The Coface Economic Publication

panorama

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Sectoral Study: Romanian Chemicals Industry

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1. FOREWORD

Using experience and information resources acquired as a provider of integrated services for the management of credit risk, Coface Romania series opens with this study a new type of detailed analysis of the most important fields in the Romanian economy, designed as a valuable sectoral X-ray in terms of:

- Market structure and the evolution of sectoral representative indicators
- Financial situation of the companies in the sector
- Sectoral payment behavior
- Companies' legal status and evolution of commercial disputes
- Insolvencies' impact
- Coface sectoral risk analysis

Choosing the chemicals industry as our first subject of this new type of studies is not accidental, because it is one of the largest and most dynamic industries in the world, with a total volume of sales of 2,744 BEUR in 2011, with an increase of 11.6% over the previous year, confirming its position as one of the main engines of economic recovery.

Despite the continuous reduction of its share in this market to the detriment of the Asian region, the EU chemical industry still holds a market share of over 20% of the total, winning in 2011 total sales worth 539 BEUR and generating 1 19 million jobs in over 60,000 companies.

In Romania this sector is not only an industry with great tradition and impact on the national economy, but also one with an special economic context of the last few years, as we shall see in subsequent sections of the study.

2. SUMMARY

According to the latest financial statements published by the Ministry of Finance in late 2011, the chemical industry worked a total of 4,598 companies considered active, which generated a total turnover of 47,4 BEUR and 89,696 jobs.

Analyzing in detail the situation and calculate financial ratios for these companies we can say that the chemical sector is facing a number of issues that could jeopardize the relative stability (in terms of number of companies and the number of employees) and the trend of economic recovery (turnover up 24%) recorded in late 2011, as follows:

- 22% of the 4,598 companies considered, no longer in operation in April 2013, the number and their size is greater than that of newly established firms in the period 2008 - 2011, this negative dynamic sector can bring loss of nearly 2 BEUR of turnover and the disappearance of more than 1,900 jobs.
- Increased solvency problems of companies in the sector over the previous year, continuing the net losses, indebtedness growth (+7.5%) and lower capitalization rate (-20%).

Indicator	Chemicals 2011	Chemicals 2010
Indebtedness rate	74,06%	68,86%
Capitalization rate	22,15%	27,72%
Net profit rate	-1,54%	-2,34%
DSO (days)	78,61	88,72

- Failure recovery in terms of profitability, as evidenced by the fact that two of the four divisions of the business sector generated net losses for the entire period 2008 - 2011, extremely low percentage (22%) of companies that fail to return profit after losses in the previous year and the group companies into two categories " normal losers " and that " normal profit".

- Reduced concern for the effective management of credit risk commercial (more about evolution by changing receivables turnover can be found in section 5 of the study), so that only 2 of the 10 companies (operating in the chemical industry) shows a decreased risk of insolvency, 3.5 - medium risk and risk difference of 4.5 recorded high to very high.

- High dependence on the situation and evolution of the most important and experienced players in the market, owning significant shares of sector assets and the results of which decisively influences the sectoral financial indicators.

Naturally, the emergence of such imbalances in the financial situation could not remain without consequences on how companies pay their obligations, so that after payment behavior[1] evaluation detailed in section 6, we can draw real alarm on payment discipline sector:

- 26% of companies operating in the chemical industry recorded at December 31, 2012 outstanding debts to the state budget, the average debt showing a significant increase of 86% compared to the end of the year. This results in a trend contrary to that of the whole economy, where one can observe a clear decrease in the level of outstanding, amid intensifying efforts to collect revenues.

- Analysis of incidents payment debt instruments based on information from a representative sample of companies analyzed individually by Coface Romania last year, shows that the average amount of firms refused to pay the chemical industry is 3 times higher than average amount Denied across all firms CIP verified by Coface.

- Equally alarming is the evolution of the number of payment incidents in the sector in the period 2006 - 2012, which shows that the number of incidents amounted to 2011 and 2012 is greater than the total number of refusals to pay recorded in the previous five years, and that only in 2012 there were 3 times more than the pre-crisis period (2006 - 2008).

Representing a completely new direction analysis at sectoral level, but very necessary in the light of the increasing frequency with which creditors resort to court to recover debts owed by delinquent customers, checking the legal status of the companies in terms of involvement in commercial litigation (lawsuits court) made in Section 7th study highlights the following:

- At the end of the first quarter of 2013 a total of 1,068 firms (23% of total) appeared as a debtor involved in at least one case involving the case of insolvency, CCJ or payment ordinance.

- The rate of acceptance by the insolvency court applications filed against companies in the chemical sector amounted to 27%.

- 16% of firms recorded files appear in court more than 5 cases, showing that the sector is a “specialized” group of companies in paying contractual obligations.

- These trends degrades rather favorable position of the sector in terms of number of insolvencies opened during previous years, presented and commented in Section 8, worsening payment behavior and increased incidence of trade disputes that are engaged companies in the industry showing that there are prerequisites to increase the number of insolvencies in the future.

[1] Based on the analysis of unpaid debts to the state budget and verifying CIP payment incidents

The same conclusion can be drawn from the analysis of the distribution of firms according to the risk of insolvency in terms of Coface Romania, made in the last section of the study based on individual assessment in 2012 for a total of 774 companies, accounting for 87% of turnover the total of the sector. According to this analysis it is observed that only 36% of companies operating in the chemical industry show a low risk of insolvency, the rest being classified in risk group than average (56%) or high risk (8%).

Size class	No. of companies	Share in the total no. of companies	Criteria for classification
Micro-enterprises	3.497	76,05%	Up to 9 employees, turnover or total assets under 2 MEUR
Small enterprises	795	17,29%	10 - 49 employees, turnover or total assets under 10 MEUR
Middle enterprises	248	5,39%	50 - 249 employees, turnover under 50 MEUR or total assets under 43 MEUR
Large enterprises	48	1,04%	250 - 999 employees
Very large enterprises	10	0,22%	Over 1.000 employees
TOTAL	**4.598**	**100%**	

3. OVERVIEW OF THE CHEMICALS INDUSTRY

For this study, in the chemical sector were grouped the active[2] companies whose main activity is declared fit on these divisions of NACE code:

- 19 - Manufacture of coke and of refined petroleum products;
- 20 - Manufacture of chemicals and chemical products;
- 21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations;
- 22 - Manufacture of rubber and plastic.

[2]By submitting their financial statements for 2011 within Ministry of Finance

On the basis of these groups resulted in a total universe of 4,598 firms in this sector, classified by size as you can see in the table above.

Although the majority share in the segment of micro firms in industry structure is evident (76.05%), the correlation of the above data with the results of previously conducted studies of micro Coface Romania indicates that the chemical industry is not among the preferred areas of activity this segment of firms in the total number of enterprises in the economy recorded a high percentage (89.79%) compared to the sectoral.

Numerical distribution of the companies by founding year

Based on the numerical distribution of firms active in the chemical industry by founding year we estimate that this market is undoubtedly a mature sector, 60% of companies were founded before 2005 and thus having over 7 years' experience in their field. Also, these companies have a very important economic and social role in the whole chemical industry that generates evidenced by:

- 82% of registered jobs in the sector
- 91% of sectoral turnover
- 87% of the total assets and liabilities
- 89% of total assets
- Over 97 of the total equity

4. MARKET STRUCTURE AND REPRESENTATIVE SECTORAL INDICATORS

Using financial data published by the Ministry of Finance, Coface Romania calculated structure and key financial performance indicators both point to all Romanian companies that submitted annual financial statements, and using criteria aggregation sector level, class size companies, year of establishment etc.

Analysis of financial indicators of their activity in recent years by companies in the chemical industry gives us important information about the status and position of this field in the whole Romanian economy:

- The number of companies active in the sector considered stabilized in 2010 - 2011, recorded in 2011, a minor decrease of only 1.46% from 2010, after the end of 2009 a reduction of 10 times and 14, 08% compared to 2008.
- Over 25% of companies considered active at the end of 2011 (1,185 of the 4,598 companies) is no longer relevant pursue an economic activity (turnover declared as zero), thus registering the 6% reduction in the number of firms that actively involved as compared to 2010.
- Total turnover generated by companies in this sector amounted in 2011 to 47.4 BRON, up 24% compared to 2010, which corresponds to a share of 4.73% of the total turnover generated in 2011 all companies active in Romania.
- In absolute terms, increased by 9.17 BRON in turnover in 2011 compared to 2010 in the sector were generated exclusively for companies with turnover of more than EUR 5 million (4% of all firms) that managed an increase of 9.29 BRON consolidated turnover, while the other categories of companies recorded a turnover of 0.12 BRON aggregate reduction.
- Total number of employees declared by companies in the chemical sector at end of 2011, 89,696 people (representing 2.31% of the total 3.89 million employees represent the entire economy) is substantially similar to that existing at the end previous year (89,434 employees).
- Despite the continuous reduction of absolute volume of net losses generated by

the industry (from 1.69 BRON in 2008 TO 731 MRON in 2011) and the positive evolution of companies working in two of the four divisions of the sector (21 - and 22 pharmaceutical industry - rubber and plastic products), granting the profitability remains one of the major financial problems of the industry, as we will see in the detailed analysis of this indicator in the next section of the study.

- Distribution of the number of companies on the detailed categories of turnover indicates a majority share of those with turnover of less than 500.000 EUR (82.95% for the sector). This distribution is mainly determined by the low caliber of companies with activities listed in Divisions 20 and 22, while the other two divisions (19 and 21) the percentage of firms with turnover below this threshold is below the industry average (58.57% and 60%).

Using the Herfindahl-Hirschman[3] index for assessing the level of market concentration within each of the four divisions of the chemical note the following:

- Market division 19 shows a very high degree of concentration (HH index of 4.667 in 2011 and consistently higher values in all the previous years) in the processing aspect predictable because the major oil companies in terms of turnover generated at consolidated impressive market share.

- The level of concentration of various chemicals market (Division 20) remains low (HH index with values oscillating between 2008 and 2011), a fact explained by the wide range of products made in this industry and the greater number of major players present market.

- Increased market index HH registered pharmaceutical products (division 21) creates the prerequisites for this market in the future migrate to moderate concentration levels amid firm polarization by increasing the market share of large and very large companies.

- Although market concentration index of rubber and plastics has increased continuously in recent years, it still has the minimum value of the four divisions of the sector, indicating a market with a high level of competition.

[3] $HHI = \sum_{k=1}^{n} (MS_k * 100)^2$;
where MS_k represent the market share held by the company K.
HHI Index must be explained as follows:
- Values below 1.000 indicates a market with a low concentration level;
- Values between 1.000 and 1.800 indicates a market with a moderate concentration level
- Values over 1.800 indicates a market with a high concentration level;

Turnover category	19 Division	20 Division	21 Division	22 Division	TOTAL SECTOR	
					No. of companies	Share in total
No activity	31,43%	31,24%	20,00%	24,04%	1.185	25,77%
0 - 100 KEUR	18,57%	35,01%	22,07%	42,61%	1.828	39,76%
100 - 500 KEUR	8,57%	15,98%	17,93%	18,08%	801	17,42%
500 - 1000 KEUR	8,57%	5,66%	6,90%	5,35%	254	5,52%
1 - 5 MEUR	20,00%	7,00%	20,00%	6,42%	331	7,20%
5 - 10 MEUR	2,86%	1,71%	4,83%	1,90%	90	1,96%
10 - 50 MEUR	5,71%	2,69%	4,83%	1,44%	88	1,91%
50 - 100 MEUR	1,43%	0,36%	3,45%	0,03%	11	0,24%
Over 100 MEUR	2,86%	0,36%	0,00%	0,12%	10	0,22%
TOTAL	100%	100%	100%	100%	4.598	100%

5. FINANCIAL SITUATION OF THE COMPANIES IN THE SECTOR

Extending the analysis of financial indicators calculated for each of the four divisions of activity included in the chemical sector, we find the existence of significant differences between their financial performances at the end 2011, thus:

- Companies belonging to division 19 (coke and refined petroleum products) have the highest level of indebtedness, ie 98.55% (as a percentage of debt to total assets) and this being the only area of the four sector that records capitalization negative net loss in the division rate is very high (-6.68%), but analysis of individual company financial results show that after removing the extremes (the first two companies that generate the largest absolute values of the loss and profit) situation is balanced.

- Activity Division 20, which brings together a diverse range of manufacturing companies (and heterogeneous) of chemicals (fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms, agrochemicals, paints and varnishes, cosmetics) is characterized also by negative profitability and a low capitalization rate (19.86%), in the media sector.

- Indicators pharmaceutical companies (Division 21) recorded the best values in the industry (low debt, positive profitability and capitalization acceptable), long duration Receivable is actually determined by the terms of settlement of payments in the health system and not impaired receivables management by drug companies.

- Manufacture of rubber and plastic products (division 22) holds the largest share in total sector in terms of number of companies, these division level financial indicators showing a positive trend in profitability and relatively low leverage ratios under media sector.

Division of activity	No. of companies	Average turnover	Indebtedness rate	Capitalization rate	Net profit/ loss	DSO	Average no. of employees
19 Division	70	254.028.744	98,55%	-0,24%	-6,68%	42	52
20 Division	1.114	9.801.394	73,08%	19,86%	-1,19%	86	28
21 Division	145	19.143.758	39,05%	56,62%	5,34%	221	60
22 Division	3.269	4.880.685	67,41%	30,71%	2,74%	89	14
TOTAL SECTOR	**4.598**	**10.315.696**	**74,06%**	**22,15%**	**-1,54%**	**79**	**20**

Evolution of financial indicators for the chemical sector firms who submitted the financial statements performed in 2010 and 2011 indicate an increase solvency problems faced by these companies, continuing the net losses, increasing indebtedness of the sector and decrease the degree of capitalization.

Indicator	Chemicals 2011	Chemicals 2010
Indebtedness rate	74,06%	68,86%
Capitalization rate	22,15%	27,72%
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Negative situation profitability indicators of the sector in the period 2010-2011 can be seen by analyzing the results obtained by companies that submitted financial statements for both years (4,016 firms), from this point of view being noticed these trends:

- Migration sections of profitability: 10.31% of all these companies recorded losses in 2010 and went on profits in 2011, while an almost identical percentage (10.01%) profit in 2010 and passed the loss in 2011.

- This offsetting effect on profitability migration classes are recorded but only in terms of number of companies, size businesses that have passed since the loss (4.08 MRON) is higher than that of firms that have passed tax (3.20 MRON).

- polarization in terms of profitability by grouping the two categories of firms ' usual losers " and that " normal profit ", so for 41% of companies with losses in 2011 the value of those losses was at least double the previous year, while a similar percentage (40%) of profitable companies in 2011 were able to achieve increases of over 100% of profit from 2010.

- Failure recovery in terms of profitability manifested in companies of loss, so that only 22% of firms with losses at the end of 2010 managed to return to profit in 2011, while 62% continued to have losses and 16% were relevant economic activities conducted during 2011.

- Reduce by 34% the rate of net loss (loss / turnover) in 2011 compared to 2010 was mainly due to the increase in turnover (+24%) success in this period by companies in the sector, as absolute value of the net loss generated by the sector in 2011 was reduced by only 18%.

Profit / Loss 2010	Profit / Loss 2011				
	No. of companies	Loss	Profit	Zero/ No activity	No. of companies
	Loss	28,46%	10,31%	7,37%	46,14%
	Profit	10,01%	36,45%	0,85%	47,31%
	Zero/ No activity	0,52%	0,20%	5,83%	6,55%
	Total	38,99%	46,96%	14,04%	100,00%

Another tool for evaluating financial performance and corporate management is the analysis of how they manage commercial credit risk.

Due to the impact it may have on the financial situation and even to retain the business, as proper management of the commercial credit risk should represent one of the major priorities of any company, especially in the post-crisis when financial soundness many business partners suffers.

Assessing how chemical firms have managed commercial credit risk in difficult economic conditions of the last years has been achieved by variation analysis of receivables as a result of the change in turnover, while considering the evolution of the average collection and receivables firms in the sector and for all active firms nationwide.

	Turnover decrease	Turnover increase
Debts decrease	**II[nd] Quadrant - Medium risk** ▪ 34% of total analyzed micro-enterprises ▪ Average turnover of 1,6 MRON ▪ Average elasticity of 1,08 ▪ DSO: 131 days ▪ Indebtedness rate in turnover of 84% ▪ Net profit rate of -6,04% ▪ Indebtedness rate of 79%	**I[st] Quadrant - Low risk** ▪ 19% of total analyzed micro-enterprises ▪ Average turnover of 16,3 MRON ▪ Average elasticity of -1,09 ▪ DSO: 82 days ▪ Indebtedness rate in turnover of 187% ▪ Rata profit net: +2,36% ▪ Indebtedness rate of 56%
Debts increase	**IV[th] Quadrant – High risk** ▪ 17% of total analyzed micro-enterprises ▪ Average turnover of 3,1 MRON ▪ Average elasticity of -1,25 ▪ DSO: 179 days ▪ Indebtedness rate in turnover of 86% ▪ Net profit rate of -5,69% ▪ Indebtedness rate of 68%	**III[rd] Quadrant - Medium to high risk** ▪ 30% of total analyzed micro-enterprises ▪ Average turnover of 21,5 MRON ▪ Average elasticity of 1,24 ▪ DSO: 127 days ▪ Indebtedness rate in turnover of 157% ▪ Net profit rate of +2,77% ▪ Indebtedness rate of 61%

From this analysis were eliminated companies that have been seen in turnover or claims outside the range of variation (-500%, 500%), mainly due to base effect. Also were considered only companies that have developed effective activity (turnover greater than zero) and elasticity's rate were calculated for the period 2010 - 2011, based on financial statements submitted to the Ministry of Finance.

The results were summarized in the four quadrants of the table:

- Companies in quadrants I and IV showed a negative elasticity of claims against the change in turnover (the two variables have evolved in opposite directions).

- Quadrants II and III companies registered a positive elasticity of claims against the change in turnover (the two variables have evolved in the same direction).

It distinguishes four categories of companies in terms of how they manage the credit risk management in the period 2010-2011:

- **Companies from the 1st[4] quadrant** – shows the lowest level of risk, due to good management of commercial credit risk. Amid increasing turnover of these companies have succeeded to reduce its debts, recording an elasticity of -1.09 (turnover increase by 1%, claims fell by 1.09%). Positive situation of the companies grouped in this quadrant is confirmed by good values and a good financial performance indicator so that these companies can cover debts by the turnover rate of 187%, have a low gearing (56%) and records an average of 2.36% of turnover.

- **Companies in quadrant II** - have a medium level of risk due to a satisfactory credit risk management trade. Amid declining turnover, these companies were able to reduce their debts faster, recording an elasticity of 1.08 (lower turnover by 1%, claims fell by 1.08%). Reduced caliber of the companies grouped in this quadrant do but they remain vulnerable to less favorable economic situation, the main risks are determined by negative profitability and inability to cover debts by turnover.

- **Companies in quadrant III** - have a medium to high level of risk due to maximization at any cost orientation of turnover rather than the application of appropriate risk management policies of trade credit. Amid increasing turnover, the company recorded a faster growth of receivables, the elasticity is 1.24 (turnover increase by 1%, receivables increased by 1.24%). Increased caliber of the companies grouped in this quadrant allows maintaining a good level of coverage of debt and profitability, leading from the relatively high risk of debt collection.

- **Companies in quadrant IV** - shows a high level of risk because of poor management of commercial credit risk. Amid declining turnover of these companies have registered claims increasing the elasticity of -1.25 (lower turnover by 1%, receivables increased by 1.25%). Because of this evolution, the average debt collection by these companies is 179 days, a level significantly higher than that recorded by the companies grouped in the first 3 quadrants. Taking into account the fact that these companies are unable to cover its debts by turnover than 86%, and with an average loss of about -5.69%, we estimate the probability that a good portion of them to become insolvent

Given the numerical weights of firms in the four quadrants, we conclude that only two of 10 companies operating in the chemical poses a risk of insolvency fell 3.5 have a medium risk and risk difference of 4.5 record high to very high.

Also worrying is the distribution of the turnover generated by the companies analyzed between the four risk categories presented in quadrants, not less than two-thirds of it (17 of 26 MEUR) being generated by companies in quadrants III and IV (the risk high), while low-risk firms (quadrant I) have a share of only 30% (7.7 BRON) in total, so it is not excluded caliber occurrence of insolvencies in the sector during the next.

[4] Due to strong individual influence on aggregate indicators we excluded the first two largest companies in terms of net losses

Top Players Analysis

Since assessment of the situation financially sector or area of activity cannot be complete without presenting the major players in that area, this section aims to calculate and analyze detailed financial indicators of the leading 100 companies in the chemical (sorted descending by turnover in 2011), using data taken from the financial statements of Coface collected in order to achieve the level of commercial risk assessments at the request of business partners or internal needs of trade credit insurance service.

Although the numerical 100 companies sorted by size criteria mentioned above account for only 2%, their impact economically and socially is key, so they raised weightings own patrimonial structure and significantly influence the financial results of the sector.

Indicator	Top 100 share in total sector
FIXED ASSETS	72,41%
CURRENT ASSETS	66,62%
TOTAL LIABILITIES	64,30%
TOTAL STOCKS	71,65%
LIQUIDITIES	52,54%
TOTAL ASSETS	69,86%
WORKING CAPITAL	85,07%
EQUITY	73,32%
TOTAL LIABILITIES	68,03%
TURNOVER	77,22%
TOTAL REVENUES	77,67%
TOTAL EXPENSES	78,19%
NET PROFT	110,21%
NUMBER OF EMPLOYEES	50,89%

Detailed financial analysis of indicators and their evolution over the last four years in the representative sample that forms the core of this chemical allows the following conclusions:

- Indicators of indebtedness and capitalization of the companies in the Top 100 have deteriorated steadily in the period under review, total debt of the increase in expense capitalization, giving the same trend and the entire sector and reaching levels that may affect the potential for additional credit.

- Permanent values reflect negative working capital absorption frequency of a portion of the temporary resources to finance permanent needs, contrary to the principle of financial management.

- Existence temporary surplus resources is also confirmed by the negative values of working capital requirements, their size being able to cover the financing needs so permanent Net Cash remained positive during the accounting period for the years 2008-2010.

- This might seem less unfavorable in terms of enhanced investment policies and development orientation, but in any case maintaining a negative working capital over a period so long as the expression is clear degradation analyzed financial balance, confirmed by negative net cash value recorded at the end of 2011.

- net losses generated by the largest players of this industry decisive situation deteriorates sectoral profitability indicators but analyzing the source of these losses we see that they are not operational nature (operating profit rate is positive permanent), but merely because of the loss significant financial who cancels such positive results obtained from the basic activity, amid increasing marginal borrowing and orientation maturity of short-term financing, which puts pressure on debt service.

- Orientation of the sample companies to short-term financing is confirmed by the constant weight of over 75% they have short-term debt in total debt. This can be beneficial in terms of cost of financing (risk premium is directly proportional to the maturity of banks' exposure), but can be problematic in terms of appropriate liquidity, especially when they are used to cover long-term needs.

- Existing liquidity problems for companies of the sample are in fact already confirmed calculate liquidity ratios, these values being below par for the duration of four years.

- The average length Receivable remained low throughout the period and is below the industry average, which shows the application of effective policies these companies' trade receivables management and disposal of additional pressure on liquidity.

- Companies but do not show the same promptness and in terms of obligations to pay third parties, such as the average duration of the payment of debts is very high (up to 6 months).

Indicator	2011	2010	2009	2008
Indebtedness rate	72,11%	67,96%	67,82%	67,01%
Capitalization rate	23,25%	27,83%	29,25%	30,06%
Working capital (WC)[5]	-5.524.415.171	-4.533.506.430	-4.416.462.719	-3.403.162.861
WC/ Fixed assets	-36,66%	-30,69%	-33,10%	-30,83%
Necessary WC[6]	-5.409.782.413	-4.596.942.565	-4.738.981.282	-3.607.032.773
Net cash[7]	-114.632.758	63.436.135	322.518.563	203.869.912
STL[8]/ Total Liabilities	75,97%	75,19%	74,91%	76,30%
Current liquidity[9]	0,75	0,78	0,71	0,75
Immediate liquidity[10]	0,47	0,50	0,43	0,48
Net profit rate	-2,20%	-2,07%	-3,25%	-5,62%
Operating profit share[11]	-0,89	-2,02	-0,23	-0,02
Operating profit rate[12]	1,41%	2,81%	0,61%	0,11%
ROA[13]	-2,64%	-2,11%	-3,10%	-7,54%
ROE[14]	-11,36%	-7,57%	-10,61%	-25,08%
DSO	65,46	75,38	69,29	57,56
Stocks rotation period (DIH)	45,72	50,43	52,87	36,36
Payment obligations period (DPO)	164,35	180,81	191,75	137,29
Cash conversion cycle (CCC)[15]	-53,17	-55,00	-69,59	-43,37

[5] Working capital + Long term liabilities - Fixed Assets
[6] Liabilities + Stocks - Short term liabilities
[7] WC - Necessary WC
[8] Short term liabilities (below 1 year)
[9] Current Assets / Short term liabilities
[10] (Current Assets - Stocks) / STL
[11] Operating profit / Gross profit
[12] Operating profit / Turnover
[13] Net profit / Total Assets
[14] Net profit / WC
[15] DSO + DIH - DPO

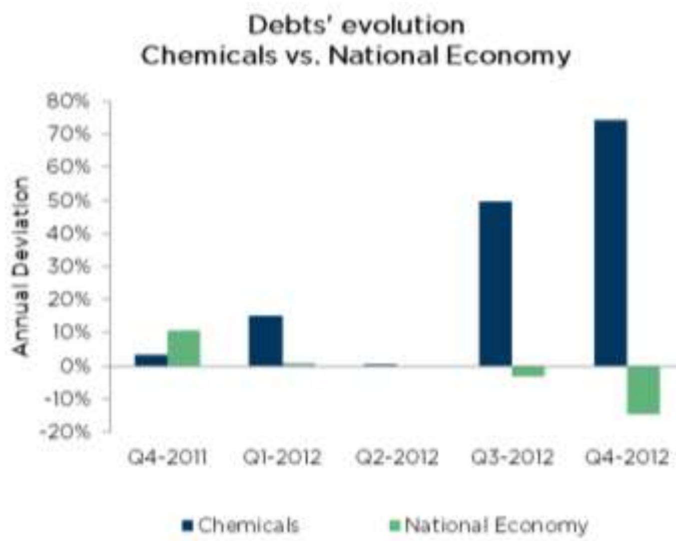
6. COMPANIES' PAYMENT BEHAVIOR, UNPAID DEBTS AND PAYMENT INCIDENTS

The sector-wide assessment of the payment behavior is an essential component of the chemicals sector's financial situation, especially in the current context of overall deteriorated payment discipline due to its persistent liquidity constraints of the companies as a result of the tightening credit conditions offered by the banks and a high level of due date regarding companies' debt collection.

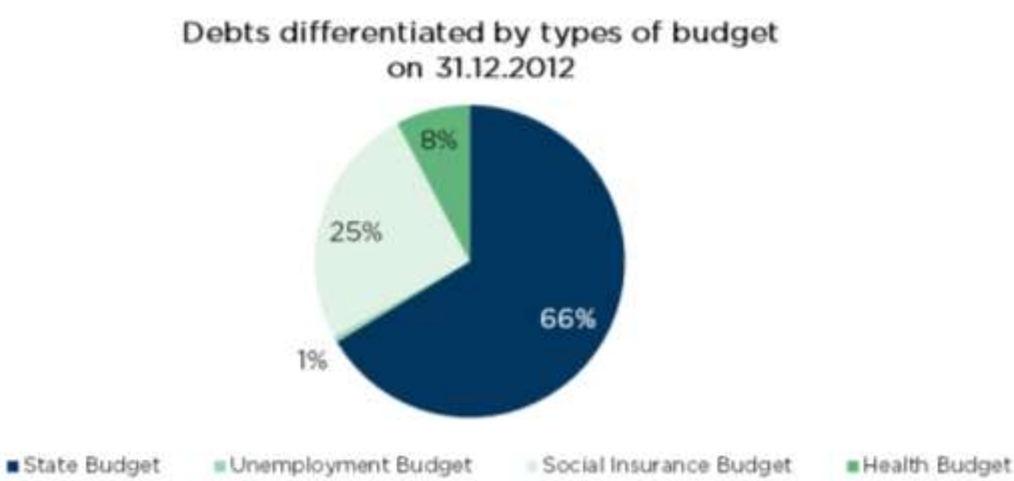
In order to estimate the payment behavior of the companies in the chemicals industry covered by this study, Coface Romania has followed two main directions:

Situation of registered overdue debts to the state budget:

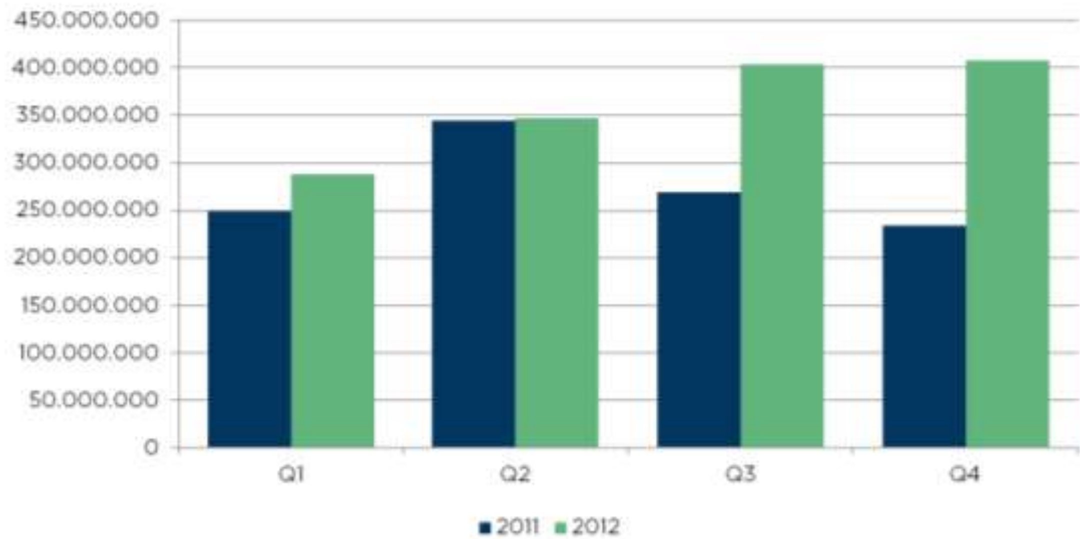
- According to published quarterly by the National Agency for Fiscal Administration (NAFA), a total of 1,194 firms in the chemical sector registered 31.12.2012 Debt worth U.S. $ 408.17 million, representing an increase of 74% (174 MEUR) from the debts registered on 31.12.2011.
- Share of the outstanding debt in the total debt outstanding chemical sector in the economy is relatively low (1.18% at the end of 2012 with constant values of 1.01% in 2011 and 2010), being inferior in terms of weight turnover (4.73% of the total in the economy).
- However, quarterly analysis of the dynamics of debt outstanding in 2012 and 2011 indicate an alarming trend for the last period, namely the accelerated growth of outstanding debts incurred by companies in the chemical industry while in the economy there is a clear trend to reduce these debts amid intensifying efforts revenue collection



Source: ANAF, Coface data

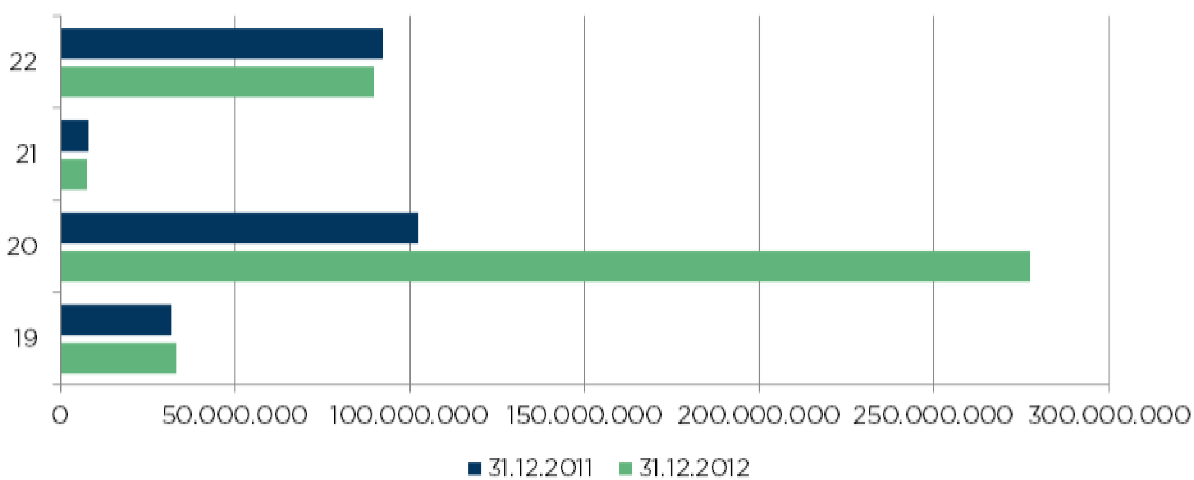


Quarterly Debts' evolution regarding the State Budget



Source: ANAF, Coface data

Debts' evolution by Divisions of Chemicals Industry



Source: ANAF, Coface data

Extending the analysis of information on overdue debts according to various criteria (type of budget, the division sector etc.), we presented additional conclusions on the situation of the sector, thus:

- Two-thirds of the total debt outstanding at 31.12.2012 is due to the state budget, thus it represents the main type of budget that companies delay or defer payments due.
- Payment of the unemployment insurance fund is made with the greatest promptness of corporate taxpayers, less than 1% of the total arrears representing this type of contribution.

- Significant increase in outstanding debt 31.12.2012 chemical sector over the same period of the previous year is largely determined in the various chemicals industry (division 20) recorded in this period drafts refused to pay) often signals the serious liquidity of the company that issued these instruments, sweep and careful interpretation of this information is a mandatory step in assessing

Element	Chemicals	Total Coface	Share / Deviation (+/-)
No. of companies verified within CIP	634	38.530	1,65%
No. of companies with CIP incidents	113	6.972	1,62%
Share of the companies with payment incidents	17,82%	18,09%	-1,49%
Total no. of payment incidents	**2.116**	**202.849**	**1,04%**
Average amount to be paid (check)	100.502	50.653	+98%
Average amount to be paid (PN)	113.122	37.475	+202%
Average amount to be paid (TOTAL)	**112.532**	**38.066**	**+196%**
Average retention amount (check)	99.499	50.250	+98%
Average retention amount (PN)	111.965	36.824	+204%
Average retention amount (TOTAL)	**111.382**	**37.428**	**+198%**

increased by 171% of outstanding debt having the largest share in total outstanding obligations of the chemical (68% 31.12.2012).

- Evolution of outstanding debt in the range mentioned in the other three divisions are included in a range of variation that can be considered normal, Division 19 an increase of 5.18%, while companies operating in Divisions 21 and 22 able reductions 3.52% and 2.75% of the outstanding obligations.

- The average outstanding debt per company in the sector amounted to 342 KRON in late 2012, thus registering a significant increase of 86% compared to the previous year and which confirmed the trend of deterioration of the ability to honor obligations.

Checking payment incidents with debt tools registered within CIP[16]

Since the occurrence of incidents of payment by debit instruments (promissory notes, checks or

[16]Payment Incidents Register (CIP) of BNR

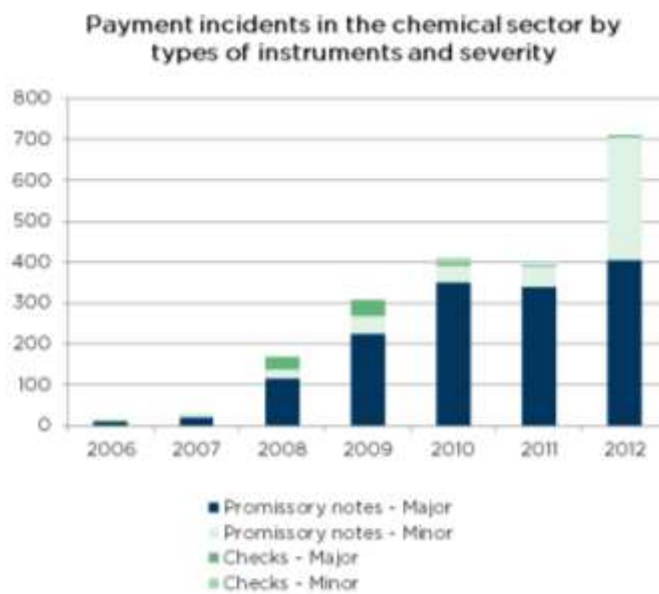
the conduct of payments, both at individual companies and aggregated at the sectoral level.

For the analysis of payment incidents in the chemical sector were used data from the CIP checks conducted by Coface Romania by Department of Business Information and Evaluation Companies, to evaluate the financial solvency and the degree of commercial risk of the companies at the request of business partners internal needs service or trade credit insurance.

Thus, during 2012 were screened at a number of CIP 634 companies in the chemical sector, this being a representative sample of 79% of the industry as a share in turnover and including both those of the major players in the sector, and SME companies verified upon request Coface partners in order to conclude commercial transactions.

Following these tests, the CIP were obtained synthetic data and detailed history of incidents payment debt instruments of companies for the past seven years (2006 - 2012), processing and analysis of these data provides the following conclusions regarding payment behavior of companies in the sector:

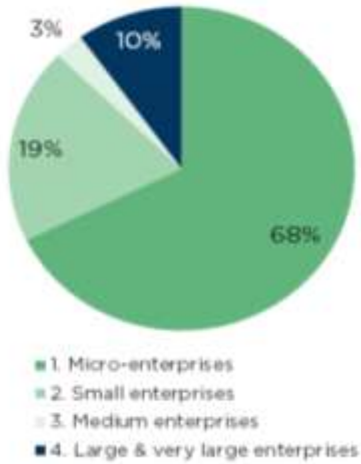
- 17.82% of the companies surveyed (113 of 634) appear to CIP recorded at least one payment incident during 2006 - 2012.
- The company recorded 113 incidents CIP generated a total of 2,116 incidents (check links and notes refused to pay), total amount of 235.6 million EUR being rejected.
- Extrapolating[17] the total amounts rejected for the sample of 634 firms CIP checked the entire universe of firms in the chemical industry as a result over the past seven years (2006-2012) in this sector has declined to pay the debt instruments amount total of 297.5 MRON.
- Although numerical share of firms in total firms incidents checked CIP is the same for both sample analyzed the chemical industry, and to the entire universe of firms audited by Coface (about 18%), while analysis of the evolution of the number incident and refused to pay the average amounts situation leads to alarming conclusions on the state of non-paying companies in the sector.
- The synthetic data show that the average amount CIP refused to pay in case of debt instruments issued by companies in the chemical industry is 3 times higher than average amount of payment to all the companies checked CIP by Coface (111 KRON vs. 37 KRON), the deviation being more pronounced in the case of promissory notes than in those checks.
- Following the evolution of the number of payment incidents in the sector in the analyzed period (2006 - 2012) we see significant increase in the number of debt instruments refused to pay the last two years, so the number of incidents amounted to 2011 and 2012 is higher than total number of refusals to pay recorded in the previous five years (2006-2010).
- Also damage the payment behavior of the sector is illustrated by the fact that only in 2012 there were 711 incidents, 3 times more than in the pre-crisis period (2006-2008).
- Distribution of the payment incidents in terms of companies' size confirms that these view microenterprises which generated 68% of all refusals to pay, while aggregate SMEs, this percentage climbs to 90%.
- Damage behavior fulfillment payments by debit instruments to attract a major problem of this new segment of companies that may face loss of credibility with suppliers and payment before requesting full or partial payment in advance.



Source: CIP, Coface data

[17] Based on the share of representative companies analyzed by Coface in relation to the total turnover of the sector

Distribution of incidents no. within CIP 2006 - 2012 by companies categories



7. COMPANIES' LEGAL STATUS AND THE EVOLUTION OF THE LEGAL DISPUTES

This section of the study focuses on identifying the current legal status of companies in the chemical sector, using information on state firms and insolvency procedures published online portal of the ONRC[18] about the situation in the court files released by the Ministry of Justice through the portal courts.

Corroborating the official status of the firm in the Register of Commerce Founded firms included in the chemical industry can analyze sectoral dynamics in terms of the establishment of new firms and exit of operation, showing that:

- Of the 4,598 companies registered with NACE mainly in the sector and who submitted the financial statements at 31.12.2011, a total of 1,011 companies are no longer in operation in mid- April 2013, being either in various stages of the procedure insolvency, liquidation or dissolution, either temporary interruption of activity.
- The number of companies that have ceased operations in the period 2012-2013 is higher than that of the newly created between 2008 - 2011 (927 firms), which looks at sector tend to reduce both the number of active firms, and the regeneration capacity of this erosion of the economic point of view.
- These trends become more apparent by comparing the size of firms out of operation at the newly established firms, with which to observe the strong negative impact of the decommissioning of a large number of companies over the past two years, which cannot be compensated the contribution made by companies "young" established during 2008 - 2011.
- Thus, out of operation in the period 2012-2013 of the 1,011 companies in the sector may entail the loss of no more than 7,069 jobs and a turnover of over U.S. $ 2.8 billion, while that the contribution of newly established firms rises only 5,120 jobs and £ 0.87 billion turnover.
- Analyzing separately the dynamics of each of the four divisions of the chemical activity can easily see that the imbalance occurred in the sector throughout the function of a large number of firms is generated mostly by companies operating in the division 20 (products and various chemicals), the dynamics of its outputs - inputs claiming the companies themselves with a strong negative result (loss of 2,478 jobs and over £ 2bn turnover).
- At the opposite pole Division 22 (plastics and rubber), which had a positive contribution to the regeneration sector, in this case the newly established companies bringing a surplus of 829 jobs and more than £ 24 million turnover.

[18]Bulletin of Insolvency Proceedings published by NORC

Division of activity	NO. OF COMPANIES		TURNOVER		NO. OF EMPLOYEES	
	Disappeared	Founded	Disappeared	Founded	Disappeared	Founded
19 Division	15	12	109.862.625	162.000.010	224	22
20 Division	279	171	2.305.529.376	252.550.859	4.415	1.937
21 Division	19	23	22.019.562	12.023.613	153	55
22 Division	698	721	425.072.863	449.534.850	2.277	3.106
TOTAL SECTOR	1.011	**927**	**2.862.484.426**	**876.109.332**	**7.069**	**5.120**
SOLD SECTOR	-84		-1.986.375.094		-1.949	

Another direction of comprehensive analysis to identify the current legal situation of companies in the chemical industry is the verification of their involvement in commercial litigation (court cases) direct and profound impact on commercial risk and even to retain the business.

This verification is important as the more special with the general deterioration in the current context of the discipline of paying contractual obligations a growing number of lenders are turning to various types of legal actions to recover amounts due from customers' bad-payers.

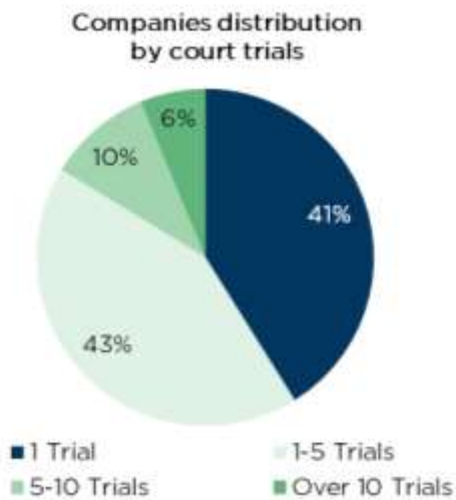
Source: Court's Portal, MJ, Coface data

For this analysis, Coface Romania verified and processed data on court cases that occur in the chemical sector firms as debtor and the file is subject to insolvency proceedings, summons payment or payment ordinance that is exactly the procedure mentioned above as having a potentially negative impact on firms.

By grouping the data by Year (opening) file and object case can get an overview of legal proceedings involving commercial impact of chemical companies, as follows:

- At the end of the first quarter of 2013, companies in the sector were involved as a debtor in 4,713 cases involving the above mentioned cases opened during 2007-2013.
- From the point of view of opening the file it is observed that the absolute maximum was reached in the period 2009 - 2010, when the economic crisis has caused lenders to use increasingly more court proceedings (including applications for insolvency) as a means of pressure of creditors, in these two years opening up no less than 47% of the files checked.
- Over the next two years (2011-2012) the number of newly registered cases fell steadily, especially on lower number of demands for payment and insolvency procedures required by lenders who began to find that in many cases the insolvency procedure and liquidation of the debtor does not necessarily lead to the recovery and flow.

- CCJ type of procedure is most commonly used by lenders (47% of cases), followed by the application of insolvency (36%), while the payment ordinance was used in only 17% of cases.



Source: Court's Portal, MJ, Coface data

- Of the 1,682 cases registered in the portal application Courts lens insolvency, only 448 of these companies have emerged in BPI[19] with information on the opening of insolvency. This results in a rate of acceptance by the court of insolvency claims 27% of this sector.

- Following distribution of court cases between the companies in the chemical sector, we see that a total of 1,068 firms (i.e. 23% of total assets in companies in late 2011) are involved as a debtor in at least a record insolvency, subpoena or order of payment.

- Divide the firms registered with processes related to commercial litigation categories of number of cases, we observe that the sector is a group of 174 companies (16% of those cases in court) that occur more than 5 cases recorded, which shows that this group of companies is " specialized " in paying contractual obligations and to recover debts, their creditors must use consistently and frequently in court.

8. INSOLVENCIES IMPACT ON CHEMICALS COMPANIES

In light of its position as provider of integrated services for commercial credit risk management that involves a close and permanent monitoring of the situation of companies, Coface Romania develops and publishes a quarterly " survey on the situation of bankruptcies in Romania ", a complex analysis that became while a reference document for information on insolvency matters for both the business community and media.

According to the latest edition of this study, which refers to the situation insolvencies during 2012 and is based on data published in the Bulletin of insolvency proceedings last year opened insolvency proceedings for a total of 23 665 Romanian companies, up 10% over the same period of 2011.

Distribution companies became insolvent in the most important sectors (made by Coface on NACE codes reported in the financial statements of companies filed for 2011) no place among chemical industry sectors "Cheer " in terms of number of company insolvencies, occupying this position 18 from a total of 23 sectors.

This positioning chemicals sector takes place in a context where for the third consecutive year the top ten sectors that recorded the highest number of insolvent firms remains unchanged, we observed an increase in the concentration for the first three to five sectors.

[19] Bulletin of Insolvency Proceedings publishes by NORC

Analyzing data on the situation of insolvency in the last three years in a comparative approach to the chemical sector with Romanian economy as a whole, here are the following trends:

- Contrary recorded nationwide trend, where the number of insolvencies has increased continuously over the last three years with annual indices between 6-10%, the chemical industry has had a rather positive in terms of the number of insolvent companies such as in the year 2012 we can talk about a 14% decrease in the number of insolvencies, while in the period 2010 to 2011 it was virtually constant.

- Chemical sector's share in total insolvencies nationwide and ranks consistently remains low at around 1%, with a tendency to decrease in the last two years amid rapid growth of insolvencies in other sectors.

- The number of insolvencies per 1,000 active companies (calculated as [no. Insolvency / Nr. Companies active] * 1000) recorded in the sector is relatively constant and close to the national average, driven by the low in the sector, both in the number of insolvent companies, and of the companies considered active.

Indicator	Chemicals			Total of companies in Romania		
The year when the insolvency was initiated	2012	2011	2010	2012	2011	2010
Number of insolvent companies[20]	**204**	**237**	**236**	23,666	21,499	19,650
Share of chemicals in total insolvencies	0,86%	1,10%	1,20%			
Position within Top Insolvent Sectors (1-23)	18	17	15			
Annual evolution of insolvencies	-13,92%	0,42%	5,83%	10,08%	9,41%	6,67%
Insolvencies per 1.000 active companies	75	83	80	82		

[20]The figures in the sector are obtained by extrapolating the share taken by companies for which there are no reports of their core activity nationwide

Indicators for the insolvent companies within the Chemicals Industry	Insolvency Year 2012	Insolvency Year 2011	Insolvency Year 2010
Average turnover (MRON)	5,14	5,25	1,54
Capitalization rate	12%	-9%	-6%
Indebtedness rate	85,08%	164,83%	105,58%
Profit/ net loss ratio	-5,40%	-17,35%	-12,99%
DSO	84,34	150,64	1,049,97
Indicators for total no. of insolvencies nationwide	**Insolvency Year 2012**	**Insolvency Year 2011**	**Insolvency Year 2010**
Capitalization rate	36%	-14%	-2%
Indebtedness rate	57,00%	112,00%	97,00%
Profit/ net loss ratio	-14,00%	-18,00%	-17,00%
DSO	145	182	185

Comparing financial ratios of companies in the chemical sector became insolvent in 2012 both the registered users of insolvent companies in the sector in previous years, as well as those of all insolvent firms nationwide notice certain features of the services sector, as follows:

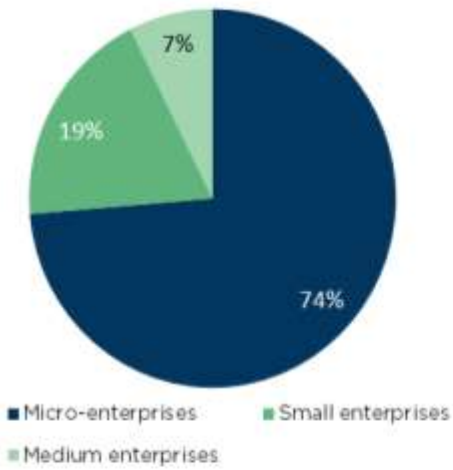
- Size insolvent firms has stabilized in 2012 at a value very close to that of the previous year, thus outlining a constant profile in terms of the size of insolvent companies (turnover average of 5 million EUR).

- The capitalization, although improved compared to that of companies in the sector insolvencies in previous years, is still very low (12%) and place well below the corresponding value of the indicator at the national level, thus presenting as one of thin capitalization specific factors that may cause insolvency within the sector

- The rate of loss of insolvent firms is lower in 2012, but the level of this indicator consistently negative, both at sectoral, national and indicates a lack of profitability as another constant feature in the profile of insolvent companies. From this point of view, the most vulnerable are micro and small enterprises amid the accumulation of losses in consecutive years and has poor support from shareholders, get to negative equity.

- Indebtedness and average length Receivable (DSO) were significantly better values insolvent firms in 2012 compared to previous years, confirming the general trend for the entire universe of insolvent companies that became insolvent last year shows a greater sensitivity, because faced with internal and external shocks lower intensity compared to previous years.

Insolvent companies in 2012



Source: ONRC, BPI, Coface data

Analyzing the distribution of insolvencies by size category of firms note the following:

- All of insolvent companies in the chemical sector in 2012 belong to the SME category, of these micro-enterprises with the largest share in the total number of insolvencies in the sector (74%).

- Despite high numerical weight of these microenterprises have contributed only 4% of the total turnover and shows the damage the financial ratios (gearing extremely high, very high loss rate and degree of capitalization strongly negative).

- The situation is not much different among small businesses that have become insolvent, the financial indicators also having very damaged values plus segment is distinguished by the largest debt collection period (131 days).

- Although they share the lowest numerical (7%), medium-sized companies have become insolvent generates the highest turnover and that the more debt and their financial indicators (partially damaged) confirm the trend previously observed, namely the insolvency of companies generally reliable, but not less capable of withstanding shocks and fluctuations certain activity or have requested their own opening insolvency proceedings for the purposes of shelter from creditors in anticipation of circumstances most conducive to reorganization.

Besides evolution insolvent financial indicators of firms from one year to another, an important role in order to understand the causes and circumstances that led to the insolvency and tracking evolutionary point it is that it goes into insolvency firm has in previous years opening procedure. Thus, analyzing the financial indicators of chemical insolvent firms that submitted financial statements, both in 2011 and in 2010 we see that:

- Turnover decreased by 7%, while net loss was increased by 29%
- Payables and receivables increased by 4% to 11%
- Equity decreased by 23%
- The market capitalization fell by 25%
- Duration Receivable increased by 25%, reaching -1.6 elasticity receivables

Small enterprises	Medium enterprises
▪ 19% of total companies ▪ Generating 18% of turnover ▪ Generating 23% of total debts ▪ DSO: 131 days ▪ Capitalization rate: -18% ▪ Indebtedness rate: 117% ▪ Average turnover: 4,84 MRON ▪ Loss ratio: -10% ▪ Average number of employees: 16	▪ 7% of total companies ▪ Generating 78% of turnover ▪ Generating 68% of total debts ▪ DSO: 72 days ▪ Capitalization rate: 22% ▪ Indebtedness rate: 74% ▪ Average turnover: 54,26 MRON ▪ Loss ratio: -4% ▪ Average number of employees: 61
Micro-enterprises	**TOTAL OF INSOLVENT COMPANIES 2012**
▪ 74% of total companies ▪ Generating 4% of turnover ▪ Generating 9% of total debts ▪ DSO: 122 days ▪ Capitalization rate: -46% ▪ Indebtedness rate: 145% ▪ Average turnover: 0,3 mil. RON ▪ Loss ratio: -19% ▪ Average number of employees: 2	▪ Average turnover 5,14 MRON (-2% compared to 5,25 MRON in 2011) ▪ Average debts value 3,8 MRON (-5% compared to 4 MRON in 2011) ▪ Loss ratio: -5%

9. COFACE SECTORAL RISK ANALYSIS

In order to assess the commercial risk of the company, Coface has developed a rating model (called @rating score) for the countries of Central and Eastern Europe, with specific calibrated macroeconomic variables and depending on data availability in each country.

The main characteristics of this evaluation are:

- Show the probability of entry in default (default) analyzed the company for the next 12 months.
- All relevant variables are combined into a single risk indicator is displayed on a scale from 0 (insolvency in progress) - 10 (minimum insolvency risk), each class is correlated with a specific insolvency probability.
- Uses econometric models calibrated differently for each country.
- Combine variables on the financial information regarding payment behavior.
- Differentiate SMEs by large companies and very large.

Calculate the probability that the company analyzed the subject to enter default for the next 12 months involving the use of 218 soft variables (i.e. payment behavior and description of company) and 299 financial variables. The results obtained by the two categories of variables are then consolidated to create a single indication of risk. Examples of variables used:

- **Qualitative (Soft)**: Registration date company form of organization, location, development, activity, (belonging to the sector for the assessment of systemic risk), information about shareholders and networking with other companies, information on payment behavior, the existence of cases in collection (access and interconnection/ database collection department within the company, which gives us information about the payment behavior of companies investigated) etc.
- **Financial (Financial)**: is computed based on the financial data available (both the dynamics of balance (absolute values) and calculated indices), e.g. dynamic turnover, fixed assets, and equity components, liquidity indicators, solvency, profitability or activity.

The final score (@rating company) is obtained as a linear combination of the two scores, the financial with a weight of 0.7, and the quality of 0.3. Depending on the value of this rating, Coface companies fall into one of these three main groups of risk:

Scoring @rating: 1-3 (NIGA - Non Investment Grade Aggravated)

For companies in this risk class (NIGA) is not recommended investment, commercial insurance or commercial credit granting. For this reason, the maximum recommended exposure these companies will always be zero.

In general, companies in this risk class (NIGA) have a decreasing trend (steeper) for several years in a row, risky behavior pay (payment incidents very recent ban is in banking, have outstanding debts recorded in our base data), negative equity or very small (< 5% of total assets), liquidity very low, very low or no negative information on commercial insurance line (confidential information can not be provided in credit reports).

Scoring @ rating 4-5 (NGA - Non Investment Grade)

For companies in this class is not recommended investment risk but may be the subject of a commercial insurance or a commercial loan (with caution).

@ Rating companies scoring 4 and 5 had both negative aspects and positive : downtrend, but good financial structure, debt budget, incidental old recent collection cases closed positive (company paid debit), negative equity, but evolving on the Profit and Loss Account smooth.

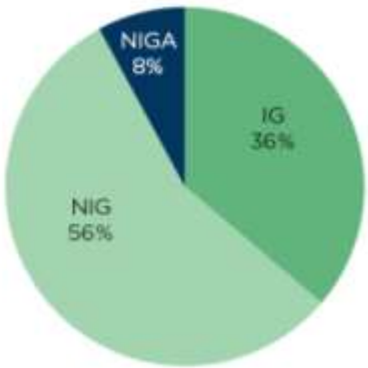
Scoring @ rating 6-10 (IG - Investment Grade)

For companies in this class is considered to be low risk. There is always a recommended commercial exposure for scoring sites in this risk class.

Coface Romania individually analyzed during 2012, at the request of business partners or direct exposure monitoring in the insurance division, **a total of 774 companies in the chemical sector**, with a total turnover of 41.2 BEUR (9.7 BEUR), corresponding to a share of 87% of the aggregate turnover of the entire sector.

Analyzing the distribution of these firms on risk classes, it is observed that only 36% of companies operating in the chemical industry shows a decreased risk of insolvency (IG group), the remainder being classified in a higher than average risk group (NIG - 56%) or risk high (NIGA - 8%).

Companies distribution analyzed by Coface in 2012 by class of risk



Of the 774 companies analyzed individually by Coface sector during 2012, a total of 464 companies were analyzed and in 2011, representing about 80% of the aggregate turnover of the firms active in the entire sector. Analyzing how these companies have migrated from one risk class to another during the two-year note the following:

- 168 firms were classified in the same risk class, representing approximately 36% of the sample;
- 167 firms were classified in a class higher insolvency risk, representing about 36% of the sample;
- 129 firms were classified in a class lower insolvency risk, representing approximately 28% of the sample.

Interpreting these results correlated with firm size, we observe that the number of firms with negative evolution (growth risk) is higher than of those who declined the risk, but there is a trend of polarization evolution based insolvency risk the size of firms, average turnover of companies with negative evolution (47.5 million USD) is more than three times smaller than those recorded a better assessment of the risk level (153 million USD).

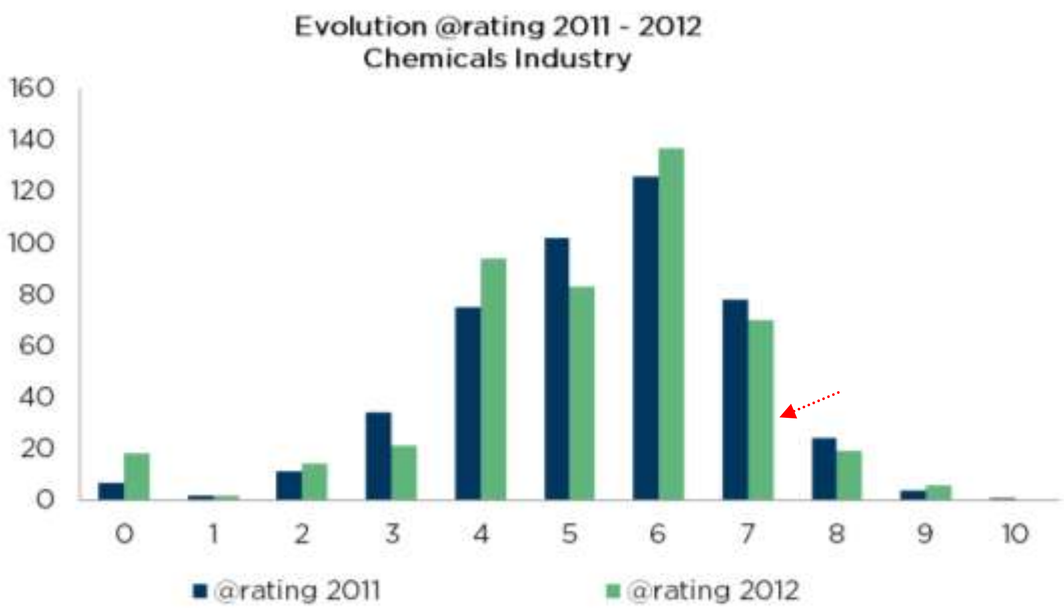
At the detailed level of risk classes, the main trend that can be observed by comparing the distribution evaluation in 2012 compared to 2011 is to reduce the number of companies at risk of insolvency low grades 7-10 and their removal be at the IG group (class 6) or above-average risk in the NGA (Class 4).

Although the level of assessed risk map of Coface in the chemical industry has experienced major changes in the period 2011-2012, some trends of the analyzes presented in this section indicates the possible future evolution of the sector by increasing insolvency risk.

	No. of companies	Average turnover MRON
Total of analyzed companies in 2011 and 2012	464	81,39

Which represents 80% of turnover for all the active companies in the sector where:

Identical @rating	168	65,91
Downgrade 1 class	118	56,47
Downgrade 2 classes	33	37,06
Downgrade over 2 classes	16	49,00
Upgrade 1 class	92	167,48
Upgrade 2 classes	29	13,32
Upgrade over 2 classes	8	278,20



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