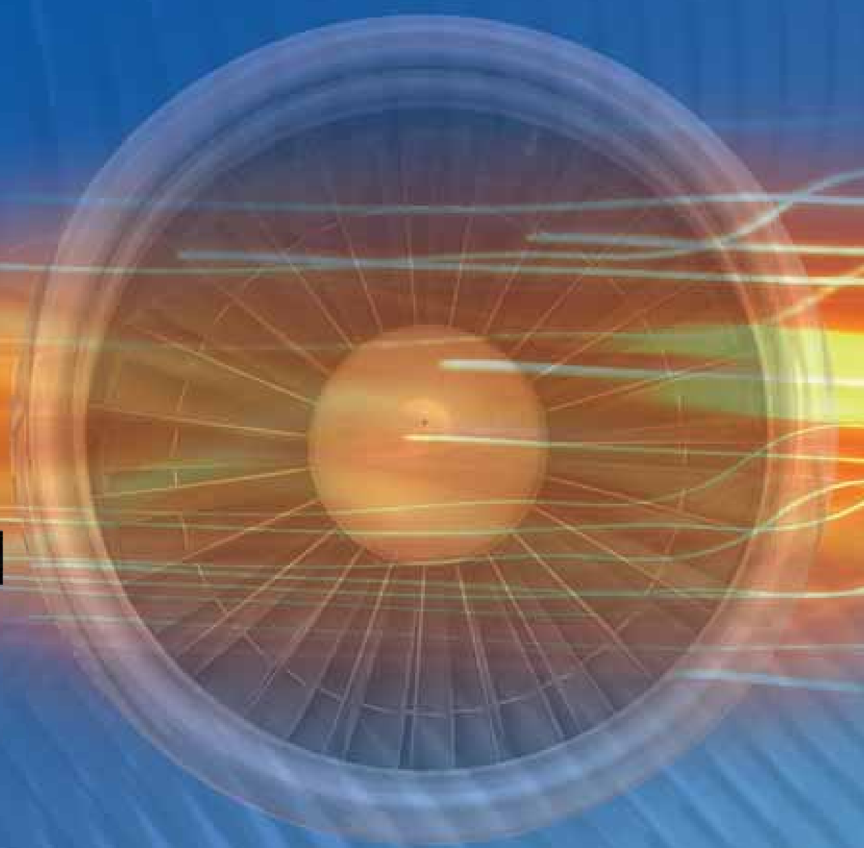
czech business & trade

economic magazine

CURRENT TRENDS IN CZECH MECHANICAL ENGINEERING



LEGAL NEWS FOR ENTREPRENEURS IN 2016

CZECH MARKET WITH INDUSTRIAL REAL ESTATE IS GROWING

ENERGY INDUSTRY IN THE CZECH REPUBLIC – STABLE AND PROSPERING SECTOR

ECONOMIC GROWTH

UNDER THE DIRECTION OF INDUSTRY

1
2016

Czech Business and Trade

Economic Magazine is Designed for Foreign Partners, Interested in Cooperation with the Czech Republic

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Questions for Lubomír Zaorálek, Minister of Foreign Affairs

What are the priorities of your Ministry with regard to foreign policy in the area of economic diplomacy in 2016-2017?

The top priority for this year has been to adjust the work of our embassies so as to better meet the needs of businessmen and to show that our Ministry is not a closed, "elitist" institution. On the contrary, the door of Černín Palace (seat of the Foreign Ministry) is open, for both individual consultations and different export seminars, business forums and meetings with ambassadors. By the end of the year, we expect to have organised more than 35 various export promotional events, attended by over 3 500 businessmen. We therefore address more enterprises right within the Czech Republic.

Evidence of the great interest of businessmen in using the services of the Ministry is the number of consultations which took place within the framework of the conference of economic diplomats in Prague. During the three days of the conference, some 3 000 meetings took place with representatives of more than 400 firms. At most of the meetings, specific plans were discussed. For example, the Embassy in Rome will assist Czech shipbuilders to enter the Italian market. SALTEN, a Czech engineering firm based in Slaný, which manufactures technologies for underwater survey and extraction and engineering equipment for vessels, requested assistance in seeking out specific trade fairs for the presentation of their products. The Congress Centre in Prague, in turn, collaborates with the Czech Embassy in Washington, which aids it through its contacts to gain new clients from among various professional associations.

This year we have updated the map of global business opportunities, which assists exporters to find their way about in foreign markets. We have also made the economic news bulletins of our embassies more easily available to businessmen and have increased the number of projects in support of economic diplomacy. In conjunction with other ministries, we are financing three times as many such projects in comparison with 2014 — specifically a total of 161 projects worth CZK 20 million.

The reward for us is that firms appreciate this co-operation. The excellent rating our offices have received from firms (overall average 1.08 as regards individual services, and 1.37 within the framework of ratings by business representations) is a great challenge for us and an obligation for the future.

Can you mention some of the important projects and undertakings in support of economic diplomacy you are planning for the near future?

In the autumn months, we will continue our efforts to reopen opportunities to enter the Cuban market, and together with the Ministry of Agriculture and the Health Ministry, we are planning a mission to Havana in September to be led by Deputy Foreign Minister Martin Tlapa. The mission will focus on both these sectors and will follow up on the successful mission of last October, which was combined with political consultations. On the political level, it is our aim to raise our diplomatic relations to the level of Ambassador.

With regard to the growing interest of Czech enterprises in establishing themselves in Chile in the area of power engineering, we are preparing a business mission to that South American country to take place in October 2016. Czech firms would like to help with the modernisation of Chile´s existing power stations and the construction of new ones. We see an opportunity, especially in the area of hydroelectric power stations, biomass incineration, delivery of cogeneration units and the construction of photovoltaic power plants. The mission will comprise representatives of Czech firms operating in the power industry, energy distribution, and follow-up sectors. Its programme is expected to include meetings with high-level officials, professional seminars, meetings with representatives of Chilean energy firms and representatives of selected municipalities.

The correct orientation of the Foreign Ministry´s economic diplomacy is affirmed by our work in Iran, among other things. With the gradual relieving of sanctions, a new chapter is opening up in Iran´s relations with the Czech Republic and the EU from the political and economic points of view. In mid-April 2016, Martin Tlapa, Czech Deputy Minister of Foreign Affairs, accompanied by 27 businessmen engaged in the area of mining and extraction and follow-up power engineering, visited the Islamic Republic of Iran. The Iranian market, with its 78 million consumers, skilled labour, a young and educated population, immense mineral resources and the closeness of the markets of neighbouring countries, offers great opportunities. An important contract was coneluded there by the EnergoPro group for the construction of a new Iranian hydroelectric power station in Khoda Afarin county, which opened the gate to Persia for Litostroj and ČKD Blansko Engineering, industrial pillars of that group. The contract involves the delivery of two Kaplan turbines with installed output of 2 x 51 MW worth more than CZK 400 million. It is the largest contract concluded by a Czech company since the sanctions began to be relieved, and I am glad that Czech diplomacy was there to help.

The main challenge for us in the area of projects is the pooling of resources of several sectors for financing the activities of economic diplomacy abroad. This year we reached agreement with the Ministries of Defence, Agriculture, Industry and Trade and Regional Development on financing partial projects. In the coming period, we would like to create a common fund for financing export-oriented undertakings abroad, so as to make the entire system more efficient.

Photo: Ministry of Foreign Affairs archives

Economic Growth under the Direction of Industry

The Czech economy has been doing surprisingly well in 2015. Economic growth has exceeded 4% and the Czech Republic thus became the third fastest growing economy in the entire European Union. The main engine of growth of GDP was still the manufacturing industry, which simultaneously managed to maintain the position of the largest employer in the country. At the same time, it also contributed to a significant decrease in unemployment and an acceleration of the increase in real wage without any indication of "overheating" the economy by speeding up inflation. The position of the economy in comparison to foreign countries has improved significantly and internal imbalances were gradually fading into the background. Even the deficit in public budgets dropped below 1% GDP and the relative debt of the country decreased as well. The exchange rate policy remained the same, not allowing the strengthening of the Czech crown beyond 27 CZK/EUR. The official and market interest rates also remained at an all-time low.

The Czech economy was moving at a very brisk pace up until the end of the year, where signs of slow-down in the otherwise very strong investment activity began to show. Despite that, investment (creation of gross fixed capital) remained the most important factor on the demand side of the economy and constituted almost 50% of 2015's growth in GDP. Investment in the economy overall grew by over 7%, with its growth being distributed almost equally between buildings and construction, machinery, and means of transport. This time, the public sector also significantly contributed to investment by making use of EU funds to finance transportation and ecological construction. Investment in promoting economic growth was seconded by household consumption. The positive mood of consumers supported by a rapid decrease in unemployment and faster increase in wages improved the willingness of households to spend. Retail sales broke records in almost all segments, including durable goods such as cars.

On the supply side of the 2015 economy, the tone was set by the manufacturing industry, which constituted almost 50% of last year's economic growth. A significant contribution was made primarily by the car-making industry, which thus further reinforced its role as the largest domestic industrial manufacturer with an almost 25% share in the manufacturing industry. Aside from the automotive industry, other fields also contributed to the positive results the branch of industry has experienced. Among these were for instance production of plastic and rubber products, electrical devices, metal products and, last but not least, mechanical engineering. In contrast, less favourable development could be seen in mining, which was impacted by the drop in prices of resources on world markets, and in the power industry.

THE YEAR 2015 WAS ALSO SUCCESSFUL FOR THE CZECH CONSTRUCTION INDUSTRY

After more than five years of recession, the production of construction companies began to increase rapidly thanks to restoration projects and construction of new infrastructure, partially overcoming the decline in production from previous years. This was aided by the above-mentioned investment from the public sector, but also the revitalisation of construction in the private sector, which was the most pronounced in construction of new flats. The growth was continued by the real estate market which took advantage of low interest rates on one hand and the willingness of consumers to invest into housing on the other. In the end, these trends resulted not only in growth in the volume of transactions on the market but also in increasing prices, which in the case of flats returned back to the highs reached in 2008. Growth in the economy over the last year was also aided by services, primarily trade, transport, restaurant services, accommodation and services in IT. In fact, no branch of the economy experienced a decline.

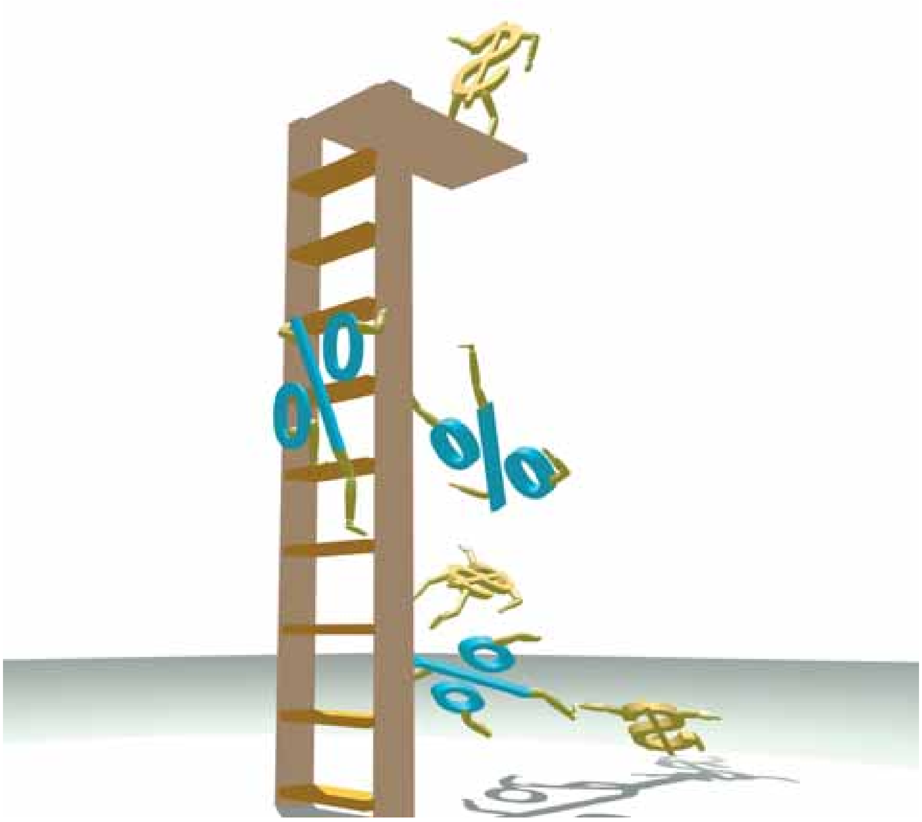
UNEMPLOYMENT ON THE BACK FOOT

The economic growth of the country in 2015 was reflected positively in the development of the domestic labour market. Based on sample surveys of the labour force, unemployment rate dropped to 5.1%, i.e. by 1.1 pp compared to the year before. Monthly statistics of the Ministry of Labour and Social Affairs also show a simultaneous increase in the offer of job vacancies even in regions which have long been characterised by above-average unemployment. However, with the significant improvement of the conditions on the labour market, many companies found themselves in a situation where they are lacking qualified employees. This shortage is beginning to pose an ever more important obstacle to further growth, primarily in industry. The shortage of workers in the last year became one of the reasons for the increase in wages, evident particularly in the second half of the year, where both the growth of average wage and median wage accelerated.

INFLATION PRESSURES REMAINED CURBED

The economic growth, or rather the revitalisation of domestic demand, did bring lower unemployment and higher wages, but did not reflect significantly on inflation. Year-on-year inflation by the end of the year was only 0.1% and therefore significantly lagged behind the 2% inflation target set by the Czech National Bank (CNB). The reason this time was a rapid decline in fuel prices caused by the price reduction of oil on world markets. The second reason was the continuing decrease in prices of food fuelled by a surplus of agricultural commodities on the European market. However, core inflation finally began to increase and closed the last year at 1.4%. Thus, CNB could continue its relaxed monetary policy built on all-time low interest rates and exchange rate policy not allowing the crown to exceed 27 CZK/EUR.

Since July of last year, however, CNB had to intervene on the foreign exchange market almost every month to keep the Czech crown below this limit. The result of these steps was a significant increase in foreign exchange reserves on one hand and a growth of crown liquidity in the Czech financial sector on the other. However, the central bank kept to its commitment and did not allow the crown to strengthen. It even de facto postponed the abolition of the current exchange policy several times and has so far not accepted the introduction of negative interest rates. Despite that, it is safe to say that credit offered by domestic banks is cheaper and more readily available than ever.



ALMOST BALANCED BUDGETS AND LOWER DEBT

Contrary to expectations, the public budget deficit dropped significantly in 2015 from -1.9% GDP to -0.4%. This can be credited mainly to the accelerated growth of the economy and the positive trend in municipal and regional budget management. While the state budget resulted in a deficit, the deficit was significantly lower than expected based on the approved plan. Indebtedness of the public sector, expressed relatively, dropped to 41% GDP and the Czech Republic remains among the least indebted countries in the EU. The national debt itself has increased slightly after two years, but due to the general shortage of bonds at a time of record-breaking surplus of liquidity on the financial market, the Ministry of Finance began to increasingly utilise the option to issue bonds with negative yields.

For over two years now, the current account on the balance of payments remains in the black. Last year, its surplus approached one per cent GDP and this year, its result keeps on improving (1.3% GDP for Q1 in accumulated expression). This development can be credited primarily to foreign trade with goods, which is reaching historical maximums thanks to the successful export of passenger cars. The surplus on the current account is further aided by services, primarily in the form of higher income from entrepreneurial services, telecommunication, construction industry and, last but not least, savings on the costs of financial services. 2015 also saw a decrease in payout of dividends to foreign entities on one hand and higher influx of dividends from abroad, a result of Czech companies becoming ever more active as investors on foreign markets in recent years.

After the abating of extremely strong stimuli, Czech economy has entered a stage of slight slowdown of economic growth, which is driven by household consumption and exports. It seems very likely that a further drop in unemployment will take place and the wage growth will accelerate in both the private and public sector. After all, the GDP results have confirmed that the economy is currently moving in this direction. It is likely that this year a new record in production and export of passenger cars will be reached. Despite a respectable anticipated pace in GDP growth, inflation is lagging behind and will likely not approach the inflation goal until 2017, which would allow CNB to depart from the current exchange rate system. Unlike the central bank, we do not anticipate official interest rates to grow the next year and therefore expect that short-term interest rates will remain around the current low. With the coming end of the quantitative easing policy in the Eurozone, we can assume a gradual increase in medium-term and long-term interest rates. The inflation outlook for 2017 should finally allow CNB to rid the Czech crown of the current exchange rate policy. It cannot be ruled out that in this context, the central bank may for a time refuse to agree to introducing negative interest rates applied to additional influx of speculative capital. The risks of future economic development of the Czech Republic lie – as usual – on the side of European demand, primarily on the interest of consumers in new passenger cars, which are the greatest long-term export article for the Czech Republic.

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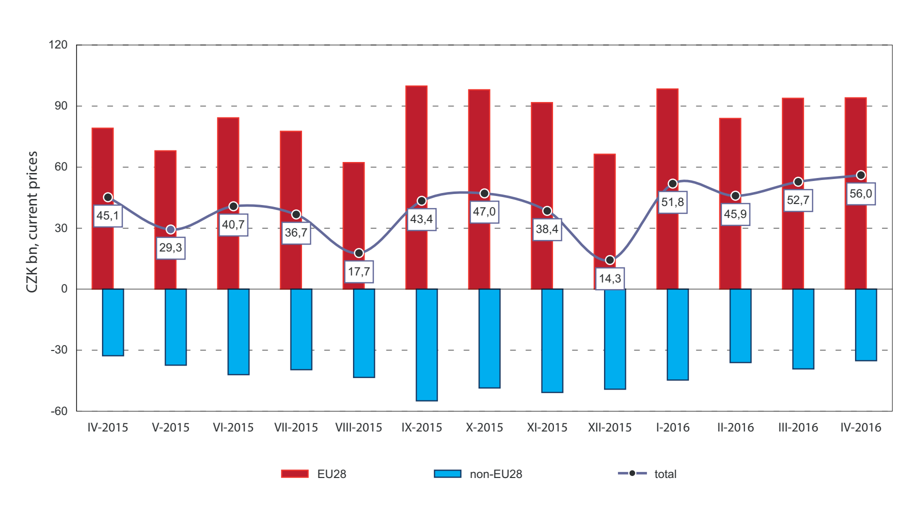
Photo: www.sxc.hu

Exporters Are Reaping the Benefits of Stable Foreign Demand and Exchange Environment

2015 was an exceptional year for the Czech economy. Economic growth, measured in year-on-year change in real GDP, reached 4.3% and was therefore the fastest since 2007. Thus, last year marked the definitive passing of the pre-crisis level of the economy. Although the dynamics of economic growth will slow down this year, partially due to the lowest year-on-year volume of EU funds available, the expected growth by over 2% will still be strong enough to keep Czech companies and households in a good mood.

TRADE BALANCE IN INDIVIDUAL MONTHS



Source: ČSOB

The characteristic feature of last year was the stability of foreign demand on the part of our key business partners, especially the Eurozone, and steady exchange rate development due to the intervention policy of CNB. The surplus of the international trade balance (national methodology) reached CZK 140.2 bn in 2015, which is a year-on-year drop by only CZK 5.8 bn. In the light of last year's investment boom, that is a very good result, since investment (with the exception of construction investment) is traditionally demanding on imports. The growth rate reached 5.9% last year, with imports increasing by 6.4%. The most important export destination was, once again, the European Union with an 84.0% share, or, to be more precise, the Eurozone, which received 65.2% of all Czech exports. From among the individual countries, Germany ranks first with 32.5% share in Czech exports. Exporters overall have succeeded in overcoming problems associated with Russian sanctions, although exports to Russia itself decreased over the course of 2015 by 32.8% and the share of exports to Russia on total exports was only 2.0%. On the import side, the share of EU or the Eurozone is lower, although still at a respectable 68.9% and 52.6% respectively of total imports to the Czech Republic over the last year. The share of German importers totalled 27.4%, and Russian imports amounted to 3.3% of total imports. The adverse balance with Russia is caused by the traditional imports of commodities such as gas and oil being at an exceptionally low level.

CURRENT ACCOUNT OF BALANCE OF PAYMENTS REFLECTS SOLID PERFORMANCE OF EXPORTERS

For the first time since 1993, the current account went into the positive in 2014 by 0.2% GDP. Last year marked another improvement to 0.9% GDP. Apart from the above-mentioned solid export performance of the Czech economy, the improvement in the external position of the domestic economy was also affected by a lower deficit in primary and secondary incomes. Higher domestic investment was also reflected by a higher reinvestment activity of foreign investors at the expense of profit repatriation. Czech investment abroad is also slowly beginning to bear fruit. The balance of secondary income was supported by EU funds. In the end, the rather significant surplus on the current account of balance of payments from last year resulted in a marked improvement of the country's otherwise still negative investment position.

CZECH ECONOMY BENEFITED LAST YEAR FROM COMBINATION OF SEVERAL ONE-TIME FACTORS

The first of these was the last chance to draw on EU funds from the 2007–2013 programme period, which was reflected, above all, in infrastructure investment. The result was, inter alia, a growth in structural engineering by 17.1%. Therefore, the construction industry as a whole showed growth for the second year in a row (growth by 7.1% last year). The second important phenomenon of 2015 was the dramatic decrease in fuel price, resulting from a drop in oil prices on the world market. The cheaper fuel led to an increase in available disposable income in both households and companies. Thanks to a second wave of decreases in oil and fuel prices at the turn of last year, the Czech economy was also positively stimulated during the first half of 2016.

DOMESTIC ECONOMY CAN RELY ON STRONG DOMESTIC DEMAND

Last year, investment activity and household consumption reached the highest rate of growth since 2007. In terms of creating gross added value, the main contributor was once again industry, whose production, in real terms, increased by 4.4%. Growth in industrial production was the result, mostly, that of growth in the automotive industry by 11.5%, growth in the production of rubber and plastic products by 9.8%, growth in the pharmaceutical industry by 8.9% and growth in the metalworking industry by 6.7%. On the other hand, a decrease in the price of energy commodities and an outage in the Dukovany nuclear power plant negatively affected the production and distribution of electricity, gas, heat and air, whose output decreased by 2.2% last year. The chemical industry also had issues; its production dropped by 5.7% (due to an accident at a chemical plant in Litvínov). Mining industry's output decreased by 1.7%.

HIGH ECONOMIC GROWTH DECREASES UNEMPLOYMENT

After seasonal adjustment, unemployment decreased throughout 2015. Based on the methodology by the ILO (International Labour Organisation), the unemployment rate by the end of last year reached its eight-year low at 4.5% and was among the lowest in the entire European Union, equal to figures in Germany. Year-on-year, unemployment decreased by 1.3 percentage points. The employment rate, on the other hand, was the highest since the beginning of the time series in 1993, amounting to 70.8%. The unemployment rate is so low that, over the course of 2015, there was a noticeable acceleration in the growth of nominal wages. Thanks to low inflation, there was also an apparent trend in the growth of real wages. The increase in the disposable income of households combined with high consumer trust was reflected in an increase in retail sales. Without the automotive segment of the sector, sales increased in real terms by 5.9%. In the automotive segment, last year's increase in sales totalled 11.5%. The entire sector of services grew, in real terms, by 2.6% last year, with all branches of services contributing to the growth.

2015 UNDER THE DIRECTION OF LOW INFLATION AND DISINFLATIONARY TREND

December's year-on-year growth of consumer prices was only 0.1% and the yearly inflation of 0.3% was the lowest since 2003 and the second lowest in history. The low price increase was primarily due to the decrease in food and fuel prices. On the other hand, core inflation reflected the strengthening domestic demand and gradually climbed to approx. 1.5% by the end of last year.

FAVOURABLE MACROECONOMIC SITUATION ALSO INFLUENCED EXCHANGE RATE DEVELOPMENT

During the first half of 2015, the Czech crown had a tendency to strengthen in relation to the Euro, but the second half of the year saw a more stable exchange rate development. The strengthening of the Euro below CZK/EUR 27.00 was prevented by the Central Bank via automatic interventions. The CNB was forced to use these interventions actively from approximately the middle of the year in order to defend its exchange rate commitment.

CZECH ECONOMY NOW BUILDS ON LAST YEAR'S FAVOURABLE MACROECONOMIC TRENDS

After last year's exceptional economic growth by 4.3%, this year's growth will be approximately two percentage points lower. The first months of this year have clearly shown that last year's boom of public investment co-funded from EU sources was significantly, but only temporarily supported by the drawing on European funds from the previous programme period. A new programme period has begun, but there is no noticeable decrease in funds available. However, we can once again observe a rather slow run-up of programme proposals funded from these sources. Even worse, complications are arising due to the outdated environmental impact assessment (EIA) of construction projects, which makes utilising EU funds on co-financing investment impossible. Unfortunately, this will have a major impact on the investment process in the public sector. This much is already evident from the number of public construction contracts issued in the first months of this year. Structural engineering is thus going to have a difficult year indeed. The building construction sector has to deal with issues regarding local plans, which often prevent the realisation of a number of projects, as is the case, for instance, in Prague. However, the growth of the Czech economy remains sufficiently robust to continue the improvement of the situation on the labour market. Employment in the Czech Republic is the highest ever and will continue improving over the course of this year as well. The result will be a decrease in the unemployment rate, although slower than before. The labour market is reaching its limits. In many regions and branches, it is becoming increasingly difficult to find the appropriate labour force. The growth in wages will thus continue to accelerate and will be reaching for the 4% level this year.

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Photo: sxc.hu

Legal News for Entrepreneurs in 2016

The greatest benefit for foreign investors and Czech entrepreneurs is the reduction of fees associated with founding a new company, effective since 1 January 2016. The notary's reward, set by a regulation of the Ministry of Justice of the Czech Republic, dropped to ½ and the court fee was removed completely. The costs for founding a limited liability company (s.r.o.) with basic capital of CZK 1 (4 euro cents) have decreased, in the case of founding a company without further professional aid, to the very keen price of approx. EUR 150. The lawmaker's intent was to reduce the costs for founding an s.r.o. company to a EUR 100 limit, which is the European Commission's goal. The amendment also eliminates fees for entries associated with natural or legal persons whose bankruptcy or impending bankruptcy is being resolved in insolvency proceedings, during which a bankruptcy declaration was already issued, and for entries where a person is being removed from the Public Registry.

EUROPEAN CERTIFICATE OF SUCCESSION NOW ALSO IN CZECH LAW

The European Certificate of Succession was introduced by EU regulation No. 650/2012 on jurisdiction, applicable law, recognition and enforcement of decisions and acceptance and enforcement of authentic instruments in matters of succession, and on the creation, of a European Certificate of Succession. The institute of European Certificate of Succession, which presents the evidence on the eligibility of the successor, testamentary successor or legatee and the powers of executor or administrator in another member state, has also been mirrored by the Czech law since 7 June 2016. The regulation introduces the principle that decisions regarding the property of the same testator should always be made within the same inheritance proceedings to eliminate the now common duplicity of hearings. By this, the regulation unifies the governing law for the succession itself with the law for the place of inheritance proceedings. This institute is important particularly for managers, entrepreneurs and other persons operating within the EU who may be affected by inheritance proceedings depending on where they currently reside.

ESTABLISHMENT OF BUSINESS AND INNOVATION AGENCY

The amendment to act on supporting small and medium-sized enterprises effectively as of 1 June 2016 established a new contributory organisation called the Business and Innovation Agency (API). The API will be formed by effectively detaching from CzechInvest, an agency for supporting enterprise, and, according to a declaration by the Ministry of Industry and Trade, by transferring approx. 130 employees from it to API. API's task will be to mediate the provision of support to entrepreneurs from EU funds. For entrepreneurs, this means that EU subsidies will no longer be mediated by CzechInvest, but by API. The remainder of CzechInvest will continue to work within the rest of its standing agenda, i.e. in mediating investment projects focused on the Czech Republic.

This split of CzechInvest was done primarily because the creation of a new organisation whose employees will be employed based on the Civil Service Act was a condition set by the European Commission, to allow trouble-free drawing on funds from the Operational Programme Enterprise and Innovation for Competitiveness.

OUT-OF-COURT SETTLEMENT OF CONSUMER DISPUTES

On 1 February 2016, an amendment to the Law on Consumer Protection came into force, introducing out-of-court settlements of consumer disputes into Czech law. Out-of-court settlements of disputes are held on the consumer's initiative, with the seller having no option to deliberately refuse this institute or terminate the proceedings. During an out-of-court settlement of disputes, the seller is obligated to provide an authorised entity with the necessary cooperation for the out-of-court settlement to proceed effectively. However, the seller is not obligated to accept the deal proposed within these proceedings and the authority for an out-of-court settlement can only issue a non-binding and substantiated opinion, which the consumer can then use in any other potential steps taken to secure his/her claim in court. The proposal for initiating out-of-court proceedings can be filed 1 year at the latest from the moment the consumer first exercised his/her right with the seller, and only under the condition that no court proceedings have begun regarding the issue, nor a legally effective verdict has been passed by a court. An out-of-court settlement of disputes must be concluded within 90 days of its initiation. If the case is especially complicated, this deadline may be extended by a further 90 days. An out-of-court settlement is ideally concluded with an agreement between the parties, or a unilateral declaration by the consumer to end his or her participation in the proceedings, the death or termination of one of the parties, the expiration of the deadline within which the dispute was to be resolved, or by a refusal of the proposal by an authorised entity. If the parties reach an amicable settlement to the dispute, this agreement must be concluded in written form. Although this agreement cannot be directly enforced, it can serve as a good foundation for the parties' positions should the case go to court, where the parties will then be able to seek enforcement of this agreement.

PENAL LAW AMENDMENT

Since 1 July 2016, Czech law has once again, after almost six years, made it punishable to prepare a criminal act of tax evasion, or evasion of any obligatory fee or payment. The preparation of this criminal act may lie in the preparatory steps before filing a tax return which would allow the perpetrator to (i) not pay the tax at all, (ii) pay the tax in a lower amount, or (iii) obtain benefits from the state for which the perpetrator is not eligible (such as excessive Value Added Tax deduction). Formerly, the preparation of this criminal act was punishable only if (i) the difference from the real tax liability was at least CZK 5 million, or (ii) tax evasion was perpetrated within an organised group which operates across multiple states. As a result, this change will allow the Czech Police primarily to intercept communication, follow persons and objects, secure and open packages, perform searches of premises used for business, or begin prosecution earlier, which also results in interrupting the period set for assessing a tax. It will thus be necessary for entrepreneurs to assess whether their so-called tax optimisation does not exceed the limits of the law and cannot be considered the preparation of a criminal act. The line between the legal and illegal interpretation and application of tax regulations may be thin, and in the case of making preparation illegal, this thin line may cause entrepreneurs and their professional consultants significant problems in the future.

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What to Watch Out for When Purchasing a Czech Company

Foreign investors in the Czech Republic must be aware of and take into account local Czech particularities which differ from those on their own domestic markets or conditions which are otherwise common knowledge in any other investment. What information can foreign investors themselves obtain online and when is it better to rely on professional consultants? What specifics are associated with the purchase of a Czech company?

LIMITED LIABILITY COMPANY (S.R.O.) AND JOINT STOCK COMPANY (A.S.)

Investment in the Czech Republic is generally realised via joint stock companies or limited liability companies. Foreign entities generally do not utilise other company types. If the investment takes the form of direct acquisition of real estate, company or other property, you can found a new Czech company or buy it as a so-called ready-made company to pursue the investment.

The purchase of a ready-made company is usually the easiest and quickest solution. The purchase should be made from a renowned seller, who should provide the corresponding guarantees and statements regarding the existence and condition of the company. Simultaneously, the investor should check in the company's documentation whether the company was founded properly and has fulfilled all its mandatory obligations. At the moment of purchase, the company becomes the investor's property and an Executive Director appointed by the investor can represent the company without delay. A subsequent registration of the changes in the Commercial Register is naturally needed and should be done as soon as possible. The founding of a new company is the safest choice for a foreign investor, but also usually a lengthier process. Until the company is entered in the Commercial Register, the investor can do business through the company only to a limited extent. It is usually required to involve professional lawyers in the founding of the company. The costs for founding a limited liability company with a nominal capital of CZK 1 (Euro 4 cents) without any additional professional aid should decrease after the latest law amendment to the very keen price of EUR 100–150 after 7 June 2016.

CHECK OF PUBLICLY AVAILABLE INFORMATION

Foreign and Czech investors today have a wide array of options for their own online check of a Czech company. Despite that, we recommend that the basic check of publicly available sources also be performed by professionals with experience with these sources of information. What information can be obtained from publicly available sources?

Final accounts and the current status of the company can be obtained from the Commercial Register kept by the Ministry of Justice at www.justice.cz. Here you can learn both the current status and condition of the company, as well as past changes. The website also allows you to access a collection of deeds which contains a plethora of documents, most importantly final accounts. If these are not included in the collection, you can request them from the Commercial Register. The company usually provides the missing documents within 2 weeks; otherwise, it would have to pay a CZK 50 000 fine. Decisions from General Meetings of shareholders included in these documents can also reveal shareholders which are otherwise not included in the Commercial Register. www.justice.cz can also reveal whether there are insolvency proceedings taking place against the company or whether there have been any in the past. The information is only available in Czech.

Information on the authorisation for business activity can be obtained from the Trade Register at www.rzp.cz. The Register contains information on Trade Licences currently held by every Czech entrepreneur, as well as past changes. Naturally, a company may have other licences and authorisations to do business which can be found in other, separate registers (such as a licence to perform employment agency activities (http://portal.mpsv.cz/sz/obcane/zpr_prace), mining activities (http://www.cbusbs.cz/index.php/menu-types.html), architectonic activities (http://www.ckait.cz/autorizovane-osoby), licences to produce or trade in electrical energy, gas and heat (www.eru.cz), authorisation to provide expert opinions or sworn translation and interpreting services (www.justice.cz), etc.). The majority of these websites is available only in Czech.

Unfortunately, there is no central register that would allow a search of all public registers concerning business entities simultaneously after entering the identification of the company of interest. To a certain extent, these needs are served by what is called the Access to Registers of Economic Entities (ARES), available at the website of the Ministry of Finance: wwwinfo.mfcr.cz/ares/ares.html.cz. Here, apart from the above-mentioned information, you can also obtain information on grants given, state subsidies, Trade Licences given and VAT registration. The website is also available in English.

Some information can only be obtained for a fee. Ongoing enforcement proceedings can be found at the Central Register of Executions (CEE) system, maintained by the Chamber of Executors. After creating an account and paying an approx. EUR 2 fee for each search, you can find information on potential ongoing executions against company property. However, the information may not necessarily be completely accurate, since the system depends on a timely and correct entry into the system by individual executors.

Information on whether the company property is subject to a pledge entered in the Pledge Register can be obtained from a notary for EUR 22. More detailed information from the Land Register can also be obtained online at www.cuzk.cz, including the prices of real estate purchased in the area. Basic information from the Land Register can be obtained on the website free of charge.

DUE DILIGENCE

In the case of purchasing an existing Czech company with a history, it is usually insufficient to perform a check from publicly available sources. Similarly to acquisitions abroad, a company must be vetted within what is known as due diligence in all areas relevant for the company, especially on legal, tax, financial, environmental, technical terms, etc.

The basic overview of the status of the company can be obtained mainly from the legal and tax due diligence, which should identify the basic risks and allow a decision on whether to purchase the company and under what conditions and at what price. Due diligence is as standard in the Czech Republic as anywhere abroad and requires the seller to disclose all information about the Czech company and provide all company documentation. From our experience, we usually encounter the following issues which are typical of the Czech Republic:

- stock, shares or other property was purchased illegitimately. The illegitimacy of the title of ownership of the seller is a common problem, not only in shares and stock but in other property as well, particularly real estate. In Czech law, there was and is a number of formal conditions which must be met before the transfer of ownership can be considered valid. It is not always possible to clearly infer the taking of ownership by acquiescence by the lapse of 3 years for movable property and 10 years for immovable property;
- potential tax or other arrears due to transactions between related persons;
- agreements between related persons may be invalid. Agreements made between related persons before 1 January 2014 were subject to formal limitations which, if not observed, could make these agreements invalid from the start;
- agreements may contain so-called change of control clauses which must be approved by an authorised contracting party before the transaction can be concluded. Otherwise, either the agreement is terminated, a contractual fine must be paid, or other sanctions are imposed;
- if a company was created due to a split, liability for obligations of the original company up to the amount of own equity capital will have been passed onto the company.

Even though it is currently possible to obtain a large amount of information from public registers, one cannot rely purely on this information and statements and guarantees of the seller when purchasing a Czech company. A comprehensive professional check will always allow the identification of risks and key issues and eliminate them before the purchase itself. Czech law was rather formalistic in the past and investors often have to deal with the invalidity of various transactions from the past which, however, can be corrected or otherwise taken care of during the purchase of a company. It is usually easier and cheaper to deal with these risks during the purchase rather than afterwards.

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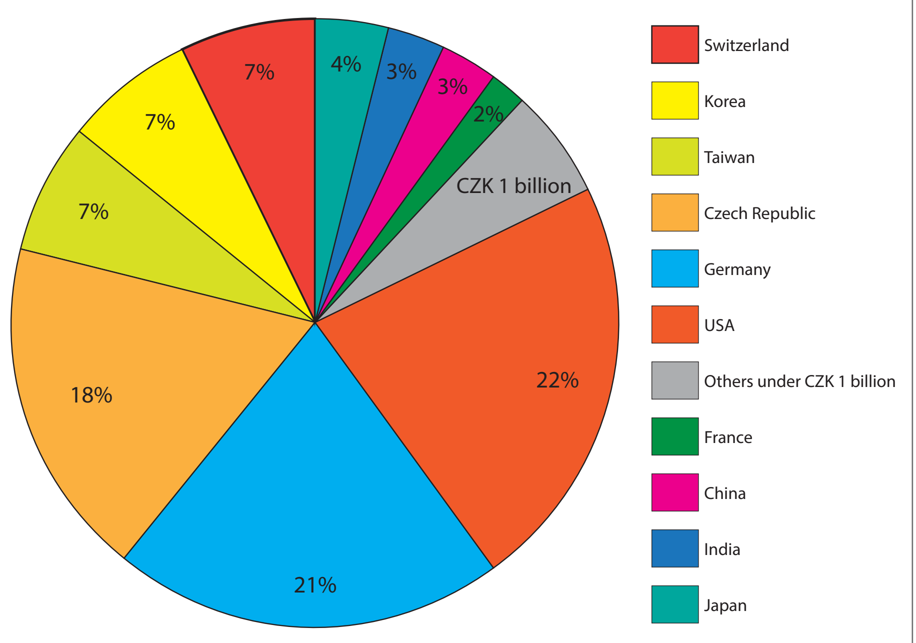
CzechInvest Mediated Investment Projects worth CZK 45 Billion in 2015

In 2015, CzechInvest Agency mediated 106 domestic and foreign investment projects. As a result, nearly CZK 45 billion will flow into the country and 14 040 new jobs will be created when completed. Of this number, 2 500 projects will be located in the Moravia-Silesia and Ústí Regions, areas afflicted by high unemployment on a long-term basis. However, attracting investors to the county is being greatly hampered by the reduced investment support introduced in 2014 by a European Commission regulation.

INVESTMENT PROJECTS MEDIATED BY CZECHINVEST IN 2015, BY COUNTRY OF ORIGIN



Source: CzechInvest

- reduction of financial support of investments from 40% to 25%
- 106 mediated investment projects to the aggregate value of nearly CZK 45 billion
- 30% hi-tech projects
- more than 14 000 new jobs, 2 500 of which in the Ustí and the Moravia-Silesia Regions

"In the light of this reduction, it is remarkable that CzechInvest has managed to negotiate investments that will create more than 14 000 new jobs, a number comparable with the preceding record year of 2014," notes the Minister of Industry and Trade, Jan Mládek. "Looking two years back, we see that the country, under the rule of the current government, which ranks investments among its highest priorities, managed to attract more than CZK 130 billion and to create more than 30 000 new jobs," the Minister points out.

Investment projects mediated by CzechInvest

Investment projects mediated by Czech Invest, 2010 - 2015 Period	Number of projects	Aggregate amount of investments (CZK millions)	Number of jobs created
2010	60	14 615.16	7 037
2011	72	33 015.49	10 702
2012	81	20 369.55	8 530
2013	108	47 937.15	10 412
2014	147	86 956.14	16 842
2015	106	44 969.56	14 040

Source: CzechInvest

Traditionally, the largest proportion of investments goes into the motor vehicle production sector, followed by the metalworking and electronic industries. The growth of investment can also be observed in the area of ICT, technological centres and shared services centres. Investors who announced their plans in 2015 place most of their investments in the Ústí Region, the capital of Prague, and the Central Bohemia Region. Most jobs will be created in the Pardubice Region, especially thanks to investments to be made by the companies of INA Lanškroun and Foxconn, which are at the same time the largest investment projects mediated last year. Along with them, figuring among the top ten, are the enlargement of production by MD ELEKTRONIK spol. s r.o. in the Plzeň Region and the expansion of Devro in the Liberec Region.

CzechInvest will carry on its efforts to locate more hi-tech investment projects in the Czech Republic. This year, for example, GE Aviation announced its plan to build a turbo-prop engine centre of excellence here. "Currently, about 100 new projects are in the pipeline," says Karel Kučera, Managing Director of CzechInvest. "Some of them are really of great importance, and are among the sectors we want to focus on still more in future, namely the aviation industry and electrical engineering," he adds.

Photo: CzechTourism archives

More Effective Filming Incentives

Foreign film crews are drawn to the Czech Republic by its historical monuments, nature and experienced teams. However, they are mainly interested in the workings of the investment incentive system. The Czech Republic reimburses them with one-fifth of the total money spent in the country. In 2015, filming incentives brought investments of 4.5 billion crowns to the Czech Republic, which is the most since 2003, when incentives for foreign crews abroad were first introduced.

In subsequent years, these investments could be even higher. An amendment to the Audiovision Act came into force in May 2016 – an important point of the amendment is the establishment of conditions for more effective provision of filming incentives. Instead of submitting requests once a year, producers will now be able to request incentives continuously, which will allow them to better plan their budgets and productions. The amendment introduces the allocation of incentives three months before the start of filming at the earliest, i.e. at a point when projects are on the verge of being realised.

WHAT HAS BEEN FILMED IN THE CZECH REPUBLIC?

Films such as The Chronicles of Narnia, Casino Royale, and Mission: Impossible surely need no introduction. All these were filmed in the Czech Republic. Newer productions include a number of projects – the creators of the American thriller, Unlocked, starring Orlando Bloom spent millions in the Czech Republic, while the BBC original series, The Musketeers, made in the Czech Republic three quarters of a billion crowns over the course of three seasons. Colin Wratten, producer of The Musketeers, pointed out in The Daily Mail Weekend that filming in the Czech Republic is cheaper than in Britain. "Working in the Czech Republic is a joy. They understand film-making here and are able to satisfy the needs of production since they have experience with shooting foreign films, including Casino Royale and Mission: Impossible, as well as BBC dramas such as The Scarlet Pimpernel and Charles II: The Power and The Passion," he said. According to Wratten, the historical locations provide the series with the feeling of majesty found in feature films. The country has also hosted stars of French cinematography, Jean Reno, Christian Clavier, and Gerard Depardieu, during the filming of the third Visitors film. However, the Czech Republic also attracts film-makers from other countries. For instance, Chinese film-makers recently joined their American, German, and Nordic counterparts, by choosing the country's locations as sites for their feature-length and TV films and series. For example, in 2015 Prague, Plzeň, Liberec, and Terezín served as locations for the filming of an eight-part Czech-Chinese co-production called Last Visa. The events of the drama drew inspiration from the real life story of Ambassador Ho Feng-Shan. He revealed to no one until his death in 1997 that, when he had worked as Chinese Consul in 1938-1940 at the Viennese Embassy, he saved thousands of Jews from concentration camps by providing them with visas and helping them to escape from Europe. In 2014, Prague bore witness to the filming of a romantic drama, Somewhere Only We Know, which now attracts many tourists to the capital. Film-makers had considered a number of cities for the location, but Prague managed to stand out even against such tough competition as Paris. "In Prague, we found absolutely everything we were looking for. Not only the architecture and locations, but also a very cultured environment and incredibly organised film-making infrastructure. Filming was truly great for us and I am certain that the film will be as well, and that Prague will leave a huge impression on the Chinese audience," says the film producer, Jiao Aimin. The promotion of the city via the silver screen is nothing new. For instance, interest in the Czech Republic grew among Korean tourists thanks to the TV series, Lovers in Prague, which was partly filmed in the Czech capital in 2005. In the first week of screening, the English version of the melodrama reached a respectable 20% of the available audience according to The Korea Herald. The huge interest in Prague two years after screening even led to the introduction of a direct airline between Seoul and the Czech capital.

Foreign productions can request a return of up to 20% of their investment in the Czech Republic. The filming itself usually costs approximately 60% of overall costs, with the remaining approx. 40% going to the services of non-film-making professionals. If foreign film crews want to request the State Cinematography Fund for support, the producer must estimate the costs before the filming itself and submit a request for the reimbursement of the above-mentioned 20% of the cost. However, the Fund will pay out the incentives only after the film has been completed. At the same time, an auditing company must check that the film-makers truly incurred these costs.

What Awaits Entrepreneurs after 2016 from the Perspective of Tax Changes

With regard to the fact that Tax Law in the Czech Republic is a rapidly changing field, we would like to take this opportunity to inform you about selected changes in the Tax Law and the associated legislation, not only due to it coming into force after 1 January 2016, but also the expected outlook it brings for the future.

CHANGES IN VAT

1. Control Statement

Payers are newly obligated to submit control statements for VAT and to do so only electronically in a format and structure set by the Tax Administrator. All electronic forms of submission in accordance with the tax code are allowed. The control statement contains the basic information on tax documents received and issued. The control statement is to be submitted by legal persons monthly by the 25th day of the following month at the latest. Natural persons must submit the statement monthly or quarterly, but always based on the period for filing a tax return. The first control statement was submitted for the tax period January 2016 by the deadline of 25 February 2016. For natural persons – quarterly payers of VAT – the first control statement for the first quarter of 2016 was submitted by 25 April 2016.

2. Extension of Duties to File a Tax Return Electronically

VAT payers — natural persons whose turnover for, at the most, 12 previous consecutive calendar months did not exceed 6 million CZK — were eligible to file a tax return for VAT in paper form.

Effective from 1 January 2016, even these payers are now obligated to file a tax return for VAT only electronically and to do so for returns filed after 1 January 2016. This filing can be performed in the form of a data report in the required format and structure, which is then sent via the data portal of the Financial Administration or from a data box. Authentication can be done either via an accepted electronic signature or login information from the data box. The filing can also be done without authentication and be subsequently confirmed by a legally set deadline through a so-called e-form.

3. Specification of the Definition of a Building Plot

Effective from 1 January 2016, the definition of a "building plot" has changed. This change was not for fiscal reasons, but to specify and expand this concept to properly taxed plots intended for construction and to bring Czech law in line with the European treatment of the term. When selling a building plot, the basic VAT rate of 21% still applies. Since the previous definition of a building plot left room for undesirable tax optimisation, it is possible that in 2016 some sites will be taxed which previously would not have been, based on old practices. On the Financial Administration website, the Financial Directorate-General published an annex to the "Information on enforcing VAT in immovable property", which contains further details.

PROPOSED CHANGES IN TAXING NATURAL PERSONS

Here, we would like to mention the main proposals for changes in taxing natural persons.

1. Increasing Tax Benefits for Second and Further Children

For 2016, an increase in the tax benefit figures was approved for second, third and every following child. For the second child,

Photo: www.sxc.hu

the tax benefit increases from CZK 15 804 to CZK 17 004 per year, or CZK 1 417 per month. For the third and every following child, the increase is from CZK 17 004 to CZK 20 604 per year, or CZK 1 717 per month. The tax benefit for the first child and the maximum tax bonus amount remain unchanged.

2. Increase in the Limit of Income for Tax Bonus

In connection with an increase of minimum wage, there was also an increase in the bottom income limit (equalling six times the annual minimum wage) for constituting a claim for a tax bonus. The amount has increased from CZK 55 200 (i.e. CZK 6 x 9 200) to CZK 59 400 (i.e. CZK 6 x 9 900). There has also been a corresponding increase in the limit of a claim for a monthly tax bonus (half of the minimum wage, now therefore CZK 4 950).

3. Increase in the Limit for Tax Benefits for Placing a Child in the Care of a Kindergarten or Similar Establishment

As a result of an increase in the minimum wage, it is possible to apply a tax benefit amounting to the proven expenses for placing a dependant child in the care of an institution for pre-school children for up to CZK 9 900 per year for each child.

■ CHANGES OF LEGAL MEASURE FOR TAX ON ACQUISITION OF IMMOVABLE PROPERTY

The key point of this change is the unification of the taxpayer with the acquirer of the immovable property in connection with the Tax on Acquisition of Immovable Property. Therefore, now the taxpayer will always be the acquirer of the immovable property (buyer). Simultaneously, the status of a tax guarantor will cease to exist. This will aid in making the interpretation unambiguous and simplifying the regulation, thus also reducing the administrative demands. The existing regulation, which left it up to the buyer and seller to agree during purchase or exchange which of the parties would carry the tax obligation, caused significant issues in practice. Due to ambiguous arrangements in contracts, the contracting parties were often unclear as to who the taxpayer was and the tax proceedings were unnecessarily extended, so that the tax could be assigned to the correct party. Now, the buyer will pay the tax directly and not indirectly as a part of the purchase price.

■ ELECTRONIC RECORDS OF SALES

The newly approved Act on Records of Sales schedules the introduction of electronic record of sales in accommodation, catering and restaurant services first to 1 December 2016. These should be followed by retail and wholesale as from 1 March 2017 and, 15 months after the introduction, entrepreneurs performing other activities such as freelance professions, transportation and agriculture, will be joining in as well. Selected crafts and production activities will become involved 18 months after the launch. It is therefore evident that, instead of an across-the-board implementation, the electronic records of sales will be introduced gradually for individual groups of entrepreneurs who perform cash sales.

The principle of the electronic records of sales lies in the recording of each payment; the customer will then receive a receipt with a unique code from the trader. According to the prescribed procedure, the trader will send a data report over the Internet to the Financial Administration server at the latest by the time of the recorded sale. The server will save the information and generate a unique code. This code will then immediately be sent back to the trader to his or her terminal, which will then print it onto a receipt. This will require millions of operations every day, making this a rather revolutionary step.

The fulfilment of the legal obligation will be monitored by both the Financial Administration and the Customs Administration.

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Driving Force of Development in Logistics Are Branches with Serial Production

Logistics are a field which encompasses the management of the entire supply chain. That means that the majority of prosperous companies must rely not only on effective leadership but also a properly planned and functional distribution strategy. "The logistics of Czech companies compared to Western Europe has been at a high standard for a long time. Already by the early 90s, Czech logistics companies were better equipped with information and communication technologies than in the old E15 countries," says Václav Cempírek, president of the Czech Logistics Association and a highly regarded expert on logistics and transport.

What current trends are appearing in logistics? How would you characterise the development of the Czech logistics market?

Current trends in logistics have long accentuated efficiency and simplicity of logistic chains. Methods such as just in time, just in time sequence, kanban and others are supported by information and telecommunication technologies. Supplier systems are aimed directly at the specific offices of the customer with minimum time for storage and completing of the delivery. There is also the challenge of implementing green logistics, for instance in transport by decreasing CO_2 emissions, in distribution systems by reducing the amount of packaging materials, introducing returnable containers, in intralogistics by implementing automated handling system, etc. Marking goods in the logistic chain with bar, 2D and QR codes or RFID chips for continuous monitoring is also very important. Informational registration systems are becoming increasingly important as well. These systems allow quick verification of commercial-law information about the individual business entities in the logistic chain with the goal of avoiding loss of goods.

The Czech logistics market is undergoing a healthy development, as evidenced also by the total growth of industrial production compared to last year. The market with industrial and warehouse real estate covered a total area of 5.78 million sq. m at the end of Q1 2016. In the first three months of the year, 84.3 sq. m of new industrial space was completed, representing a year-on-year increase by 112%. More than 271 tsd. sq. m is currently in construction and it is likely that the market will cross the 6 mil. sq. m mark in the second half of the year. Construction planning has changed: new areas are once again being developed on speculative basis, i.e. without a prearranged lessee. Developers are advocating their decision based on the prevailing significant demand on the part of potential lessees (especially trade and 3PL companies), the positive developments in Czech economy and the low vacancy rate in industrial properties (lowest in the last ten years, currently at 4.2%). (Editorial note: More on leasing industrial property on page 20).

How is logistics of Czech companies doing compared to Western Europe, for instance in the field of progressive technologies used in logistic processes?

The logistics of Czech companies compared to Western Europe has been at a high standard for a long time. Already by the early 90s, Czech logistics companies were better equipped with information and communication technologies than those in the old E15 countries. This was caused

Photo: Václav Cempírek archives, www.freeimages.com

on in part by the fact that our country has skipped half to one entire development stage in the field and our companies already started off with purchasing modern HW and SW. In Western Europe, companies did not want to change or replace the still functional but outdated information systems for new ones, since those were not written off yet. By the turn of the millennium, there was no difference any more between our logistic conception and that of Western countries. The provision of logistic services for not just foreign companies operating on our territory became commonplace and a number of logistic technologies was improved by our experts. Automotive industry had and still has the largest influence on the development of logistics. Tested logistic methods and models have spread from industrial branches to agriculture and finally also to the tertiary sector, i.e. services. The continuous reductions in the "depth" of automotive production places high demands on subcontractors delivering components and thus also on the providers of logistic services. From the perspective of equipping logistic processes with handling and warehouse machinery, order picking systems, packaging machinery and means of transportation for external transport, the Czech Republic is among the best when compared to the dev

eloped countries of Western Europe. This is also evidenced by the participation of our companies in major international transport and logistics fairs.

What is the major driving force for the development of this sector of the Czech market?

The driving force of development in logistics are all branches of the economy with serial production, which continuously manufacture large amounts of products. These include above all mechanical engineering with automotive industry and suppliers of components, electrical engineering, but also food processing industry and the tertiary sector, for instance in the area of social and health care services. The breadth of product lines, the high requirements of customers, the demanding time windows for input and output both in the material flow and the flow of goods, quality checks of goods in the supplier chain, checks for reliability of vehicles, the technology of their controls etc., all these place high demands on transport and logistics.

You are working as the president of the Czech Logistics Association. Can you name any goals the Association has set for itself for 2016?

We are interested in preparing enticing offers for the members of our Association to make the fulfilment of our mission more enjoyable for all. This year, we reprised one of our most important events, the Czech Logistics Day. The event took place on 21 April in Prague within the Europe-wide project European Supply Chain Day and was host to a number of company presentations from transport, logistics and many associated disciplines. The fair was organised by RELIANT company. Out of all European associations united under the European Logistics Association banner,

Photo: Cushman & Wakefield archives

more than 40 tsd. people took part in the European Logistics Day, spread across 458 different events in 23 European countries. I think that 36 companies and around 300 participants in our event is an accomplishment serving as evidence that logistics is an active and attractive field in our country and that the Czech Logistics Association and its members are headed in the right direction. The participants were presented with the unique opportunity to peek into the current events in transport and logistics and familiarise themselves with a number of successful solutions and cutting edge technologies in the sector. The presentation stands were a site for professional accompanying programmes.

It is our constant goal to stabilise the membership base and gradually increase it. In cooperation with partner institutions, we are preparing seminars on current topics such as Industrie4, risk management, RFID etc. and not just for the members of our association, but interested parties from the outside as well. For instance, in September 2016 we organised a tour for members into the production plant of Volkswagen Slovakia Bratislava and Port of Bratislava with a boat ride on the Danube. We wish to use these trips to show our members logistic processes which are otherwise inaccessible to the public.

You also teach at Jan Perner Transport Faculty of University of Pardubice. In your opinion, are logistics popular among Czech students?

Logistics are certainly an interesting subject for students, especially for those who have graduated from quality secondary schools focused on logistics. This statement may raise a few eyebrows but there really are such schools in the Czech Republic and I am in close contact with a number of them. After all, many of the specialised teachers working at these schools are graduates from universities where they studied subjects focusing on logistics. At the Jan Perner Transport Faculty of University of Pardubice, we have two branches of study focused on logistics. I have been very satisfied with the students both during their studies and at their conclusion, when they were preparing their Bachelor and Master's thesis of respectable quality. We are in close contact with important companies in the Pardubice Region, but also those outside it.

Where do you currently see opportunities or threats in the field of logistics?

In my eyes, we can anticipate opportunities in logistics to present themselves in the near future in further automation, not only in the field of engineering but also in the administrative and management sector. Automation in a broader sense will be introduced in processes such as material disposal, material dispatching, warehouse management, stocktaking, synchronisation of material dispatching and preparation of means of transport, etc.

I foresee threats from insufficient transport infrastructure for all modes of transport, in our case mostly road transport. Modernisation of existing and construction of new roads is progressing at a snail's pace and this could in the near future endanger the econ omic development of the Czech Republic. I see an underestimated threat in insufficient checks of goods declarations in accompanying documentation and their correspondence with the actual goods loaded, and in uncontrolled migration of persons into Europe. These together could have immeasurable impact on future development and sustainability of life not just in Europe.

Do you currently see any trends affecting logistic services in the Czech Republic?

An important trend affecting external transport are the efforts of transferring goods from road transport to rail transport using continental combined transportation. There is search for opportunities for supporting these systems which would lead to sustainable development in transportation.

In distribution logistics, e-commerce is beginning to gain ground and places demand on logistic operators when handling orders in the required time windows, but also delivering to the end customer with regard to access roads (pedestrian zones, limited parking etc.).

In intralogistics, the high volume of production necessitates the use of automated storage and control systems.

CZECH LOGISTICS ONCE AGAIN SHINE IN BRUSSELS

This year's European round of Project of the Year competition held in Brussels in April 2016 by the European Logistics Association once again confirmed the first-rate quality of Czech logistics. The six finalists from all across Europe also included a project by company KIEKERT CS nominated by the Czech Logistics Association on the basis of its success in the Czech national round of the competition called CLA Logistic Project of the Year. After the victory of ŠKODA Auto's project two years earlier, this is the second time that a Czech logistic concept scored so highly in the tough competition of top European companies. Kiekert CS entered the competition with a solution for its own production logistics based on replacing classic storage with a modern, fully automated storage built by Logzact. The construction of the fully automated storage itself was preceded by a complete overhaul of the entire logistic system and its preparation for the new arrangement. The solution resulted in a significant improvement in the performance and efficiency of the entire set of logistic processes in the company as well as improvement in the total capacity of the storage, all the while significantly reducing the number of workers needed primarily as operating staff. And the return on the entire investment is three years at the most to boot. "This has fully confirmed our expectations by improving the effectiveness of preparing materials for production and optimising overall the material flows in the entire internal chain," says Lucie Brklová, logistics manager in KIEKERT CS. "The improved storage capacity also allowed us to keep pace with the continuous increase in production volume which would otherwise require us to resort to external storage." The winning project of this year's competition was a solution by BLG Logistics, which is based on creating a fully automated system for logistics of e-shop goods, including the handling of returned goods; all of that with the use of robots and autonomous movement of mobile shelving units in open space. According to the words of the chairman of the evaluation committee, the decision on the winning project was extraordinarily difficult this year, since all projects offered inspiring solutions with great potential for transferability to other fields.

Czech Market with Industrial Real Estate Is Growing

Czech market with industrial and warehouse real estate covered a total area of 5.78 million sq. m at the end of Q1 2016. In the first three months of the year, 84 300 sq. m of new industrial space was completed, representing a year-on-year (Q1 2015 vs. Q1 2016) increase by 112%. A total of 271 200 sq. m is currently being built, which will push the market over the limit of 6 million sq. m in the second half of this year. Almost half (44%) of new warehouse and industrial areas is being built on a speculative basis, i.e. with no prearranged lessee. Developers are reacting to the lowest vacancies in the last ten years, ongoing strong demand on the part of potential lessees (primarily trade and 3PL companies) and the generally positive economic outlook of the Czech Republic.

"There are now 5.78 million sq. m of industrial and warehouse premises in the Czech Republic. The highest market share is held by the capital city of Prague (40%). The second and third place changes regularly between the West Bohemian centre Plzeň (current market share of 15.3%) and the South Moravian urban centre Brno (14.9%). 271 200 sq. m are currently in construction, which will push the Czech market over the 6 mil sq. m mark in the second half of the year," states Harry Bannatyne, head of the department of industrial property of JLL, and adds: "Currently, new construction is concentrated (in ca. 70%) in Prague-West and the west of the Czech Republic (Plzeň area, or Karlovy Vary area). The largest projects currently in construction are Mountpark in Plzeň (44 000 sq. m on speculative basis), P3 Park D8 (23 500 sq. m, built-to-suit), Panattoni Park Prague Airport II (23 300 sq. m built-to-suit)."

RISE IN THE IMPORTANCE OF E-COMMERCE

"In the first quarter of 2016, 84 300 sq. m in total of new warehouse and industrial areas were completed within 10 projects. Compared to the same period of last year, this marked an increase by 112%. The largest completed projects were: Prologis Park Jirny (33 500 sq. m for company Globus), CTPark Kvasiny (10 600 sq. m for one of the suppliers of Škoda Auto), and CTPark Modřice (10 500 sq. m for Megatech Industries Hlinsko)," says Valerie Tomanová, industrial property market analyst for JLL. The gross take-up in the first quarter reached 313 600 sq. m, which is an increase by 29% compared to the same period the year before. The demand was driven by companies focusing on wholesale and e-commerce (these amounted to 52% of gross and 60% of net take-up), followed in second place by 3PL firms (24% share on gross and 19% share on net take-up). "The results from the first quarter of 2016 confirm the positive outlook of the Czech market with industrial real estate this year. The net take-up reached 210 900 sq. m, which is 8% more than in the same period last year (Q1 2015) and over 38% more than the five-year average. Aside from companies in the automotive industry, which has long been among the most active lessees on the Czech industrial property market, e-commerce is also gaining on importance," adds Blanka Vačková, head of market survey of the real estate services firm, JLL. The share of renegotiations, i.e. expired lease agreements which were renewed under new conditions, was 33% in the first quarter of 2016.

Thanks to strong demand, the total vacancy rate of industrial property in the Czech Republic dropped to the lowest level in the last ten years; the rate is currently 4.2%. Zero vacancy (i.e. everything is leased out) is in these regions: Central Bohemian, Hradec Králové, Liberec, and Zlín. Ústí nad Labem, Jihlava, Plzeň, and Prague are also below the country's average vacancy rate. Brno, Ostrava, and Olomouc, for instance, are above the country's average vacancy rate.

According to Colliers International, prime headline for industrial and logistics property in the Czech Republic remained stable in Q1 2016 at 4.25 EUR/sq. m/month. The rent for office conversions is 8.00 – 9.00 EUR/sq. m/month. The standard level of service fees is between 0.50 and 0.65 EUR/sq. m/month. Prime headline rent remains stable at: Prague (3.80 – 4.25 EUR/sq. m/month), Brno (3.90 – 4.25 EUR/sq. m/month) and Plzeň (3.75 – 4.20 EUR/sq. m/month). Rent for built-to-suit projects is usually higher. "The strategic position in the middle of Europe, the developed infrastructure and skilled labour force combined with A class quality developer projects allow the Czech Republic to maintain its position as one of the driving forces in the region," adds Harry Bannatyne, head of the department of industrial property in JLL.

Source: EY M&A Barometer

Overview of largest lease transactions in the first quarter of 2016 (without renegotiations)

Industrial park	Lessee	Leased area	Lessee type
Panattoni Park Cheb	Tchibo	73 100 sq. m	Retail/wholesale
CTPark Aš	Petainer	22 400 sq. m	Manufacturing
Prologis Park Prague Airport	Linemart	18 200 sq. m	E-commerce
Prologis Park Prague Rudná	Not stated	9 400 sq. m	Retail/wholesale
CTPark Plzeň	Lidl	7 900 sq. m	Retail/wholesale

Source: IRF/JLL April 2016

Strong Year for Mergers and Acquisitions

From the international perspective, 2015 was the best year in history for mergers and acquisitions. The Czech market of mergers and acquisitions was also well on its way in the first half of 2015, but in the end, the year did not become record-breaking for the Czech Republic. The volume of the market of fusions and acquisitions in the Czech Republic decreased year-on-year by 9% (from USD 7.9 to 7.2 billion). Despite a slight decrease in the market volume and the number of acquisitions and mergers realised (from 221 to 185), in the context of the last several years, 2015 in the Czech Republic was a very strong year for such transactions. Within the region of Central and Southeast Europe, the Czech Republic ranked third in both market volume and number of transactions, following Turkey and Poland.

The most attractive fields from the perspective of the number of transactions in the Czech Republic were services, while the key field for the region as a whole was IT. In terms of value, the largest mergers and acquisitions for the Czech Republic took place in manufacturing, and for the region in banking and financial services. "The main reason for this continuous global trend is the coordinated effort of many central banks to cause inflation in consumer prices by printing more and more money. However, the question remains which types of assets this effort will affect in the end. We can see that profit multiples offered for purchased companies have exceeded the year 2007, so companies are clearly being appreciated and sold at higher values than in the period just before the crisis. For company owners, this is good news either way," says Petr Kříž, executive director in mergers and acquisitions in the Czech Republic for company EY when asked to describe the situation on the market.

In 2015, investors in the Czech Republic have performed a total of 185 transactions for USD 7.2 billion. The biggest transaction of last year in the Czech Republic was the acquisition by Swedish company Trelleborg, which purchased the leading manufacturer of tyres and industrial polymer solutions ČGS Holding for ca. USD 1.3 billion. The most active investor, however, was Energetický a průmyslový holding of the billionaires Daniel Křetínský and Patrik Tkáč, which made 8 significant transactions. CTP Invest spol. s r.o. group of Remon Vos was then the most active investor in immovable property with 5 transactions.

In an international comparison, the Czech Republic once again figures as a strong regional investor. Czech investors have made 38 investments abroad, while foreign investors made 58 transactions in the Czech Republic, which represents a decrease by 31% when compared to 2014. "The Czech Republic has maintained its position among the three strongest transaction markets in the region. It still has room to grow, however. The first pillar of growth in the near future will be the continuing environment of low interest rates, the second the relatively undervalued Czech crown and primarily the fact that though transaction multiples have recently increased, they are still attractive when compared to worldwide multiples," explains Michal Hrmo, mergers and acquisitions consultant for company EY in the Czech Republic.

STRONGEST SERVICES, BUT SIGNIFICANT DROP IN IMMOVABLE PROPERT

The number of transactions has increased significantly in the food industry (by 250%), agriculture (by 200%), in media and telecommunication (by 150%) and in power engineering and mining (by 129%). In absolute numbers, last year saw the largest number of transactions in services (35 compared to last year's 32). On the other hand, transaction activity in immovable property has experienced a surprising decrease despite being among the top sectors in terms of transactions in previous years. A similar drop was seen in the entertainment industry and the chemical industry.

"The Czech Republic has built for itself a reputation of a solid "safe harbour" for immovable property investment in the last few years. Thanks to its position, stability and number of interesting pieces of real estate, it is a favourite destination for both western and (especially recently) eastern investors. In past decades, the domestic real estate market fostered a number of strong investment groups which are becoming increasingly more active abroad year after year," explains Michal Hrmo, mergers and acquisitions consultant for company EY in the Czech Republic.

"The year 2016 may revolve around successful sales of assets of some locally strong financial groups. The current price offers are at such a level that at least some of these groups will be motivated to sell," says Petr Kříž, executive director of mergers and acquisitions for EY company in the Czech Republic.

Energy Industry in the Czech Republic – Stable and Prospering Sector

The energy industry is one of the most important sectors in the Czech Republic. Traditionally, we are very strong in the area of engineering and the manufacture of power generating facilities, which the industry can build and operate efficiently, including nuclear power sources. The Czech Republic is self-sufficient in electricity production, based predominantly on domestic brown coal deposits and nuclear power sources. On the other hand, natural gas and oil are imported from politically unstable countries, which may endanger safe and reliable supplies in future. The adequate capacity of national and international transmission facilities creates prerequisites for international trade in electricity. The energy sector is a stable branch in the Czech Republic, which attracts foreign investors and creates good prerequisites for the further development of Czech industry.

Photo: ČEZ archives

GAS INDUSTRY

Europe is more than 80% dependent on primary energy sources from politically unstable areas. None of the four Visegrad countries (V4), including the Czech Republic, can do without Russian natural gas. It is therefore unconditionally necessary to seek new, alternative transport routes, in addition to facilities carrying gas from east to west, ensure reverse flow from west to east and complete the Czech section of the Stork II gas pipeline that will connect Polish harbour liquefied gas terminal with the important junction in Baumgarten, Austria. Investment activities aimed at interconnecting European gas pipeline systems must be stimulated at both the EU and national levels. In this respect, positive news is the fact that the Czech Republic has approved the updated State Energy Concept, although it was expected to give more support to the gas sector in comparison with other energy sources.

OIL AND PETROCHEMICAL INDUSTRIES

Another risk commodity is crude oil. An alternative to the conventional transport route carrying Russian oil across Ukraine is the TAL Transalpine Oil Pipeline, making it possible to supply the Czech market with crude oil carried by tankers to Trieste, Italy, or via the Adria Oil Pipeline, which links Omišalj harbour in Croatia with the Slovak part of the Druzhba pipeline. Currently the facilities on the alternative oil pipelines are used at nearly 100%, but the volume of oil transported by the "national" Druzhba oil pipeline is declining in both the Czech Republic and Slovakia. The reason is the excess refinery capacity in Europe and potential national interests in the case of the Polish owner of Czech oil refineries. A solution is to build an all-European transmission system that will enable reverse flows and higher deliveries via the Druzhba pipeline, for example through the IKL oil pipeline to German refineries, or more intensive cooperation of Slovakia´s Transpetrol with ÖMV in the construction of facilities enabling reverse supplies from Bratislava to Schwechat, Austria.

PRODUCTION OF ELECTRICITY FROM CONVENTIONAL SOURCES

Conventional production of electricity from coal and nuclear material has a very strong position in the Czech Republic. The updated State Energy Concept supports the use of those sources which we can operate very efficiently. A key issue is the enlargement of the nuclear power plants by adding new blocks to the existing plants in Dukovany and Temelín. Here, however, a stronger in-

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centive must come from the state, as we can see, for example, in the UK, where measures have been taken to support investment in new facilities, irrespective of the type of production source. This motivates firms to long-term investment which, considering current energy prices amounting to EUR 25/MWh, appears to be rather risky. These prices are below the level of the turning point of conventional energy sources production. The main reason for the decline in electricity prices is the growing proportion of renew able sources in the energy mix, the priority connection of those sources, state support and, in the final analysis, the excess of supply over demand.

RENEWABLE SOURCES

After the solar wave, energy production in the Czech Republic from renewable sources is stabilised. Water sources are being used at 99 %, and as regards solar energy development, good prospects exist in the operation of facilities with a capacity of under 10 kW. Opportunities for development also exist in biofuel incineration. As it is hard to predict possibilities of developing production from renewable sources, the idea of electricity "storage" has come to the fore. This role can be played by pumped-storage power plants, which can pump water to the upper reservoir when there is a surplus of electricity and the price is very low, or even negative. There are localities in the Czech Republic suitable for this type of power station, but their construction would be expensive and demanding as regards both finance and administration, which reduces their potential in the future. The question is whether other electricity storage technologies (batteries, fuel cells) should be developed, or whether a more active management of demand should be ensured. Here, however, technological development has not made enough progress to enable their massive development in the conditions of the Czech market in the next five years.

DEVELOPMENT OF ELECTRICITY PRICES

Electricity prices will not go up markedly in the wholesale market in the course of the next three to five years. The reasons are the large number of production facilities and at the same time the low price of primary sources as a result of OPEC´s price policy and the theoretical possibility of "alternative supplies" of primary sources (shale gas or coal) to Europe. Therefore, oscillation of wholesale electricity prices at the level of 20–25 EUR/MWh can be expected. Will this price become a new standard? If so, further

Photo: ČEZ archives

investment in production will not be possible without state support. This will bring along a change of the market model and maybe the return to the single electricity supplier model. The price for final users is experiencing a permanent paradigm. Prices in the wholesale market are declining, but since 2008 the prices for final users – households and small enterprises -- have been increasing. In spite of this growth of prices for final clients, however, the change is very low, ranging around +-3%. This growth is linked with the need to support the financing of investment in renewable sources, in certain cases their preferential connection to the system, and the need to finance projects to increase the capacity of existing transmission and distribution systems. There is also the problem of compensation payments for gas-fuelled plants temporarily being put out of action and acting as a stand-by source to ensure the reliability of electricity supplies. Investments are also needed to build facilities enabling the interlinking of the electricity markets, as required by EU legislation. This will concern not only the energy infrastructure, but also the area of information technologies. The benefit will be easier availability and greater reliability of electricity supplies, but no price reduction for final users can be expected. On the other hand, there is a risk that electricity will become unavailable because the transmission and distribution facilities will be unable to handle such large volumes. Some countries, similarly to the Czech Republic and Poland, will put their protective systems in operation on their cross-border transmission lines for case of crisis.

CHANGES IN THE CONSUMPTION AND BEHAVIOUR OF CUSTOMERS

Energy consumption is pulled by growing industrial production, household consumption, as well as by energy saving programmes and other factors, such as the weather, which is especially true of the gas industry. The last two mild winters in the Czech Republic did not do much good to the industry as regards revenues. The price, the same as consumption, which in the past correlated with gross domestic product, was stagnant. In the 1st half of 2016, the Czech economy grew, in the 1st quarter by 2.5%, while energy consumption is not showing such dynamic growth. The reason is higher energy efficiency in a number of industries on the part of small and medium-sized enterprises and households. It can therefore be expected that energy consumption will not increase massively in the next three to five years, but, on the contrary, may decline by 3–5% a year.

ENERGY STABILITY IN THE CZECH REPUBLIC AND ATTRACTIVENESS FOR FOREIGN INVESTORS

The Czech Parliament recently passed a new Energy Act Amendment, updated its State Energy Concept and adopted rules for the new regulation period in the area of distribution to be in force until 2018.

From the foreign investors' point of view, the Czech Republic is very attractive as regards the energy sector, both as concerns legislation and future development. More investment can be expected to go into production facilities, cross-border installations and protection against electricity spilling across the border, especially from Germany, investment in the infrastructure in the area of distribution and the completion of the backbone gas pipeline running from north to south. The parameters of the updated State Energy Concept and the draft to regulate the pipeline system create good conditions for ensuring a reasonable payback period for the capital invested.

IMPACTS OF NEW TRENDS IN ENERGY SECTOR ON INDUSTRIAL PRODUCTION IN THE CZECH REPUBLIC

For industrial production, prospects of more investment in the energy systems are a good signal. Such investment will ensure good energy supplies, thanks to the opening of alternative transport routes, the risk of non-deliveries from politically unstable countries will be eliminated and a high quality and reliability of deliveries will be guaranteed. For the period of the next three to five years, the prices are expected to remain stable. The only risk is a change of the market model and switching to payment for connection. With the help of state support for raising energy efficiency, a reduction of the energy intensiveness of industry is expected. This, however, is the concern of the industrial enterprises themselves. The outcome of these efforts should be an overall reduction in energy-related costs and higher competitiveness of Czech enterprises at home and abroad.

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KEY ACTORS IN THE ELECTRICITY AND GAS MARKETS IN THE CZECH REPUBLIC

The most significant actor in the Czech market is the ČEZ Group, currently figuring among the ten most important actors in the European market. ČEZ is a vertically integrated company, operating in the area of coal mining, conventional and renewable energy sources production, trading, electricity and gas sale, electricity distribution, energy services and telecommunications. The ČEZ Group has the capacity to flexibly react to changes in the energy sector which, according to EBITDA, ranks it alongside the best energy companies in Europe. The second most important actor in the Czech market is the RWE Group, which concerns itself with gas transmission, distribution and sale, and energy services. The RWE company is one of the most successful entities within the RWE Group. The stability, efficiency and adequate profit rate of the Czech energy market has attracted foreign investors, who have entered the segment or regulated activities – gas transport and distribution. Other important actors in the Czech market include the E.ON Group, selling and distributing electricity and gas and providing energy services. The group's portfolio also comprises smaller manufacturing facilities. Another company with a similar structure is Pražská energetika, operating on the territory of the capital city of Prague, which also invests in renewable energy sources outside its own distribution area. There are also a number of alternative electricity and gas suppliers and energy service providers in the Czech Republic. Energy services are another step towards broadening the activities of vertically integrated companies and a segment with great potential for future development.

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Doosan Škoda Power build our future on rich tradition and sophisticated technology. Thanks to the many years of experience in this field, there is managed to maintain the status of one of the five strongest manufacturers of steam turbines in the world. Almost ninety percent of the turbines is exported.

Doosan Škoda Power has a very good long-term position in the EU market. Namely in the area of supply of industrial steam turbines for biomass power plants, municipal waste or combined cycle power plants, especially in the Nordic countries, Germany or Poland, and for combined cycles in Turkey. Nevertheless, we have experienced the largest business growth in Latin America. India is also a traditional territory. However, all emerging markets, namely in the Southeast Asia, are of great challenge.

MAJOR PROJECTS

Doosan Škoda Power currently implementing more than 30 projects with new turbines and nearly 20 upgrades or retrofitting of older turbines worldwide. It has made contracts to supply two 110 MW turbines for solar power plants in Chile. Those projects will be the largest solar power plants in South America and, at the same time, the first solar power plants in the world equipped with the "Tower & Storage" technology. The major projects also include 300 MW turbines for the combined cycles in Mexico.

There is prepared a basic design of the non-OEM turbines (i.e. competitive machines), including the introduction of new technologies essential for implementation of such projects. These include for instance unique machining technology of turbine parts directly on the site, application of reverse engineering for steam turbines components or scanning the layout of turbine rooms.

RESEARCH&DEVELOPMENT

To maintain this technology at the highest level, Doosan Škoda Power heavily invests into research&development, engineering SW and new manufacturing equipment. Thanks to years of experience and know-how, which is currently utilised also by the parent company in Korea, Pilsen R & D has become the global centre of research and development of steam turbines for the entire Doosan group.

FUTURE OF DEVELOPMENT

The developers in Pilsen primarily focus on new materials for use at high temperatures, and on development of long blades for the turbine output stages and optimisation of their shape. There is also permanently tend to cut down the costs and increase efficiency of the heat cycle. Given the large number of sources connected to the distribution network while the requirements for flexibility, speed of starts and changes in performance have dramatically shifted, the increase of flexibility of operation is a topic of growing importance.

Besides the quality of the product which ranks among the world top products, Doosan Škoda Power also have a great team of technicians who know how to get into accord with the customer and their requirements and thus offer a significant amount of technical flexibility of their solutions. At the same time, the company is able to take patronage over larger delivery units and provide complete equipment of the turbine room. The worldwide network of Doosan sales offices allows to work globally in the area of energy equipment supplies, and take full advantage of the capacity of the parent company as the EPC contractor.

Doosan Skoda Power is a part of a powerful combination of companies united under the Doosan Group to deliver complementary technologies, skills and value to customers the world over.

Source: Doosan Škoda Power s.r.o.

Recent Changes in Czech Energy Legislation

The European Union has long ago adopted three ambitious energy strategies to combat climate change and to ensure energy independence. According to the 2020 Energy Strategy, which has the earliest target date for achieving its goals, the European Union intends to combat climate change and air pollution, and to decrease its dependence on foreign fossil fuels by accelerating investments into efficient buildings, products and transport, and by the development of low carbon technologies such as solar power.

In order to help attain the strategy's objectives, the Czech Republic has recently adopted amendments to various energy laws; namely to the Energy Act, the Act on Supported Energy Sources, and the Act on Energy Management. This article aims to briefly introduce the most salient changes introduced by these amendments.

1. MANDATORY ENERGY AUDITS

An energy audit represents an effective incentive to improve the energy efficiency of buildings and other energy operations. Mandatory energy audits were adopted into the Czech legislation a long time before the 2020 Energy Strategy was approved, and since then the number of persons obliged to carry out an energy audit has expanded.

The recent amendment to the Act on Energy Management (effective from 1 July 2015)goes even further. Enterprises qualifying as a "large enterprise"(i.e. enterprises employing more than 250 employees or having an annual revenue of more than EUR 50 million or having a balance sheet of more than EUR 43 million) newly also have to carry out an energy audit of their energy operations.

The new obligation applies from 5 December 2015, and the mandatory energy audit has to be repeated every four years. However, if the large enterprise already has in place an energy audit not older than 1 July 2012, this audit remains in force until 30 June 2019.

Nonetheless, wherever there is a rule, there is usually an exception to it. The Act on Energy Management includes such an exception when it grants large enterprises the option to avoid this new obligation by obtaining an ISO certification. Depending on the type of ISO certification (whether ISO 50001 or ISO14001), the large enterprise either does not have to obtain an energy audit at all or has to obtain it only once, and not every 4 years.

2. CHANGES IN CALCULATION OF RENEWABLE ENERGY CONTRIBUTION

All consumers of electricity in the Czech Republic have to pay a renewable energy contribution towards funding of renewable energy projects and subsidising the purchase prices for electricity produced from renewables. Until the end of 2015, the Act on Supported Energy Sources stipulated that the contribution is calculated as a multiple of a base fee (per MWh) and the amount of consumed electricity. This 'pay-as-you-use' formula clearly incentivised consumers including large enterprises to try to reduce their energy consumption. However, the formula has changed with effect from 1 January 2016. The Act on Supported Energy Sources now divides consumers into two groups based on the type of electricity network to which they are connected (ultra-high voltage or high voltage networks vs. low voltage networks) and bases the formula on either the maximum reserved input (former group) or on the ampere capacity of installed circuit breakers (latter group).

The maximum amount of the contribution is capped at the same amount per MWh of consumed electricity as in 2015. Therefore, nothing is likely to change for consumers with low energy consumption which will probably continue to pay the contribution at the capped level. However, the landscape could change significantly for high energy consumption consumers, which were the loudest supporters of a change in the formula in order to lift the burden of the contribution from their shoulders. As a result of the new formula, in theory, these consumers might end up paying a smaller contribution per MWh of consumed electricity than they did in 2015. However, the result may vary taking into account all circumstances specific to each consumer.

3. SMALL PV PLANTS

The last significant change of the Czech energy legislation is an amendment to the Energy Act which introduces, among other changes, relief from licensing requirements for small photovoltaic power plants (up to 10 kW of installed output). This relief corresponds with the 2020 Energy Strategy's goal to promote the development of low carbon technologies, among which solar power has a firm and leading position.

According to the amended Energy Act, starting from 1 January 2016 small photovoltaic power plants no longer require a licence for their operation. This removes a huge administrative burden from their operators, and should promote widespread use of such small plants.

Although the limit of installed output will presumably make this relief more attractive for households rather than businesses, we assume that small photovoltaic power plants may still find their way into SMEs, and onto their rooftops.

4. CONCLUSION

It appears from the above that the end of 2015 and the start of 2016 was quite a turbulent time for the Czech energy legislation. The changes were mostly for the better for small power generators and large customers. However, we also noted a potentially burdensome change in the form of mandatory energy audits for large enterprises. Thankfully, at least these can be avoided by getting the ISO certification which, in fact, is already quite common within the businesses.

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Czech Pellets Are Going into Export

Czech pellet producing plants have closed their balance for 2015 – they manufactured a record-breaking 300 thousand tonnes of ecological fuel. Only one-third of wooden pellets was consumed on the domestic market; the majority was intended for export. Thanks to the high quality of domestic pellets where the Czech Republic ranks first in comparison with the entirety of Western Europe, the country successfully exports pellets west – to Italy, Austria, and Germany.

The production of wooden pellets is a rapidly developing branch of Czech industry. First, it richly supplies the domestic demand, and second, it has wisely and successfully oriented itself towards western markets. The owners of boilers and stoves for pellets need not fear any shortages, as pellets will be available in several times the amount required for the domestic market in the following years, despite the domestic demand likely growing as time goes on. That is because this year, the government shall support the purchase of environmentally friendly boilers for wooden pellets. "Thanks to boiler subsidies, boilers for biomass are experiencing an increase in sales, which will surely be reflected on domestic demand for pellets in the following heating season," says Vladimír Stupavský, director of the Czech Pellets Cluster.

WHERE DO CZECH PELLETS GO?

In 2015, export of wooden pellets increased the most for Italy, with a year-on-year increase by over 100%. More than half of all of Czech pellet export went to Italy, i.e. a total of 114 tsd. tonnes. Why Italy? " Italy is one of the biggest consumers of wooden pellets in the world and is highly dependent on import. It produces the same amount as the Czech Republic, i.e. only 300 tsd. tonnes, but the country's consumption exceeds 3 mil. tonnes," Stupavský explains. Export grew in 2015 also for Russia to 65 tsd. tonnes, while Germany stagnated – 37 tsd. tonnes of exported Czech pellets, the same as in the previous period.

CZECH PELLETS ARE THRIVING

Czech wooden pellets are successful on western markets for one clear reason – the Czech Republic ranks first among Eastern European countries in the amount of high-quality certified pellets. In 2015, the Czech Republic produced over 230 tsd. tonnes of pellets with ENplus certification. More than 99% of export was under ENplus certification and in the highest quality class, A1. Sale to western markets is always associated with the proof of quality and origin of the pellets. Export is dominated by packaging in 15 kg packs transported on one-tonne pallets. While there is a demand for Czech pellets in the west, some consumers on the domestic market still prefer importing pellets from Ukraine and other eastern countries where fuel can be purchased cheaper. However, the low price takes its toll on quality. "Low-quality pellets have a lower heating value and generally contain a large amount of ash and other non-wooden admixtures. As a result, saving money on pellets does not pay off in the end: you will pay less for a pack of low-quality pellets, but you will consume much more of them during the heating season," warns Vladimír Stupavský. "It is a shame that Czech consumers do not value Czech pellets the way our western neighbours do." What other developments on the domestic market with pellets are foreseen by Ing. Martin Černý, executive director of BIOMAC, the foremost Czech producer of wooden pellets and briquettes? "We will focus primarily on the domestic market, where the demand is much lower when compared to our western neighbours. No other EU country's government supports coal fuel as extensively as the Czech one. Until the coal policy of the state changes, I do not expect a dramatic increase in the domestic consumption of pellets."

Source: Klastr Česká peleta archives

Czech Mechanical Engineering Will Grow in 2016

Czech mechanical engineering will grow in 2016, agree company directors across individual sections. According to a study by CEEC Research, the positive growth trend should continue also in 2017. In connection with the future development in the sector, directors are also mentioning possible risks which could slow down growth or even stop it completely. One of the key risks is primarily shortage of qualified workers or unexpected changes on key export markets as well as negative geopolitical changes.

Predictions of the development of Czech engineering are similar across individual segments. Directors of large companies expect that this year, average growth should reach 2.2%; growth has been predicted by the majority of companies in the given segment (81%). Small/medium-sized companies are slightly more optimistic in their predictions, expecting a growth in the output of engineering in 2016 by 2.9% (confirmed by 81% of directors). Czech engineering should be able to maintain a positive trend also in 2017 (confirmed by 83% of companies). Company directors predict that growth in 2017 should on average reach 2.5% (compared to 2016). A look at individual segments indicates no large differences in the predictions of these segments. According to Bohdan Wojnar, board member of Škoda Auto, a. s., the fourth industrial revolution, on whose verge we now stand, will continue to progress in upcoming years. Thanks to innovations, we will gain the ability to react even more flexibly to ever faster changes in demand and in the possibilities of production capacities. "The interconnection of all production machinery, robots, individual sections and entire plants will continue, which shall significantly transform the understanding of the production process as we know it today. All the steps we are making in production innovations are leading primarily to more effective spending of invested funds. In the future, we plan transitioning to the concept of smart factories, where individual components will be equipped with chips with the option of custom logistic allocation. Predicting future development is always difficult, but based on the current revitalisation of the economy, we expect the industrial sector to grow further in 2016–2017", says Wojnar. "Due to the fact that slight growth of Czech engineering continued even in 2015, we expect this trend to continue in the following two years as well. Production machinery is one of the basic components of industry in almost all developed economies. Good condition of this sector also indicates the innovativeness of production and contributes to generating and maintaining highly skilled labour force, which then moves on from this sector to other fields as well across the entire economy. Of course, much depends on the political situation, adds Vanda Yousifová, director of OT industry, ABF, a. s.

In the area of sales of engineering companies, there is also an apparent anticipation of growth, which companies are linking to

Photo: Profesia archives

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the improving state of the economy not only in the Czech Republic, but also in countries where their products are exported. This development should, logically, have a positive influence on sales. In total 83% of company directors agree that sales of engineering companies in 2016 should grow by 5.0%. There are some apparent differences between the sales development plans of individual companies. The larger variety of the responses reflected primarily specific problems some of the companies are currently dealing with (one of the important influences is, for instance, geopolitical development, the situation in Ukraine, relationship with Russia, etc.). If we look at the development of sales in 2016 through the lens of categorising companies based on their size, we can observe certain differences between the predictions of the directors. Representatives of large companies predict a growth in sales on average by 4.1% in 2016. In small/medium-sized companies, the situation is seen more favourably – on average, this year's growth in sales in small/medium-sized companies is predicted at 5.3%.

BROADENING EXPORT TERRITORIES NOT ONLY IN EUROPE

Based on analysis, revenue from export in engineering companies in 2016 will grow on average by 4.3%. Almost one-half of large companies (45%) is concerned about the negative effects sanctions against Russia might have on their revenue. The companies are trying to resolve the situation mainly by searching for new markets. In this effort, the companies are limited above all by tough competition and the administrative issues in entering some of these new markets. Engineering companies' revenue from export should also grow in 2017, on average by 3.8%. Growth in 2017 is expected mainly by large companies (5.6%). Representatives of small/medium-sized companies are less optimistic (3.1%). More than two-thirds of all directors (71%) confirm that they are planning on expanding their export territories. This expansion should take place primarily in Europe, but will also head to more distant destinations (mostly Asia and the Middle East). The expansion of export territories is planned mostly in large companies (confirmed by 80% of directors). Aside from the above-mentioned regions, they are also drawn to North America. "Our target territories in the power generation business are mainly outside EU, in countries with coal and gas reserves where the Škoda brand, or Škoda Praha, still resonates. These are primarily Turkey, Indonesia, South Africa, and neighbouring countries. We are also putting things in motion in South America. We wish to return to Egypt and break through in Morocco, Algeria, and Cuba," says Peter Bodnár, director general of ŠKODA PRAHA, a. s. "The business activities of Kovosvit in the area of selling machine tools stand on four pillars: sale in the Czech Republic and Slovakia, in Poland, in Russia and export to other world countries. Our plan in export is spreading out to multiple territories to mitigate risk and focus on breaking through in promising markets such as China, India and Eastern Europe. I view the government's steps in building new business relationships as very positive and would be glad if these continued at an even greater scale in the future, since these actions are the first step along the road of gaining new business opportunities," sums up František Švec, commercial manager of KOVOSVIT MAS, a. s. "The most attractive territories for us are North and South America and developing countries of the Middle East (currently unstable). Also attractive are territories of the post-Soviet Asian republics," adds Janusz Pandur, financial director and executive director of Šroubárna Kyjov, spol. s r. o.

MAJOR IMPORTANCE OF ENERGY ENGINEERING

An important part of the Czech manufacturing industry is the production of machines and devices with classification CZ-NACE 28, which include a wide array of devices which affect materials either mechanically or thermally, or perform production processes on these materials (handling, spraying, weighing or packaging), including the production of their mechanical components which generate and use force. These also include parts manufactured specifically for these machines and devices. This section also includes fixed, mobile, or manually-controlled devices regardless of whether these are designed for industry, crafts, construction industry, agriculture or use in the household. Also included is production of special devices for passengers or freight. One of the important components of the Czech general engineering is energy engineering, which is currently experiencing growth thanks to the increasing world-wide demand for power. Recently, Czech energy engineering, as a key factor in renovation and development of Czech power engineering, has been once again making its way to the forefront, while still maintaining its traditional customers in Russia, post-Soviet republics, China, India, Pakistan, Egypt, Turkey, Vietnam, Cuba and other countries. The inclusion of Czech manufacturers of power-producing systems in supplier consortia is often aided by their membership in supranational compa-

Photo: Vítkovice company archives

nies whose connections and influence open the door to contracts from abroad. At the same time, a number of purely Czech companies are successful exporters of power-producing systems thanks to their long-standing tradition and rich references. Improvement in competitiveness on foreign markets is the purpose of the Czech Power Engineering Alliance, an association of thirteen major Czech engineering companies under the leadership of Škoda Praha. "The Alliance will be a partner to large foreign companies in deliveries for the construction of, primarily, nuclear power plants," says Peter Bodnár, director general of Škoda Praha, a subsidiary of the CEZ Group. "The alliance of power engineering companies, which now unites 14 top Czech engineering companies, will be one of the major partners for the government in further developing Czech engineering, creating new jobs and improving competitiveness of companies," states Prime Minister Bohuslav Sobotka. "The goal of this endeavour is to find opportunities in power engineering projects mostly abroad, since the Czech Republic alone is too small to maintain these competences and gain new ones in the future," says director general of the CEZ Group, Daniel Beneš. Under the leadership of Škoda Praha, the Alliance unites engineering companies Alta, Doosan Škoda Power, Elektro Kroměříž, I.B.C. Praha, Královopolská RIA, Modřany Power, MSA, OSC, Sigma Group, Škoda JS, ZAT, Vítkovice Holding and ZVVZ Group. In 2016 for instance, the Alliance signed a memorandum about cooperation with Chinese nuclear power companies. "Czech companies have extensive experience with nuclear power projects both at home and abroad and offer reliable solutions which, at the same time, comply with the strict European environmental legislation. It is, therefore, enticing for Chinese companies to work with us," states Peter Bodnár, director general of ŠKODA PRAHA. In forming this cooperative, the company is following in the footsteps of technological companies from the USA or France and thus simplifies the making of contracts for sub-deliveries for Chinese nuclear power companies. ŠKODA PRAHA also signed a deal for cooperation on projects in network development and renewable source dev elopment. The company will work with Chinese group Pinggao in development projects focusing on clean technologies, construction of power networks and power plants, primarily wind and photovoltaic power plants, in Central and Eastern Europe, Ukraine, Mongolia, and China. The total volume of investment may total tens of billions of crowns.

Current Trends in Czech Mechanical Engineering

Analysis of the economic situation in the machinery and engineering sector in 2016 anticipates noticeable growth of around 2.7%. In engineering, automakers are currently the driving force of the Czech economy, bringing about many exciting innovations. The companies in the cluster, large but also small and medium-sized enterprises, are primarily dedicated to heavy and general engineering and current trends towards strengthening of competitiveness, innovation, and winning new markets are for us the priorities.

Czech engineering has always been export-oriented and in the future this will be the same. Engineering production has historically been an inseparable part of the Czech economy. The demand and situation of the market are dynamically changing and therefore it is absolutely necessary to offer a lot of flexibility, to deal with small production batches, and with precise and comprehensive production. It is necessary to invest into modern technology, to have productive machines and an attractive production programme based on the company's final products.
Engineering must continue to grow and consider its future. The Czech Republic has a traditional advantage in the sufficient number of outstanding technical universities able to maintain, expand and modernise our existing engineering capacity. It is no wonder that we find three major technical universities and several secondary schools among the members of the cluster. The trend is therefore to support technical education.
Czech engineering companies are facing and gradually will face increasing competition from companies previously unknown and coming from more distant destinations. For us, this means not only a continual re-evaluation of overall costs, but also the imperative of maintaining the technological edge that distinguishes us from our competitors.

OPPORTUNITIES FOR CZECH ENGINEERING, EXAMPLES OF FOREIGN PROJECTS

The expected growth in the engineering sector is one of the factors that stimulates over 70% of Czech engineering companies to expand their export activities, especially for new export territories. The diversification of export destinations in today's business world is a necessity and contributes significantly to an increase of Czech

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- For further details see NEW MACHINES at www.retos.cz .

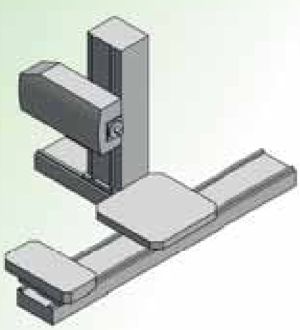
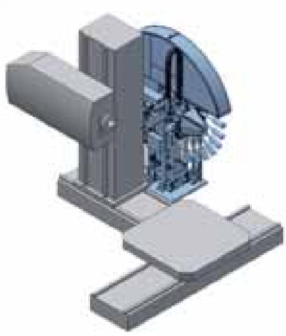
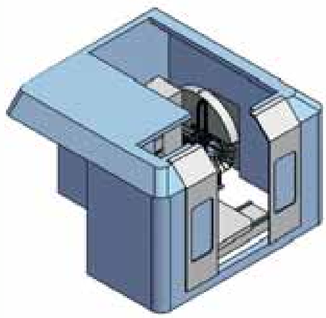
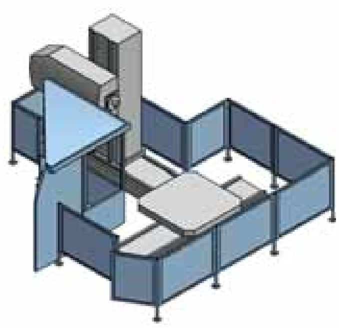

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Photo: Národní strojírenský klastr archives

exports, which have traditionally had a major impact on the overall performance of our open economy.

The production programme of our member companies covers almost the whole field of engineering, from single engineering products up to the production and delivery of the largest technological units. The cluster is also successful in the production of industrial pumps, of all kinds of valves and various fittings. Allow me to point out several examples of how companies in the cluster are able to transform a business opportunity into final success.

In the cluster we have a group of successful makers of fittings, of which Jihomoravská armaturka, a part of the international group VGA, just recently entered the cluster. They regularly attend waterworks international trade fairs and conferences. This year in late May and early June they exhibited at the 50th IFAT international trade fair for water, sewage and waste management in Munich. In June, they participated in the AQUA international exhibition of water management, hydropower, municipal engineering and environmental protection in Trenčín, and in autumn they will be exhibiting at the ECOFAIR international environmental trade fair – heating, ecology, and water in Belgrade, etc. The company supplies fittings to its partners in international projects such as in Poland (Opole) – thermal power plant, Bulgaria (Plovdiv) – water treatment plant, reservoir, Croatia (Omiš) – filtering stations, Slovenia (Šoštanj) – thermal power plant, etc.

VÍTKOVICE MACHINERY GROUP IS SYSTEMATICALLY EXPANDING ITS INTERNATIONAL TRADE WORLDWIDE

For example in Slovakia, VITKOVICE REVMONT is building a bus terminal with a shopping centre for the Primum company. The Terminal Shopping Centre, as the project is called, will be situated in Banská Bystrica on the side of the obsolete old bus station. The contract represents 400 million crowns. The new Terminal Shopping Centre complex will comprise two basic sections – a bus terminal with a mall and a shopping centre with about 40 stores and a parking lot for 300 cars. The bus station will have barrier-free connection to the nearby railway station.

In Sweden, another Vítkovice company, Hutní montáže, signed a contract for the "SYRA 4" project with the company of Chemoproject Nitrogen for the delivery and installation of 900 toness of steel structures for a chemical plant for the production of nitric acid in Köping, Sweden. The assembly was launched in April 2016 and will be completed by November 2016. Hutní montáže has also been successful in Bulgaria, where it is assembling a CFB boiler, including technological equipment, near the famous Bulgarian resort of Varna. The company is involved not only in the assembly of the technological equipment of the boiler, but also in the entire assembly of the steel structures of the boiler room.

VÍTKOVICE companies are also extending their successful projects from contracts already completed. A perfect example is

Container MGC 5200 for CNG transport, produced by VÍTKOVICE, a.s.

certainly the construction of the Niederfinow boat lift, a unique engineering work linking the basins of the Elbe and the Oder near Berlin. The German customer is so satisfied with the work done by VÍTKOVICE that VÍTKOVICE HEAVY MACHINERY has won another order, namely for the supporting parts of the trough lift. The columns of the unique lift, which will replace the obsolete technical masterpiece of the German waterways, are 40 meters long after assembly and always put together from ten-toothed segments.
Water ways in Brandenburg are so busy that the capacity of the lift is no longer sufficient for current demands. The new boat lift will therefore have significantly higher transport parameters. The vessel of the boat lift including water and ship weighs about ten thousand tonnes and during a hypothetic fault the threaded columns from VÍTKOVICEmust enable the safe lowering of the lift to the basic position. The unique Niederfinow technical work is a government-monitored project, because it allows the seamless transportation of essential raw materials and products along the waterways of Germany.
This year VÍTKOVICE CYLINDERS began to produce the first pieces of pressure vessels for a very demanding customer in Germany, which is one of the few manufacturers of submarines in the world. And the pressure vessels manufactured by VÍTKOVICE MACHINERY GROUP will be used as tanks of compressed air for submarines. In late April, the dimensional and sealing test of the manufactured pressure vessels was carried out.
VÍTKOVICE companies also took part in major international trade fairs and promotional events. In April an exhibition was prepared within the exhibition grounds of the Czech-Trade Agency for the prestigious TUBE and WIRE trade fair, which took place in Düsseldorf, and for the industry the processing sector of special alloys, forge materials and tools was presented at the trade fair. VÍTKOVICE Kordt und Rosch GmbH, VÍTKOVICE HEAVY MACHINERY and VÍTKOVICE HAMMERING were also presented there.
The long tradition and innovative solutions of Vítkovice Cylinders has allowed manufacturing companies in the Group to successfully export all over the world and this year Vítkovice Cylinders will also participate in a trade fair aimed at CNG technology– FIGAS & VEHIGAS in Peru, Latin America. VÍTKOVICE will also not miss out one of the largest trade fairs and conferences – Chillventa in Nuremberg, the flagship marketing event for European and international companies doing business in the field of refrigeration technology.
Our largest trading partner is still Germany. Year on year in the period 2013/2014 there was a marked increase in exports to China, which will partially offset the Russian shortfall, coming from the EU sanctions against the Russian Federation, the decline in the ruble exchange rate and payment problems of some Russian partners.

COLLABORATION OF THE CLUSTER WITH SIMILAR ORGANISATIONS ABROAD

On the occasion of the "Czech-Korea Business and Culture Forum", organised by the Czech Chamber of Commerce in Prague Hilton, the Czech Machinery Cluster signed a Memorandum of Cooperation with the Korean agencies KOTRA and KOAMI in December 2015. Future collaboration will focus on all fields of engineering, including nuclear energy and technical education.
The Czech Machinery Cluster closed a deal on partnership with the South-West Hungarian Engineering Cluster in Pécs in the autumn of 2014. In October 2014, the cluster in cooperation with the Czech-Hungarian Chamber of Commerce and the Czech Embassy in Budapest, prepared a Symposium on energy cooperation and opportunities for Czech companies in the construction of nuclear power plantPaks II. In May last year, the cluster and SWHEC signed a Memorandum on Cooperation, and in January 2016 members of the Hungarian cluster visited Ostrava, toured several Czech companies and held B2B talks on the cooperation of members of the cluster inbuilding up nuclear power plant Paks II.

CURRENT PROJECTS – COLLABORATION IN THE FIELD OF INNOVATIVE ENGINEERING

Our companies are investing tens of millions of crowns annually into the development of technical education. They provide scholarships, contribute to the activity of technical disciplines at universities and run secondary technical schools.
Last year, the cluster put together the project "The Competitiveness Strategy of Members of the Czech Machinery Cluster". This project aimed to promote the innovative development of the member companies of the cluster, supporting them to strengthen their position in the global market. The project included consultations and brainstorming on innovative business ideas and projects, analysis of corporate innovation processes and applicative analysis of grants. Enrolled in the project were 21 companies of CMC and an innovation audit was accomplished in 18 of the enrolled companies. The project recorded 61 innovative subject-matters that were gradually developed.
This year and the next year we want to build on the results of project and continue to strengthen the innovation capacity of the companies in the cluster in a similar follow-up project called Innovation 2017.

Ladislav Mravec
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Photo: TOS Varnsdorf archives, Národní strojírenský klastr archives

TOS Varnsdorf – Elite Machine Tools

TOS VARNSDORF – an important Czech joint stock company owned exclusively by Czech capital. Its history is long and productive: the firm came into being in 1903, under the name of Arno Plauert, which in time worked its way to becoming a leading European machine tool manufacturer.

The company´s manufacturing plant is located in Varnsdorf, but it has affiliations in the most important markets, with a network of agents and dealers spread all over the world. The firm is present in more than 50 countries worldwide. For example, in Saint Petersburg in the Russian Federation it has an affiliated service and trading company, TOS Varnsdorf-RUS, and in Yekaterinburg it has GRS Ural, an affiliated manufacturing and service company. In China, it has an affiliated manufacturing company, TOS Machine Tool Kunming, and an affiliated trading and service company, TOS Machine Tools Shanghai. In addition, TOS Varnsdorf is represented extensively in foreign markets. For example, this year it held an impressive exhibition at CCMT in Shanghai, the world´s largest machine tool fair, and participated in the SteelFab fair in Sharjah and the Metalloobrabotka fair in Moscow, where it presented its 3D Cinema projection system. Five machines made by the company now have D3 projection. The 3D Cinema projection system is the outcome of the firm´s collaboration with the Technical University in Brno and was presented at five different fairs and exhibitions in 2015.

The firm also has affiliations in the Czech Republic: in Olomouc, where small universal milling machines and accessories for the parent company are manufactured, and in Rumburk, which is a grey-iron foundry making castings for the parent company.

The company exports 80 to 90 % of its production on a long-term basis. Its largest outlets are the EU markets and those of the Russian Federation, followed by China, India, Brazil and many other countries in Asia and Latin America. Currently, the company is building new positions for itself in the USA and Canada.

The firm´s core business is development, production, sale, and servicing of machine tools intended for working pieces sized 1 cu. m and more, with precision of hundredths of a millimetre. Specifically, these are horizontal boring and milling machines and machining centres. The machines can be divided into three main groups according to the type of their technological use and the client´s requirements. The first group comprises table-type milling and boring machines for universal use and machining of segments weighing from 5 tonnes to 30 tonnes; these machines have spindles with diameters of from 100 mm to 150 mm. The second group of machines consists of floor-type milling machines bearing the WRD mark, designed for the most demanding technological operations on pieces of up to 130 tonnes (machines with spindle diameters of from 130 mm to 200 mm). These machines are used especially in metallurgy, power engineering and in the manufacture of big building machines utilised, for example, in the manufacture of turbines, parts of wind power plants, wagon and lorry undercarriages and frames for building machines. The third group of machines comprises modern machining centres, enabling the use of high-tech technologies with the most advanced tools. These are machines of the WHtec 130 series and TOStec machines using 100 mm to 112 mm spindles.

The company´s current offer is not limited to machines alone, but is complemented with a number of services, such as preparing technological studies, situation of the machines and assistance with designing the machine bases, supply of implements, tools and clamping accessories, machine operator training, including machine programming, guarantee and post-guarantee service, and complete modernisation and rebuilding of machines.

The company focuses on innovation. It has a 40-member construction team, which, in collaboration with the marketing section, is preparing new solutions. The company´s creed is that there can be no success in today´s demanding and turbulent markets without innovation, whether in actual production or in the development of completely new machines with better parameters enabling the utilisation of the latest machining technologies.

Liberec Scientists Closely Cooperate with Industry

Research into the fibrillation process by the effect of DC and AC electric fields in nano fibre manufacture

Current mechanical engineering is very sophisticated. Therefore, production plants are keenly interested in cooperating with science and research centres. The Faculty of Mechanical Engineering at the Technical University of Liberec is among the centres of science where cooperation with industry is truly in full swing. It is especially successful in the field of materials and technologies, including nano-technologies.

For instance, the science team of Professor Ladislav Ševčík at the Department of the Design of Machine Elements and Mechanisms have developed a new technology for continuous production of nano-fibre structures with inorganic precursor content. The newly designed machine components have ensured the optimisation of electrostatic field parameters, which resulted in an increase in the productivity of nano-fibre production. The resulting material has excellent properties for the area of filtration and photovoltaics.

Under the leadership of Professor Jaroslav Beran, the research team at the Department of Textile Machine Design is researching development and production of machines and lines for producing nano-yarn, utilising technology of spinning through the effects of alternating electric field. This research also delves in optimising the shape and material for spinning electrodes. The research team has experienced significant success when they developed a unique line for producing core-spun nano-yarn in cooperation with the team of Professor David Lukáš from the Department of Nonwovens and Nano-fibrous Materials from the Faculty of Textile Engineering. Both teams are also cooperating in researching and developing further machines and technologies for producing nano-fibres and nano-fibre structures using technologies of spinning using both direct and alternating electrical fields. "We have succeeded in developing a unique device for producing core-shell nano-fibres, where additives constituting the fibre endow it with very specific functional properties. These will be used in health care, especially regenerative medicine and tissue engineering," says the dean of Faculty of Mechanical Engineering, Professor Petr Lenfeld.

AUTOMOTIVE INDUSTRY

Research focusing on the automotive industry has also come with significant results. A few years ago, the Department of the Design of Machine Elements and Mechanisms developed and supplied three base blocks, including pneumatic vibro-isolating mounts, for testing equipment in the dynamic testing facility of company Škoda Auto. The testing equipment allows the simulation of on-road conditions and the sprung base blocks isolate strong vibrations and dynamic forces from the testing facility building. Thanks to the unique solution, the base blocks can be suitably adjusted for the specific test. Another advantage is a significant decrease in weight. Professor Lubomír Pešík adds that the base blocks made by the university were used for testing the new Škoda Rapid and a model of Škoda Octavia II. "In 2015, we received an order from company Škoda Auto a.s. for a solution for emergency supports for three clamping plates weighing 40 to 70 tsd. kilograms for the second floor of the Unit Testing Centre. Aside from ensuring an even distribution of the load on the testing area floor, our unique solution also allows sufficient levelling of the clamping plates based on current needs," says Pěšík.

ENERGY SAVINGS

During the faculty's cooperation with company 2VV s.r.o., Liberec scientists have developed a new enthalpic heat exchanger. It is designed for heat recovery ventilation and brings not only heat, but also humidity and heat bound in water vapour. It achieves up to double the effectiveness of conventional heat exchangers made of plastic or aluminium. Thanks to these patented exchangers, energy savings in buildings are dramatically increasing. The supply of fresh and adequately humid air also significantly improves the quality of the indoor environment. The ingeniousness of the Liberec solution lies in the use of a special material based on

Photo: Technical University of Liberec archives

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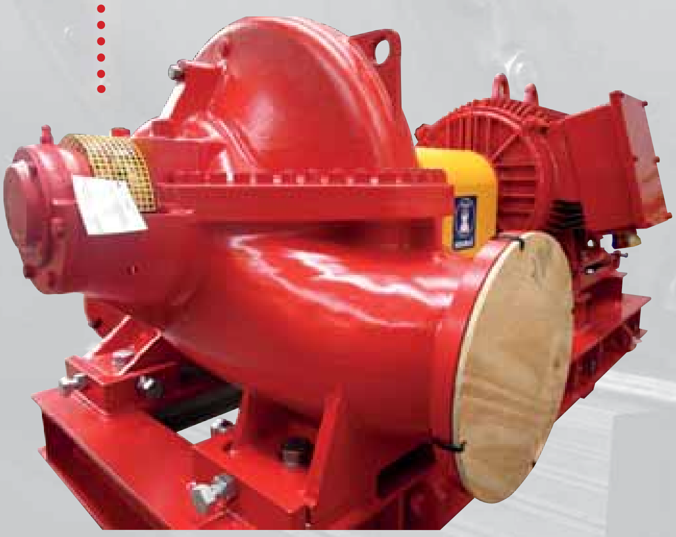
References:

- **Czech Republic, Slovakia, Poland, Russia, Kazakhstan, Turkey, Egypt, India, Argentina, Cuba, China, Pakistan**



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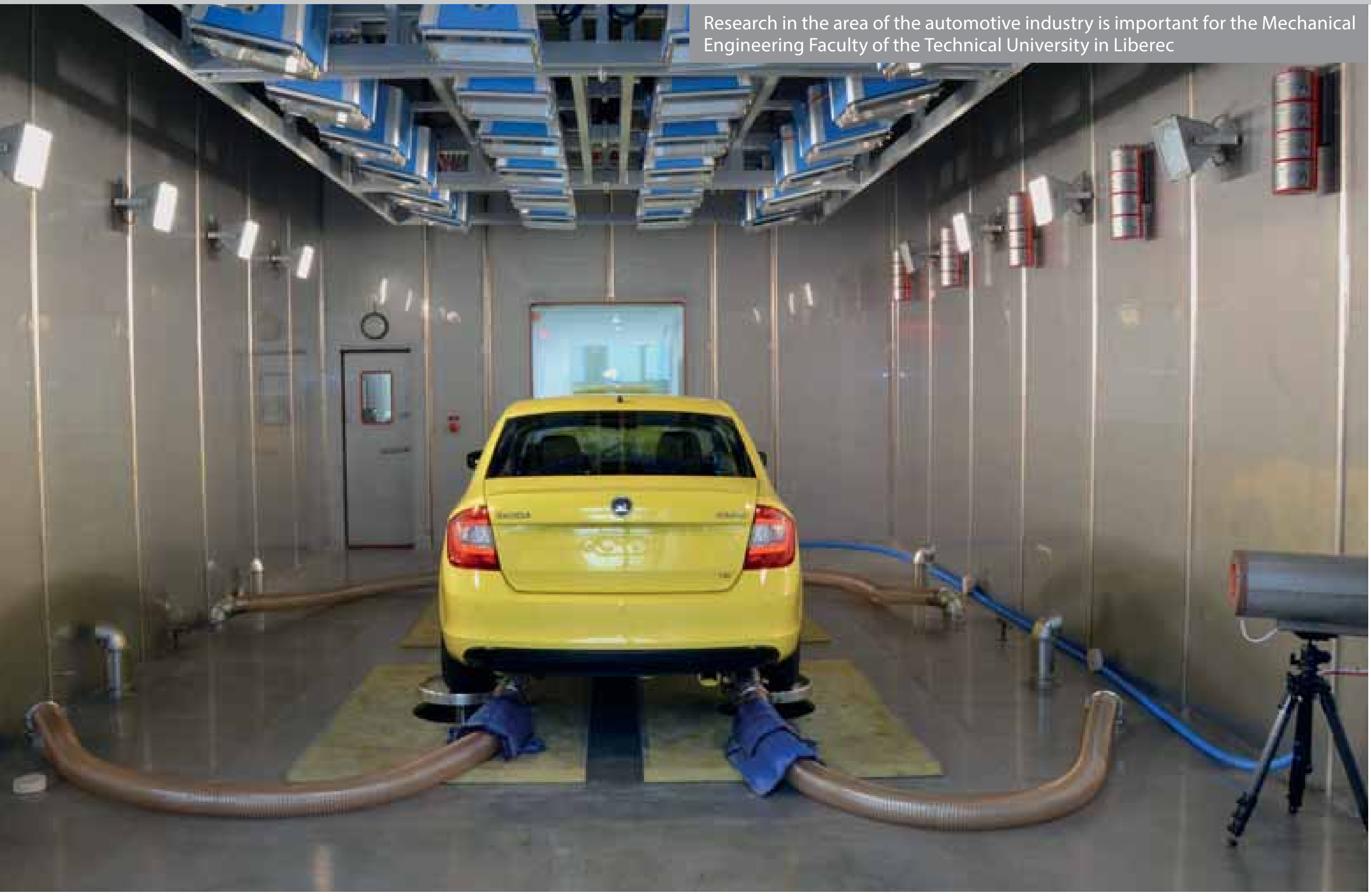

Research in the area of the automotive industry is important for the Mechanical Engineering Faculty of the Technical University in Liberec

a membrane, as well as in the shape of the heat exchanging surface which was optimised using numerical modelling, and the unique technology of processing the material and assembling the individual plates. The exchangers are already on the market, being sold by company Recutech s.r.o., who bought the licence for their production.

PLASTICS INDUSTRY

Also worth of attention is research in utilising natural fibres in manufacturing of plastics for the automotive and other consumer goods industries. The intention is to replace mineral and synthetic materials which are used as additives to plastics. According to Professor Petr Lenfeld, fibres of coconut, flax, jute, banana, or sheep and goat wool may significantly improve the properties of plastic materials and significantly reduce their price. "The cost reduction is significant. However, possibly even more importantly, the production of parts from natural materials significantly reduces the stress on the environment," states Lenfeld. Plastic materials with additives, so-called composites, are obtained by mixing the basic polymer material with natural additives. "The rigidity of plastic parts is significantly increased primarily by fibres made of jute, hemp and flax, as well as banana or bamboo. The material also retains its toughness and is thus suitable for use in door panelling, pillars and other car parts," professor Lenfeld sums up. On the other hand, according to professor Lenfeld, fibres of animal origin, such as Tussah silk as well as sheep and goat hair, have favourable effects on the ductility of plastic parts.

Cooperation in researching the working of plastics by extrusion and extrusion blow moulding for producing hollow bodies is also functioning smoothly. The Department of Mechanical Engineering in partnership with company GDK spol.s.r.o. in Kolová u Karlových Varů focused on research and development of progressive internal cooling and research of the effects of differences in the intensity of thermal energy conduction on the utility properties of products. The result is a new blow moulding machine with an integrated system of internal cooling via the injection of liquid CO_2, which allows the increase in productivity thanks to feedback from temperature-pressure sensors. Machines of this type are, as of yet, not used anywhere in the world.

"We emphasise the interconnection and mutual effects of the academic environment and industrial practice not only in the field of scientific, developmental, innovative and research activities and projects, but also in contractual research. We include modern findings from practice into our lessons. Hand in hand with industry, we are also working on research and development projects and participate on contractual research," says the Dean of the Faculty of Mechanical Engineering, Petr Lenfeld.

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Current university information
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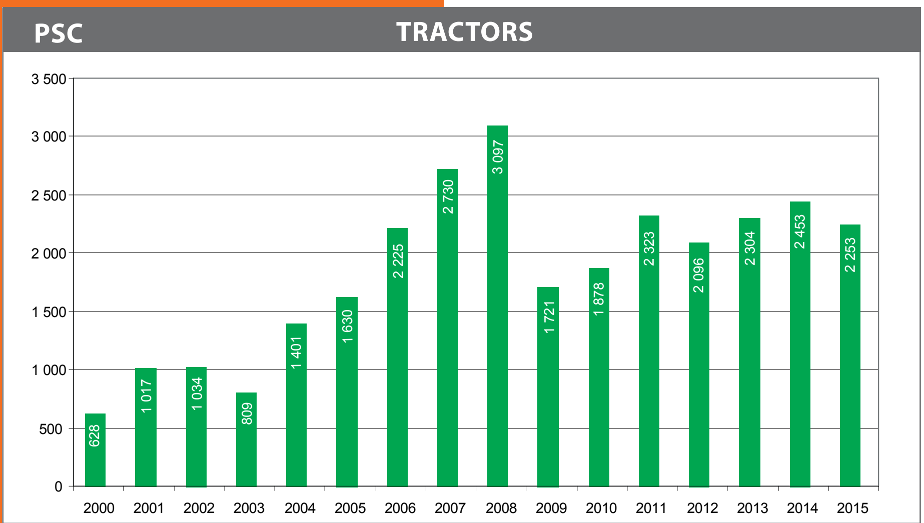
Photo: Technical University of Liberec archives

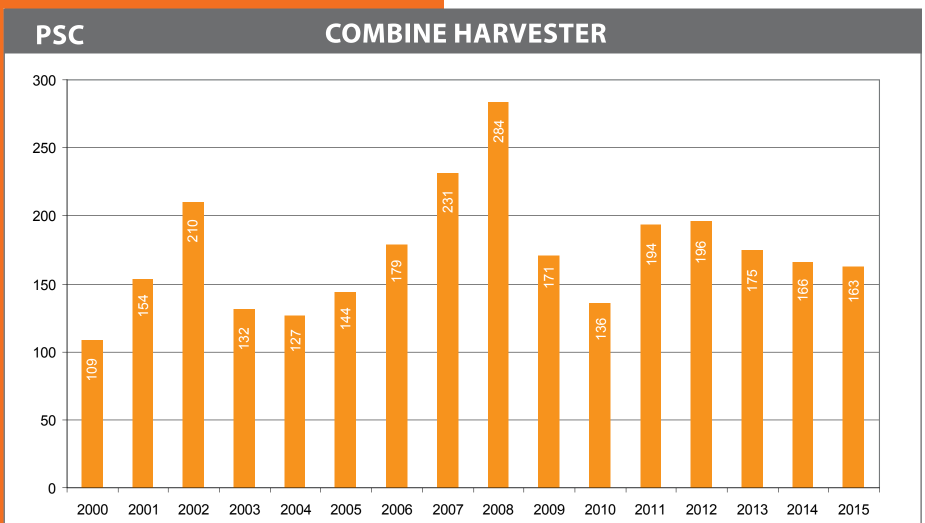
Czech Agricultural Engineering is Engaging in International Trade to an Ever Greater Extent

Agricultural machinery is one of the traditional Czech export commodities. The nature of the machines has changed radically in the last 30 years and modern agricultural machinery can be compared to some of the most technologically demanding fields in the world, utilising modern materials and technologies of the Space Age. The sophistication of Czech factory production has not dissipated. The companies respond to demand more quickly, introduce new models and when it comes to the quality of implementation and competitive pricing, Czech products find their place even on foreign markets.

Photo: Zetor archives



Source: Ministry of Industry and Trade of the Czech Republic



Source: Ministry of Industry and Trade of the Czech Republic

In the Czech Republic, there is approximately one hundred manufacturers of machinery for agriculture and forestry. The Agricultural and Forestry Machinery Association A.ZeT has 44 member companies including all the significant domestic manufacturers. The total production of member companies totals approximately CZK 19 billion (ca. EUR 700 mil.), which represents 80% of total production in the country. From total export of CZK 15.9 billion (ca. EUR 585 mil.) in the country, A.ZeT constitutes over 85%. Manufacturers of agricultural machinery employ around 10 000 people in the Czech Republic based on the Association's estimates, which is approximately one-third of the people the sector employed 20 years ago.

Based on a survey by the Association of Importers of Agricultural Machinery (SDZT) and the Agricultural and Forestry Machinery Association, 2 253 tractors were sold in 2015 compared to the previous year's 2 453, i.e. an 8% drop; in the same period, 163 combine harvesters were sold compared to the 166 of the year before, i.e. a year-on-year drop by almost 2%. However, the reality is that sales decreased significantly overall in 2009 and 2010. Therefore, the numbers from 2015 are approximately on the same level as sales numbers from 2006.

Long-term statistics show that the sale of versatile tractors is rather stable, holding steady at ca. 2 300 units since the begin-

ning of the decade. We can observe a less favourable development in combine harvesters, where we estimate a market capacity of approximately 200 units due to the conditions of the machinery in use and the need for machinery renovations; however, sales have been slightly dropping year-on-year, with last year's numbers being approximately 20% below the anticipated values.

■ FOREIGN TRADE

Czech companies are getting involved in international trade to an ever increasing extent. Practically until 2008, the import of foreign machinery grew side by side with the success of Czech manufacturers selling on foreign markets. Similarly to domestic sales, foreign trade dropped by approximately 30% in 2009 and 2010 compared to the previous period. In 2011, foreign trade started to recover and the trend continued in the following years. The turnover of foreign trade with agricultural machinery was over CZK 33 billion in 2015, with the export numbers (CZK 16 bil.) and import numbers (CZK 17.5 bil.) at a more or less even level. In other words: expressed in CZK, the amount of goods the Czech Republic imports is comparable to the amount exported. The biggest trade partners of the Czech Republic are the neighbouring countries Germany, Austria, and Slovakia, followed by France and Poland. Much depends on the range of products in question: Zetor is traditionally successful in Poland, Scandinavia, and the Balkan States; individual manufacturers are again finding partners even in countries of the former USSR – Russia, Ukraine, the Baltic States – and are gradually making a foothold in new EU countries as well – Romania and Bulgaria.

The most significant export goods are machinery for hay and forage harvesting, which includes all, mowers, forage harvesters, rakes, tedders, etc., whose share in export was approximately 40%, followed by tractors with 22% and machines for working the soil, with an almost equal share on export as tractors.

■ SUCCESSFUL RETURN OF ZETOR BRAND

Important exporting companies include Farmet from the town of České Skalice in the Náchod area, and BEDNAR FMT Praha, followed by OPaLL AGRI Dolní Životice and SMS CZ Rokycany, all focusing on manufacturing machinery for working the soil; AGRIO MZS Křemže is gaining ground with its sprayers, ZDT Nové Veselí successfully exports trailers and semitrailers. Other export articles include reaping machines, front loaders, manure spreaders and a wide range of small agricultural machinery and tools. Also successful is the production of specialised machinery such as stump cutters or refineries for processing oil seeds. FARMTEC Jistebnice, BAUER TECHNICS Tábor and AGE České Meziříčí belong among the foremost exporters of stable mechanisation.

We are glad to see that the Zetor brand of tractors is successfully making its way back onto major foreign markets. The company exports almost 90% of its production and sells the rest in the Czech Republic and in Slovakia. The presentation of a new design direction Zetor by Pininfarina – a concept created in cooperation with the famous design firm – was one of the big attractions of fairs in Hannover and Brno. The new look of the product impressed all the attendees and will be gradually applied to all model series of the Zetor brand over time.

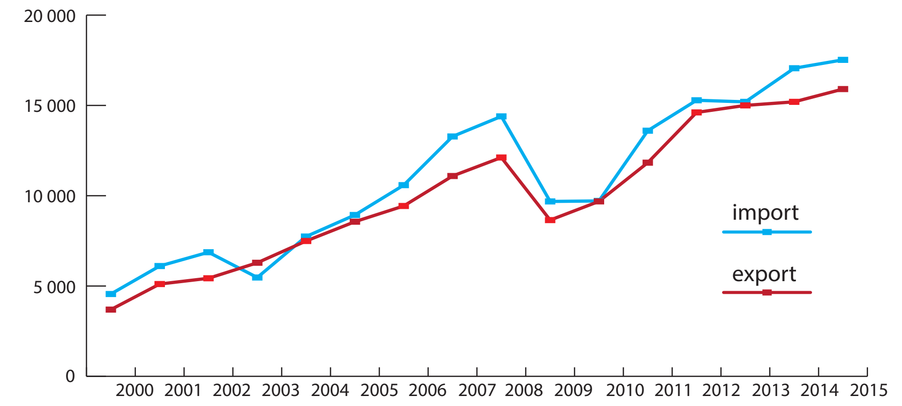
■ QUALITY OF CZECH PRODUCTS IS COMPARABLE TO EUROPEAN STANDARD

The high standard of quality of Czech products is evidenced by the fact that, for business reasons, European fields and stables make use of many machines and devices developed in the Czech Republic but painted in the colours of the foreign business partners. While not every company is willing to accept this model, it is a widespread trend, and if such a cooperation offers employment opportunities for Czech manufacturers and allows their products to reach foreign markets, there is nothing to protest against.

The main items in imported machinery are products which are not manufactured anywhere in the Czech Republic. These are mainly high-performance tractors (over 120 kW), combine harvesters and presses. Unfortunately, today the list also includes forage harvesters, which the Czech Republic used to produce and even export, but whose production was terminated. Machinery for harvesting sugar beet was met by a similar fate: the Czech Republic is now fully dependent on import.

In total over the last five years, sales on the Czech market are dominated once again by the domestic Zetor brand (19%), followed by the imported John Deere (18.7%), New Holland (16.6%) and Case IH (10.3%). In combine harvesters, the market is divided between Claas holding with one-third of the market (33%), New Holland with another ca. third of the market (31%), with the last third (almost) shared by John Deere (17%) and Massey Ferguson (10%).

DEVELOPMENT IN FOREIGN TRADE - MANUFACTURING OF AGRICULTURAL AND FORESTRY MACHINERY (IN CZK MIL.)



EUR 1= CZK 27.50 CZK *Source: Ministry of Industry and Trade of the Czech Republic*

■ FAIRS AND EXHIBITIONS IN THE CZECH REPUBLIC

Czech manufacturers and key importers are in close cooperation with the organisers of the two major domestic exhibitions of agricultural machinery, Veletrhy Brno, a.s. and Výstaviště České Budějovice a.s. The group of international trade fairs TECHAGRO / SILVA REGINA / ANIMAL VETEX / BIOMASS in Brno, which has so far managed to develop an excellent international reputation, can stand up to the strictest of comparisons and can pride itself on being among the three greatest events of its kind in the European context, following SIMA Paris and AGRITECHNICA Hannover trade fairs. The association A.ZeT stood at its conception in 1994 and remains one of the co-organisers of the fair, taking part in both shaping the event and its accompanying programme. Traditionally, Czech companies take up a significant portion of the exhibition space. In recent years, TECHAGRO has been one of the most successful projects among all fairs ever held in the Czech Republic, and this year's fair once again broke all the records with exhibition space of 78 000 square metres, 110 000 visitors, and almost 800 exhibitors from 40 countries.

■ PRESENTATIONS ABROAD

The production potential of Czech agricultural engineering exceeds the absorption capabilities of the domestic market. The support of Czech export is one of the main missions of A.ZeT. The association tries to present Czech manufacturers abroad – the most important events abroad for this purpose are the fairs SIMA in Paris and AGRITECHNICA in Hannover. Both exhibitions are at the very top not only in the European but international context as well and both take place every odd year. Czech companies have been an integral part of these fairs consistently since 1995. In 2015, 23 Czech companies took part on the AGRITECHNICA fair in Hannover and our agricultural engineering industry was presented as officially guaranteed by the Czech Ministry of Industry and Trade. The joint participation of companies was organised by the Association previously also in Kiev in Ukraine, Herning in Denmark, Poznań in Poland, on the AGROSALON fair in Moscow and twice even on the EXPO AGRO exhibition in Argentina. Manufacturers of small agricultural machinery find great value in the GaLaBau fair in Nuremberg.

It is gratifying for Czech manufacturers that over the last year, the level of cooperation with the Ministry of Agriculture has improved significantly: we can expect the ministry to support the presence of Czech companies on international agricultural fairs and the representatives of our companies participate on business missions led by the ministry's representatives. Thus, this year we had the opportunity to present our sector of agricultural machinery in Tanzania, Zambia, Nigeria, Senegal, and China; the joint approach of suppliers of agricultural and food processing technologies or even genetic material can provide Czech producers with synergy when forming business and cooperative relationships in specific regions.

■ STRONG POINTS OF THE FIELD, TRENDS AND EXPECTATIONS

The structure of our manufacturing companies is a relative advantage for our agricultural engineering: in the majority of cases, these are small and medium-sized companies which are capable of reacting flexibly to demand and even in production of serial character they are capable of preparing the machinery exactly to the demands and needs of the customer.

Agricultural technology reflects the requirements of farmers for higher machine performance and improved quality of work operations which result in "precision agriculture". A similar rhetoric to the one found in industry is taking root: the hot topic is Agricultural Machinery 4.0, i.e. the use of ICT not only in machines as wholes alongside the interconnection of individual machines and technologies into an intelligent data network and the use of systems for precision navigation of tractors and self-propelled machines, but also for observing, monitoring, and controlling even the individual working parts and units. In all these aspects, Czech manufacturers are competitive even in an international comparison.

Czech economy is small and open and practically dependent on export. Agriculture is a sector significantly dependent on political decisions, both on the national and union level. Proper competition is also disrupted by the policies of retail chains which farmers have to depend on to an excessive extent due to the current legislation. EU member states are divided on the controversial issue of funding common agricultural policy (CAP), whose imbalanced and unjust interventions and subsidies disrupt free competition and demotivate hundreds of Czech farmers from business, be it in producing meat, cereals, milk, fruit and vegetables, where Czech agriculture is competitive. Due to the differences in approach, it remains to be seen whether it will be possible to push through changes that would reduce the amount of funds for CAP, increase the support of rural development and improving rural quality of life while simultaneously reducing production subsidies, accompanied by an overall limiting of the regulation in the sector, without bringing asymmetric solutions which disadvantage some member states (including the Czech Republic).

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