European Panels Market Developments - Current Situation and Trends

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Abstract

The world social and economic situation at the beginning of the new millennium has a direct influence upon the forest economy. The forecasts for the next decades point out new centers of economic development, which will concentrate capital and will change in time the today's political and economic balance. The unprecedented demographic growth in Asia and the aging of the European population will result in the occurrence of controversial scenarios for the whole region economic evolution. China and Russia seem to become the world leaders in the production of wood half products and furniture. Countries with tradition in wood working and furniture manufacture will be subjected to a harsh competition, in terms of raw materials and manufacturing costs. The expansion of the European Community to 27 members open up new prospects, but also bring about completely new aspects, for which no previous experience or adequate regulations are available. A new development regarding the energy production from biomass start hardly to compete the raw material market for European wood based panel producers. Also the environmental issues continue to differ from one country to other and involve different investment levels and production costs with immediate impact on market competitiveness. The new requirements for low emissions boards a will harsh the competition between the producers.

Keywords: European market, wood based panels, panels development

General Situation

In 2007, world population was of nearly 6.7 bill., mainly concentrated in the Far East, as follows: a quarter in China, an other one in India and Pakistan, 15% on the African continent and 10% in South-Eastern Asia.

The population growth forecast for the following decades is further on in favour of the Asian and African continents. While the population of the two American continents will grow by 30% in the north and up to 40% in the south, the European population will dramatically diminish from 700 million (Russian Federation, inclusively) nowadays to only 650 million inhabitants. In the next 40 years, the African population will increase twofold (1.9 bill.), and India, with 1.6 bill. will surpass China (1.4 bill.). In addition to the fact that the populations of the today's advanced countries will significantly decrease, as for example Russian Federation (-20%), Japan (-15%), Italy (-13%), Germany (-5%), the population will grow old, the group below 15 years of age will diminish by 30% and the one over 60 years of age will increase twice as much as at present. In accordance with the present moderate forecasts, the world population will reach 9 bill. inhabitants in the year 2050 and more than 75% of them will in Asia and Africa [UNFPA].

The world gross product (WGP) was of about USD 65,000 bill. in 2007. It is to be pointed out that North America, and Central and Western Europe, with only 15% of the world population, contribute with more than 60% to the WGP. Also contrasting is the fact that Africa and the Indian Peninsula contribute with only 4% to the WGP, although possessing considerable natural riches and having 35% of the world population. The hierarchy of the industrialized countries is now substantially modified by the countries under development, i.e. Brasil, India, Mexico, ranking among the first 10 countries, as regards the national gross product [IMF].

Forestry Worldwide

About 30% of the earth land is covered by forests, which means 3.95 bill.ha, out of which 57% are in the countries under development, while the rest of 43% belongs to the industrialized countries. Europe without the Russian Federation has only 200 mill. ha.
In terms of the forest types imposed by the geo-climatic areas, 48% of the planet afforested land is tropical, 22% temperate, and 30% a northern one. 12 to 15 mill.ha of rain forests are destroyed every year within the southern hemisphere, particularly in the countries under development. 3.3 bill.m³ are yearly harvested all over the world, out of which 55% is used to produce heat and electrical energy, and 45% for wood products and by-products. 500 species are harvested worldwide, most of them originating in the tropical and sub-tropical regions, and manufactured in the area of origin only under the form of semi-finished products. In Europe, only 20 to 30 species are harvested (i.e. pine, picea, oak, beech, birch), after attaining an average age of 60 years. Forest plantations in Europe are not common.

Europe holds a wood total volume of 25 bill.m³ distributed over an area of 149 mill.ha of harvestable forest. The European Community is harvesting an annual volume of wood

which exceed 300 mill.m³/year, considering the 27 states. The natural annual growth of this geographical region (EC27) attains the approximate value of 650 mill.m³/year. [FAO, Giesen, Schwarzenbauer]. In 2007 Europe (without the Russian Federation) harvested 109 mill.m³ softwood, reaching soon the same level like North America.

Regional Evolutions

At the turn of the millenium, the characteristic of the wood based board industry was the fast growing of the production capacities and the overcapacity with dramatic consequences over prices and small producers (Fig.1). The installed capacity worldwide for the wood based composite boards has risen from 2000 to 2007 by more than 25%, reaching 230 mill.m³/year.

The forecast for the coming years is further on a positive one, stating a growth of the production capacities by almost 10%. Europe, as a cradle of this industry (excepting in part MDF/OSB), holds more than 30% of the world capacity, developing only in the eastern part, particularly in Russia (Fig. 1).

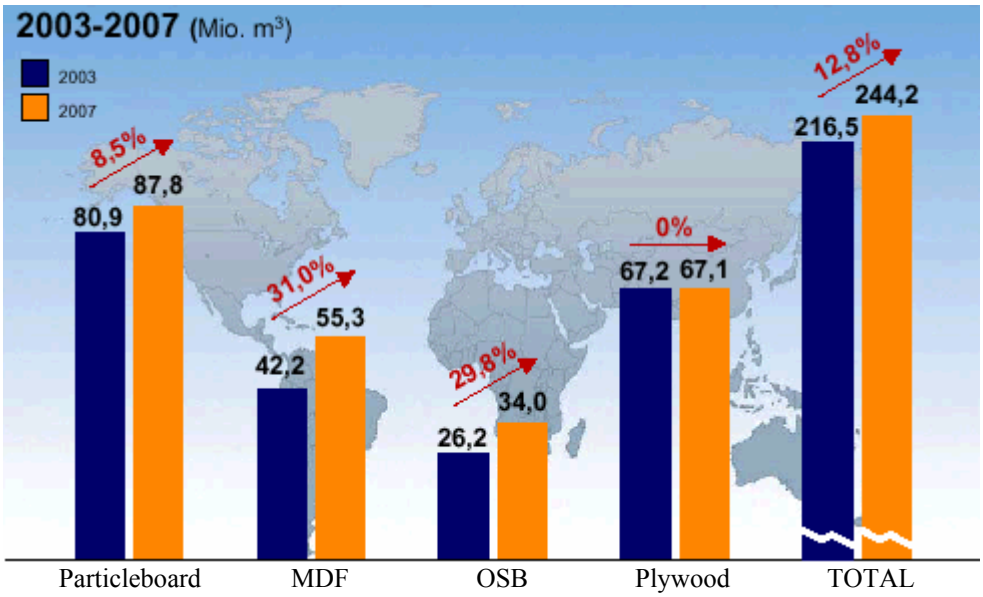

Figure 1: Worldwide development of production capacity for wood-based panels [Siempelkamp]

Oriented Strand Board (OSB) seems to be like MDF in its evolution and had a growth of more than 40% in the same period, reaching 34 mill.m³/year. In North America, 85% of the global production capacity was concentrated, with an increasing rate of 33% over the last years . In the same period in Europe the annual production capacity has doubled, reaching in 2007 approx. 4 mill.m³.

Although particleboard (PB) has held for decades the supremacy both worldwide (35%) and in Europe (66%), loses constantly ground in North America and Central Europe as well. An unexpected invigoration of the production capacities can be seen lately in China, Latin America and Eastern Europe. Europe still holds the first position as concerns the production capacity, with 44.8 mil.m³ /year, which means 52% of the global one. (Note: In this paper, PB and OSB are treated as separate products).

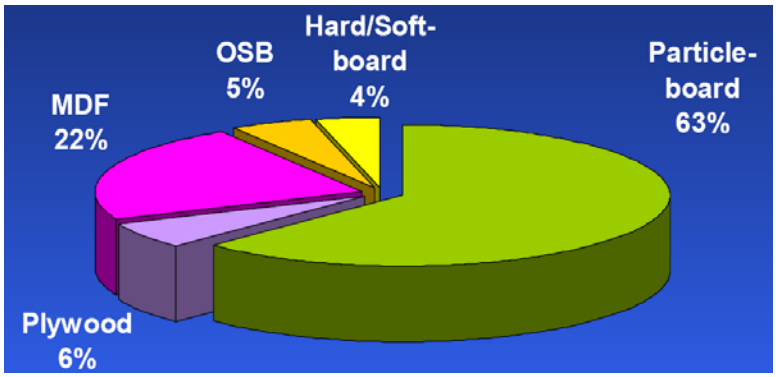

Figure 2: Wood-based panels of Europe (60,5 mill.m³/year) [EPF]

In 2005, the total number of operational technological lines all over the world was 1,224 (163.4 mil.m³), allotted as follows: PB 58.7%, MDF 34.6% and OSB 6.7%. More than 400 production lines are using continuous presses made in Europe.

The floors made of thin MDF coated with decorative melamine-resin impregnated paper exceeded the amount of 600 mill.m². The demand and trend will be sustained by regions like Russia and China, where the new living standard already make such fitting out affordable. More than 80% are supplied by the European HDF producers.

The most impressive jump in less than 5 years has been made by China, where the number of MDF manufacturing lines (260) doubled, increasing its capacity threefold (15.4 mill.m³/year); this country surpassed Europe at least theoretically in terms of installed capacity. Because of the wooden raw material structure, there are no new projects and investments in the field of PB and OSB for the time being although the local standards allow for the building of wooden frame constructions. The negative evolution of the log imports from Russia and the new re-afforestation policy (plantations) seem to be the crucial factors for the future investments in this sector. China is at present a major exporter of resinous plywood, laminated products and furniture [Wadsworth].

New laminated lamellas and veneer based composites are used for industrial and civil construction. Glue laminated timber (GLT) increased their field and ratio of utilization as beams, replacing successfully the concrete and steel one. Especially Central Europe increased their capacity for the production of GLT by 100% in the last years reaching 4 mil.m³/year, 85% of them concentrated especially in the German speaking countries.

Veneer sheets or strands based panels developed and produced mainly in the USA, like Laminated Veneer Lumber (LVL), Parallel Strand Lumber (PSL) or Laminated Strand Lumber (LSL), start to find a higher utilization in the European market for roof, decking and framed based wooden or mixed constructions. The high mechanical performances vs. low weight is the key for an positive impact as modern building material (Fig. 3).

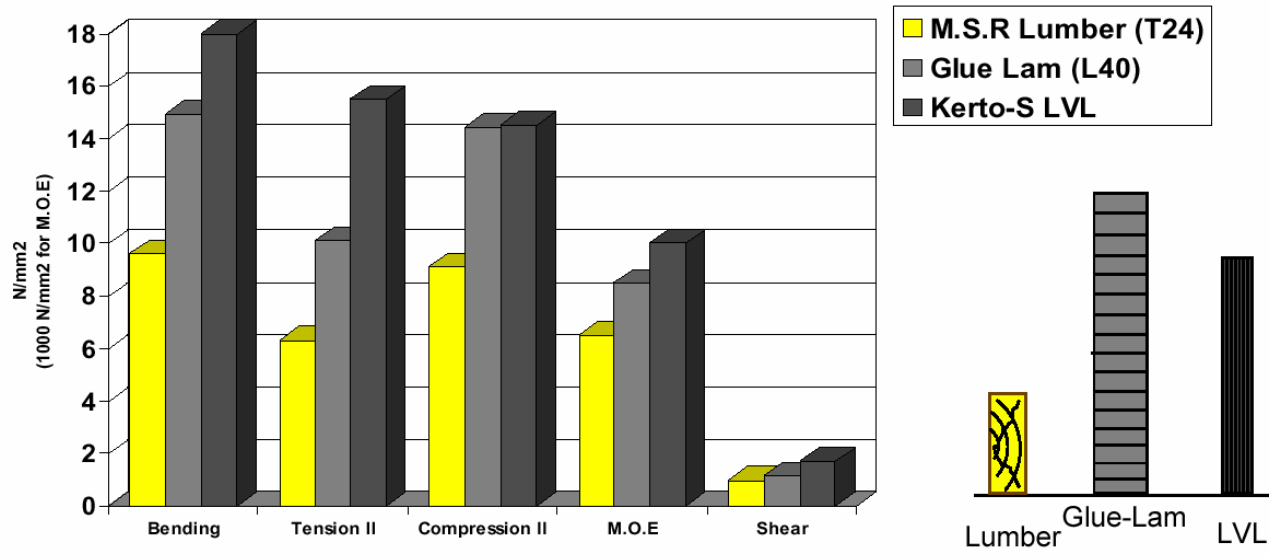

Figure 3: Mechanical performances of GLT and LVL vs. machined graded lumber [Raute]

The constructions made of wooden prefab elements witnessed a favorable evolution in Europe and particularly in USA, and quite considerable in the Far East, at least until the break out of the financial crisis of 1997 in Japan [Botting, Wadsworth]. Owing to the weather conditions and limited service life of the wooden prefab constructions, the housing renovation and reconstruction in USA ensure a good and increasing market for the OSB and PB type boards.

For instance, as against the 1.64 mill. dwellings built up in Japan in 1996, only 1.17 mill. were made in the year 2004, out of which 45% of wood. Such involution led to a low consumption of wood based boards, while Japanese investors started up major production capacities in the neighboring regions.

Unlike Japan, South Korea has seen a spectacular rise over the last decade, from 300,000 to 700,000 dwellings/year. As a consequence, the wood based board consumption increased in this country, placing it on the 4th position for the global MDF consumption (2 mill.m^3/year).

Only 0.01% dwellings are made of wood of the total number yearly built in China (8 mill.).

Generally, Western Europe had until recently a declining evolution on the construction market, with quite alarming tendencies. In the last year, both in the case of industrial (-2...-4%) and civil (-2 ... +1%) constructions, the most pronounced reductions in the economic activity were recorded, justified by the declining national gross incomes, the instability in the manpower market and the transfer of capital to the Eastern markets. As compared to such a critical situation, an invigoration was forecasted in the field of constructions. Thus, in Central Europe occurs increases of up to 3% as against Eastern Europe, where the construction volume will exceed by 4-8% the present value. In Germany for instance, where the construction sector is under rehabilitation (2001: -4% / 2005: +1%), the improvement of the situation is forecasted, particularly because of the restorations, representing 45% of the total volume and the new constructions in the field of civil constructions, in the eastern part (Tab. 1).

Table 1: Constructions development in EC [Holzkurier, 2005]

Country	National gross	Dwelling / 1000 cap.	Total dwelling 2004	Wooden dwelling
Germany	+1,8%	3,4	278.000	19.660
Spain	+3,2%	12,4	515.000	?
Italy	+1,1%	3,7	216.000	?
Austria	+2,3%	5,0	41.000	5.660
Irland	+6,5%	18,5	73.000	32.700*

- together with parts of UK!

Compared to the other region of the world, where houses made in wood or wood based materials are used quite often as the, i.e. USA 85% and Sweden more than 90%, Germany records a low level of only 17%. The positive development in the last 15 years shows that wood got a good acceptance in Germany in order to be used as the main raw material for massive wood houses (>3,000) or wooden frame based one (>30,000).

Russia is building only 10% of the new houses using wood but the share will double till 2010. The regions Moscow and St. Petersburg will reach 2 mill. new flats per year.

Eastern Europe is the target region for the most ensuing investments in the sector of forestry, particularly as regards the boards. The decisive factor of this strategy is not the qualified and cheap manpower, but the available resources of raw material and the increasing demand for wood products. For example, Poland, Ukraine and Russia, with a population of more than 230 mill. inhabitants, represent the equivalent of the EC 15 in the year 2004. 85% of the inhabitants are below 65 years of age, while 60% of them are employed in production. The other side of the coin in such regions, moderating the élan of many investors or still leading to limit situations, is reflected in the deficient banking system – foreign currency operations, the continuously changing customs regulations and proceedings, long distance transportation of commodities and, above all, the sanitary system [Siempelkamp].

Russia. Although meanwhile considered a continuously developing market, especially for wood products, Russia is not a „threat" for the development of this sector in Europe,

thanks to the increasing domestic demand and the still high export of logs. The timber production languishes for the time being on account of the outmoded equipment under a closing down process and the sporadic investments, especially those with foreign capital in the European part.
The installed capacities for PB and plywood will increase in the near future by 50%, satisfying the demand for boards of more than 8 mill.m³/year. The furniture import has doubled over the last 5 years (370 mill.USD), prevailing the Italian products (50%). Although the peeling-logs are permanently subject to price speculations and market fluctuations, the investments in plywood plants seem to become interesting, while Europe gradually turns into an importer, the demand is guaranteed and continuously increasing [Deppe/Hasch].

Ukraine is still strengthening its economy after the recession in the last decade with serious consequences upon the production of boards (-50%) and furniture (-20%). The investments with local and international capital allowed in 2002 the coming into equilibrium of the furniture production balance. The lack of quality boards on the domestic market brings about another critical situation for the furniture industry in this country. The value of the furniture production in the year 2005 exceeded 220 mill.USD.

The furniture industry witnesses worldwide profound changes in terms of both the manufacturers and the diversity of products, which need to meet the new requirements of the customers. The traditional furniture manufacturers in the Central Europe and North America are hardly facing up to the competition of the new manufacturers from the countries under development in the Eastern Europe and South-East Asia, which are little by little stifling them by quantity and the price level. One of the immediate actions to be taken in order to surmount this recent situation is that the developed countries should specialize on one hand in the manufacturing of high quality furniture to meet the needs of a small category of consumers, i.e. the high income consumers, and on the other hand in meeting the needs of the young generation, with low incomes but a growing consumption. For the largest category of consumers, the furniture production needs to be flexible, so that it could quickly adapt to a permanently changing design, with more and more diverse ecological requirements. Another solution confirmed by the market is to sell the furniture not assembled, in flat packages containing the pieces and accessories and allowing containers transportation. The new generation of furniture is developed in such a way as to consist of low weight elements, yet maintaining the existing performances.

The IKEA Swedish phenomenon (**I**ngvar, **K**amprad, **E**lmtaryd, **A**gunnaryd), has changed completely in the last decades the strategy of selling furniture, serving the customers and penetrating the markets, producing nonconformist products and following slogans such as varied customers, high quality design, high operational efficiency, low prices. The megagroup, with a history of more than 50 years, is still led by its founder, Ingvar Kamprad who is considered by all the global statistics among the first 5 multi-millionaires of the world. Ikea has 250 stores in 40 countries around the world and has realized in 2007 with 120,000 employees a turnover of 20 bill. € [Euwid/www.ikea.com].

For the first time after many decades and because of the unexpected rise in the price of steel, the wooden constructions can compete with the classical systems made of concrete steel, metal especially. The new wooden structures are favored by the elements in their structure, developed with pre-designed properties and meeting the same requirements as the rest of the building materials. Fireproofness, large spans, low weights at high dimensional stability in various environments and, last but not least, easy and fast assembling are the characteristics of the new wooden constructions. At the same time, the legislation in the Central European countries has changed in the favor of the new wooden structures, allowing the building of civil and industrial constructions, of various complexities and long life span. The price of such wooden constructions is a decisive factor recommending and imposing them on the market.

The European wood working industry generated in 2006 more than 230 bill. €, employing 2.3 mill. workers in 340,000 companies. 50% of this amount was represented by furniture, followed by wood based products for construction.

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