

Market analysis Availability of forest products and by-products South-East USA

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1. Introduction

SGS has been assigned by Electrabel to analyse the market availability of the feedstock used to produce wood pellets in South-East USA, in order to assess to what extent the use of those materials for energy purpose might compete with the industrial use of those resources both locally and internationally.

This report will cover the following wood resources used as raw material by pellet producers in South East USA:

- residues of forest exploitation
- round wood from forest thinnings
- round wood from forest harvesting
- sawmill residues (sawmill chips, sawdust and shavings)

The industrial activities concerned by those materials are:

- sawmills
- pulp and paper
- wood panels production

The geographic range covered by the analysis includes the most significant forested states in South-East USA: Georgia, Alabama, Florida, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee en Virginia.

2. Production volumes

According to the most recent statistics available from the FAO to data¹ (Figure 1) the production of round wood in the US in 2012 was 361 million m³. It shows a slight increase since 2010 after radical decrease of about 30% experienced between 2005 and 2010. The current production levels are still far below the production levels of 2005 (467 million m³).

The decrease of the production levels between 2005 and 2010 was triggered by the subprime mortgage crisis, which lead to a fall of the demand for timber products as building materials. This situation was subsequently aggravated by the propagation of the financial crisis to other sectors of the economy, resulting in a lower demand for various wood products. As a result, many-wood based industries in the US went bankrupt between 2005 and 2010, leading to a reduced demand for wood raw materials and reduced production levels, associated with a diminution in the volumes of harvested wood. As can be seen on Figure 2, the production of chips and particles, pulp for paper, sawnwood and wood-based panels has also been decreasing in the USA after 2005, following a similar trend as the round wood production.

¹ http://faostat3.fao.org/faostat-gateway/go/to/browse/F/*E

The same trend affected all regions of the USA, as can be seen in the statistics of processed timber production per region on Figure 3 (with distinction between North, South and West regions).

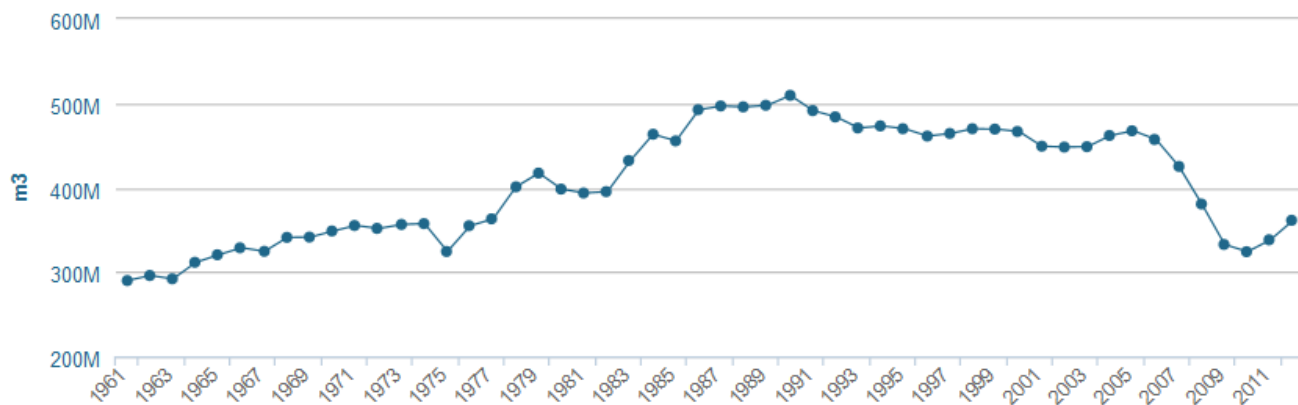


Figure 1 : round wood production (harvesting in m³) in USA between 1961 and 2012
(source: FAOstat)

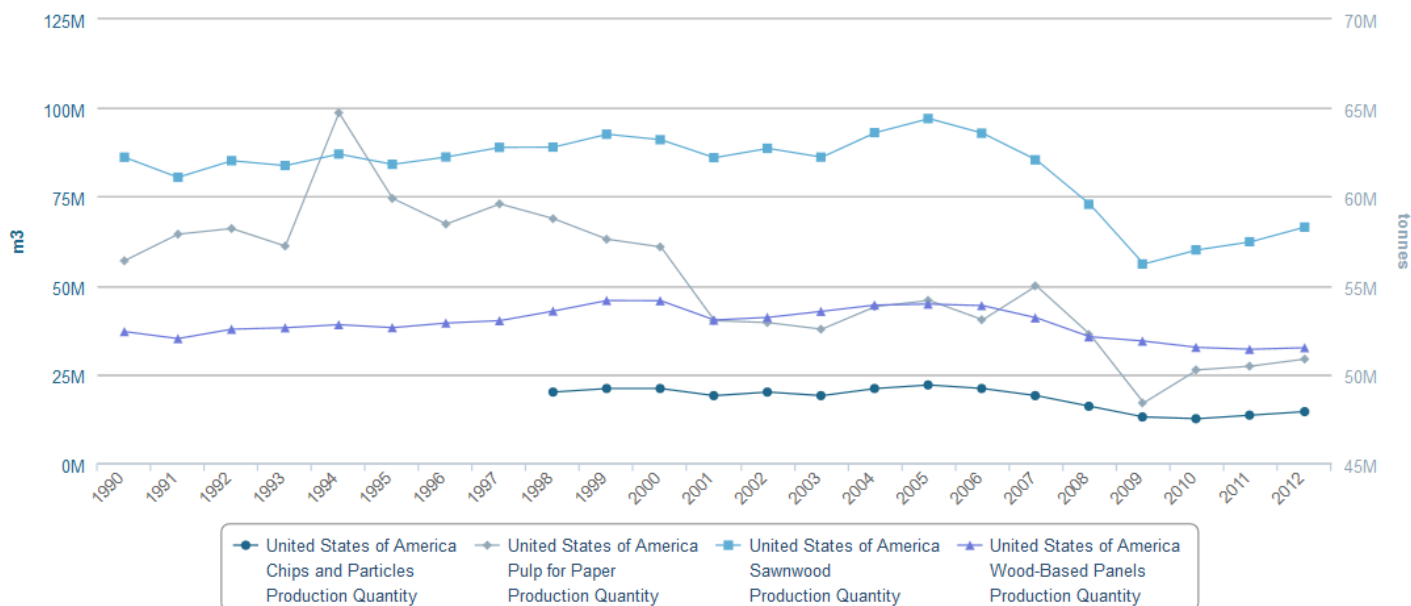


Figure 2 : production levels of chips and particles (m³), pulp for paper (tonnes), sawnwood (m³) and wood-based panels (m³) in the USA between 1990 and 2012 (source: FAOstat)

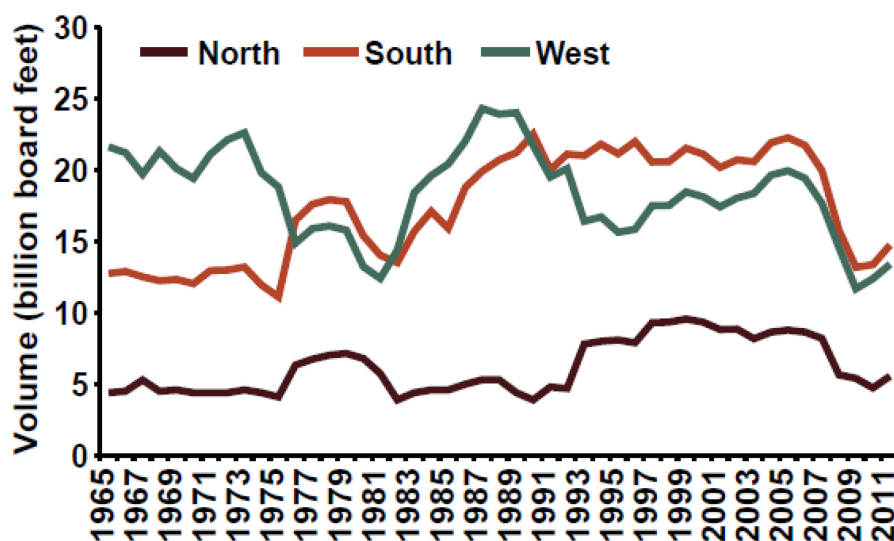


Figure 3 : evolution of processed timber production in the USA per region

When we look more specifically at the production from the forests in the Southern states, we can see that the evolution of the sawnwood production follows a quite similar trend as the trend observed at the country level. As far as pulpwood is concerned, though, the decrease in domestic production and consumption had already started in the late 90ies, because of an important and ongoing reduction of

the paper production capacity in the Southern states (Figure 4). According to Wear & Grei (2013)², this reduction of paper production capacity was driven by the competition at the global scale, suggesting cheaper paper and cardboard imports. Indeed the domestic consumption of paper and cardboard products was not declining until 2005 but the imports were clearly increasing from 1990 to 2005 (based on national statistics available in Howard, & Westby, 2013³).

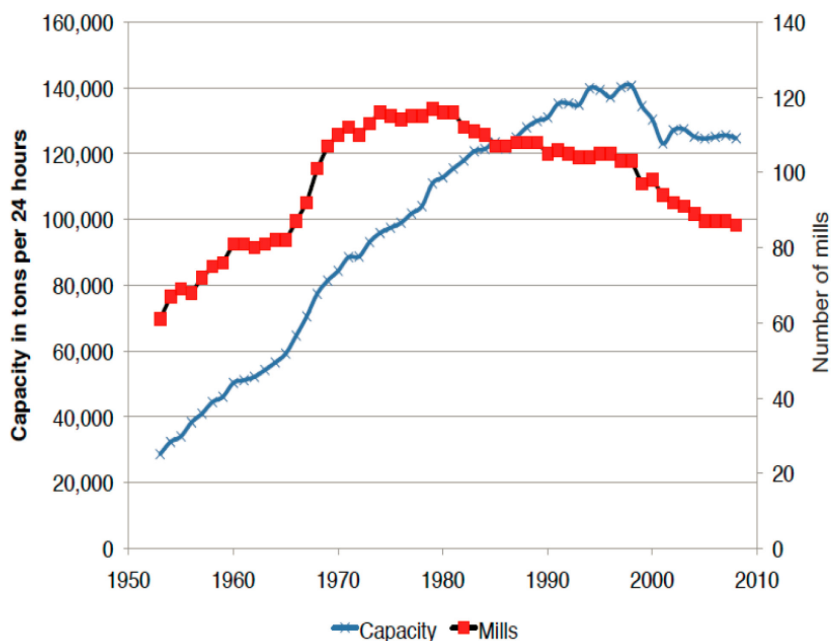


Figure 4 : Total number of pulp mills and capacity in the Southern U.S., 1953-2009
(source : USDA Forest Service, 2013, Mill Closure Reflects Larger Trends in the U.S. Pulp and Paper Sector)

3. Forest exploitation levels

The level of forest exploitation in the USA compared with the annual growth is analysed for each individual state (see sustainability reports per state), based on USDA's Forest Inventory and Analysis (FIA).

In the Southern states, the analysis leads to the conclusion that the annual growth has been exceeding the harvested volumes in recent years, reflecting an augmentation of living biomass. Even though some states show a slight augmentation of forest surfaces, the augmentation of living biomass is mostly due to an increased maturity of the trees, resulting in a higher wood volume per

² Wear & Greis, 2013, The Southern Forest Futures Project: technical report

³ Howard, James L.; Westby, Rebecca M. 2013. U.S. timber production, trade, consumption and price statistics 1965–2011. Research Paper FPL-RP-676. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory.

unit of surface. The recent decrease in harvested volumes of round wood obviously contributed to the increase of living biomass.

4. Price of wood resources

As can be seen on Figure 5, the prices of sawnwood and pulp wood in Southern USA have significantly decreased since 2000 and in particular during the period 2005-2010, reflecting the continuous decrease of the domestic demand for pulp and building materials. Only the price of pulpwood from hardwood remained rather stable during this period.

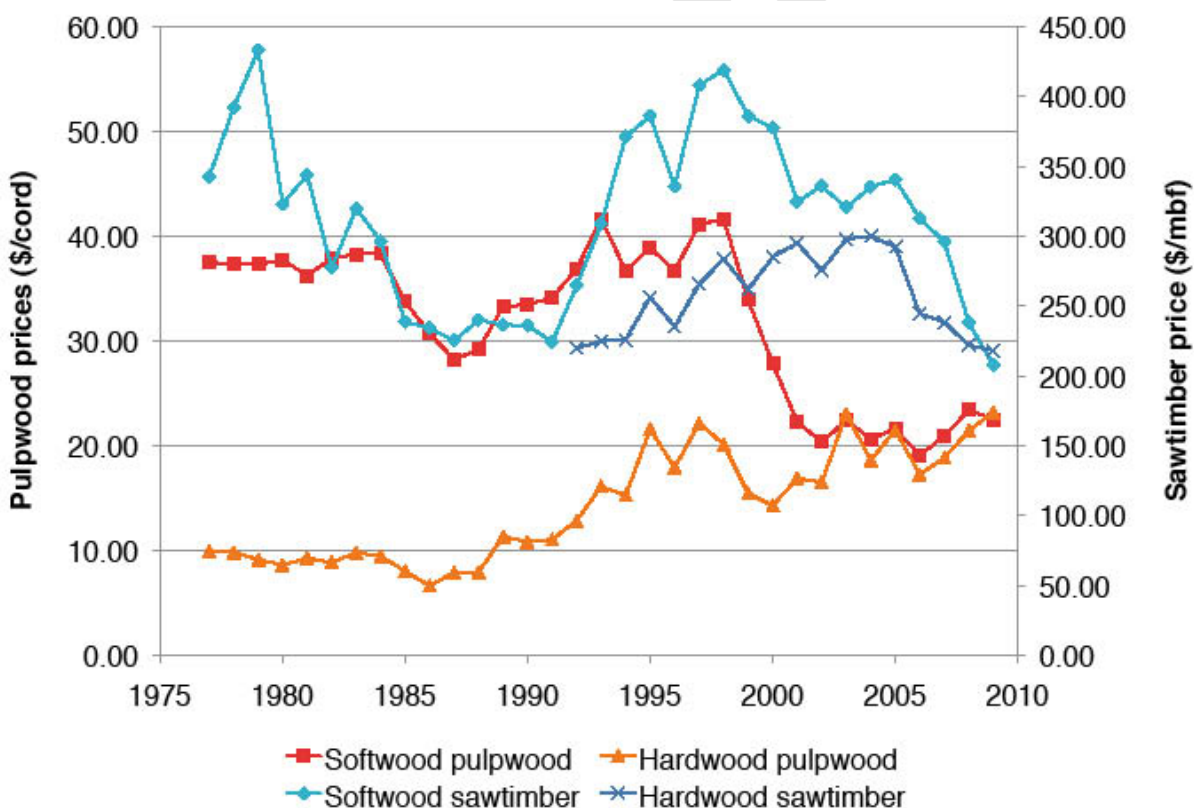


Figure 5 : Real stumpage prices in the South by product, 1977 to 2008.
(Source: Wear & Greis, 2013, The Southern Forest Futures Project: technical report)

5. Import and export of wood resources

In this section, imports and exports are taken into account to assess the availability of the different kind of materials.

While the imports and exports of round wood to/from the USA remains negligible compared to the domestic production, it is noticeable that the imports have clearly decreased and the exports slightly increased since 2005, while domestic demand was falling (Figure 6).

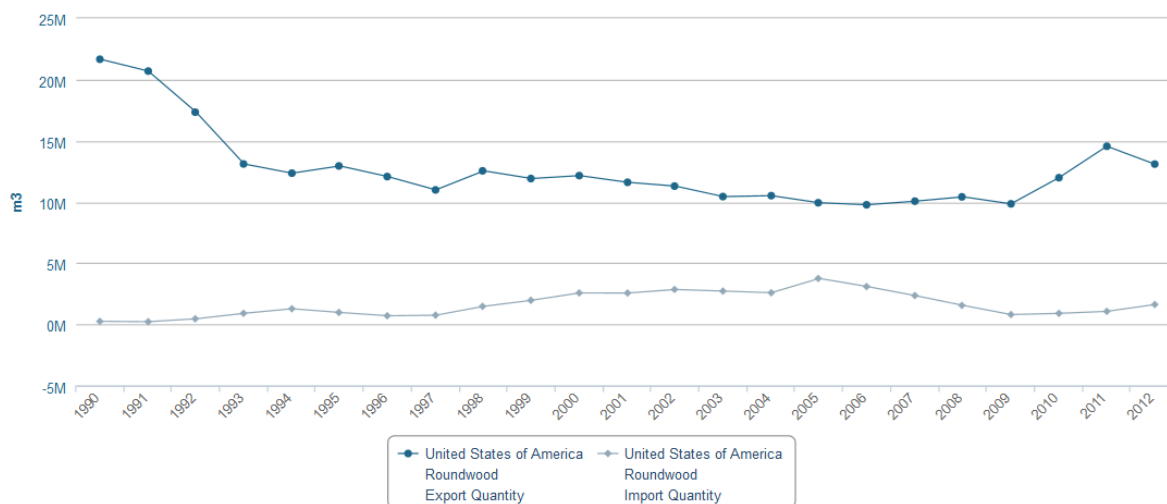


Figure 6 : imports and exports of round wood in the USA between 1990 and 2012
(source : FAOstat)

The exports of pulp for paper have significantly increased in recent year, while the production was decreasing, suggesting that an excess of material was available on the domestic market when several paper mills were run out of business (Figure 6). The pulp exports which used to be only 5.57 million tons back in 2005, increased to 8.32 million tons in 2011 and 7.31 million tons in 2012. Since 2007 the pulp exports exceed pulp import, while it used to be the opposite situation between 1997 and 2007.

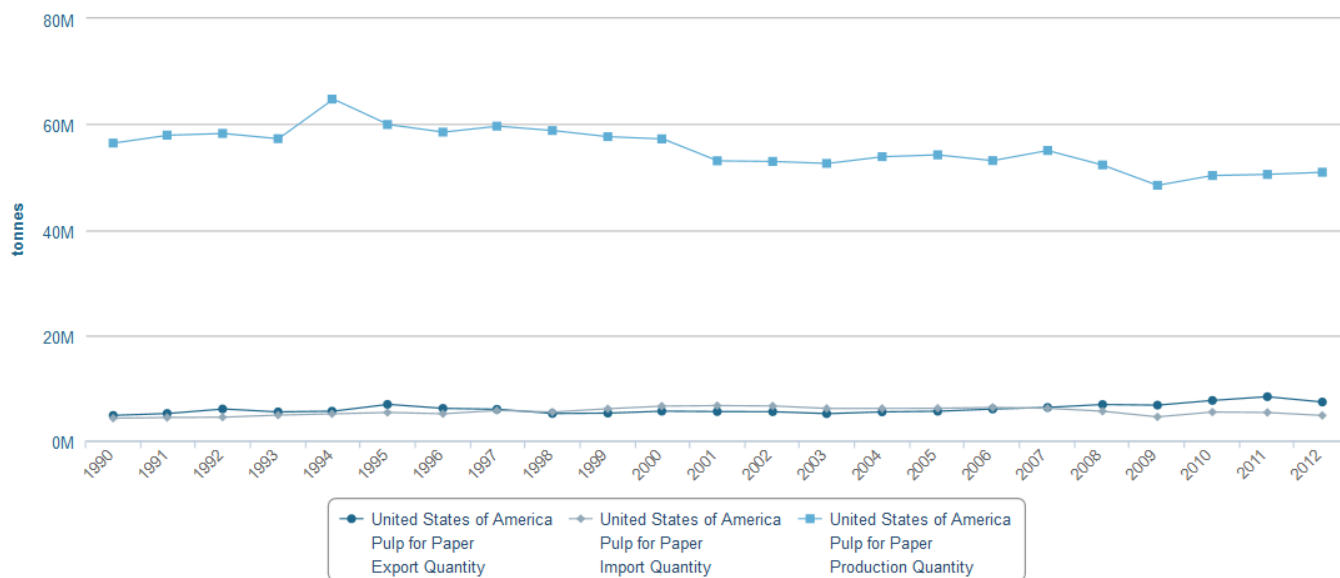


Figure 7 : production, imports and exports of pulp and paper in the USA between 1990 and 2012
(source : FAOstat)

The exported volumes of chips and particles also show an increase in recent years, from 3.8 million m³ in 2005 to 5.4 m³ in 2012 (Figure 7). During the same period the imports have decreased and were at a negligible level in 2012. The proportion of exported chips and particles, compared to the domestic production, used to be 17% in 2005 and have reached 37% in 2012.

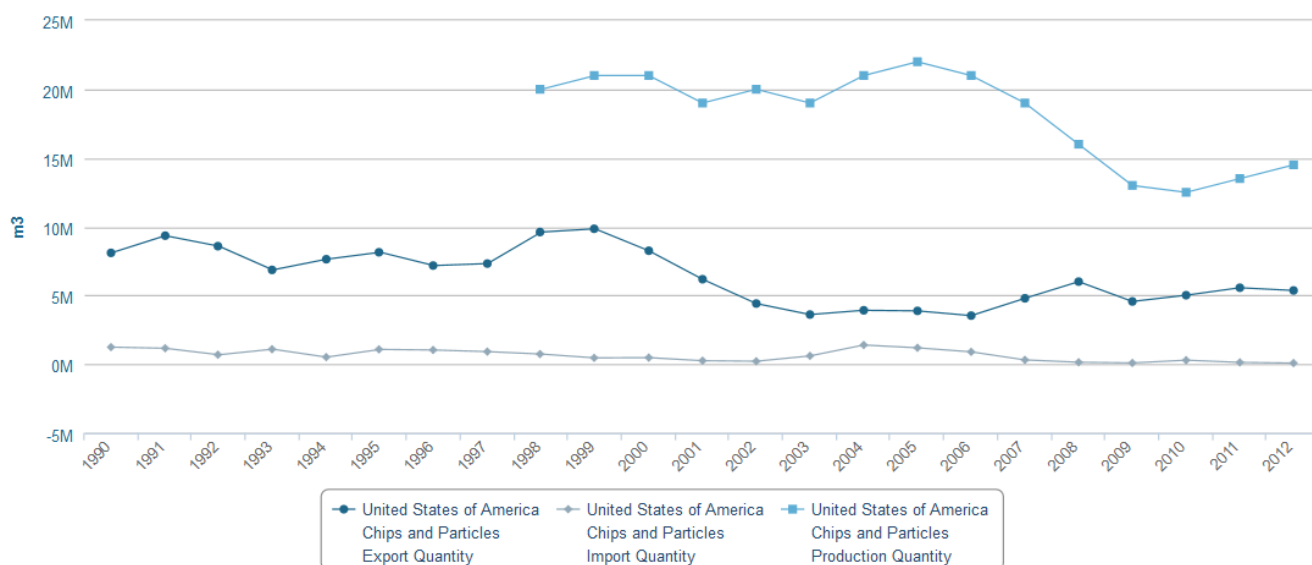


Figure 8 : production, imports and exports of chips and particles in the USA between 1990 and 2012
(source : FAOstat)

The imported volumes of wood-based panels have sharply fallen since 2005, following the same decreasing trend as the domestic production (Figure 8). During the same period, the exported volumes have remained negligible.

After a sharp decrease of sawnwood imports between 2005 and 2009 (following the same trend as domestic production), the imported volumes have been rather stable (Figure 9). A very large majority of the imports is from Canadian origin. According to Howard & Westby (2013)⁴, the imports of Canadian lumber (processed timber) currently contributes to keep the prices of softwood low, which does not help the sawmill sector to recover from the crisis.

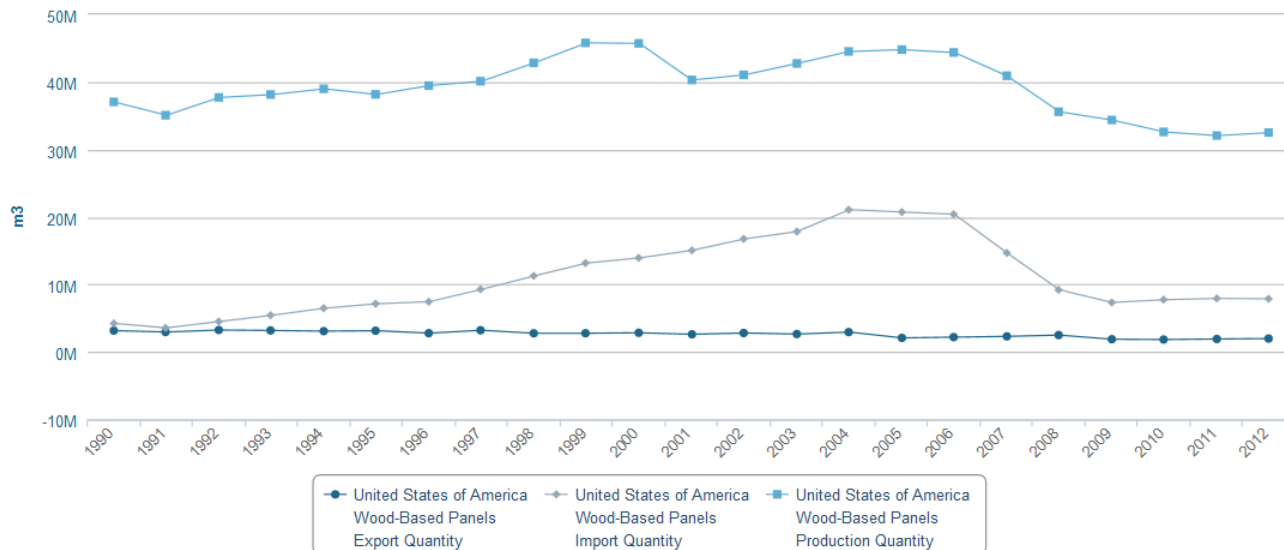


Figure 9 : production, imports and exports of wood-based panels in the USA between 1990 and 2012
(source : FAOstat)

⁴ Howard, James L.; Westby, Rebecca M. 2013. U.S. timber production, trade, consumption and price statistics 1965–2011. Research Paper FPL-RP-676. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory.

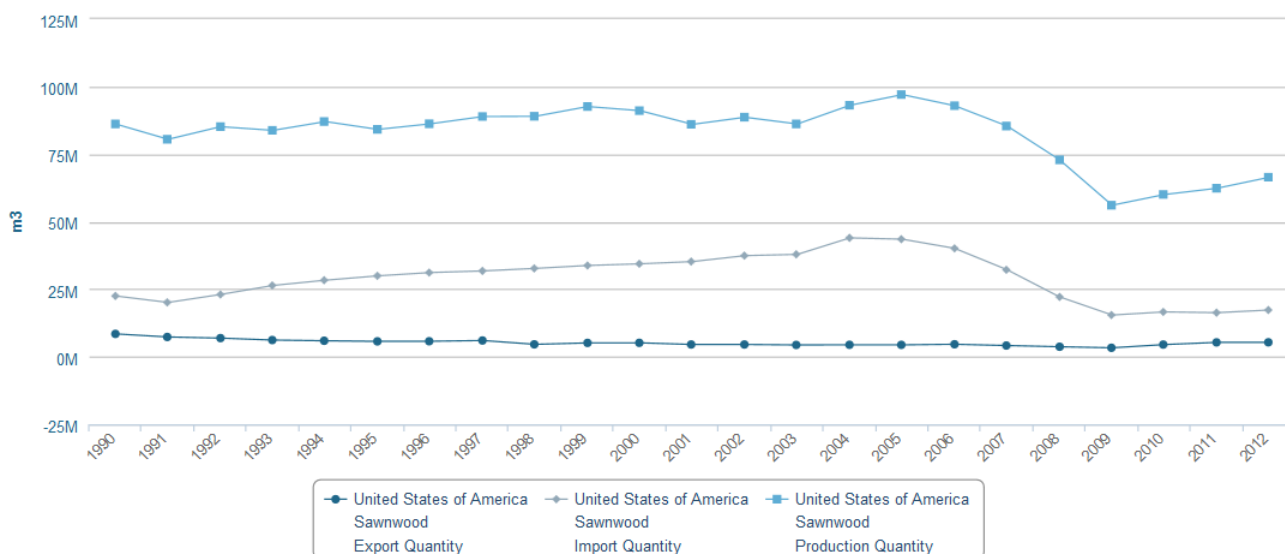


Figure 10 : production, imports and exports of sawnwood in the USA between 1990 and 2012 (source : FAOstat)

Also according Howard & Westby (2013), a recent increase in the imports of cheap furniture from Asia to USA is responsible for difficulties for domestic producers of furniture and their suppliers of wood boards and wood panels, resulting in a lower demand for those products on the domestic market.

6. Conclusion

The analysis of offer and demand of wood on the USA market, more particularly in the Southern states, shows that there has been a recent decrease in the production of wood based products, including round wood, sawnwood, paper pulp and wood panels, associated with the closure of wood based industries and a sharp decrease in the domestic demand. This decrease is particularly clear during the period 2005-2010, even though this trend was already noticeable in the Southern states since the late 90ies as far as the paper pulp market is concerned.

Even though the production volume of round wood has started to increase again since 2010, the market remains depressed and the production levels remain much less than they used to be in the period 2000-2005. A sharp decrease of the prices of sawnwood and pulpwood is associated with the reduction of the demand and the closure of wood industry units (with the exception of pulpwood from hardwood, which remains fairly stable).

The imports of woody raw materials (round wood, pulp, chips and residues) have significantly decreased in recent years, while wood based industry were closing. The exports of those products have significantly increased.

A technical report on the production trends and forecasts from forest in Southern USA (Wear & Greis, 2013⁵) reached the following conclusions:

- *Southern forests could sustain higher timber production levels, but demand is the limiting factor and demand growth is uncertain.*
- *Analysis of traditional wood products markets indicates that the supply of biomass could grow by about 43 percent under current levels of productivity without increased scarcity, largely because of declining demands for wood products. With plantation productivity growth at about 50 percent by 2060, forest biomass output could expand by as much as 70 percent without substantial impacts on market scarcity.*

⁵ Wear & Greis, 2013, The Southern Forest Futures Project: technical report

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