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European Center

The Expected Effects of the EU Accession on the Chemical Industry in the Slovak Republic

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1. Introduction

1.1. Basic characteristics of the chemical industry

The Slovak chemical industry differs from the chemical industries in developed countries by high material and energy demands owing to the prevalence of heavy chemical industry and low number of sophisticated productions of higher added values. In addition, the European and world chemical industries apply the principle of interconnections between productions under one parent concern. The revenue margin is thus not being accounted for at the deliveries of inter-consumption but is being collected from the final customer at the consumer market. Most concerns - wherein the managers succeeded in becoming their owners in the process of privatization – are only about to face the integration of productions.

Three industries may be included into the chemical industry – according to the Industrial Classification of Economic Activities (NACE):

- NACE 232 Refinery oil products

production program covers the fuels, heating and lube oils, asphalts and paraffins

- NACE 24 Chemical industry (excluded pharmaceutical industry)

covers a wide range of basic chemical products, pesticides and other agrochemical products, coat paints, varnishes and similar coating materials, chemical and plant products, glycerine; soap and detergents, deteratives and polishers, and other chemical products

- NACE 25 Products of rubber and plastic

may be classified as products of rubber that include tyres and rubber tubes, tyre trading, other rubber products, India-rubber and related products, and as products of plastics that include final consumer products, as well as products for other industrial utilization

1.2. Position of the chemistry in whole industry, domestic and European economy

The chemical industry in its wider sense stands for the second most significant industry in the Slovak Republic – after the engineering industry. Including the oil refinement and rubber and plastic production, it covers approximately one-sixth of the sales, one-seventh of the added value but not a tenth of the employment rate within the industry domain. One-sixth of the whole industry sales comes from the positive economic results of chemical concerns in 2001.

The labor productivity, measured by the added value amount per employee in the chemical industry, amounted in total to more than 845 thousand SKK in 2001. This figure proves the primacy within the industry domain. The high labor productivity is associated with the significantly lower employment rate typical mainly for the refinement industry. We assess this industry in the analysis separately.

Industrial companies in the EU generated altogether approximately a quarter of the eurozone GDP in 2001. Industry in Slovakia participated in formation of Slovak GDP in the same degree.

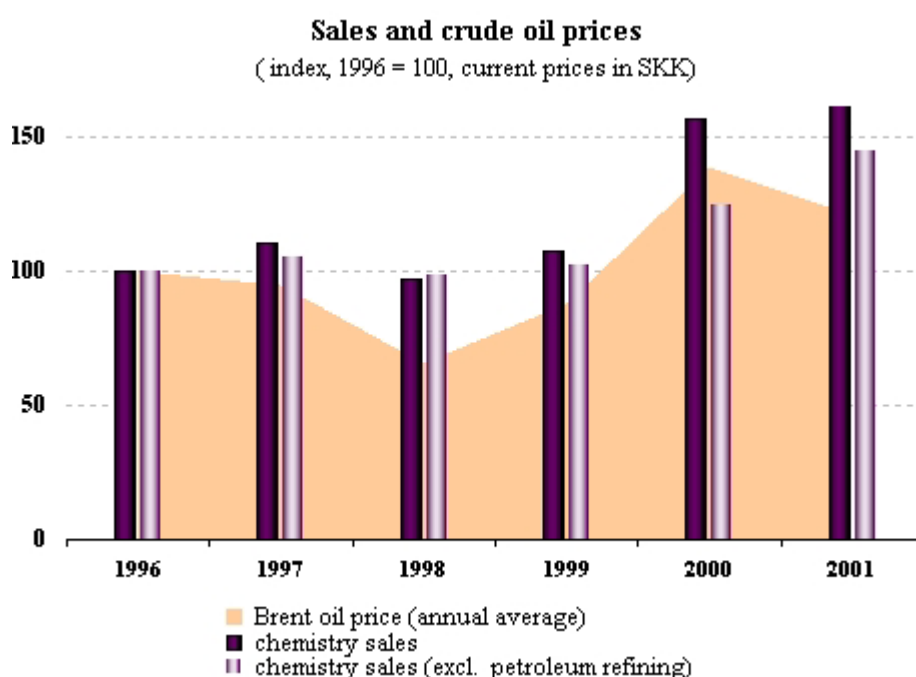
Industry contributes to the national economy added value formation with nearly 30 percent. In 2001 the share of chemistry in general in the added value of Slovak economy was 3.6%; not including the added value of crude oil refining (2.3%).

2. Growth effects of the EU accession

2.1. Current situation and trends in the chemical industry

The chemical industry, predominantly represented by the refinement and basic chemicals industries, responded sensitively to the prices of crude oil. While prices of the “black gold” are falling, sales and added value of the chemical industry are following the trend. If entrepreneurs in the industry are able to eliminate the entail of price growth by increasing of production effectiveness or by cost rationalization, the world trend will not influence domestic profits.

The example is refinery business, in which the owners of Slovnaft (covers more than nine tenths of the sales in the refinement industry) enjoyed – thanks to the huge investments over preceding years – tremendous incomes¹.



SOURCE: Statistical office of the SR, Moneyline Telerate

As for the chemical industry, 2001 stood for the second year of expansion (on a year-to-year basis - 13 % in current prices). In case of the industry covering rubber and plastic production, it was the third year of expansion. At the first sight it may seem the Slovak chemical industry is strong enough to prosper despite the world recession that had an adverse effect upon most of the European chemical concerns in 2001. However, a deeper review shows the Slovak concerns paradoxically enjoyed successes also thanks to the European recession. International corporations were due to poor results impelled to foster the pressure upon the reduction of production unit costs. This process led to maximum utilization of production capacities at plants in the countries that could ensure productions at the required quality level with lower costs. Slovakia belongs to this group of countries as well.

The domestic proprietors of chemical concerns that have in most cases settled the outstanding liabilities towards the Slovak National Property Fund and resisted the pressure that followed the political changes in

¹ There are two significant companies operating in refinery – Slovnaft and Petrochema, whereby the results of Slovnaft make more than nine tenths of the industrial numbers. Moreover, Slovnaft processed more than five millions of tons of oil a year (in 2001 even 5.395 mil. tons), what was more than fifty multiple of the Petrochema capacity.

1998, benefited from the lower price of loans dominating in the company liabilities. It is thus mostly the profit of chemical concerns that stands as a prerequisite of a future growth of realized volumes. Namely, the profit is the second most relevant source of financing for Slovak companies.

The number of loss-making concerns (at the time of comparison – concerns of more than 20 employees) decreased in 2001 in comparison to 1998 almost by a half. The year 2001 was special for the chemical industry also in respect of the aggregate results. The profits reached maximum levels within the period of past six years, whereby the losses recorded their lowest possible levels. The profits are finally improving equity situation of Slovak chemical companies and allowing owners to invest in new technologies.

2.2. Analysis of the direct and indirect growth effects

The integration does not depend only on policy maker's decisions

In the long-term perspective, the Slovak chemical industry productivity resides mostly in the refinement business. The raw material in this industry enters the manufacturing process "directly from the well" and then - having undergone the technologically demanding process - straight to the consumer's tank.

The industry of refinery oil products gets moved especially upon the price of the input raw material – the oil. The yield achieved at the oil processing is a key to success within the refinery business. With the price of heavy heating oil amounting to less than two thirds of the oil price, the share of products of high added value per the total refinery production is important. The refinery capacity from the technological point of view of lowering the share of residual oil in favor of the fuels therefore determines its competitiveness capacity.

Traditional Slovak fuel producer – Slovnaft – is typical example of economical structures integration not depending on political decisions of policymakers. After the crisis in 1998 and 1999 caused by risky financing of costly investments of EFPA (Environmental Fuel Project Apollo), Slovnaft could not reject the capital investment of Hungarian oil and gas company MOL.

The collaboration based on more extended principle than national one strengthens both partners position upon purchasing input raw materials. The cooperation enables both partners to supply fuels in separate territories. Slovnaft stopped supplying gas stations in Hungary and in return took over the territories of the Czech and Polish market from MOL. Nowadays the Slovak refinery market is open for EU and associated countries. In this case, only secondary effects will affect entrepreneurship in the industry after accession. One of them is disposable income of population and state fuel tax policy. Nevertheless, the demand for fuels is non-elastic and the competitiveness of refinery depends on the yield achieved at the oil processing.

Apart from the production efficiency, a direct approach towards the end customer stands for an important factor in the refinery business, i.e. the ability to sell fuels to the motorists without "giving" part of the margin to the merchants. In the opinion of Mr. W. Ruttentorfer - the ÖMV concern director - the Central European market accepts annually approximately 75 mil. tons of fuels, whereby the capacities of refineries in this region amount to about 85 mil. tons. The profitability in the industry therefore depends on the capacity of particular refinery to satisfy this market by a network of own filling stations.

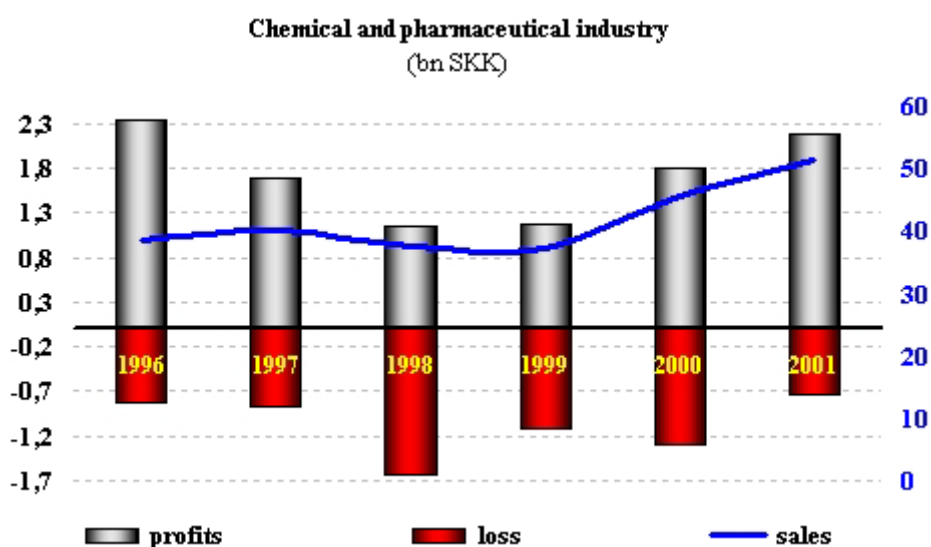
In September 2002, petrol was sold within the Slovak market at 754 filling stations. However, more than one fifth of them stand for the so-called "yard stations" active in premises of former co-operative farms, or big enterprises, that often do not comply with ecological and technical standards. In the following years we are at first expecting the reconstruction of sale places – gas stations on the Slovak refinery product market.

Slovak Antitrust Office currently limits the number of gas stations for Slovnaft. There will be only some changes in their structure. Nowadays there are several non-environmental gas stations under reconstruction. It is also important to ensure oil desulphurization required by EU norms.

Relations to chosen industry branches

More than half of the incomes within the chemical industry come from the manufacturers of basic chemical substances, the share of which totaled only 36 % in 1998. Within the European Union, the share of this sub-industry reaches about two fifths.

Decisive share, two-third share in the very sub-industry of basic chemicals, is divided among three concerns: Duslo, NCHZ and Chemko. The share of these three concerns in profits was even a bit higher in 2001. At the predominance of the production of basic chemicals, the profitability of the whole industry depends especially on the growth of realized volumes.



SOURCE: Statistical office of the SR

Several domestic producers of basic chemicals are thriving especially thanks to advantages provided to them before the liberalization of Slovak energy market, not because of actual market advantages. The main advantage, claimed also in European chemical business, is successful vertical integration of the interconnected sequential productions. To benefit from this advantage it is necessary to have a massive “financial cushion”, run-in cash flow, foolproof distribution and sufficient market share. None of Slovak major producers with domestic owners has all of these advantages. After accession it is possible to expect activity of foreign chemical leaders in this area.

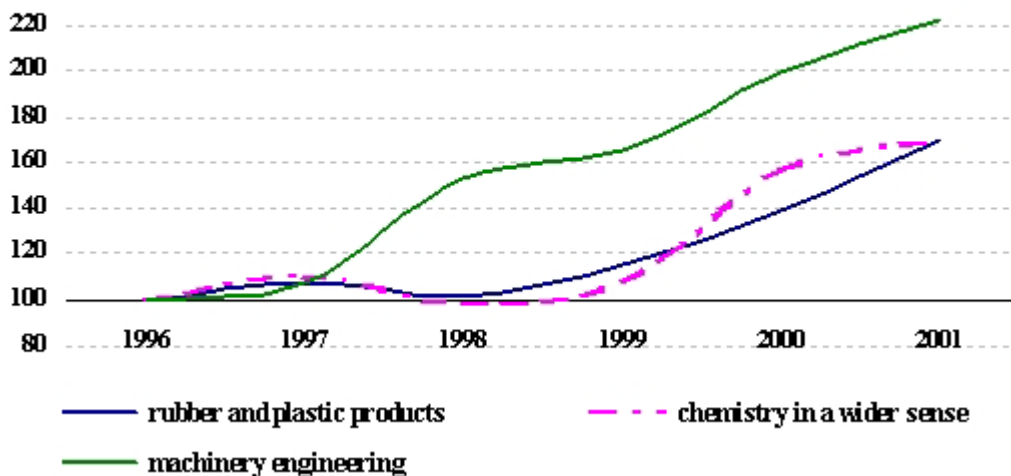
Foreign investors, who have been operating in the Slovak chemical industry for a decade, had been lead into SR mainly by costs strategy and in some cases also by results of research and development. After accession, these investors are going to re-evaluate their positions in the region and also discuss the possibility of moving production further east. For example nowadays we can hear more Asian than East-European accent on the world yarns markets.

Although the production of industrial yarns in the Slovakia is more successful than production of textile yarns, the challenge for yarns producers is environmentalism, especially the substitution of viscose by polyester.

Within the sub-industry of detergents, soaps, cleansing agents and cosmetics, several minor manufacturers like AB Kozmetika, De Miclén, Herba Drug or Tatrachema are active. World concerns force the home

manufacturers out of both home and foreign markets. In the Central Europe, the wave of acquisitions took place at the beginning of 90's. However, the Slovak manufacturers did not get integrated into the multinational structures. Nowadays domestic producers are being pushed out of domestic market by world concerns. In connection to EU accession it is more possible to expect support of promotion and sale than direct investments into production. If a foreign leader starts its own production on the target market, the business often comprises only mixing of imported ingredients and packaging the product into national package. The research and development is carried out in parent companies.

Sales related to chosen branches
(index 1996 = 100, current prices)



SOURCE: Statistical office of the SR. TREND Analyses

The production of painting substances is connected with the development in the building, furniture and machinery engineering industries. The dominant concern within the sub-industry is Chemolak, covering approximately 80% share in the sub-industry incomes. The development of painting substances is thus associated with the difficulties in the concern. Chemolak did not realize the replacement of big customers by smaller concerns and workshops. It thus lost the market share at the home and Czech markets.

The number of rubber and plastic producers in comparison to the chemical and pharmaceutical producers is more than twofold. In the long-term perspective the rubber and plastic industry makes almost three quarters of the incomes from sales for export.

The employment in the industry has grown thanks to the smaller enterprises. The five biggest employers within the industry, on the other hand, have been cutting the number of working positions for several years (in 2001, they provided work for approximately three quarters of employees in the industry).

The Slovak rubber and plastic industry is different from other chemical industries as its results are close to stable European chemistry performance – especially in the last three years. In addition the industrial results correlate more to other types of production – machinery engineering, electrical engineering or consumer industry - than to the development in the chemical industry. The reason resides in the strong representation of the rubber production in the industry (three fifths of the incomes) mostly represented by the production of passenger and truck tyres and linked to the development in the automotive industry. We can identify a similar tendency in the production of rubber and rubber-metal products for motorcars and other transport facilities.

Plastic products are being applied in the building, automotive, packing and food industries (wrapping foils). Within the field of plastic materials, foreign suppliers penetrate the sub-industry – especially within the segment of products determined for the building industry (roof systems, gas system, roads and highways),

above all through refinancing of the deliveries to the consumers. This long-term weakness of Slovak manufacturers should no longer pose a serious problem due to lowering the interest rates.

Traditional home manufacturers attempt to get involved into the deliveries for automobile or electrical engineering industries, but the foreign investors active in these industries prefer to co-operate with more renowned enterprises. In connection with the expected development of automotive industry in SR the success of domestic producers will be defined by their ability to fulfil the high automotive quality norms. Comparing to European producers they will still exploit the lower labor costs.

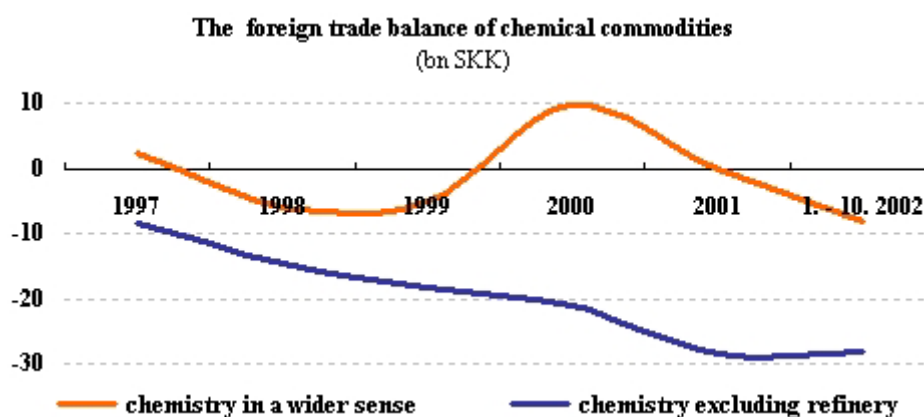
Production of packaging represents a strong segment within the plastic production. Although it partially reflects the prices of oil because the input polyethylene and polypropylene granulate are oil products, the very demand for packaging (industrial and consumer) is more influenced by the results of the industry and whole economy. The industry is currently open, competitiveness depends on investment into new technologies and accepting the European technical parameters.

The continuing inflow of foreign investors into the industry indicates its significance. Increasing volumes of investments that amounted to 4.1 bn SKK in 2001, i.e. half of investments of the chemical industry in general, also seem promising.

3. Foreign trade

The Slovak chemical industry capacities have been historically built for needs far exceeding the domestic demand. The chemical production (especially the basic chemicals, refinery products, rubber products and fibers) becomes profitable only when the production volume is multiple times higher than the domestic demand. The chemical industry is therefore dependent on export that in the long run represents more than two thirds of the incomes.

Until now about half of the export goes to the traditional markets of the “socialist chemical industry” times. More than a third is exported to the Czech Republic and about one tenth to Poland and Hungary. Contrary to the total export of the SR, the EU countries within chemical industry play only a minority role. Most of the products and especially intermediate products go to Germany (13 % of the export) and Austria (11 %).



SOURCE: Statistical office of the SR

Results of the SR trade balance in chemical commodities are continuously deteriorating. The positive balance was achieved in the past due to the export of the refinery oil products. It boomed due to the rise of petrol and naphtha prices after the rapid increase of world oil prices. This positive effect for Slovakia within this trade in these commodities is however accompanied by a dramatically augmenting liability resulting from the import of oil (it is not included in the balance of the industry).

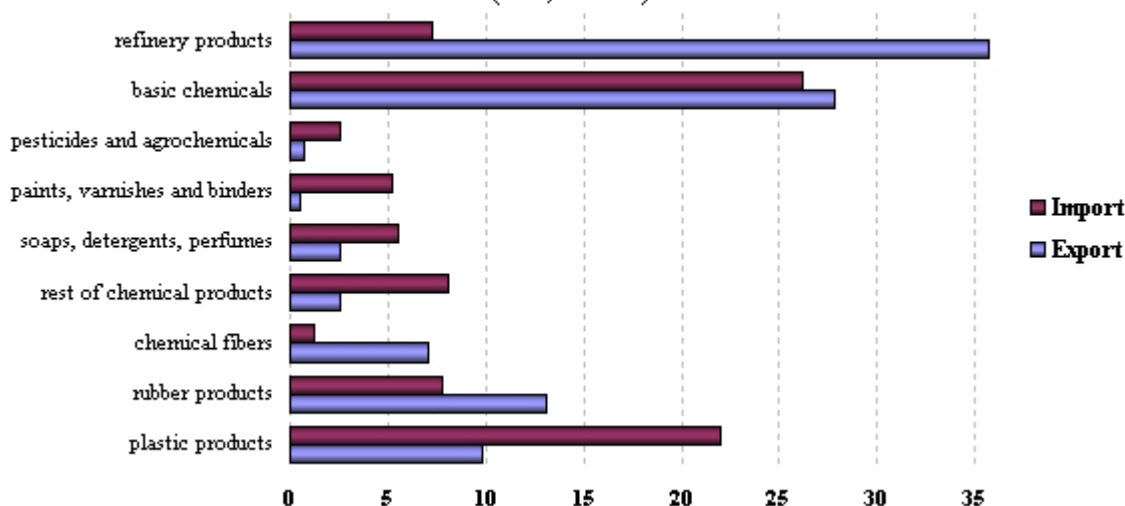
It is therefore more suitable to examine the trade balance in chemical commodities without considering the refinery products. Adjusted time series reveals gradual expansion of the trade liability that tripled its amount within the time range of 1997 to 2001. We did not record any change in 2002 as well, the balance after the first ten months of 2002 amounted to the liability of the whole 2001.

The plastic business areas make the biggest deficit. Given the current orientation of Slovak plastic producers there is no reason to expect any dramatic changes in this trend. The Slovak plastic producers are oriented towards plastics for industrial proceeds mainly used for domestic inter-consumption. This is also one of the reasons for slight growth of the export of plastics.

Within the category of paints and varnishes, the increase of import goes along with the decrease of export – nearly to negligible levels. In addition the Slovak manufacturers failed to cover the domestic consumption. The demand is covered mostly by imports.

Foreign trade balance of chosen chemical commodities

(2001, bn SKK)



SOURCE: Statistical office of the SR

The trade balance of the domain of paints and varnishes is connected with the economic development in dominant domestic producer – Chemolak. The company used to have large-capacity consumers from the socialism period and it did not manage in time their replacement with small businesses and workshops, mainly in furniture making industry.

Namely, production structure oriented on small business and workshops does not exist on the domestic market. Foreign paints and varnishes producers have used this opportunity and have claimed this market. In future they have no reasons to leave the claimed market.

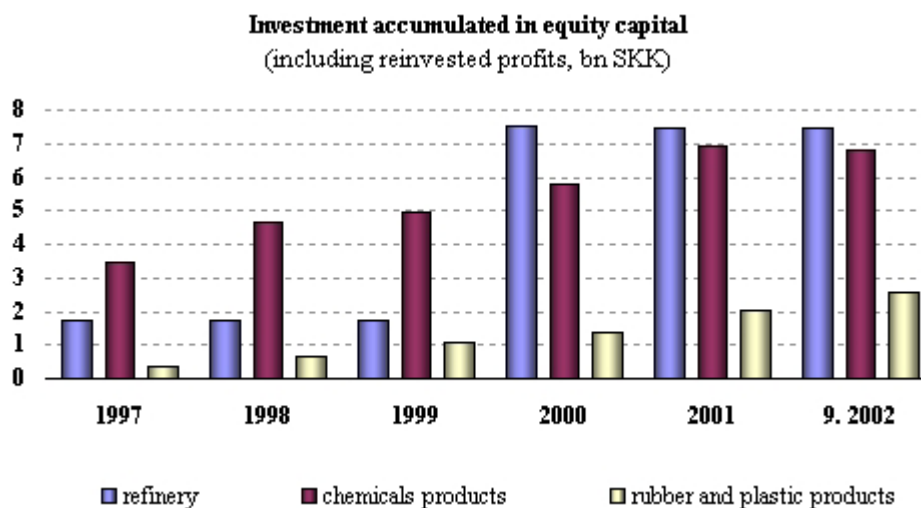
The similar situation is on the final market of detergents, soaps, cleansing agents and cosmetics, where the domestic demand prefers (also influenced by massive PR activities) foreign producers.

The active items of the trade balance traditionally include rubber products, especially those intended for the automotive industry (tyres and rubber parts). Their export exceeded the import in 2001 by more than 5 bn SKK. Statistics show more positive data due to the trade in chemical fibres where almost the whole home production is being exported abroad for further processing. If the threats of moving yarns production to the East are real the Slovak economy will lose this asset.

The Slovak foreign trade in basic chemical products is balanced so far. In this traditionally Slovak production foreign suppliers are becoming active by supplying their daughter plants in the SR by their own inputs. The strongest sub-industry of the Slovak chemical industry has recorded regularly slight trading surpluses. However, this advantage may disappear due to continuous increasing of own imports of foreign companies.

4. Foreign direct investments

In the year 2003 one half of ten major SR chemical enterprises is in Slovak ownership. Annual sales of these five reach almost twenty per cent of all sales in chemical industry. With the exclusion of refinery business it is more than one third. With the accession of Slovakia to EU we can expect the change of opinion of domestic owners on keeping their estates. Total assets available to potential foreign investors amount to 560 mil. EUR. These chemical assets generated almost 75 mil. EUR net cash flow (net profit and amortization) in the year 2001.



SOURCE: Ministry of finance of the SR

We can expect the inflow of foreign direct investment predominantly in the area of passenger radial tyres, where the attraction of main domestic producer – MATADOR – is increasing because of its investment in Russian Federation. It is only a question of time when Matador will be overtaken by one of the top five companies (Goodyear + Dunlop, Bridgestone, Michelin, Continental, Pirelli). The hottest candidate is German Continental, which has three capital assets in Slovakia already and is also present on Czech and Romanian market.

The production of packaging films will be another important area where Chemosvit is the biggest producer in the Central and Eastern Europe. The strength of the company is in the

comprehensive technical chain from processing of graphic proposal to film printing and also the productive capacities in the countries of Eastern Europe (it is established on Ukrainian market). On the other hand it has non-transparent structure - twenty subsidiary companies with different orientation from industrial production to ski tows services. Another problem is difficult decision making due to high number of owners and also the controversial investments from the previous years.

The development of FDIs in the area of basic chemicals can be changed by potential investments to Chemko, Novacke Chemicke Zavody and Duslo. After repaying the debts Chemko became a financially stable company. Existing infrastructure and own power plant allows Chemko to create industry park focused on chemistry. NCHZ can offer a connection to suppliers of industrial salt – the basic raw material for production and also the monopoly position as a PVC producer on the Slovak market. The owners of Duslo will be probably the last ones offering their stocks. Nowadays the company profits from revival of industrial fertilizers market, the company also launched the nitric acid production.

There are only a few green-field investments in the sector. Energy, raw materials and also process intensity of production leads the market players to acquisitions or splitting and restructuring of existing companies.

The perspective of automotive production in Slovakia can create an opportunity also for this kind of investments, predominantly in plastic production, especially buffers, tanks, door fillings, cable kits, rubber-to-metal springing and dumping components.

After accession process to EU mostly the existing investment projects will be supported. Various Slovak chemical factories with foreign owners have already succeeded in the competition inside the concern and gained higher support from the parent company concerning the production development and access to markets. The examples are factories of the groups Barlo Group, Continental, Gruppo Bonazzi, MOL or Sasol.

The political stabilization and confidence in stable development of the region and especially Slovakia played an important role in this decisions. In the following years the FDI will be supported by necessary investments into environmentalism of productions of present foreign investors.

5. Labor market

Slovak chemical industry is currently open to European and world competitors. It is not burdened by any significant protective disposals of EU. After integration of Slovakia into EU we cannot expect any direct employment impacts in the sector. Mainly the background of other sectors (which are the competitors of the chemistry in the labor market) is going to change after integration of Slovakia into EU.

Slovak chemistry profits from the advantage of higher wages. The refinery employee earned almost the double of the average wage in the economy in the year 2001. The wages of employees in the chemical, rubber and plastic industry were a bit lower comparing to refinery employee wages but still higher than the average.

Average monthly wage (SKK, companies with more than 20 employees)

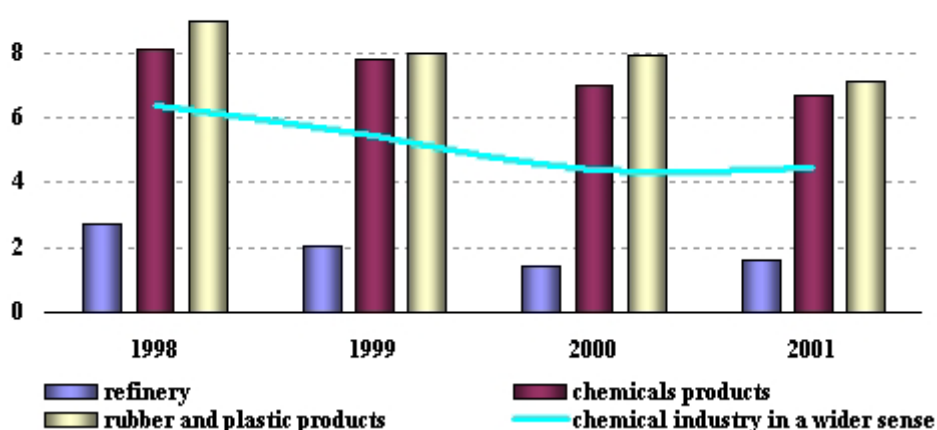
	1997	1998	1999	2000	2001
Refinery	14 353	15 468	16 835	19 212	21 544
Chemicals products	10 806	11 658	12 758	14 440	16 172
Rubber and plastic products	10 930	11 688	13 039	15 153	15 979
Industry	9 519	10 412	11 107	12 135	13 373
National economy	8 219	9 033	9 682	10 497	11 315

SOURCE: Statistical office of the SR

By sustaining the present conditions the chemical employees have no reason to look for a job in other industry sectors. Only the paper and cellulose sector may be the exemption because of similar employee skills and average wages. Another opportunity for employees working in maintenance production of the chemistry sector could be the growing number of machinery companies.

In general the narrow specialization of chemists and also the requirements for qualification and experience are reducing the possibilities to find a job in a different sector. This natural barrier can slow down the increase of the wages (which have been significantly rising in the last years) in the sector mainly after integration to EU. So we can expect that one of the most important competitive advantages of domestic sector will be sustained.

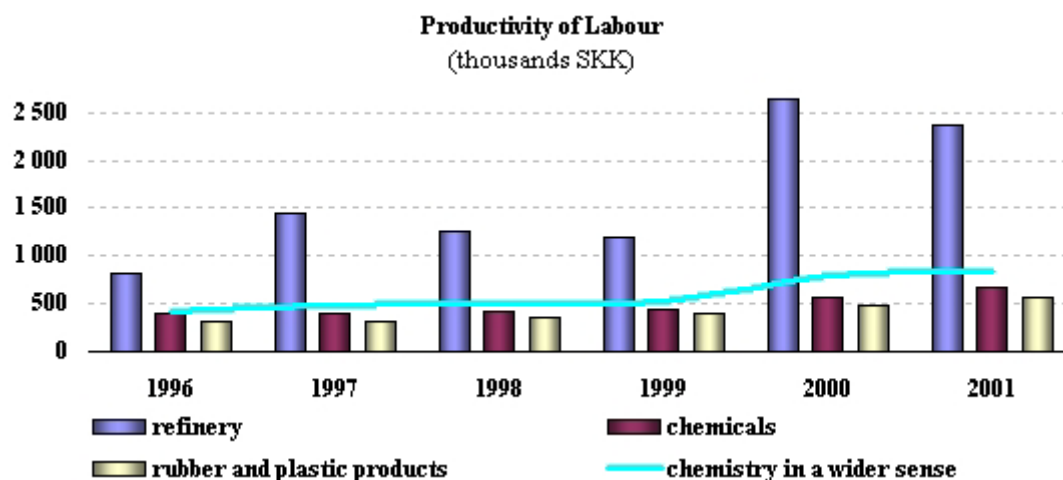
The share of personal costs on total costs
(%)



SOURCE: Statistical office of the SR

This statement is supported by current labor cost share on total costs. Labor costs represent 4.5% of total costs in the sector. Domestic producers will be looking for cost savings in the area of consumption of raw materials and energy, which still offers wide possibilities of cost reduction. Currently it can already be seen on the tendency of added value growth in the sector.

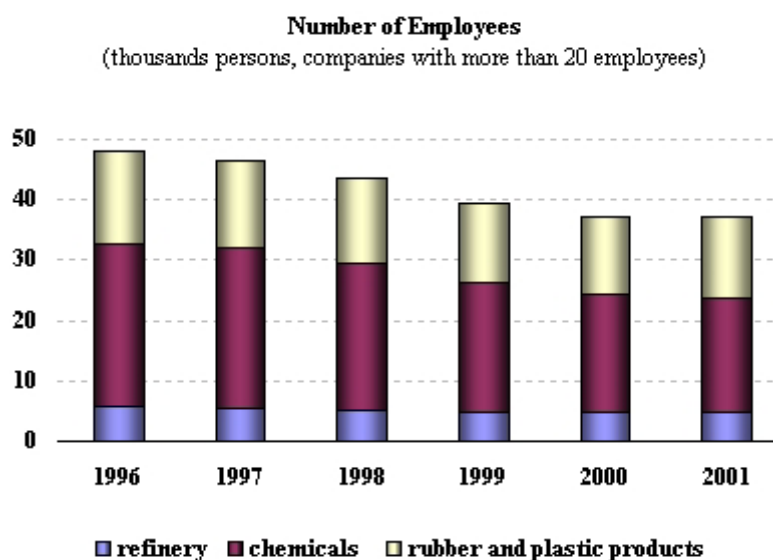
The growth of the labor productivity in this sector generates wider space for rewarding the employees in chemical industry disregarding the potential pressure on labor costs (wages) caused by higher wages in other sectors.



SOURCE: Statistical office of the SR

In the year 2001 there worked one quarter (11 000) less employees in the chemical industry in comparison with the year 1996. Nearly 8 000 employees -- 30% of all employees in the sector in the year 1996 -- left the chemical and pharmaceutical companies, 2000 (15 % decrease) less employees are involved in rubber and plastic production and 1000 (16 % decrease) employees left the refinery. The employment in the sector is nowadays steady, but there still exist a mild over-employment in some cases.

The integration of Slovakia into EU will not bring any significant change in employment in the sector. Mild decrease of the number of employees, currently working for main employers, will be balanced predominantly by developing the sub-sector of plastics which will give a good opportunity for small enterprises. The sector employment tendency will be stable, possibly mildly decreasing in the future.



SOURCE: Statistical office of the SR

The strong increase in employment caused in other economies or sectors by strategic investors or green field investments is unlikely to take place in Slovak chemistry. To start up a new business in the chemical industry demands huge investments into production array. Currently, the potential acquisitions by main chemical companies will cause the decrease of work opportunities.

6. Regulatory Framework

In August 2002 a new chemical legislation in the Slovak Republic became effective. It involves especially the Law 163/2001 Coll. about chemical substances and chemical formulations together with ten regulations. New law is consistent with EU law and EU directives and ensures the conditions for free movement of chemical substances and formulations. There is a transition period valid till 31.12.2003 during which the companies can put the chemical substances and formulations on the market under supervision of Ministry of Economy of the Slovak Republic.

The new law discusses the rights and duties of entrepreneurs to put the chemical substances on the market and defines the scope of government administration authority by executive of control. It defines the condition of announcement, classification, testing, marking, packing, importing and exporting the chemical substances and chemical formulations from the view of life protection, humans health protection and environment protection. Together with the regulations it has approximately one thousand pages.

The Law 163/2002 Coll. about chemical substances and formulations transfer the responsibility for chemical substances that are put on the market mainly on the entrepreneur. It follows the European principles of eliminating the technical barriers of trade. According to the original law this responsibility belonged to the state institutions which agreed with putting the substances on the market.

In connection with integration into EU the Strategy for future policy in the area of chemicals (suggestion of European Committee) is very important. It is one of the greatest reforms of European chemical law in last thirty years. According to analyses requested by European Committee, the whole costs of the changeover could achieve 7 bn. EUR. Passing the new law is expected in the year 2005 in the form of package of directives.

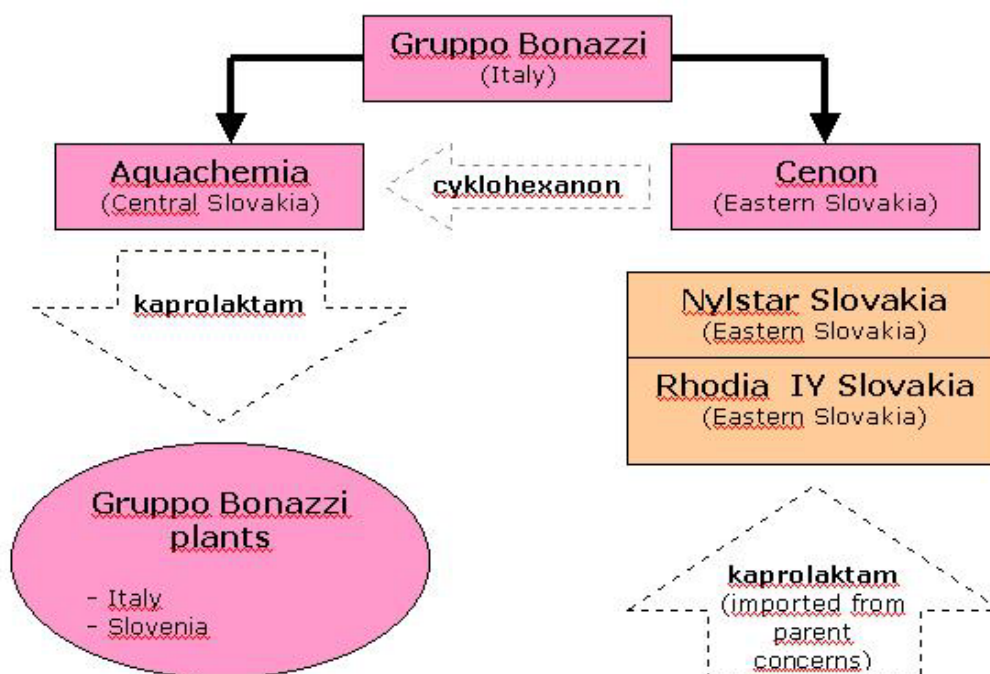
The new law will significantly change the conditions of production and putting the chemical substances and formulations on the market. The main change will be the request for European registration of all substances trading on the market over amount of 1 ton per year. The changes will also include the evaluation of risks of these chemical substances from view of their use and authorization of some categories of dangerous chemicals.

This suggested system was named REACH – Registration, Evaluation and Authorization of Chemicals. The specifications of REACH system, including the test specification, depend on evident or suspicious dangerous features, usage, exposition and the amount of produced or imported chemicals. All of the chemicals in amount over 1 ton will have to be registered in central database. If the tonnage is higher, a special fee will have to be paid because of the long-term effects of the chemical substances on the environment.

Main Slovak chemical producers will be influenced predominantly by Council Directive 96/61/EC (Integrated Prevention and Pollution Control). There is a transitive period valid till the year 2011 for 10 companies involving five chemical producers: Slovensky Hodvab, Istrochem, NCHZ, Duslo and Matador.

7. The effect of accession on the market structures

Only a minimum of the Slovak chemical products is sold on consumer market. Almost whole assortment of the domestic chemical goods is used for further processing. The rule that chemistry is its own biggest consumer is more significant in the domestic structure than in Europe or in the world. This, at first sight poor structure, could become an advantage before accession to the EU.



SOURCE: TREND Analyses

Several foreign, but also domestic investors are using the production arrays based in SR during socialism. These, as well as traditional CEE markets, have fallen apart after transformation from planned economy into a market-oriented economy.

For example the Italian chemical concern Gruppo Bonazzi processes cyclohexanone produced in the Eastern Slovakia in its subsidiary Aquachemia (located in Žilina). Aquachemia fabricate kaprolaktam – the basic material for industrial yarns. An integrated manufacturer with a good capital base is therefore producing the commodity for the production of polyamides in Slovakia.

The manufacturers of synthetic fibres in Humenné and Chemlon successors – Nylstar Slovakia and Rhodia Industrial Yarns Slovakia would be able to process the whole production even after the increase in capacity. Nevertheless, Aquachemia actually exports the caprolactam especially to Bonazzi plants in the Slovenian Ljubljana and Italian Arco. The plants in Humenné in fact import the caprolactam – as they belong to the competitive concerns.

Another example represents the investment of Czech agrochemical group Agrofert into Istrochem (located in Bratislava). Contribution of Slovak chemical plant for the group is to be in the field of rubber chemicals, when benzene produced in Deza, a.s., Valašské Meziříčí and processed in the Ostrava plant of Hungarian Borsodchem will be sent to Bratislava as a raw material for rubber chemicals. Moreover, the company in co-operation with the group will be able to use its free production capacities (currently used at 57%) better also for the production of pesticides and industrial explosives.

Utilization of synergic effects associated with interconnected productions is often complicated and sometimes disabled by problems accumulated during a long period in Slovak companies. The investment that represents approximately 5% of the nominal value of the acquired shares was commented by the majority owner of Agrofert A Babiš in the following way: “ ... the factory is expensive even if taken for free and we are buying a large number of problems... ”.

There is a similar situation in Novacke chemicke zavody (NCHZ) where after seven years of litigations and non-transparent operations with company's stocks a new owner has come. The owner of 90 % of the NCHZ shares also introduced a policy of association with Solivary Prešov, the supplier of the basic raw material – industrial salt. Despite the large investment demands - the acquisition of Solivary is conditioned by reinvesting SKK 900 mil.- the connection could result in a positive synergic effect.

7.1. Biggest market players:

The analysis does not include only industry (aggregate) view. It is essential also to know the economy and the strategy of the Top companies standing in the background of the data. This applies particularly to small Slovak economy, where the whole branches usually comprise only a few companies. Performance of these few then essentially affects aggregate indicators of the branch. The analysis reports the commercial history and future perspectives of four companies representing refinery (Slovnaft), basic chemicals (Duslo) and rubber and plastic industry (Matador and Chemosvit).

Top 10 Slovak Chemical Companies (Ranked by sales)	Type of Production
Slovnaft, a.s., Bratislava	refinery, petrochemical and plastics products
Duslo, a.s., Šaľa	basic chemicals
Matador, a.s., Púchov	passengers and light truck tyres
Slovakofarma, a.s., Hlohovec	pharmaceuticals
Continental Matador, s.r.o., Púchov	truck rubber tyres
Novácke chemické závody, a.s., Nováky	PVC and other polymers, calcium carbide and other inorganic products
Chemosvit, a.s., Svit	plastic films, hoses and profiles
Chemko, a.s., Strážske	formaline, rubber chemicals, basic products of organic and inorganic chemistries, power engineering, adhesives, fertilizers and others
Nylstar Slovakia, a.s., Humenné	synthetic yarns
Slovenský hodváb, a.s., Senica	viscose and polyester yarns, PET polymers, PET performs for bottles

SOURCE: TREND Analyses

Slovnaft, a.s., Bratislava

Slovnaft is a refinery and petrochemical company processing crude oil imported mainly from the Russian federation (5,4 mil. tons in 2001). Transpetrol, a.s, transports this raw material to Slovakia by means of the pipeline Družba. Slovnaft is a holding company. Although some subsidiaries have been recently merged with the parent company and other ones clustered around larger corporations, there are still nearly 20

subsidiaries in the holding. Their business is a purchase and sale of oil products, operation and construction of filling stations, foreign trade, servicing activities to the refinery and petrochemical production, and other activities in the Slovak, Czech, Polish, Austrian and Ukrainian markets.

The company production program involves engine oils, automobile and industrial oils, lubricating greases and anticorrosive agents, asphalts, heating oils and oil extracts, polyethylene (LDPE), polypropylene, petrochemical products etc.

In 2000, the company launched the EFPA project (Environmental Fuel Project Apollo) valued at USD 530 mil, substantially increasing gasoline and diesel outputs from crude oil. In the same year, the Hungarian oil and gas company MOL became a shareholder in Slovnaft. The synergic effect (in 2001 evaluated at USD 14 mil.) strengthens the position upon purchasing input raw materials and enables both partners to supply fuels in separate territories. Slovnaft stopped supplying filling stations in Hungary and in return took over from MOL the territories of the Czech and Polish market. In 2001, Slovnaft merged with its subsidiary Slovnaft Benzinol and operated 359 filling stations compared to 800 ones operated by MOL.

The effect of the EFPA project became visible in 2001 when the volumes of produced gasoline and diesel increased while the total output of heavy fuel oils, aromatics and bitumen dropped, in spite of the business interruption of several production units caused by an external blackout in July 2001.

Sales structure (year 2001):	
Production of refinery, petrochemical and plastics products	97,2 %
Services	1,5 %
Sale of goods	1,3 %

Strengths:

- modern technology of heavy oil products processing
- price of crude oil from Russia
- strong strategic investor from the core business (better access to capital resources, markets and basic raw materials, using the synergy)
- dominant position in the sale of gasoline and diesel at home market
- geographical location (connected to the pipeline Družba close to the Danube river)
- possible expansion of the refinery

Weaknesses:

- need to modernize and integrate the filling stations network (many from Slovnaft filling stations do not offer the full set of services)
- connection to only one source of the vital raw material (e.g. OMV has an access to the Adria and Družba pipelines)
- over-employment (slight)
- purchase of raw materials through intermediaries

Duslo, a.s., Šaľa

The company has been active in its business for almost half a century. Currently it produces basic chemicals, namely industrial fertilizers and ammonia, as well as rubber chemicals.

The company management that governs the absolute majority in the management-employee company Prezam (owning 97% of Duslo shares) develops both business fields. In August 1999, the company launched a complex designed for production of nitric acid (investments amounted to SKK 1.5 billion), and thus lowered the energetic requirements upon the production of fertilizer thirty times in comparison to the production using old machines. In 2002, the company planned to invest a billion crowns mainly into the rubber chemicals production through which it covers about thirty percent of the French concern Michelin and American Goodyear consumption. Moreover, this is not a licensed production but these products are based on own research and development in Duslo.

Energy and gas prices are determining at the production of industrial fertilizers. The risk factor, apart from the gas price, is also the development of prices at the world market in industrial fertilizers. The decline of interest in fertilizers at European markets in 1999 forced several important players like BASF, Hydro or Rhône-Poulence to close some of their factories. Duslo retained its position thanks to the production diversification but it was helped also by subsidized price of natural gas that made the position of Slovak producer advantageous in comparison with foreign competition. In 2000 the company took the abandoned market positions when it concluded a long-term contract on delivery of 250 000 tons of fertilizers a year into Germany.

With the growing prices for input commodities (mainly natural gas and commodities derived from oil) and pressure upon the sale prices of products in 2001 the company recorded - despite the 15% increase of sales on a year-to-year basis - decrease of added value and operational profitability.

The pressure on operational margins will also influence results for 2002 since Duslo will pay for gas approximately SKK 450 million more than in 2001. The results will be weakened also by logistic problems caused by floods in Europe. However, according to the opinion of the company managers, agrochemicals are doing really good.

The management sees a perspective in the support of company scientific research activities in the field of plastic additives, rubber chemicals, fertilizers and dispersions. The company research entered into a merger in 2002 with Výskumný ústav chemickej technológie, a.s. Bratislava (Chemical Technology Research Institute).

Sales structure (year 2001):	
Industrial fertilizers and ammonia production	55 %
Rubber chemicals production	37 %
PVAC dispersions and adhesives production	4 %

Strengths:

- production diversification between rubber chemicals and industrial fertilizers
- a quarter share on global production of antidegradants, an eighth share in case of antioxidants, while the production of these compounds for tyre production comes from its own research
- direct connection to a transit gas pipeline that lowers the price of the key commodity
- connection to the Danube water way
- investments into production modernization in the low prices advantage period of incoming raw materials

Weaknesses:

- the price of the key raw material – gas – is increasing from the long-term point of view, its endowment is a matter of past
- the substantial part of the production is still highly energetically demanding – the negative aspects will manifest themselves after the electric energy price deregulation
- over-employment (“If there were less than 500 people here, probably nobody would notice it,” Jozef Kollár, the company general director, said in 2000; the number of employees has not significantly changed since 2000)

Matador, a.s., Púchov

One of the three largest companies in the branch is focused on rubber production with high degree of finalization. It concentrates on production of passenger radial and light truck tyres. In 2001, the company produced 4.2 million of tyres in Púchov and 1.2 million in Omsk (Russia). The company also sells car tyres in a franchise network.

Matador’s key business strategies are self-subsistence and independence. It is the last car tyre producer in the region that has not become a member of any globally operating concerns.

Matador is focused on car tyres, conveyor belts and devices for rubber technologies. The company put the production of truck tyres into the joint venture with Continental in 1999.

In 2001 the company launched High Technology Production program where it plans to increase its current production (4.2 million in 2001) to five million pieces of tyres by 2005.

A part of the project is an expansion of car tyre product range with higher inch classes (17-20) as well as off-road products.

The company sells its know-how. In 2001 it started car tyre production in the Iranian Kavir Tire worth USD 1.8 million and it plans to continue with the investing in truck tyre production. The company prepares 5 projects of know-how sale for USD 8.2 million.

Matador has undergone the process of restructuralization in 2001 when it sold shares in companies that do not focus on or do not support its core activities: in Technická guma (Technical Rubber), a.s., Hnúšťa and

Merina, a.s., Trenčín. It also holds shares in textile factories Ozeta, a.s., Trenčín and Maytex, a.s., Liptovský Mikuláš. In these cases it is waiting for a better price. Forty companies in the holding contribute by a third to the economic result of the group. Other divisions with separate accounting were also assigned under the joint controlling as the company is trying to identify non-profitable parts of its business. Matador uses outsourcing and exercises CRM and Balanced Scorecard devices in its management.

The Conveyor Belt Division generates an eighth of Matador sales and covers free production capacities. The reasons are recession of solid fuel power engineering in the Slovak Republic and minimum demand from companies. Majority of the production is therefore exported, mainly to the Russian market.

A strong potential, but also rather big problems are associated with the Matador investment in the Russian federation – Matador Omskšina. The plant produces annually more than a fifth of car tyres of the Matador group. It is not a problem to place the whole production to the Russian market (it has orders for two years in advance), the payment discipline is causing cash-flow difficulties. Some problems are caused by the quality of some raw materials and workforce.

Sales structure (year 2001):	
Car tyres production and sale	77,2 %
Conveyor belts production and sale	13,5 %
Technical rubber production and sale	4,9 %

Direct competition:

- domestic: none, a part of consumers, however, considers Barum (Czech Republic, Continental group) as a domestic trade mark; Barum holds its good position from the past also thank to competitive prices
- foreign: Barum, Bridgestone, Continental, Goodyear, Michelin and others

Strengths:

- developed trade network and strong position at home market (the company affirms it has a market share of 46%)
- difficult but valuable experience in the Russian market, significant potential in the long-term horizon
- own development and research, partly financed by know-how sale -

Weaknesses:

- lacking connection to global concerns which invested in the neighboring countries (Bridgestone in Polish Poznań, Continental in Czech Barum and in Romanian Timisoara)
- lacking financial background for more significant penetration in the Russian territory
- problems in conveyor belt division (sales only in markets of developing countries)
- in comparison with competition still low work productivity

Chemosvit, a.s., Svit

Chemosvit is the biggest producer of packing films in Central and Eastern Europe. It exports two thirds of its production to the Czech Republic, Poland, Russia and Ukraine. The corner stone of Chemosvit business is production of flexible films, their printing and further adaptations. Films are used for wrapping of food and consumer products. Production portfolio is supplied with polypropylene and polyethylene sacks and plastic production. The basic input production raw material is polypropylene and polyethylene granulate provided by Slovnaft, a.s., Bratislava. However, the company imports two thirds of input and raw materials.

Chemosvit produces films from granulate and finalizes them with printing, metallizing, coating and surface adaptation. The volume of bought films supplied as semi-products with films produced within the company significantly increased in the last few years. The company invested mainly into technologies for their further valuation. The company has modern machinery for film printing and own print preparation that significantly shortens the delivery time in contrast to the external print preparation.

In 1994 the company managers purchased Chemosvit from the Fund of National Property through direct sale formally for SKK 1.985 billion. Buyers did not have to cover the whole two thirds from the purchase price because of already accomplished investments. In summer 2002, all the obligations towards the Fund of National Property were settled and the company was definitely moved into the private owners' hands.

The central company of the holding – Chemosvit, a.s., Svit – capitally participates in 20 companies, mostly as a majority holder. Subsidiary companies are focused on machinery production and maintenance, textile fibre production, wrapping, transportation, production and distribution of heat, electricity and supply water, and services. Significant position among the subsidiary companies have Terichem, a.s., Svit, joint venture with Finnish producer of very thin electro films Rani Plast, as well as Chemosvit Fibrochem, a.s., the producer of polypropylene textile silk with dominant position in Europe.

In 2001, half of the production of Chemosvit was purchased by 15 biggest consumers, mostly multinational companies like Philip Morris, Danone, Nestlé, Intersnack, Kraft Jacobs Suchard, Unilever, in Slovakia mainly Harmanecké papierne (Harmanec Paper Mills) and Tento.

After overcoming financial difficulties in 1998 and 1999, when the company was threatened by cross-default due to loan expenses, three years of reinforcing of its own capital started and the company got out of the worst. In 2002 it even expanded flexoprint and started to prepare new technologies package of print preparation. Managers have been speaking about entry of an investor for a few years. Attractiveness of the company was lowered by non-transparency in the previous years but it is still viable.

Sales structure (year 2001):	
Plastic films, hoses and profiles production	80,5 %
Commodities production designed for wrapping of goods	9,3 %
Hiring of own machinery	2,6 %

Strengths:

- comprehensive technological chain from processing of graphic proposal to film printing
- flexibility of deliveries, mainly for large consumers
- production capacities in the Eastern Europe countries (joint venture in Ukraine)
- modern and quality machines designed for printing of produced films
- partly diversified production through subsidiary companies

Weaknesses:

- lack of investment means
- credit burden resulting from the way of privatization
- customs barriers in perspective Eastern Europe markets (Russia, Ukraine)
- too high a number of co-owners – managers => difficult reception of fundamental decisions

8. The short-term policy: recommendations

EU accession represents a significant challenge for policy makers and corporations. TREND Analyses assess the following policy measures for corporate and public sector:

8.1. Recommendations for corporate sector:

- to move the attention to middle and long term strategy
- to integrate the interconnected production capacity in the industry
- to focus the attention on costs, especially on material and energy savings
- get ready for convergence of European and Slovak personal costs
- to use secondary energy sources – at first, warmth generated from chemical reactions
- to invest into new technologies in time
- to environmentalize the production to a maximum degree, considering the European Parliament and Council Directive 96/61/EC (Integrated Prevention and Pollution Control), at first, focus on:
 - decline the sulphate, nitrogen and carbon oxides emissions
 - reducing the pollution of volatile organic compound emissions according to European Parliament and Council Directive 94/63/EC on the control of volatile organic compound emissions resulting from the storage of petrol and its distribution from terminals to service stations
 - solving old environmental pollution: contaminated areas
 - the waste-water pollution

Except of the public organizations of EC, the foreign competitors will aim their attention at the question of environmental influences of domestic producers.

- use the International Accountings Standards, preparing for IFRS
- re-evaluate individual positions on global market
- to prepare skilled work force (from apprentice to university degree)
- increase the investments into long life learning, at first, foreign language skills
- eliminate the over-employment

8.2. Recommendations for general policy makers:

- eliminate the barriers of entrepreneurship in Slovakia
 - instability and ambiguity of legislation: simplification and stabilization of laws, tax legislation in particular
 - functioning of courts, elimination of unnecessary delay in proceeding (improvement of court decisions in commercial acts)
 - solving the problem of corruption
- cuts in tax rates on re-invested profit
- the education system must undergo a reform – expand the possibilities of interdisciplinary studies (in particular chemistry and economy)
- accomplish Slovak National Emission Inventory System
- engender to REACH (Registration, Evaluation and Authorization of Chemicals) system
- to prepare the legislation for the end of transition period of EC Parliament Directives, at first:
 - European Parliament and Council Directive 94/63/EC on the control of volatile compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations
 - Council Directive 96/61/ EC concerning integrated pollution prevention and control (IPPC)
 - the urban waste water treatment directive Council Directive 91/271/EC
 - Council Directive 76/464/EC on pollution of the aquatic environment by certain dangerous substances

9. Brief summary

Watching the Slovak chemistry, we are expecting following effects of the EU accession:

GROWTH EFFECTS

- The industry (predominantly represented by refinery business) follows crude oil prices; forecast of growth is complicated by this fact.
- Pure results of EU chemistry can help Slovak producers; international corporations utilize production capacities at plants that could ensure productions at the required quality level with lower costs.
- We forecast good results (growth) for Slovak chemical producers with domestic owners during year 2002 and first half of 2003. First reason is that companies with perspective core business had cheapened its expensive loan portfolio during 1999 – 2001. Now (2003) they pay less money to bankers and can invest more. The second reason is that Slovak owners understand that only way how to succeed in the EU is collaboration or integration with international corporations. Therefore they are going to cooperate or to sell their property in good conditions and with good growth indices.
- Some producers do not depend on EU policy maker's decisions; growth or reduction of sales does not correlate with the EU accession.
- Many Slovak producers of rubber and plastic are producing for automotive industry. Investment of PSA Peugeot Citroën may increase sales.
- Demand for packs (industrial and consumer) is influenced in the first place by results of Slovak industry and whole economy. Dynamics of growth of Slovakia is relatively strong (prediction of real growth of GDP is 3,7 % for year 2003).

FOREIGN TRADE

- More than two thirds of the sales are exported; industry is therefore dependent on export.
- About half of the export goes to the traditional markets of the "socialist chemical industry" times (Czech Republic, Poland and Hungary). After EU accession this share could be changed.
- Domestic producers do not produce enough consumer chemistry. Results of the SR trade balance in chemical commodities are continuously deteriorating. There is no reason for change after the EU accession.

FOREIGN DIRECT INVESTEMENTS

- In the year 2003 there is still one half of ten major SR chemical enterprises in Slovak ownership. Annual sales of these five reach almost twenty per cent of all sales in chemical industry. Excluding refinery business it is more than one third.
- We can expect the inflow of foreign direct investment predominantly in the area of passenger radial tires.
- The production of packaging films will be another area of interest.
- The development of FDI in the area of basic chemicals can be changed by potential investments into companies Chemko, Novacke Chemicke Zavody or Duslo.

- Production of packs stands for a strong segment within the plastic production. The inflow of foreign investment into this branch will be significant.

LABOR MARKET EFFECT OF EU ACCESSION

- Slovak chemistry profits from the advantage of higher wages (compare to other SR industries). Chemical employees have mainly no reason to look for a job in other industry sectors. Only the paper and cellulose sector may be the exemption because of similar employee skills and average wages.
- In general, the narrow specialization of chemists and also the requirements for qualification and experience are reducing the possibilities to find a job in a different sector. This natural barrier can slow down the increase of the wages (which have been significantly rising in the previous years) in the sector after integration to EU. We can expect that one of the most important competitive advantages – not expensive workforce - of domestic sector will be sustained.

REGULATORY FRAMEWORK

- In August 2002 a new chemical legislation in the Slovak Republic became effective. It is consistent with EU law and EU directives and ensures the conditions for free movement of chemical substances and formulations.
- Main Slovak chemical producers will be influenced predominantly by Council Directive 96/61/EC (Integrated Prevention and Pollution Control). There is a transitive period valid till the year 2011 for five chemical producers: Slovensky Hodvab, Istrochem, NCHZ, Duslo and Matador.
- The law 163/2002 Z.z. about chemical substances and formulations transmit the responsibility for chemical substances, which are put on the market mainly on the entrepreneur.

THE EFFECT ON THE MARKET STRUCTURES

- Only minimum of the Slovak chemical products is sold on consumer market. The accession will not change this fact.
- The challenge for Slovak producers, but also for foreign investors is to use “production chains” based in a region during socialism.
- Utilization of synergic effects associated with interconnected productions is often complicated and sometimes impossible by problems accumulated through long time in Slovak companies.