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magazine

Winning at Global Competitiveness



Special report on China with views from experts in academia and business ■ Key Enabling Technologies and the EU's new industrial policy ■ ISO and CEN safety standards for machine tools ■ EU trade policy and competitiveness ■ The EU's Factories of the Future public-private partnership ■ EMO Hannover 2011

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foreword



Dear Readers,

The upturn in machine tool orders which started in the last quarter of 2009 has continued throughout the most of 2010. Orders of European machine tools grew in the first 3 quarters of 2010 by almost 60% compared to the corresponding level of 2009. Exports to Asia are the central driver of the upturn. Let's not forget that despite the upturn, the output remains still below the pre-crisis levels.

In the same period, the overall industrial production in Europe rose thanks to a strong surge of exports to Asia.

EU27 exports to China grew by about 40% in the first half of 2010 compared to the first half of 2009.

The manufacturing industry is proving once again its ability to recover rapidly and to drive economy out of economic recession. Despite low growth rate records in domestic markets, a competitive manufacturing industry can benefit from growth in foreign markets to turn new business opportunities into growth and jobs at home.

The overall economic scene in Europe, however, is not particularly optimistic. After the economic recession, the Eurozone is now caught up in a sovereign debt crisis which slows down the pace of recovery. Trade with China is a source of growing trade deficit for Europe as much as it is the driver of growth in many sectors. In 2009, almost one fifth of the EU's total imports came from China, while the share of European exports to China was less than 8% of total EU exports. Europe can close this gap and make it a sustainable business by exporting more.

Looking at Europe's main export lines, advanced technology products are ranked the first. In the case of China, almost 60% of EU27 exports to this destination were machinery and vehicles in the first half of 2010. Europe certainly plays in the high-value league. In the machinery industry and the machine tool sector in particular, value comes from mainly R&D and design. European industrial strategy should be devised so as to ensure that Europe's domestic input ratio in value added products remains high.

Policy makers should, therefore, concentrate on ensuring the right conditions in Europe to remain competitive in high-performing exporting sectors and to attract new investments in advanced, high value manufacturing. The manufacturing industry hinges on a sound R&D base, a highly-skilled workforce and an innovation-friendly business environment. Having a secure access to global supply chains and to international markets is a key component for competitiveness and growth.

The Europe 2020 flagship initiative 'An Industrial Policy for the Globalization Era', launched in October, shows very positive signs of long-term political commitment to support manufacturing. In the context of globalisation, international competitiveness of industry is placed at the heart of the discussion at EU level. The renewed EU trade strategy is another promising initiative to improve the access of European goods and services to high-growth markets.

This issue of CECIMO magazine contributes to the discussion by exposing the factors which impact on the competitiveness of the European machine tool industry. With this in mind, China, due to its growing importance in the production and trade of machine tools, comes under focus.

Filip Geerts, Director General

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EMO is the world's premier trade fair for metalworking technology. The countdown has started for the 19th edition of EMO which will take place in Hannover, on 19-24 September 2011.

Global Competitiveness: Reacting to the new Chinese reality



CECIMO delegates discussed global competitiveness in the machine tool industry and how to react to the new Chinese reality at the Fall General Assembly, 2010

Over the last few years, a significant shift from the developed world to developing countries has marked the history of the machine tool industry. China, which virtually didn't exist on the industrial map of machine tool builders 10 years ago, has emerged as the biggest manufacturing country of machine tools as well as the fastest growing market in the world. How should we react to this new Chinese reality? CECIMO delegates tried to answer this question during the CECIMO Fall General Assembly that took place in November 2010 in Milan, Italy. Mr. Michael Hauser, CECIMO President, gave a comprehensive overview of critical issues in his opening speech.

China yesterday and today

"10 years ago the world looked very different. The machine tool market was basically dominated by the Europeans, the Japanese, the Taiwanese and few Americans. China, as a market, was not even a blip on the radar for most companies. Apart from

government business, it did not even exist for the western manufacturer." Mr Hauser said.

Today, the picture is totally different. The Chinese market has grown to become the biggest machine tool market in the world. It accounts for over 40% of the world's total consumption of machine tools while the share of mature economies has been gradually decreasing. How has the country managed to surpass the rest of the world, not only in machine tools, but also in other crucial sectors?

Firstly, state owned enterprises have invested in new technology in defense, energy and other strategic sectors. Later on, foreign-owned enterprises were allowed to be set up and they mainly went to China to benefit from low costs and to produce low value goods (toys etc) for the rest of the world. Simple products have been gradually replaced by advanced high value goods, including consumer electronics, LED, ICT and automotive. Finally over the last five to seven years privately owned enterprises have been emerging mostly



"We have to look into the implications of the Chinese factor on the competitiveness of European machine tool builders before we design our future strategies."

[Mr Michael Hauser, President of CECIMO]

to satisfy the booming local demand.

The Chinese market challenges European manufacturers

For foreign manufacturing companies there are huge challenges in China. China is a very different country which poses many more difficulties for a European company compared with its Asian competitors. "The country is far away from Europe, we do not understand their language, and we sometimes don't share the same values. This situation puts European machine tool builders at a disadvantage compared with Korean, Japanese, Taiwanese and Singaporean manufacturers." President Hauser pointed out.

In order to illustrate different concerns of manufacturers working with China, he made a distinction between three different groups: The early birds who already have their own plants in China, their localized products and their local management. "They have surely already lost some of their know-how at an early stage, but they seem to be successful and they are now scared that they cannot get their money out of China" the President stated. Another group, which he refers to as exotic and niche players, sell high-tech machines hopefully for good margins. And, finally "there are apparent losers who do not sell to China because they were too late".

What will the future bring?

A main driver behind China's rapid transformation has been the strong commitment of Chinese people to help with the development and the progress of their country. The western world lacks this kind of collective motivation.

"However, China is changing too", President Hauser affirmed. "The social evolution triggered by the economic evolution in China may bring about significant changes in the way Chinese people live, think and spend." Only time will tell. Nevertheless, one certain truth is that China is too big to be ignored. Henceforth, what happens to China will inevitably affect Europe.

Europe remains the world's biggest manufacturer of machine tools. In 2009, fifteen CECIMO member countries produced 42% of the output in the global machine tool market and European exports equalled to 60% of world total exports. Nevertheless, the technology and output gap between the West and East is closing. "We have to look into the implications of the Chinese factor on the competitiveness of European machine tool builders before we design our strategy" he said.

China is changing fast; we need to be fast to understand and to react to the Chinese reality. ■

The CECIMO Self Regulatory Initiative

An important agenda point of the CECIMO General Assembly was the Eco-design directive and CECIMO self-regulatory initiative: The CECIMO self-regulatory initiative is running under the auspices of the CECIMO Energy Efficiency Working Group, with the participation of industrial experts from machine tool companies, research institutes and national member associations. The aim of the initiative is to propose to the European Commission voluntary measures for energy efficiency of machine tools which would replace the mandatory requirements that would otherwise be imposed under the EU's Framework Directive on Eco-Design of Energy-related Products (Directive 2009/125/EC).

Meanwhile, CECIMO is closely following the EU product group study on machine tools contracted to the Fraunhofer Institute. CECIMO provided its first comments on the first reports of the study during the first stakeholder meeting in Brussels on 12 July 2010 which was organised with the aim of collecting feedback from interested parties. Moreover, CECIMO continues to share with the Fraunhofer Institute its expertise on the industry through a continuous dialogue.



Future of Advanced Manufacturing in Europe

The Key Enabling Technologies (KET) Initiative is designed to provide a European policy response for the deployment of technologies which have a significant impact on Europe's industrial and innovation capacity. The High Level Group on KETs set up by the European Commission is charged to develop a shared long-term strategy for KETs which include advanced manufacturing systems.

The Europe 2020 flagship initiative “An Industrial Policy for the Globalisation Era”, launched in October 2010, sets the EU strategy for strengthening the competitiveness of the European industrial base. A strong, competitive and diversified manufacturing base will drive economic recovery and job creation in Europe, the Commission states.

In the wake of the economic meltdown all sectors are faced with the challenge of adjusting their products and production processes to a low carbon economy. Europe can compete, amidst fierce competition in global markets, on the basis of high value products only. Europe's strong science and technology base provides a unique opportunity to boost the global competitiveness of the European manufacturing industry.

The Key Enabling Technologies (KET) Initiative of the Commission, which is one of the main action points of the new EU industrial policy, is geared at helping industry tap this potential.

Key enabling technologies

The KET initiative aims at exploiting the innovative potential of key emerging technologies to improve the performance of products and services produced in Europe. Five of the KETs identified by the European Commission, namely, nano-technology, biotechnology, photonics, advanced materials, micro and nano-electronics, can boost the value of products and services across sectors, such as energy, communication, environment, manufacturing and consumer goods. They contribute to the development of disruptive technologies and furnish products with intelligent and sustainable features. Examples are engine control sensors, photovoltaic solar panels, LEDs, self-diagnostic devices, light transport vehicles made of composites and many others.

Advanced manufacturing systems (AMS) stand as the sixth and cross-cutting KET given their strong impact on improving process efficiency. AMS provide all industrial sectors with significant productivity gains, improve quality and increase energy and material efficiency in the production process. Moreover, they radically reduce time-to-market and ensure that European firms are

"Europe remains a world leader in the development of advanced manufacturing technologies. However, emerging countries are rapidly closing the innovation gap. We need to act to ensure the competitiveness of our manufacturing industry for the long term. Europe needs to look after its R&D and manufacturing base which acts as the anchor tenant and is a source of innovation." [Mr Javier Eguren of NICOLÁS CORREA S.A., CECIMO delegate and member of KET HLG representing AMS]



Source: EFFRA

first to put new products and services onto the market.

KETs have come under focus in the new EU industrial policy which places a strong emphasis on the transition to a resource-efficient low carbon economy. KETs have a great potential to help tackle global challenges such as climate change, ageing population and energy efficiency and to bring about significant economic and social value for Europe.

Boosting Europe's strength in advanced manufacturing

On 15th November, the High Level Expert Group on KET, an advisory group set up by the European Commission, organized an Open Day to discuss with stakeholders from industry, the research community and academia about possible policy measures which would facilitate the deployment of AMS in Europe.

Participants agreed that Europe has a strong S&T base, but it faces difficulties in

developing new technologies to market maturity. The gap between research and markets has been identified as the main impediment to the deployment of AMS in Europe. "Today, technology development requires the involvement of all actors along the value-chain. Europe should promote a new model of research partnership which is based on pooling expertise and resources and risk-sharing. There is a need to improve the coordination of R&D and Industrial policies and to guarantee support for pilot plants and for the early industrialization of R&D results," states Mr. Javier Eguren, member of the HLG and CECIMO Vice-President. Many speakers of the Open Day suggested that Europe should build on the positive experience of the Factories of the Future European Public-Private Partnership.

A strong emphasis is placed on the need to improve framework conditions for industry in Europe through better regulation and reducing administrative burden in cross-border operations. This is a pre-requisite to lower costs of doing business in the

internal market as well as to stimulate competition and to boost growth. Europe needs to attract high value investments to benefit from the global knowledge economy and to constantly enhance its S&T base.

A vital action point identified by the panel is to facilitate access to capital to help revitalize businesses in the wake of the recession and create resources for innovation which is key to the competitiveness of industry. The advanced manufacturing industry needs a secured access to energy and raw material supplies at competitive prices. Finally, open markets worldwide are necessary to create economies of scale and to ensure increasing returns on high-tech investments. The final report of the HLG which incorporates the feedback from the Open Day is expected to come out in July 2011. ■

Unleashing the export potential of the machine tool industry



Free trade agreements negotiated by the EU have a great potential to foster free and fair trade worldwide by improving market access and ensuring the enforcement of WTO rules. European machine tool builders invited by CECIMO voiced the expectations of the industry from the EU trade policy to the EU Trade Commissioner and MEPs at a roundtable discussion at the European Parliament.



"In a knowledge based economy, the presence of a strong and competitive manufacturing sector is simply indispensable."

[Karel De Gucht, European Commissioner for Trade]

The global economic meltdown has accentuated the export-led growth pattern of the European machine tool industry. Currently, sales to non-CECIMO countries constitute almost two thirds of total external sales of CECIMO members. This provides for a profitable business in a moment of stagnating growth in Europe. However, the high export performance of the European machine tool industry is challenged by protectionism and the weak enforcement of international rules of trade worldwide.

"Tackling tariffs has been like harvesting the low-hanging fruit of trade liberalization. Now, we must step up our efforts and move into territory where we are missing out today" says Karel De Gucht, European Commissioner for Trade.

Against this background, CECIMO runs a regular monitoring activity to identify barriers to the access of European machines to third markets. The findings show that non-tariff barriers and the

protection of intellectual property rights are the major problems to be tackled. Restrictions on foreign investment and a lack of guarantee to protect investment in third countries render the access of European manufacturers to these markets costly and risky. Moreover, investigations reveal important shortcomings of the European market surveillance system which results in the distortion of competition in the internal market.

Non-tariff barriers

Non-transparent and complex standards and conformity assessment requirements imposed by other national or regional authorities may pose barriers to market access and impede the global level playing-field. Such regulatory environments make the profits from exports obsolete as compliance with diverse standards may require radical changes in production and costly testing and certification procedures.

CECIMO advocates that international standards

should be taken as a basis for technical regulations and conformity assessment procedures. Access to information about national standards and the transparency of conformity assessment procedures need to be ensured.

European manufacturers are committed to producing safe and environmentally-friendly machine tools. Standards should not be made redundant. The promotion of international standards on energy efficiency, for example, is key to creating a global market for green products. This would encourage international competition on energy-efficient machines, help create economies of scale, reduce costs and stimulate innovation.



"It is perfectly understandable that developing countries develop ever more sophisticated standards concomitant with their development paths. However, they should not be used as a means to promote anti-competitive practices either unintentionally or by providing a screen for some baser mercantilist tendencies"

[Geoff Lloyd, Managing Director of Heller Machine Tools Ltd, UK]

Intellectual Property Rights

Innovation and technology development are the central competitive factor in the machine tool industry. However, in a globalised world the protection of IPR has become increasingly difficult. European machine tool manufacturers report major counterfeiting cases in China and Taiwan. Manufacturers pledge for certainty for the protection of their innovations and enhanced measures against counterfeiting.

The EU has recently stepped up its efforts to tackle the problem. FTA agreements that the EU negotiates with third countries include comprehensive IPR chapters. Another recent important step is the Anti-Counterfeiting Trade Agreement (ACTA) between a group of mainly industrialised countries including the EU Member States, the USA, Japan, Canada, Switzerland and South Korea among others. ACTA aims at increasing international coordination to fight counterfeiting worldwide. However, the failure to include China and India in the agreement seems to be the major drawback.

A major breakthrough in IPR protection is the agreement reached between twelve EU member countries to create a Single European Patent. The new regulation is expected to lower the costs significantly and to shorten the length of procedures required to register a patent in Europe. There is an urgent need to increase awareness and promote tools to defend IPRs in the EU, bearing in mind that the majority of European manufacturers are small and are deprived from resources to pursue IPR infringements in third countries.

Market Surveillance

European machine tool builders report that machines imported from non-EU countries that do not comply with EU regulations freely circulate in the internal market. A lack of strong market surveillance renders the existence of regulation obsolete and creates unfair competition in the internal market. Inefficient action against non-compliant imported machines puts the safety and health of citizens at risk.

CECIMO advocates rapid implementation of the new legislative framework for the exportation of products in the internal market and points out the need for a particular focus on stopping non-compliant import products at the point of entry into the EU.

Furthermore, the EU lacks a sanction mechanism to deter foreign manufacturers from exporting non-compliant machines into the EU. In cases of infringement, national penalties often fail to apply to foreign manufacturers. Manufacturers point out that divergent national penalties in EU member countries create further disparities in the internal market. ■



"...some capital goods manufacturers, such as our group, have eventually come to the conclusion that setting up an industrial base in a foreign country, such as China, provides more opportunity to protect our intellectual property rights in China than from abroad." [Francois Duval, General Manager of Cinetic Machining]



"European Safety and Environment Directives risk becoming, in the absence of a suitable market control and surveillance system, a cost element rather than an advantage over imports from non-EU countries." [Ezio Colombo, President of FICEP]

CECIMO and Standardisation Bodies: Safety standards



CECIMO has financed for more than seven years the secretariat and chairmanship of technical committees on safety standards for machine tools within CEN and ISO. CECIMO strives to contribute to the promotion of standards in the machine tool sector and to the development of an effective efficient and inclusive standards-making system in Europe and worldwide.

Standardisation bodies play an important role in setting safety standards for machine tools worldwide. Safety requirements are one of the important aspects in production and marketing of a machine tool, thus, standardisation requires great attention from industry to fulfil its functions. Besides enhancing the safety of products, standards ensure the interoperability of products and services, promote innovation, help remove technical barriers to trade worldwide and enable manufacturers to comply with European legislation.

CECIMO's contribution to standardisation

CECIMO is active in the following standardisation bodies defining the safety standards of Machine Tools:

- The Technical Committee 143 of CEN (CEN/TC 143) responsible for standards for the safety of machine tools.
- ISO/TC 39 responsible for the standardization of all machine tools at an international level
- ISO/TC 39/SC 10 specialised on the safety of machine tools

CECIMO promotes the existence of sound safety standards and thus has financed for more than seven years on behalf of its members, the managing of the secretariat and the chairmanship of all three related committees. The original idea behind this was to share costs between all those who need safety standards for machine tools. Today, these committees, backed by

CECIMO, have a track record of achievements and provide invaluable services for the machine tool industry.

Efficiency and cost reduction

The Technical Committee 143 of CEN plays an important role in ensuring that safety standards for machine tools are up-to-date, they are timely and efficiently made and the cost of standardisation is optimised.

Standards are regularly reviewed so that the latest innovations can be timely integrated into products and successfully marketed. For example, CEN standards are updated whenever new safety devices are offered, new machine tools are designed, or whenever new machining procedures shall be covered.

The definition of safety measures and risk analysis are undertaken in a centralised way by CEN working groups, which aim at reducing the burden on companies working in safety issues. When it comes to the standardisation process, the reduction of costs for participating companies and machine tool associations is ensured by keeping the number of physical meetings to minimum and encouraging decision-making by correspondence whenever possible. A maximum amount of work is done with minimum resources.

Lastly, the chairman plays an important role in achieving faster and more effective standardisation work by participating in different working groups and proposing compromises on critical issues.

Internationalisation of European Standards

CECIMO promotes the internationalisation of European safety standards. For example, ISO safety standards are also checked against the Machinery Directive and so ISO standards can be used to comply with the essential requirements of the Directive. This practice enables manufacturers to comply with other regional and national standards when they fulfil the Machinery directive. In practice, CEN and ISO EN standards are voted in parallel, to ensure that they develop alongside each other, which is in accordance to an official agreement between ISO and CEN, the Vienna Agreement.

European standards and international standards align gradually. Today, ISO safety standards for machine tools take great notice of CEN/TC 143 standards. For example, ISO/TC 39/SC 10 revises and updates CEN safety standards for machine tools under the Vienna Agreement. CEN safety standards are also translated into national standards and translated texts are used in other regions (eg. China and USA). The current Secretariat and chairmen established within ISO/TC 39/SC 10, an identical structure to CEN/TC 143. Dr. Wolfgang Knapp, chairman of ISO/TC 39, ISO/TC 39/SC 10 and CEN/TC 143, states "This close cooperation ensures that standardisation is done only once and internationally". Eventually, European machine tool manufacturers will only have to comply with one standard (ISO standards) valid worldwide. ■

CHINA FOCUS

The rapid rise of China in the machine tool business has raised many questions in the minds of manufacturers. A myriad of issues comprising market opportunities, investment risks, intellectual property rights protection and the emergence of competitive local manufacturers which heat up the regional and global competition, make China a complex case study. Two experts, who were the keynote speakers at the CECIMO Fall General Assembly 2010, share their insights into China in our special report.



Is the Middle Kingdom a rising sun?

Gian Maria Gros-Pietro*

Most of the machine tool producers look at China as a major threat. Mainly for three reasons: 1) the rate of growth at which Chinese production of machine tools surpasses that of the main historical producers; 2) China has an unbeatable cost advantage; 3) many Chinese producers deliberately infringe patents, brands and other forms of intellectual property.

One could observe that all of these three aspects were present, in a different form and to a different extent, in the rise of Japanese production in the 80s, but none of these remain highly worrying today. The infringement of IPRs tends to disappear when a country starts to produce them and China is already one of the largest R&D investors. The cost advantage is based on low wages; a factor that tends to fade as industrial success expands. Furthermore, without these two factors the aggressiveness of the domestic machine tool industry will be contained. So, Chinese production of machine tools could become less threatening.

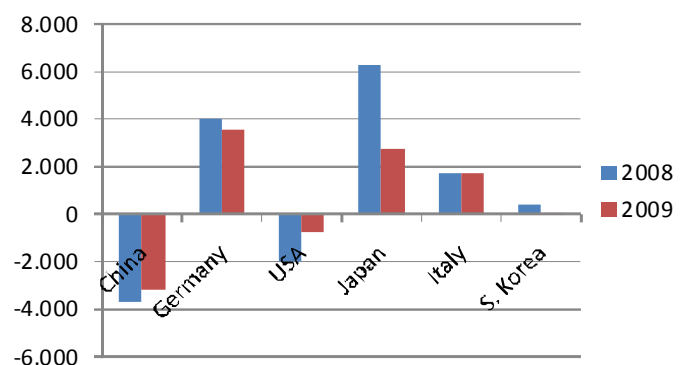
However, let's not forget that China is completely different from Japan. The "Middle Kingdom" is not a "Rising Sun", it is the return of an empire that has been the first world economy for ten centuries, from the VI to the XVI. It is going to resume this position between 2020 and 2030 and keep it. This trend will make China the largest capital investor for decades; a relevant fact for the machine tool industry.

Another fundamental difference with Japan is that China is deeply involved in the development of the countries it trades with. It is, at the same time, a leading exporter and a driving importer and is the destination of a huge flow of FDI, targeting its rapidly growing internal market, which was never the case for Japan. So, it is no surprise

that China is the largest producer of machine tools, as it is, by far, the biggest consumer.

Nevertheless, China is not a relevant exporter; showing a poor export propensity. Looking at the chart comparing the absolute difference between production and consumption of machine tools in six selected countries, in 2008 and 2009, we see that there are only two large and structurally importing countries, the U.S. and China. And there are two structural and strong exporting producers: Japan and Germany. However, Japan appears to be the main loser of the current crisis, which lost its leader position to Germany in 2009.

Production minus Consumption
in the leading countries (million €)



In the next decade, we can expect China to remain a structural importer of machine tools, rapidly upgrading the technical level of its consumption and production, whilst experiencing a managed salary increase as a preferred alternative, in real term, to a substantial revaluation of the Chinese Renminbi. ■

* Mr. Gros-Pietro of Confindustria is Head of the Economics Department at LUISS University in Italy

The New China Machinery Market

Jan Borgonjon & Franc Kaiser*



Tectonic shifts in the Chinese market

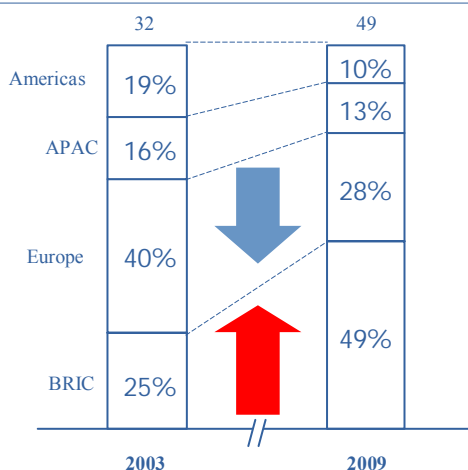
China changes very quickly and all too often we miss the changes since they come so quickly and are so subtle. Foreign companies are doubly apt to miss shifts in the market, though Chinese ones can, too. The Chinese machinery market has been transformed in the past decade and is virtually a completely different environment. Local machinery makers have become the dominant players by acquiring foreign companies and learning from their foreign joint venture partners. Now, they are competing head-to-head with major foreign manufacturers in the medium quality market and are likely to become

very strong competitors in the export and domestic high-end market in the next 10 years. Likewise, China now is the most important sales market for all machinery makers, including agricultural, construction, machine tools and other machinery makers. This sector offers excellent examples of how a market has become completely transformed in the past decade.

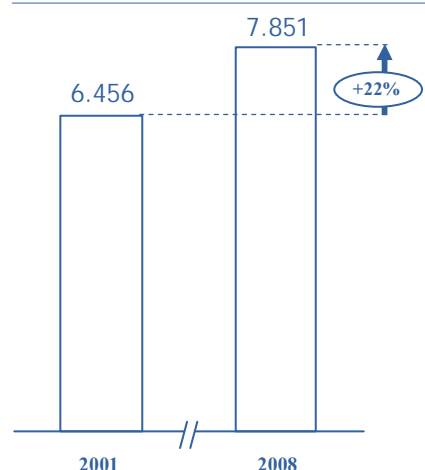
China's top machine tool makers' sales have grown to be more than 10 times bigger than in 2001, while foreign machine tool makers' sales have increased by about 30 to 40 percent, albeit from a larger base.

Chinese machine tool players outperformed international players' growth in the last decade

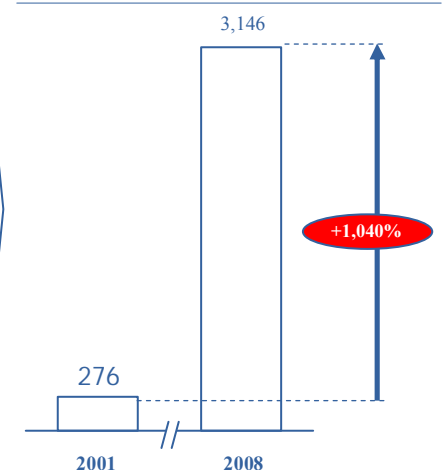
Global consumption of machine tools, in USD bn



Accumulated sales of selected 5 int'l machine tool makers, in USD m



Accumulated sales of top 5 Chinese machine tool makers, in USD m



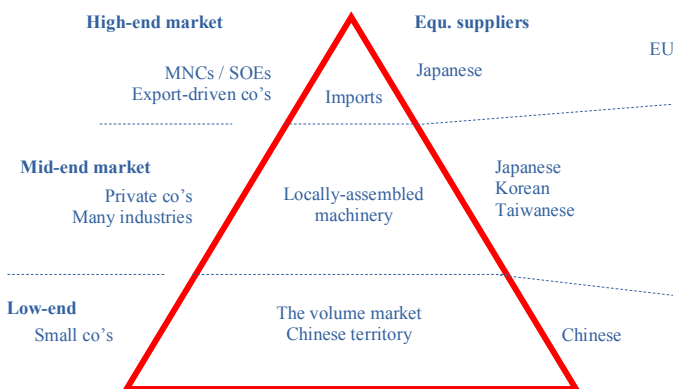
Sources: Various machine tool associations, company annual reports, InterChina analysis

While sales have exploded, the structure of the Chinese market has completely changed. Instead of a pyramid with a large low-end base, the Chinese market is now "diamond" or "rhombus"-shaped, with the middle-quality segment (often also referred to as the "good-enough market") constituting the largest share, with smaller high- and low-end markets. Customers currently in the mid-quality segment may not trade up to higher-end machines anymore, making the air thinner for technology leaders with high-priced equipment. Such customers do not need more expensive (and high-quality) machines anymore to

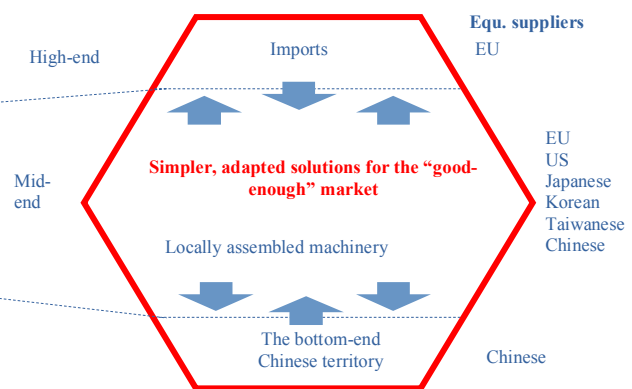
produce the right components at the right quality level, but will be satisfied now and for years to come with good-enough machines. For years, many high-quality suppliers and machinery makers have been waiting in vain for those mid-quality customers to trade up, and now it's not happening. Meanwhile, the market is becoming a bit less differentiated, as Chinese players aggressively push into the mid-range market with lower prices. This is happening elsewhere, not just in China, so the trend is of global relevance.

A change of paradigm (example of machine tools)

From a **pyramid** market structure...



... to a **diamond** structure



While leveraging know-how from their foreign joint venture partners, Chinese machine tool makers have been acquiring foreign companies, sometimes for the sake of diversifying technologies rather than just absorbing them. We believe that M&A activity in the machinery industry will enter a new age soon, where Chinese players will be more active buyers of overseas businesses and will ally with other global heavyweights. It could very well be that the deals in the last few years were just the beginning for more intensive internationalization of Chinese companies.

As Chinese machine tool makers become more competitive in the mid and low-grade market, they are stepping up exports of mid-grade machine tools. They have the potential to expand their dominance overseas to become the major exporter of machine tools in the next decade. As with automobiles, the Chinese are exporting good-enough quality machine tools to the APAC region and Middle East, but could improve their quality and start exporting to the U.S., Japan and Europe. China exported only US\$379.4 million in machine tools in 2003 but that rose to US\$2.1 billion by 2008. Up to now, the exports mainly were cheap, manual equipment. In 2009, 20% - 30% of the value of China's exports of metal working machine tools was CNC equipment, but ten years ago, this was nearly zero. Before the global slump hit, China's exports were rising at a 20% CAGR between 2001 and 2008.

China's transformation into the world's biggest market, accounting for US\$19.8 billion in sales, or 42 percent of global consumption, in 2009 means that for most companies it is a make-or-break priority both for local and foreign manufacturers. Europe, which in 2003 comprised about 40 percent of the world machine tool market, consumed only 28 percent of total sales in 2009. Machine tool makers' sales in China are no longer only a small portion of their global sales, making this market a must-have rather than a "nice-to-have" market. As a proportion of sales, imports have decreased, though by dollar value they have risen dramatically as the entire market has ballooned in size. China's imports of US\$ 5.9 billion in machine tools in 2009 were bigger than the total consumption of the world's second largest market - Germany - which had sales of US\$5.82 billion. With China's market now four times the size of Germany's a tectonic shift has occurred, amplified by the financial crisis and the virtual halt in orders in 2008 and 2009. The trend is probably irreversible. As the Chinese market has matured, it is now not uncommon for Western machinery companies to have one-third of their sales in China.

The shape of things to come: New standards, global alliances

Taking a broader perspective, we expect that China will set standards for the worldwide machinery industry and machinery market. The automotive industry is a good benchmark, as it normally leads other industries' business model trends by 5 - 10 years. As Chinese car brands and producers gain importance, they are shaping the way parts and components are built, produced, and purchased. The same thing is bound to happen with the machinery industry. Chinese machinery makers will eventually lead in innovations, as they are now in high-speed rail. With China likely to set standards for how machines are built and what their applications will be, now, more than ever, Western machinery makers must re-invent themselves in the eyes of their Chinese customers.

Machinery makers also need to consider what China's dominance means for the scale and size of companies. The global machinery industry in the last 50 years has undergone several waves of mergers and acquisitions as factories and brands were consolidated. We believe that pan-global marriages, such as the alliance of DMG of Germany and Mori Seiki of Japan in March 2009 - for sales, production and after service worldwide - are only the beginning of a wider trend.

We may be witnessing the advent of larger European-Chinese-Japanese conglomerates, huge groups that will serve global procurement and value chains, with local particularities and offerings to suit customers' needs. They will be intertwined through mutual investment relationships, and will be able to leverage sourcing and procurement advantages, streamline offerings (e.g. machine model designs) for higher efficiency, and use different production locations for proximity to markets.

Overall, in coming years China should be seen as a partnership opportunity for Western machinery makers to gain scale, for the Chinese market, for other emerging markets worldwide, and for global production and sales partnerships. ■

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Innovate or disappear

In the strive for Europe's well being, we only need to ask ourselves: Where could we be better than the others?



"It is not only a question of creativity, but also about how an idea can be translated into a marketable product. Machine Tool provides solution for that"

[Mr. Jean-Camille Uring, CECIMO delegate and CEO of Cinetic Industrie, France]

Innovation is recognized as one of the fundamentals of economic development. The machine tool industry is the engine for virtually all manufacturing activities and, to a large extent, enables other sectors to be innovative. The future of Europe's economic importance and security is highly dependent on the competitive edge that we can bring to the market.

Of course Europe can't be strong in everything. We cannot really benefit from soaring commodity prices, because we do not have many raw materials. Due to our climate, we are not able to grow the many varieties of fruit and vegetables that we consume. The costs we incur do not allow us to produce cheaply. Raw materials, food and a high standard of living are all elements which are critical to our existence. The question is: What can we give in exchange for things we must import?

The answer to that question is given in the official statistics: machinery and transport equipment as well as chemicals and related products are virtually the only product which the European Union sells more abroad than it purchases from others.

"Only CECIMO members will export in 2010 over 75% of their production. We will close the year with a record surplus reaching almost 7 billion Euros" Mr. Jean-Camille Uring (CECIMO delegate and CEO of Cinetic Industrie, France) estimates.

On the other hand, Europe is highly dependent on imports of mineral fuels, other manufactured goods and raw materials.

Due to many constraints, partly mentioned above, it is difficult to build up an industry in Europe from scratch and become a leading player on the international scene when it is already well established elsewhere. The products or solutions that we could potentially invent would most likely

derive from the power we already have – machinery or chemistry. Of course the bottom line is to keep the industries we have in Europe. So, how can we do this?

In the strive for Europe's well being, we only need to ask ourselves where could we be better than the others. European machine tool builders are well known for the high performance and quality of products that they bring to the market. We already have hundreds of years of innovation legacy in the business. It is essential to continue to be innovative, but to remain a leader we should always strive to improve. The prosperity of the industry is a common interest for the European Union.

Innovation in the machine tool industry has a knock-on effect on almost all the manufacturing industries. Whether it be the innovation in medical equipment or alternative energy, high-end machine tools are an essential component of any step forward for producers of these goods.

For reasons of increased international competition the machine tool industry should be at the centre of industrial strategies in Europe. As well as the mature economies, there are new countries looking to take a lead in innovation. If we allow our competitors to become stronger, especially in machinery, Europe's economic importance will be drastically lowered, thus causing a negative impact on our economic development.

The machine tool industry is a critical link between new ideas and commercial goods which keep the innovative Europe running. The prosperity of these sectors determines not only the future of thousands of people working for machine tool builders across Europe, but also the social and economic development of the whole of our community. ■

European Research for Factories of the Future

Dr Massimo Mattucci is involved in the new business development of the COMAU Group, the global innovation leader in advanced manufacturing systems. He has been Chairman of the EFFRA association since 2009 and represents European industry in the implementation of a large-scale public-private technology partnership. He answers our questions on the role of the association and top priorities in production research.

EFFRA has existed for almost two years now and it has rapidly grown into an important actor in European research. Can you explain briefly what the mission of EFFRA is and how it functions?

EFFRA's mission is to promote and facilitate pre-competitive research on production technologies within the European Union.

In May 2009, like-minded private organisations such as CECIMO, COMAU and many others created this association in order to speak with a common voice to the public sector in the implementation of the EU's public-private partnership for 'Factories of the Future'. Over the past years membership of our association has grown to more than 100 organisations across the continent and we expect more membership applications from companies that are producing factory equipment in the near future.

As the European Commission's main partner in the 'Factories of the Future' research programme, EFFRA carries out a number of tasks. Most importantly, we create a European-wide consensus of research priorities which the European Commission should financially support under this initiative. In these times of financial austerity it is important that public funds are spent on issues that really matter and our public partner values the first-hand expertise of our association members very much.

The European Union runs several programmes for research and development. What is special about 'Factories of the Future'?

The 'Factories of the Future' research programme is based on a partnership approach. Instead of civil servants running the programme on their own, the 'Factories of the Future' public-private partnership has a culture of dialogue between the EU-administration and industry where both sides work as a team towards the common objective.

It is clear to the public partner and to industry alike that we need to fuel economic growth and create more and better jobs if we want to preserve our standard of living. Trade organisation such as CECIMO,



but also informal networks such as the European MANUFUTURE technology platform, have consistently asked for a stronger focus on industry in governmentally co-funded research projects. I think that these efforts have paid off and now the European Commission assists industry to bring their products to the markets more rapidly.

'Factories of the Future' gives, moreover, the opportunities to the machine tool sector to define and take part in dedicated areas of industrial research. Let's take the issue of sustainable manufacturing as an example. Many companies have recognised this topic as a priority and also COMAU develops new solutions for green automation. Based on our own activities, we convinced the European Commission to earmark significant funds for research on energy-efficiency, on the reduction of environmentally harmful emissions and on improvements in human-machine collaboration as well. This is a clear sign that our public partner is willing to follow industry's vision and to help our sector to achieve its goals.

Lastly, I am very pleased about the fact that the European Commission processes grant applications relatively quickly. Coming from industry I know that speed matters most. For the first 25 'Factories of the Future' projects, which are up and running by now, the EU-administration has cut down the time-to-grant from twelve months on average to a period of between six and nine months. This is a first step in the right direction and EFFRA will help the Commission to find solutions for streamlining the process and reducing unnecessary bureaucracy even more.

What is the future of the Public-private partnership and what expectations do you have?

The 'Factories of the Future' programme has got off to a good start and both public and private sides would like to continue the partnership model for the years to come. I believe that the cooperation between EFFRA and the European Commission has now reached a stage where we should formalise our relationship. Moreover, we should extend our research activities and respond to new global challenges in a more effective manner. ■



EMO - Machine tools and more!

The world's premier trade fair for metalworking technology will take place in Hannover, Germany, on 19-24 September 2011.

The countdown has started for the biggest, most important and most international meeting point for production technology around the world. "Machine tools and more!" is the catchphrase of EMO Hannover 2011, which describes best what you should be prepared to see at the show that is built around the modern-day metalworking technology.

"The definition of modern manufacturing goes beyond machines so as to cover technical solutions, product support services and sustainability in the production process. EMO covers them all" states Detlev Elsinghorst, General Commissioner for EMO Hannover 2011, appointed by CECIMO. EMO is the world top-class, innovative, inspiring and unrivalled exhibition for the metalworking sector and takes place in the very heart of Europe.

EMO is positioned as the international stage for innovation in the metalworking sector as an impressive array of equipment and technologies are presented to the public for the first time at the fair. The exhibition not only attracts customers from all around the globe who are in search of state-of-the-art production technology for their plants, but it also catches the attention of international technology experts from the entire spectrum. EMO is the showcase of the world's innovative power in metalworking technologies.

Machine tools are the key enabling factor for any industrial production operation. Therefore, people visiting EMO come from all the major industrial sectors such as machinery and plant construction, the automotive industry and its component suppliers, aerospace technologies, precision mechanics and optics, shipbuilding, medical technology, tool and mould building, steel and lightweight engineering. The productivity and competitiveness of major industries are built on the strength of production technologies provided by the machine tool industry.

EMO Hannover 2011 offers the highest added value to exhibitors and visitors through the following events that will be organized during the show:



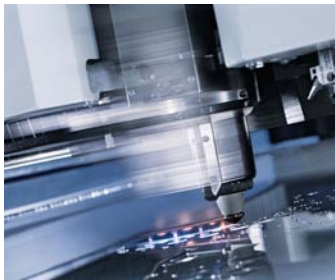
EMO is the international showcase for innovation in metalworking technologies.

At the last EMO Hannover fair in 2007, approximately 2,120 exhibitors exhibited on a net exhibition floor space of 180,200 m². The number of visitors who came from 80 different countries exceeded 166,500. With the manufacturing industry in the upward path of growth, international economic conditions point out a favourable climate for EMO Hannover. VDW, the German Machine Tool Builders' Association organising the show, informs that the total space booked so far exceeds the level of bookings recorded during the same period in 2007.

For the first time, EMO Hannover 2011 is offering exhibitors the possibility to register online. Connect now to www.emo-hannover.de to reserve your place at the world's leading machine tool show.

"The definition of modern manufacturing goes beyond machines so as to cover technical solutions, product support services and sustainability in the production process. EMO covers them all"

[Detlev Elsinghorst, General Commissioner for EMO Hannover 2011]



Photos top to down:
1. Trumpf, 2. Hamuel, 3. Heller

Machine tools and more!

EMO Hannover 2011 provides a comprehensive picture of the state-of-the art technologies in cutting and forming machine tools, manufacturing systems, precision tools, automated material flow, CA technology, control and drive engineering, measurement technology and parts and accessories.

Moreover, the show will offer the highest added value to exhibitors and visitors through the following events:

- International conference on sustainable manufacturing
- New manufacturing technologies in the aerospace industry – conference and special event
- B2Fair networking
- Conference to emerging markets, eg. Russia
- Special youth show: "Mechanical engineering – a powerful carrier"
- Medical show with seminars

CECIMO to organise an EU Day at EMO

CECIMO will organise an "EU Day" at EMO Hannover which will host a roundtable discussion between EU officials, CECIMO member associations and machine tool builders around the current policy issues from trade and industrial policies to research and competition. A guided visit will be organised to show EU officials the latest innovations in the manufacturing industry and to enable them to exchange views with manufacturers at their booths.



Turkish Association of Machinery Manufacturers



"The EU is the most important partner of Turkey in the trade of machine tools."

[Mr. Arslan Sanir,
Coordinator in
MIB]

Profile:

The Turkish Association of Machinery Manufacturers (MIB), established in 1990 brings together manufacturers of every type of machinery and components. MIB has been a member of CECIMO and PNEUROP since 1999 and 2005, respectively. Amongst the 200 MIB members, 80 of them are machine tool manufacturers. MIB member companies are responsible for 65% of the total machinery exports and 95% machine tool exports of Turkey.

Activities:

MIB represents the machinery industry in Turkey and abroad. MIB is recognised and acclaimed as the primary source of information about the Turkish machinery industry. Every five years, MIB prepares reports about the sector for the State Planning Organisation of Turkey and puts forward proposals with regards to measures to be undertaken to support the development of the sector. The sector strategy report that MIB prepared in 2009 upon the request of the Turkish Ministry of Industry has been adopted as government policy.

So far, MIB has participated in two research projects within FP7. The association participates in five-six international exhibitions on average each year to promote the sector internationally. During a recent business mission to China, in November 2010, MIB was in Shanghai and Chongquin to present the sector to Chinese entrepreneurs.

Turkish Machine Tool Industry

The first investments in machine tools in Turkey, dating back to the 1950s, were made in the production of bending machines and mechanical and hydraulic presses. Turkish machine tool manufacturers remained focused on the domestic market for many years. It was only in 1995, at the outbreak of the economic crisis when Turkish companies were forced to go in search of international business that they started expanding into external markets. This year marked a turnaround for the sector as it encouraged manufacturers to increase their quality and performance to boost their competitiveness in the international marketplace. The export volume jumped accordingly from € 16.9 million in 1995 to € 69.3 million in 2000 and to € 349.8 million in 2008. The output which was €119.4 million in 1995 rose to € 200 million in 2000 and to €442

million in 2008. Exports and production dropped to €256.5 million and €316.3 respectively in 2009.

Ata Can Dirin, Board Member of Dirinler Makina San.Tic. A.Ş. and CECIMO delegate representing Turkey, affirms: "Over the last 15 years, Turkish manufacturers have stepped up efforts in technology development and international marketing activities in particular, which has resulted in an increased presence in world markets."

Exports towards Russia, Brasil, Poland, Egypt and Irak have been rising significantly over recent years. Most exporting companies comply with EU technical regulations and belong to the category of medium-high technology. The Turkish machine tool industry is ranked 15th in the world, measured in terms of exports and production. Metal-working machines account for 73% of Turkish machine tool exports and 70.6% of the production. 61% of machine tool imports is metal cutting machines. 29% of imports come from Germany, followed by Italy and Taiwan.

Message to the EU

Mr. Arslan Sanir, Coordinator in MIB, states: "The EU is the most important partner of Turkey in the trade of machine tools. In 2008, Turkey exported 53% of its machine tool production to EU countries, whilst imports from EU countries accounted for 51% of imports to Turkey. The Customs Union between Turkey and the EU contributed to boosting trade between both partners.

However, free trade agreements (FTAs) that the EU concludes with third countries have a negative impact on the Turkish industry and create unfair competition. As a result of the EU-Turkey Customs Union agreement, Turkey applies the same tariff rates with the EU to third country imports. FTAs concluded by the EU result in an automatic reduction of tariffs that Turkey applies to products imported from third countries which enter into a FTA with the EU, however these countries do not reduce tariffs on Turkish imports accordingly. This situation puts Turkish manufacturers at a disadvantage vis-à-vis manufacturers from the EU countries. Despite all the initiatives undertaken at government level, the European Commission does not take any action to ensure Turkey's participation in FTAs in equal conditions." ■

Statistical Toolbox: Forecast the future

Updated monthly, this statistical toolbox aims to help companies forecast their activity based on macro-economic cycles. A series of macro-economic and financial indicators that are benchmarked to the quarterly machine tool orders in 8 CECIMO countries provides an overview of the performance metrics of the European Machine Tool sector.

Keep up to date with machine tool business cycles, visit www.cecimo.eu

New Delegates in CECIMO



Ecodesign: CECIMO Self Regulatory Initiative

The Ecodesign Directive of the European Parliament and Council sets the framework for adopting EU-wide measures to improve the design of machine tools. CECIMO's Self Regulatory Initiative offers a flexible, rapid and cost-effective way to reach the environmental performance targets laid down in the Ecodesign Directive.

For more information on SRI, useful links, and how to get involved, visit www.cecimo.eu/index.php/ecodesign-eup/welcome.html



Mr. Massimo Carboniero
Italian Delegate
General Manager
OMERA SRL



Mr. Luigi Galdabini
Italian Delegate
Managing Director
CESARE GALDABINI



Mr. Martin Kapp
German Delegate
General Manager
KAPP GmbH



Mr. Jan Klingelberg
German Delegate
CEO
KLINGELBERG AG

Dates for your diary...

IMTEX Cutting Machine Tool Exhibition
(CECIMO Booth: Hall 1; Booth A 104)
20 - 26 January: Bangalore, India

Eco Machine Tools: 2nd Stakeholder Meeting
March, Brussels, Belgium

CIMT China International Machine Tool Show
11 - 16 April: Beijing, China

CECIMO General Managers' Meeting
5 - 6 May: Vienna, Austria

SEMI Forum supported by CECIMO (www.semi.org)
24 May: Brussels, Belgium

CECIMO General Assembly
4 - 7 June: Porto, Portugal



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Czech Republic: SST

Svazu Strojírenské Technologie

Denmark: FDVV

Foreningen af Værktøjs- og Værktøjsmaskinfabrikanter

Finland

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Syndicat des Entreprises de Technologies de Production

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Italy: UCIMU-SISTEMI PER PRODURRE

Associazione dei costruttori Italiani di machine utensili robot
e automazione

Netherlands: VIMAG

Federatie Productie Technologie / Sectie VIMAG

Portugal: AIMMAP

Associação dos Industriais Metalúrgicos, Metalomecânicos
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Sweden: MTAS

Machine and Tool Association of Sweden

Switzerland: SWISSMEM

Die Schweizer Maschinen-, Elektro- und Metall-Industrie

Turkey: MIB

Makina Imalatçilari Birliği

United Kingdom: MTA

The Manufacturing Technologies Association

cecimo is the European Association representing the common interests of the European Machine Tool Industries. We bring together 15 National Associations representing over 1500 industrial enterprises in Europe, 80% of which are SMEs. Innovation and R&D are high on our agenda to promote the development of the industry in the fields of economy, technology and science.