risk the investor gets more returns.

Sortino Ratio

This ratio differentiates between good and bad volatility in the Sharpe ratio. This differentiation of upwards and downwards volatility allows the calculation to provide a risk-adjusted measure of a security or fund's performance without penalizing it for upward price changes.

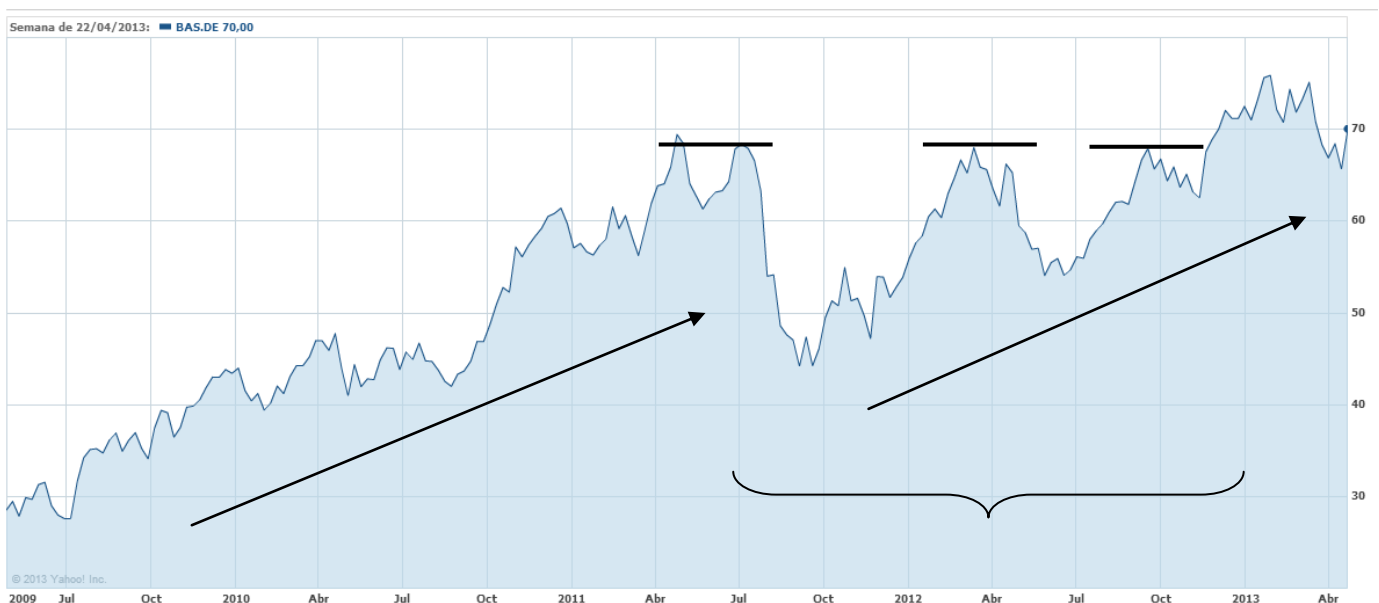
The formula of this ratio is the same as the Sharpe ratio but taking into account the negative variations when calculating the standard deviation of daily returns.

Sortino ratio for BASF SE: 1,277003

Sortino ratio for EUROSTOXX 50: 0,243362

So again, BASF SE presents a better value in a ratio than EUROSTOXX 50.

Chart analysis



As we can see in the previous graph, the stock price has followed a bullish trend over the 4 years in general terms.

However, from abril 2011 to october 2012 the movement was more lateral, with a resistance at around 68 points.

Finally in october 2012 these resistance was beaten and the stock price kept increasing.

Nevertheless, since the last months of the past year, the stock seems to be following a lateral behavior again.



In the graph below we can appreciate some interesting things:

- Although having bought at first moment would have been a good decision (the price has increased), the indicators weren't clear enough to execute the buying order
- In the moment of the first circle (February 2009) the SMA lines cross and could indicate a good moment to purchase BASF shares. Besides, for a year and a half the three lines keep so separate (MACD).
- In the second circle (October 2010): the lines seems to indicate a selling moment, but, on the contrary, it was a good moment to buy as the price increased a lot.
- In the third circle (July 2011): the lines show clearly a selling moment, and effectively, since that moment the price fell quite. The MACD reinforces this statement with the separation of the lines in SMA.
- The fourth and fifth circles aren't clear enough to execute orders

Beta Coefficient

The **Beta** (β) of a [stock](#) or [portfolio](#) is a number describing the [correlated volatility](#) of an asset in relation to the volatility of the benchmark that said asset is being compared to. This benchmark is generally the overall financial market and is often estimated via the use of representative indices, in this case the EUROSTOXX 50. Some interpretations of beta are explained in the following table.

| Value of Beta | Interpretation |
|-----------------|---|
| $\beta < 0$ | Asset generally moves in the opposite direction as compared to the index |
| $\beta = 0$ | Movement of the asset is uncorrelated with the movement of the benchmark |
| $0 < \beta < 1$ | Movement of the asset is generally in the same direction as, but less than the movement of the benchmark |
| $\beta = 1$ | Movement of the asset is generally in the same direction as, and about the same amount as the movement of the benchmark |
| $\beta > 1$ | Movement of the asset is generally in the same direction as, but more than the movement of the benchmark |

So when we calculate the Beta of BASF SE respect the EUROSTOXX 50 we get a value of **0,006234745**. This means that the stock of BASF SE follows the same behavior than EUROSTOXX but the movement/correlated volatility is quite different.

Dow Jones Sustainability Index

BASF share was included in DJSI World for twelfth consecutive year in 2012. The company received particular recognition for its commitment in the areas of climate strategy and risk and crisis management, as well as human capital development.

The Dow Jones Sustainability World Index (DJSI World) is a worldwide sustainability index which lists the top 10% of the 2,500 largest companies that appear in the Dow Jones Global Index in terms of economic, ecological and social criteria.

Analysis of Net Income Variation and Dividend payout

Dividend analysis

| Year | Dividend (M of €) | Dividend per share | Year-end share price | Dividend yield (%) |
|------|-------------------|--------------------|----------------------|--------------------|
| 2012 | 2,388 | 2.60 | 71.15 | 3.7 |
| 2011 | 2,296 | 2.50 | 53.89 | 4.6 |
| 2010 | 2,021 | 2.20 | 59.70 | 3.7 |
| 2009 | 1,561 | 1.70 | 43.46 | 3.9 |
| 2008 | 1,791 | 1.95 | 27.73 | 7.0 |
| 2007 | 1,831 | 1.95 | 50.71 | 3.8 |
| 2006 | 1,484 | 1.50 | 36.93 | 4.1 |

| | | | | |
|------|-------|------|-------|-----|
| 2005 | 1,015 | 1.00 | 32.36 | 3.1 |
| 2004 | 904 | 0.85 | 26.50 | 3.2 |
| 2003 | 774 | 0.70 | 22.29 | 3.1 |

As we can see in these data, the dividend per share has always increased in the last 10 years or at least has remained constant. Moreover, the dividend yield has never been lower than 3% and with the financial crisis not only hasn't decreased but has achieved good values. That has been possible thanks to the increase in the dividend per share at the same time that increased the share price.

For all this we can say that BASF SE shares have been a stable investment with a no small yield. So, despite having high volatility in some years (7% in 2008), it has been always in positive values; hardly ever has taking place a very high fell in yield or dividend values.

Net Income Variation

| year | value in € | variation |
|------|---------------|-----------|
| 2002 | 1.598.700.000 | |
| 2003 | 977.000.000 | -38,89% |
| 2004 | 2.133.000.000 | 118,32% |
| 2005 | 3.168.000.000 | 48,52% |
| 2006 | 3.466.000.000 | 9,41% |
| 2007 | 4.326.000.000 | 24,81% |
| 2008 | 3.305.000.000 | -23,60% |
| 2009 | 1.655.000.000 | -49,92% |
| 2010 | 5.074.000.000 | 206,59% |
| 2011 | 6.603.000.000 | 30,13% |
| 2012 | 4.879.000.000 | -26,11% |

standard
 deviation 1,73E+09
 mean 3,31E+09
 variance 2,99E+18
 variance
 coefficient 0,523505

Although in general terms the net income has increased, it presents important variations through years. For example in 2009 it fell so much. However, in 2010 it recovered and reached top values until the moment.

So we can consider the Net Income to be pretty volatile as it is not quite constant and it increases and drops a lot each year.

Conclusions about Basf risk

In a way of summary, we can say that the risk Management is a responsibility of the board of executive directors and that it is a very centralized and standardized process.

Concrete risks and opportunities the company faces are delegated to business units and steered by local units, with the only exception of the exchange rates and raw material prices, which are managed in a more global way by the company.

One habit of the company is that the risk managers get a monthly inform of the current risks of the firm (if Risk suppose more than 10M€ losses, they don't wait until the end of the month and the managers are informed immediately)

Among other general risks of BASF we can talk about pretty logical facts, like:

- Demand fluctuation
- Margin volatility due to variation in raw materials prices
- Regulation and political risks
- Technology
- Litigations and claims

Furthermore, the company has to take into account also financial risks, such as foreign currency risks, given that they produce and sell all over the world, interest rate risks, commodity price risks, default, credit and liquidity risks... Each of these issues are taken very seriously by BASF, and that is why the firm takes care of getting sufficient and appropriate financial instruments in order to hedge possible losses in each case. The most used ones are options and contracts for the currency risks, swaps, combined interest rates, currency derivatives, forward contracts, credit lines, etc.

Regarding the stock market, the most essential facts to underline are that BASF is more volatile than EUROSTOXX 50; it also has better Sharpe and Sortino Ratio, which are some indicators of how well the return of an asset compensates the investor for the risk taken, and that it has an increasing trend in chart analysis combined with lateral movements.

Besides, talking about the dividends and the net income of the company, we can affirm that the firm has had a good behavior of dividend payout and a high variance and volatility of net income through years.

Making an analysis of some important ratios of risk, we could split them into two parts: effects on the short term and long term:

Short-term

For the short term, we analyse ratios like the working capital, liquidity ratio, acid-test, cash ratio, average payment period, etc.

In each of them, the result obtained reflects a pretty good situation of the company regarding the standards of the whole industry, which means that the risks are more or less "under control" and that the company is in a good financial situation.

Long-term

For the long term, we analyse other ratios, such as Debt Ratio, Return on Equity, Financial Leverage Ratio, and many others.

Once again, looking at the results, most of them are favourable for BASF, they show a stable situation for the firm we are analysing, so the conclusion we can spread out of all these calculations is that even though some of the ratios are not 100% trustable and reliable, the current level of risk of BASF is not very high.

INDEX OF FINANCIAL ANALYSIS

- Introduction49
- Return on Equity49
- Return on Assets53
- Sensibility to Debt56
- ROA vs. CASH CYCLE vs. CA/CL.....57
- Growth Rate 57
- Value added 58
- Consolidated accounts vs. individual accounts.....60
- Demand seasonality 60
- Conclusions62

INTRODUCTION

Once we have already made a qualitative description of the chemical company BASF and after analyzing the general and financial risk level the firm faces, as well as how they manage to deal and litigate with it, now it is time to talk in a more exhaustive and detailed way about the financial and economic situation of the German firm.

Thanks to all the information resources we have used, such as BASF Annual Reports, Amadeus, Sabi, etc. and all the financial metrics and ratios we have learned during this course, in this final paper we will try to respond questions like: How does the firm mainly get profits, through margin or through turnover? How has the firm evolved during the last years? How is its financing structure? Is it positive or negative for BASF to be indebted? Why?

To provide answers it is important to consider many data, but it is even more important to be able to analyze them properly and to extract meaningful conclusions. In order to do it, we will be continuously comparing plenty of the analyzed parameters between them.

This final report is a very vast and extensive analysis of the financial situation of BASF and we think that any investor will find a lot of useful information in it.

RETURN ON EQUITY

Commonly known as ROE, it's the amount of net income returned as a percentage of shareholders equity. It measures a corporation's profitability by revealing how much profit a company generates with the money that shareholders have invested. ROE is equal to a fiscal year's net income (after preferred stock dividends but before common stock dividends) divided by total equity (excluding preferred shares), expressed as a percentage. As with many financial ratios, ROE is best used to compare companies in the same industry.

$$\text{Return on Equity} = \text{Net Income} / \text{Equity}$$

In 2012, the Net Income of BASF was equal to 4879 million Euros, while the value of the equity was 25385 million Euros. Then, their Return on Equity was equal to 0.1922. We can also say that the ROE is a 19.22%.

One year before they had obtained a ROE of 0.27 or 27%. This decrease in 2012 is mainly produced by the fall of the net income of the company, which went from 6188 million Euros to 4879 million.

Those values are quite consistent with the chemical manufacturing industry, whose companies have an average Return on Equity of an interval between 20% and 24%, depending on the source of information.

We have compared the ROE of BASF in 2012 with the one obtained in the same year for each of the different companies of the Eurostoxx 50 that have been analyzed in class. The averaged ROE of all those companies has been a 16.09%. Then, we can conclude that BASF has a little higher ROE than the average one, but it's still quite similar.

Focusing only with the German companies of the Eurostoxx 50 that, (Bayer, Siemens, Volkswagen and so on), BASF has also a slightly higher ROE than the averaged one, which in that case has resulted a 16.38%.

We can decompose the formula of ROE due to the DuPont formula, also known as the strategic profit model. It is a common way to break down ROE into three important components. Essentially, ROE will equal the Margin Ratio multiplied by the Asset Turnover Ratio multiplied by the Financial Leverage Ratio. Changes on each of those ratios involve a change in the ROE. For example, if the Margin Ratio increases, every sale brings in more money, resulting in a higher overall ROE. Similarly, if the Asset Turnover Ratio increases, the firm generates more sales for every unit of assets owned, again resulting in a higher overall ROE. Finally, increasing the Financial Leverage Ratio means that the firm uses more debt financing relative to equity financing.

$$\text{ROE} = \text{Net Income} / \text{Equity} = (\text{Net Income} / \text{Sales}) * (\text{Sales} / \text{Assets}) * (\text{Assets} / \text{Equity})$$

Margin Ratio

Also known as Profit Margin, it measures how much out of every monetary unit of sales a company actually keeps in earnings. It is displayed as a percentage; a 20\% profit margin, for example, means the company has a net income of 0.20 cents for each Euro of sales.

Looking at the earnings of a company often doesn't tell the entire story. Increased earnings are good, but an increase does not mean that the Margin Ratio of a company is improving. For instance, if a company has costs that have increased at a greater rate than sales, it leads to a lower profit margin.

For businesses, knowing their Margin Ratio is important because it tells them whether their business is pricing goods and services effectively. A low margin compared to the competitors would suggest if the company is under-pricing, while a high margin might indicate over-pricing. Low profit margin ratios can also suggest the business is unable to control production costs, or that a low amount of earnings are generated from revenues.

This ratio is mainly used to internal comparison. Since industries are so different, the Margin Ratio is not very good at comparing companies in different industries. It is good, however, at comparing companies in the same industry.

$$\text{Margin Ratio} = \text{Net Income} / \text{Sales}$$

As BASF obtained a Net Income of 4879 million Euros and their revenues of sales were 78729 million Euros, they obtained a Margin Ratio of 0.062 (6.2%) in 2012, while one year before they had obtained a ratio of 0.084 (8.4%). This change is quite significant, and its reason is the high fall of the net income, which went from 6188 million in 2011 to 4879 million. Sales, though, hardly changed.

According to Yahoo Finance, the averaged Margin Ratio from the chemical industry in 2012 is a 6.80 %, really similar to the one obtained by BASF. It is a low margin, because BASF products are oriented to the whole population, so they aren't exclusive products with very high prices.

Turnover Ratio

Also known as Asset Turnover Ratio, it's the amount of sales generated for every monetary unit's worth of assets. It is calculated by dividing sales in monetary units by assets also in monetary units.

It measures the ability of a company to use its assets to efficiently generate sales. This ratio considers all assets, current and fixed. It also indicates pricing strategy: companies with low Margin Ratios tend to have high Turnover Ratios, and conversely.

In this case, the higher the number is, the better for the company, although investors must be sure to compare a business to its industry, avoiding comparing completely unrelated businesses. If a company can generate more sales with fewer assets it has a higher turnover ratio which tells it is a good company because it is using its assets efficiently. A lower turnover ratio tells that the company is not using its assets optimally.

$$\text{Turnover Ratio} = \text{Sales} / \text{Assets}$$

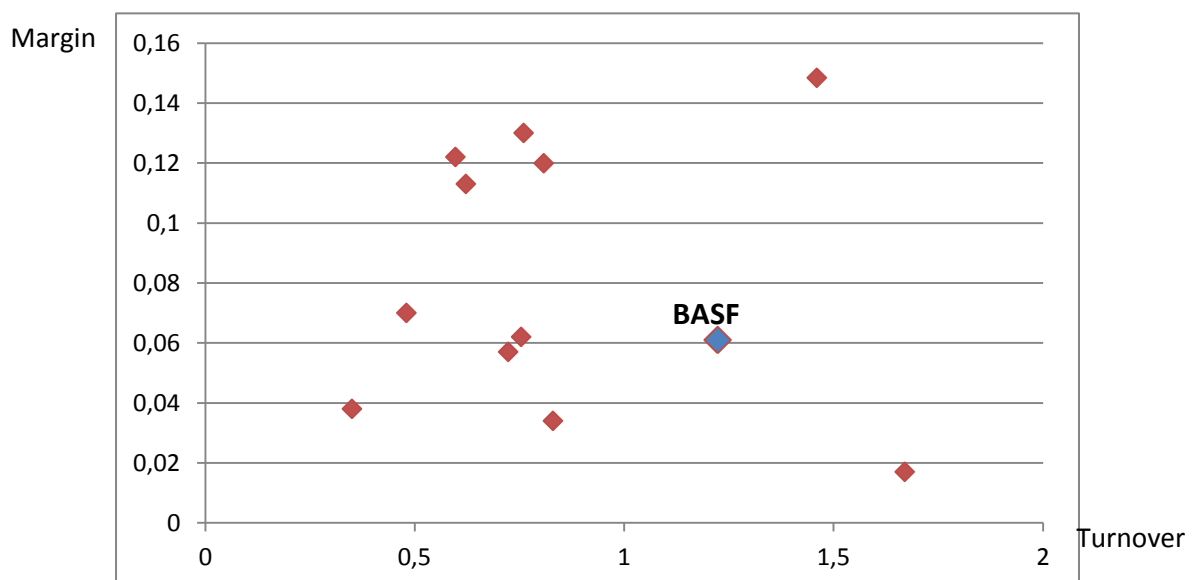
As we have said before, BASF got sales of 78729 million Euros in 2012. As the total value of their assets was equal to 64327 million Euros, the company obtained a Turnover Ratio of 1.22. It means that for every Euro of the company's assets, BASF generated 1.22 Euros of revenues. This value was slightly higher than the one they obtained one year before, in 2011, when the ratio was equal to 1.20.

There is no set number that represents a good Asset Turnover Ratio because each industry has varying business models.

According to the CSImarket website, the averaged Turnover Ratio of the chemical manufacturing industry in 2012 was equal to 0.75. Then, we can conclude that BASF is using their assets to produce sales more efficiently than their competitors do.

Margin vs. Turnover ratio

Here we can find a graph that relates Margin (Y axis) and Turnover Ratio (X axis). Depending on the position a company (EUROSTOXX 50) holds and its strategy it will be closer or farther from the axis.



BASF is in a situation that can be considered Massive Production but with a Turnover Ratio a little higher than normal. That is common in a corporation like this who produces in huge amounts all around the world. Its earnings strategy is especially based in a high turnover ratio more than big profit margins.

The case of Inditex is a special one as we are talking about a Brand Champion. Not only achieves big earnings through high margins but through high turnover ratios as well. Compared with Carrefour for instance, this last one has as well a high turnover ratio but a very low margin. Moreover, we are talking about a company with a high stock rotation. So the way to obtain profits vary through different companies and business models.

Financial Leverage Ratio

It is a measure of how much assets a company holds relative to its equity. A high financial leverage ratio means that the company is using debt and other liabilities to finance its assets.

Business companies with high leverage are considered to be at risk of bankruptcy if, in case, they are not able to repay the debts, it might lead to difficulties in getting new lenders in future.

The level of leverage depends on a lot of factors such as availability of collateral, strength of operating cash flow and tax treatments. Thus, investors should be careful about comparing financial leverage between companies from different industries. For example companies in the banking industry operate with a high leverage as their assets are easily collateralized.

$$\text{Financial Leverage Ratio} = \text{Assets} / \text{Equity}$$

BASF assets at the end of 2012 were equal to 64327 million Euros, and its equity was equal to 25804 million Euros. That caused a Financial Leverage Ratio of 2.49, while in 2011 it had been equal to 2.40.

We can also calculate this ratio with the following formula:

$$\text{Financial Leverage Ratio} = 1 + (\text{Liabilities} / \text{Equity})$$

With that last formula, knowing that in 2012 BASF's liabilities were equal to 38523 million Euros and the equity was equal to 25804 million Euros, the result of dividing them is 1.49. Then, as we add 1, we get the same Financial Leverage Ratio of 2.49 that we had obtained with the other way.

In the chemical industry, the averaged Financial Leverage Ratio is equal to 2.86. Thus, we can conclude that BASF is in a less risky situation than the majority of its competitors.

RETURN ON ASSETS

ROA is one of the basic metrics used to evaluate a company's stock. It is a measure of how profitable a company is relative to its assets or the resources it owns or controls. It measures the **economical profitability of the company**, while the ROE measures the financial profitability. This allows managers to judge how efficient management is using the company's assets to generate earnings. In other words, it tells an investor how much profit a company generated for each 1€ in assets. The return on assets figure is also a sure-fire way to measure the asset intensity of a business. Companies such as telecommunication providers, car manufacturers, and railroads are very asset-intensive, meaning they require big, expensive machinery or equipment to generate a profit. Advertising agencies and software companies, on the other hand, are generally very asset-light (in the case of a software companies, once a program has been developed, employees simply copy it to a five-cent disk, throw an instruction manual in the box, and mail it out to stores).

Return on assets measures company's earnings in relation to all of the resources it had at its disposal (the shareholders' capital plus short and long-term borrowed funds). Thus, it is the most stringent and excessive test of return to shareholders. If a company has no debt, **the return on assets and return on equity figures will be the same**. In other words, the economical profitability will be equal to the financial profitability.

There are two acceptable ways to calculate return on assets:

Option 1: Net Profit Margin x Asset Turnover = Return on Assets

(Both concepts were already explained in the previous paragraph)

Option 2 (and fastest one): $\frac{EBIT_{31/12/x1}}{Total\ Assets\ 1/1/x1} = Return\ on\ Assets$

For example, if we have two companies: A and B; which are 100 million € and 50 million € worth in total assets at the beginning of the year (respectively) and whose earnings before interest and taxes of that year were 20 million € and 15 million € respectively, we will obtain a ROA for company A of $\frac{20\ millions}{100\ millions} = 0,2 = 20\%$; and a ROA for company B of $\frac{15\ millions}{50\ millions} = 0,3 = 30\%$.

So, company B is better at converting its investments into profits, even though it is a smaller company. For this reason, an investor will probably decide to buy shares of company B. In fact, if the ROA of any company stays equal (or it decreases) from one year to another, that company will be unattractive for the investor, given that it means that neither the turnover nor the margin ratio has increased.

In the case of BASF, we have calculated the ROA for the year 2012 making the equation of: $\frac{8976}{61175}$ which is equal to 0,14672=14,672%. This means that for each 1€ invested in the assets of the company, it has yield 14,672%, regardless the fiscal and financial policy the company follows(precisely that's why we calculate the ROA with the EBIT dates instead of with the Net Income ones).

In order to make a more meaningful and accurate interpretation of this result we have to compare it with the ROE, given that the ROA for itself is not enough to judge the profitability of the firm.

Considering that ROE before taxes = $\frac{EBT\ 31/12}{Equities\ 1/1}$ we get to the final result for BASF's ROE bt= 31,88%. (ROE = 19,22%)

The comparison between both ratios is been made in order to determine the most efficient way to finance the total assets or the investments of the firm. Or what is the same, to determine the most appropriate financial structure (or of liabilities) for the growth of the firm. The difference between these ratios is called leverage ratio.

As we have said, in our case ROE is higher than ROA; so the leverage effect is positive (or amplifier). This happens given that the average cost of debt is lower than the economic profitability (ROA). In this case, part of the asset financing with debt has enabled the growth of the financial profitability.

If we make an analysis of the Roa, Roe before taxes, Roe, net income and debt cost of the last 4 years we see the following:

BASF:

| | 2009 | 2010 | 2011 | 2012 |
|------------------|-----------|-----------|-----------|-----------|
| ROA | 7.22% | 15.13% | 14.45% | 14.67% |
| ROE | 7.53% | 24.48% | 27.31% | 19.2% |
| ROE before taxes | 15.13% | 36.84% | 37.75% | 31.66% |
| Net Income | 1410 mil. | 4557 mil. | 6188 mil. | 4879 mil. |
| Debt cost(k) | 7.19% | 1.57% | 2.14% | 3.29% |

As we see in this table, the biggest change occurred from 2009 to 2010. In 2009 ROA and ROE were almost equal (7.22% and 7.53%), which means that the company had no debt, so the firm financed the totality of their assets with their own resources.

Basically, BASF didn't get any loan from the financial institutions given that the debt cost (k) was practically equal to the ROA (as we see in the table: 7.22% and 7.19%).

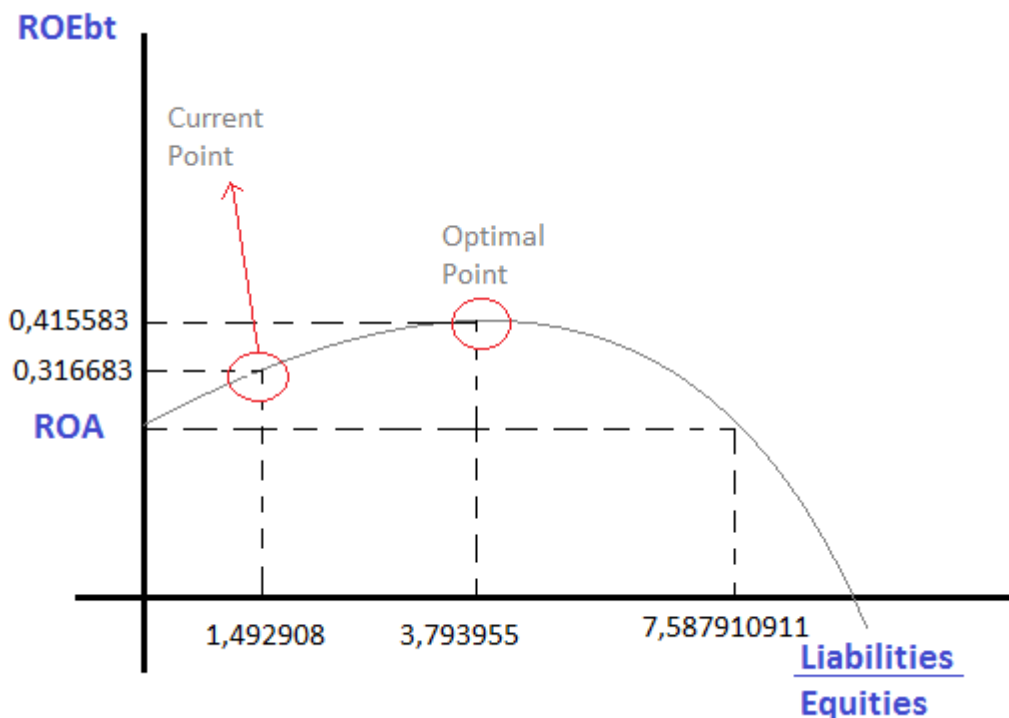
Actually, the ROA is the first parameter that the banks want to know and analyze, in order to compare it with the current "k" (introduced in the following section). Thus, taking the relationship between ROA and "k" of 2009 into account, BASF was hardly capable to obtain any financing from the banks. However, even if banks had conceded them credits, it was not worth it for the firm, and that's why they financed themselves with own resources.

From 2010 onwards, things changed in BASF. They increased their net income by 223% (from 1410 million to 4557 mil.) And if we have a look at the table, we can notice that other parameters have changed as well. Now both ROE and ROA are much higher than before, but given that the return on equity is even higher than the return on assets (24.48% and 15.13%) the firm was now able to borrow money. Furthermore, the debt cost has decreased significantly (from 7.19% to 1.57%) so it was easy for the firm to pay the loans back to the banks and to get even profit from it. For the following years, ROA has maintained pretty stable, as well as ROE, with the exception of 2011, in which it increased considerably (27.31%) having also a very high net income (6188 million).

But the key point is that BASF has **increased their benefits increasing their debt**. This is only possible when the return on equity is higher than the return on assets, which happened since 2010 in BASF. The company can increase its debts if the amount of profitability they get from that money is higher than the interests they pay for those loans (debt cost).

In this case, BASF has taken advantage of its high ROA and low “k”; and we could say that having a higher debt has helped BASF to grow in a sustainable way.

Taking into account the formula of $ROE_{bt} = ROA + [ROA - e] * \frac{Liab}{Equit} - j * \left(\frac{Liab}{Equit}\right)^2$ we obtain the following function:



This graph has some important results and interpretations:

- When Liab/Equities is 0, ROA and ROEbt coincide
- The other point where ROEbt and ROA coincide is when Liab/Equities is 7,58. At this point the risk is higher than the previous one. However, sometimes it can be recommendable to be more leveraged as this can allow the company to grow; that can drive to more power market, become a monopoly or oligopoly position and set prices, what means more profitability.
- The optimal point of leverage is for values of 3,79 in Liab/Equities. Until this point the ROEbt increases but this point onwards more leverage won't mean more profitability. At this point ROEbt would be 41,55%. We know this is a maximum making the first derivative of the formula of ROEbt on Liab/Equit and equalizing to 0. When we make the second derivative, as it is a negative value (j is positive) we are talking about a maximum.
- Currently, BASF has a ROEbt of 31,67% and a Leverage value of 1,49; as we have seen previously, the company successfully manages its risk and, regarding the figures we have just seen, perhaps it would be recommendable to take a little higher risks in order to obtain more profitability as the corporation hasn't reached yet the optimal point.

SENSIBILITY TO DEBT

In order to analyze the sensibility of banks to borrow money to a company, there is a parameter that can be used; we are talking about “j” that is included in the formula of ROE bt:

$$ROE_{bt} = ROA + [ROA - e] * \frac{Liab}{Equit} - j * \left(\frac{Liab}{Equit}\right)^2$$

So having calculated previously ROEbt, ROA, Liab/Equit and knowing that the Euribor was 0,5% we can isolate the “j” parameter and it has a value of: 0,018678

This parameter is important to know when the company is issuing debt because it allows to find the “k” parameter:

$$k = \text{euribor} + \text{Premium risk} \quad \text{where} \quad \text{Premium risk} = j * Liab/Equit$$

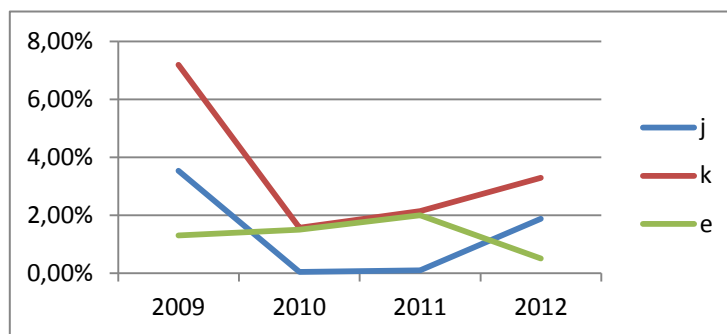
So the Premium risk for BASF would be: 0,027884

And k= 0,032884

That means that if BASF issues debt, it should be issued at 3,29% given the current risk given of the company.

Taking a look to the data of the last 4 years we have:

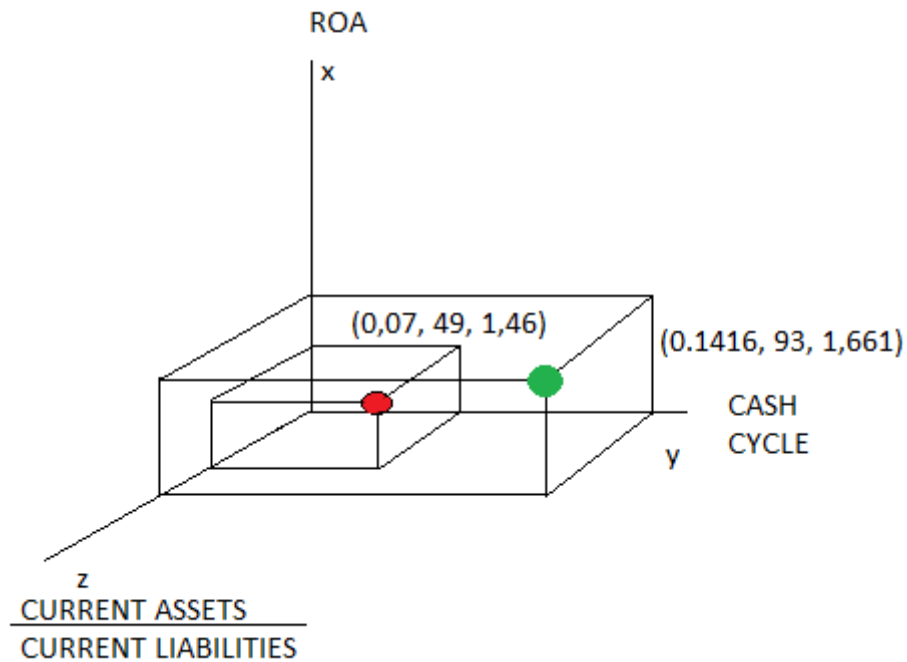
| | 2009 | 2010 | 2011 | 2012 |
|----------|-------|-------|-------|-------|
| J | 3,53% | 0,04% | 0,10% | 1,87% |
| K | 7,19% | 1,57% | 2,14% | 3,29% |
| E | 1,30% | 1,50% | 2% | 0,50% |



As we can see, the value that has more influence in “k” is “j” as they move in the same direction and are low influenced by euribor, who only smoothes or makes increase “k”.

2009 was a year of high “k” due to the relatively bad results of the company that almost divided by two its ROA and decreased a lot its ROEbt. When BASF recovered its good financial situation, “j” and “k” decreased sensibly although Euribor increased.

ROA vs. CASH CYCLE vs. CA/CL



Source: Amadeus and own elaboration

As we can appreciate in the graph, BASF (green point for BASF and red point for average values of Eurostoxx 50) has higher values in the three parameters, comparing with the main companies of the Eurostoxx 50 Index. The higher ROA means that the company has a more profitable assets; the Current Ratio means that BASF is more able to pay its short term debts and a bigger Cash Conversion Cycle means that the company takes more length of time converting resource inputs into cash flows than the mean of corporations in the European Index.

GROWTH RATE

A way to evaluate the growth a company has every year is looking the proportion of money that is retained inside the company after paying dividends and taxes. That way, “g” is calculated in the following way:

$$g = (1 - \text{payout}) * (1 - \text{tax rate}) * ROA$$

In 2012, earnings per share were 5,31 € and the dividend per share was 2,6€ so the payout policy was 49%. The tax burden held was 38% (Tax rate increased considerably in 2012, mostly due to .continuous oil production in Libya, as they are non-compensable foreign income taxes for oil production). The ROA for these year was 14,67%.

So we obtain $g = 4,64\%$. That way, in 2012 BASF generated a profitability of 4,64% that was retained into the company to make it grow.

| Year | 2009 | 2010 | 2011 | 2012 |
|---------|-------|------|------|-------|
| G value | 1,24% | 5,8% | 6,7% | 4,64% |

As we have been seen, 2009 wasn't the best year in BASF's history; however, except these year, the "g" parameter had good values so we can conclude saying that BASF has had a continuous growth in last year thanks to the retained earnings they had. That was achieved not paying out to shareholders all the profits the company had.

This situation has been possible thanks to the Good ROAs that the company has had in these years and the management of the Tax burden (despite increasing in 2012 as we have already mentioned). In the case of dividends we already saw its behavior in Risk Analysis: they have never decreased in the last 10 years, always increasing or remaining stable, with a yield never lower than 3%. Nevertheless, they have been stable enough to allow BASF to retain certain amount of profits for the company growth.

VALUE ADDED

The value added is equivalent to the total revenues of a company minus the cost of goods and services purchased, depreciation and amortization. In other words, it's the difference between the price market and the costs of production. Numerically we can also get it by the following formula:

$$\text{Value Added: EBITDA} + \text{Wages}$$

Value added also makes reference to an item of interest (product, service, person, etc) that go beyond the standard expectations and provide something more, while adding little or nothing to its cost. Value added features give competitive edges to companies with otherwise more expensive products.

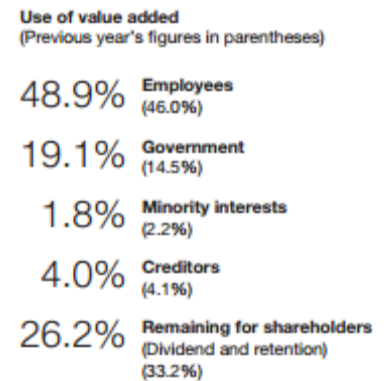
We must also talk about value added referring to severance payments. When an employee is fired from a company, he must receive a compensation, which is called a severance. Apart from the ethic reasons, this severance has a close relation with the value added. It is because an employee that has been working for several years in a company has contributed to the development and growth of this company. He has taken part of the company; he has provided some value to it. Then, if he is fired, he must get a compensation for this value added.

When calculating the value added of a company, we have to take into account different aspects, like the Margin Ratio or the wages the company pays. A high Margin Ratio means that there is quite difference between the price of a product or service and the cost that the company has suffered to produce it. Then, we have to analyze if that difference is large because the price is very high or because the costs are very low.

In order to get the value added, we focus on the personnel costs (wages), because they are subjected to main changes if the company decides to carry out their productive activities in some underdeveloped countries. Thus, if a company reaches high margins thanks to paying extremely low wages to their employees, we won't consider that they have a high value added. Otherwise, if a company offers a product in a high price because they have also paid high wages, and people is willing to pay this price, then we can affirm that this company has a

significant value added. In the case of BASF, they have manufacturing plants in all over the world. Their principal factory is located in Germany, and they also have important plants in United States, Japan, Belgium and even in Spain, which are developed countries where the wages paid are quite high because their employees must be qualified. Then, it can be affirmed that BASF has no policy of relocating their plants to underdeveloped countries in order to get the minimum personnel expenses.

Those high personnel costs imply that the selling price of their products must be high too. But as we have seen when calculating the ratios, BASF doesn't have such a large margin. That's because their products aren't oriented to an elitist public, but for the general one, so the price is high, but not excessively. It causes what we have seen before, that the company prefers to selling large quantities of product getting low margin for each unit than selling less units with a higher margin.



Thus, the company reaches that consumers see their products as very valorous and qualitative, but not in an excessive price, so they are willing to pay for having them. In other words, BASF has a high value added for their customers. We can get the value added of BASF in 2012 getting the revenues obtained by their sales, and

| | |
|--|-------|
| Sales from revenues | 78729 |
| Cost of raw materials | 40839 |
| Services purchased, energy costs and other expenses | 12745 |
| Amortization and depreciation | 3540 |
| Value added | 21605 |

subtracting the cost of raw materials, the cost of services purchased

, energy costs and other expenses, and the value of amortization and depreciation, as we can see in the following table:

Numerically, we can also obtain the value added with the formula we have explained before. As BASF got in 2012 an EBITDA (which is the income before interest, taxes, depreciation and amortization) of 12516 million Euros, and their personnel expenses (wages) were equal to 9089 million Euros, then their value added during the last year was equal to 21605 million Euros.

The contribution to this value added is shown on this graph, where we can see that employees are the major contributors comparing with the others stakeholders. This aspect reinforces what we have said about employees and severance payments.

Consolidated accounts vs. Individual accounts

In BASF Group, BASF SE is the parent company and it holds hundreds of subsidiaries with different accounting methods.

Fully consolidated subsidiaries: 272 companies

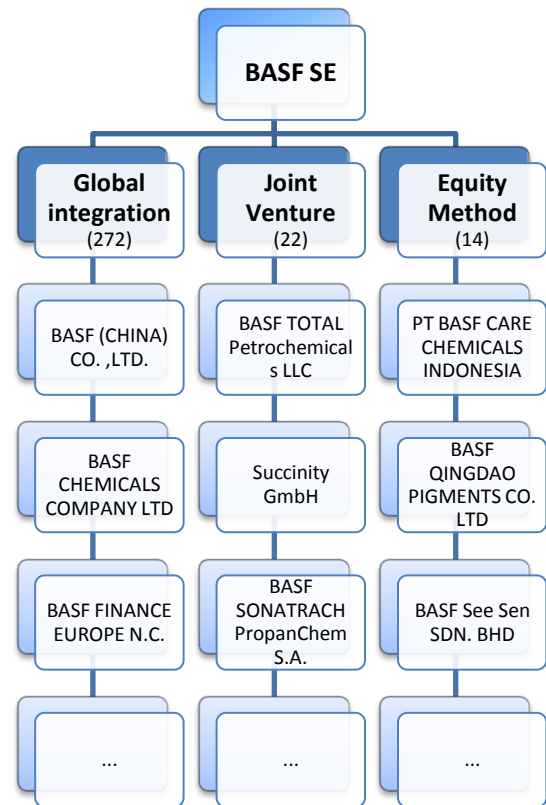
Proportionally consolidated associated companies: 22 companies

Equity consolidated subsidiaries: 4 companies

Equity consolidated affiliates: 10 companies

In the case of Global Integration Method, the assets and liabilities of the subsidiaries companies appear in the balance sheet of BASF SE.

Analyzing the Equity Method, we find 24.843 Million € in Financial Investment in the balance sheet of BASF SE, an increase of 1,77% with respect to the previous year due to some acquisitions. In counterparty, in the Income Statement we can find 343 Million € of Minority Interests.



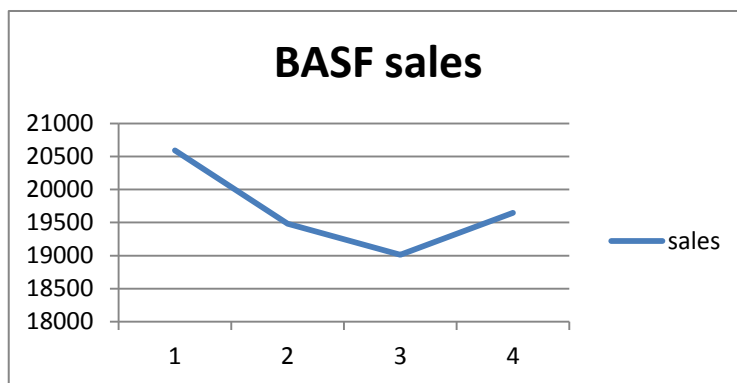
DEMAND SEASONALITY

In order to better understand fluctuations in Earnings, Ratios, etc. it is important to know the evolution of the demand through the year. In the next tables (BASF 2012 Quarterly reports data and own elaboration) we can see the quarterly evolution the company's sales and divided by sectors.

| Sales/Quarter | 1st | 2 nd | 3rd | 4th | Total |
|-------------------------------|-------|-----------------|-------|-------|-------|
| Basf Sales | 20590 | 19481 | 19010 | 19648 | 78729 |
| Basf Net Income | 1724 | 1229 | 946 | 980 | 4879 |
| Chemicals | 3484 | 3348 | 3556 | 3436 | 13824 |
| Plastics | 2678 | 2878 | 2969 | 2877 | 11402 |
| Performance products | 3999 | 4122 | 4015 | 3735 | 15871 |
| Functional solutions | 2845 | 2974 | 2847 | 2794 | 11460 |
| Agricultural solutions | 1327 | 1467 | 1008 | 877 | 4679 |
| Oil & Gas | 4975 | 3585 | 3372 | 4768 | 16700 |
| Other | 1282 | 1107 | 1243 | 1161 | 4793 |

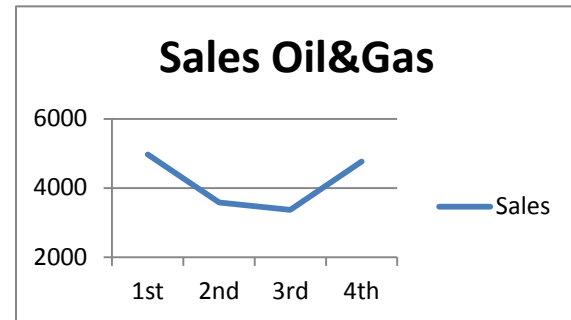
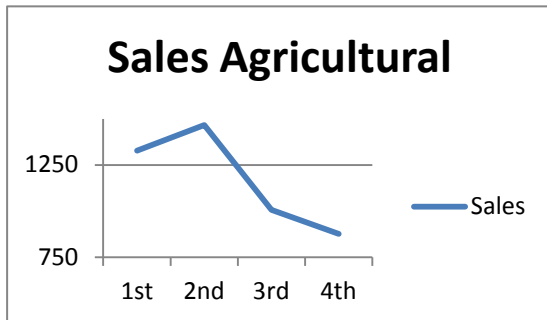
| Sales/Quarter | 2nd | 3 rd | 4th |
|-------------------------------|---------|-----------------|---------|
| Basf Sales | -5,39% | -2,42% | 3,36% |
| Chemicals | -3,90% | 6,21% | -3,37% |
| Plastics | 7,47% | 3,16% | -3,10% |
| Performance products | 3,08% | -2,60% | -6,97% |
| Functional solutions | 4,53% | -4,27% | -1,86% |
| Agricultural solutions | 10,55% | -31,29% | -13,00% |
| Oil & Gas | -27,94% | -5,94% | 41,40% |
| Other | -13,65% | 12,29% | -6,60% |

As we can appreciate, BASF Sales have decreased until the last quarter of the year. Although the majority of sectors have increased their sales, Oil & Gas sector has had a large decrease in sales due mainly to the increase in raw materials and the consequent constraint in benefit margins.



In the third quarter, sales decrease mainly for the influence of Agricultural Products decrease. In this case, earnings decreased as a result of the falling margins and scheduled maintenance shutdown of several plants.

In last quarter all sectors suffered a decrease in their sales except Oil & Gas that had a big increase that made that the Total sales increased. The increase in Oil & Gas sales is due to increase in volume and prices (29% and 10% respectively). This is normal as the fourth quarter is the coldest one and more energy is required to heat houses, factories or whatever. On the other hand, earnings improved significantly thanks to continuous production of crude oil in Libya.



When talking about a B2B company like BASF that produces and sells a wide range of products to a broad spectrum of clients it is difficult to see if it has seasonality in its products. As a rule, the company will have increases and decreases in sales due to factors like raw materials, prices (and margins) and volumes depending on different factors; but it won't have typical seasonality like the one we can find in Business to Consumers companies with less products or more limited customers.

CONCLUSIONS

When analyzing some ratios we can see that BASF is in a good financial position. Its ROE (19,2%) its higher than the mean of EUROSTOXX in general and of German Companies as well (almost 3 percentual points above). Its ROE before taxes was quite good as well, with a value of 31,66%.

In the case of Return on Assets, despite being difficult to compare among industries and companies because of the different type of assets used, BASF had a good ROA the last year (14,67%), higher than its sensibility to debt "k" 3,29%; that way, it was profitable for the company to become leveraged. These sensibility to debt has maintained low through years (except in 2009) what means that BASF successfully manages its risk so it is not very expensive for the company to borrow money.

All these ratios have maintained balanced through years although analyzing the ROEbt function we appreciated that the company could become a little more leveraged and it would lead to a higher profitability. When doing this it has to be considered the increase in risk as well. These stability has allowed BASF to retain earnings every year; that way, the company has achieved a sustainable growth through years.

The value added of the company is generated mainly by employees, followed by other stakeholders, government, creditors and minority interests.

Taking a look to the demand function we can see some fluctuations depending on the season we are; however, being a so diversified company with clients all around the world allows BASF to maintain the sales pretty stable through the year.

In reference to BASF's accounting consolidation structure, 88% of the subsidiaries hold a Global Integration Method, while a 7% are Joint Venture only a 5% are consolidated