

“Path Dependence and Public Timber Auctions”

Historical analysis of the social construction of a merchant institution to sell France’s public timber

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ABSTRACT: This paper, taking a socio-economic perspective, aims to better understand France’s historical persistence in using auction to sell public timber. It focuses on the necessity to consider the evolution of merchant rules as the result of a social construction - wherein past choices influence the future - rather than a simple economic “cost – advantage” type arbitrage. In this regard, it is possible to point up the existence of a path dependence in auction which - as an institutional matrix - participates in structuring the timber industry.

KEY WORDS: Timber sales, timber auctions, institution, path dependence, lock-in.

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Current interests: The objective of my studies is not to consider timber market as an abstract entity, but rather as a socially rooted institution. In consequence, the aim is to analyze merchant relations as social actions, which take into consideration economic elements as well as moral factors.

The second part of my studies concerns the analysis of the mechanism of the auction system in public timber sales. The objective is to compare auction protocols with their social reality in order to give a new approach to the understanding of the results of timber sales. The assumption is to consider auction as a way to build a social value accepted by the timber industry – considered as a community.

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1 INTRODUCTION

The rules for selling timber originating from public forests are set by a specific law system, in which in the course of history has granted a paramount place to the auction system. During centuries and until quite recently this sale mechanism was the only one ensuring the distribution of timber. Despite the fact that it has been seriously criticized in the last decades, the auction remains the favorite mechanism to sell public timber. This situation leads us to analyze the reasons of the persistence of this institution.

At first, describing evolution of the law system should allow to better understand the lead role granted to the auction for a long time, the latter being considered as the institutional matrix to sell public timber. The article follows – in a socio-economic perspective – with the demonstration of the existence of the path dependence in the auction system for the timber industry and its consequences.

In addition, we try to explain how the importance of the auction during the history of timber sale has affected the organizational shape the timber industry is and how it has allowed an institutional lock-in of the timber sales mechanism.

2 THE HISTORICAL PREDOMINANCE OF THE AUCTION

The present understanding of the public timber sale mechanisms cannot be perfect without a preliminary study of their historical evolution.

In this regard it seems pertinent to take as a starting point the Ordinance of 1669 written by Colbert, the French Minister of Finance under King Louis XIV. Indeed, if the bibliographical studies give information concerning the sale mechanisms before this period, the Ordinance of Colbert represents the reference text for timber sale (Baudrillart 1825: 103).

The section of the Ordinance dedicated to the commercialization comprises 52 clauses and it gives details about the sale procedure to be used. The Ordinance made the auction the merchant institution, which was able to sell public timber efficiently.

2.1 From the Ordinance of 1669 to the 1st Forestry Act : the omnipresence of the auction.

All in all, it was the reign of Louis XIV that implemented a large-scale forestry administration. Colbert's Reform of 1661, which aimed at putting some order in the management of royal lands, forbade several practices, reduced the number of officers by removing the most corrupt ones and imposed harsh fines through the inquiries of commissioners: "The total sum of fines imposed upon forestry officers, merchants, churchmen or private citizens after the Reform of 1661 exceeded 2 million pounds, while more than 70 000 arpents (35 000 hectares) of fraudulently alienated forests were reintegrated into the royal property" (Badré 1984: 75). It was only after he had restored order that Colbert introduced the Ordinance of 1669.

Title XV – "*Plate, saddling, tree marking and sales of timber*" – of the Ordinance of 1669 describes the modalities concerning the sales of the King's timber. The auction may be regarded as a formal rule, which aimed at restoring some transparency concerning timber sales. The auction became the institutional matrix selected by the political regime in order to fight against local collusion (North, 1990). The influence of the Ordinance of 1669 was so important that two centuries later when the legislators composed the first Forestry Act they were faithful to Colbert's Ordinance. Article 17 stated: "*No ordinary or extraordinary sale, other than the auction sale, may take place in the State's forests; the auction has to be announced at least two weeks in advance and public notices must be displayed in the*

department's chief place, at the place where the auction will take place, in the village where the woods are located and in the surrounding villages." The auction sales were considered to be the only way for the State to be sure that no massive fraud or cartels took place.

In fact, the way the auction sales function presented in Colbert's Ordinance can provide an additional guarantee against the risk of wrongly estimating the value a wood parcel before the sale. Indeed, the numerous competing buyers gathering at the same place at the same time tend to approach the "true" value they think the proposed timber represents. This characteristic of the auction system gives more security to the seller against a possible false estimation of the wood parcels. In its historic form that had crossed centuries, the auction sales remained the rule in selling public timber and prevailed throughout the 19th century.

2.2 The sales of public timber in the 20th century : The erosion of the monopoly accorded to the auction.

The monopoly held by the auction sales for many centuries was first weakened in 1926. For the first time in centuries, public forest timber was allowed to be sold under tight conditions by private agreements, in negotiated sales.

However, the auction remained the main sale practice in France. In fact, sale by private agreement was limited to certain types of woods that were not sold at the auction or could not be sold there because of their small value. That was the case, for instance, of burned forests, windfalls or damaged woods. These parcels, which do not answer the main demand, had to be sold by finding niches. But when it came to the "classical" sale of public timber, the system of the auction was never questioned.

A historical analysis of legislative changes throughout the 20th century shows that certain institutional inflexibility exists concerning the sale practices of timber. The part of the Forestry Act about sale practices was slightly transformed in 1969 to allow sales by mutual agreement. Nevertheless, their use remained related to some sort of dispensation: "*Sales by mutual agreement can be used, as a dispensation of the above-written Article 17, exclusively for imperious technical and commercial reasons.*"

In 1982 the Duroure report 1982 stressed the necessity to propose new sale practices to secure the future of forests: "*we have to delete the obstacle that does not allow the Office to proceed*

like this in national forests and broaden the cases in which the seller can use private treaty sale of harvested timber”.

According to several reports on the forest industry, it lacked competitiveness due to the absence of significant change in the field of sale practices. One of the reports, written by former minister Jean-Louis Bianco and entitled “*The forest: a chance for France*” (1998), was based on the Duroure report and heavily criticized the organization of timber sales.

It noted that there was a serious problem related to the competitiveness of timber prices in the French wood industry in 1998. Meanwhile, in 1985 a report by the company Jaakko Pöyry had placed France first among European countries in terms of competitiveness in timber supply. Bianco showed that as a result of the random character of the auction system a sawmill that processes 20 000 cubic meters of logs is forced to buy hundreds of lots and estimate 5 to 10 times more lots on the parcel. This means significant waste of time and energy.

Modernizing sale practices was one of the main suggestions Bianco made: “*A quantified objective must be debated concerning the negotiated supply contracts in order to guarantee a provision with stable and foreseeable prices in the industry. [...] The amount of 30% of sales a few years from now would not be unreasonable.*” At the same time the auction system continued to be preferred to sell public timber.

2.3 The beginning of the 21st century: The end of the monopoly held by the auction.

Whereas the different amendments to the Forestry Act during the 20th century gave a limited position to the private agreements preferring the auction system, the beginning of the 21th century places private agreements and the auction system in a tie position.

The situation described in the reports was taken more seriously starting from 2001. That year for the first time since centuries the law on forest orientation allowed other sale practices than the auction to be used in situations not covered by a dispensation. Article 11 of Chapter 2 about the sale practices of the ONF (National Forestry Office) now stated: “*Sales by private agreement may be used for technical, commercial or economic reasons in the case of and according to the modalities defined in the decree by Council of State. Supply contracts lasting several years may be signed.*” However, since the application decrees were not properly

composed the use of sales by private agreement have remained extremely rare on the field and the difficulties related to supply persist.

The Juillot report affirmed these supply problems in 2003, making them the first element of its analysis. It repeated the remarks of Bianco report: *“Founded in general on individual sales of small-size heterogeneous lots, they have multiple consequences: high direct costs, difficulty to rationalize the logging and transport, necessity to have a costly important security stock to compensate the lack of visibility in timber supply, brakes for the concentration or standardization of the first transformation. Once well adapted to small firms located in proximity markets, these methods are now unanimously recognized by sellers and buyers as an important origin of impairments, on open markets where concentration is a necessity.”* (Juillot 2003: 37).

It recommended also more contractualization during sales by private agreement: *“[...] A part bound to be proposed in private treaty sales, by reference to sales conditions and price lists negotiated and announced in advance. These private treaty sales should be applied to isolated lots or on multiple, annual or semi-annual deliveries (usually called timber supply contracts). This plan tries to reduce uneconomical costs of timber mobilisation linked to the estimation of articles which have not been bought, to the obligation to maintain important security stocks, to the difficulty of rationalizing logging and transports in the actual plan. It should permit to adapt the timber industry more easily to the downstream market which needs more homogeneous products.”* (Juillot 2003: 40).

The law of February 23, 2005 *“on the development of rural territories”* finally implemented this in its Article 134-7: *“Cuttings and the products of cuttings in the State’s forests and woods are sold by the National Forestry Office either through the auctions or calls for tenders, either by private agreement, according to the conditions fixed in the decree by Council of State.”*

From now on, the people at the ONF in charge of selling timber are free to choose between the auction sales and sales by private agreement. 80 years after the appearance of the first dispensation, sale by private agreement has become an independent sale practice promoted by the ONF.

3 PATH DEPENDENCE AND THE INSTITUTIONAL LOCK-IN INTO THE AUCTION

The historical use of the auction during several centuries has developed a path dependence in the specific rules created to sell public timber. This path conducted to a certain rigidity of the institutional matrix which led to a situation of unefficiency for a part of the timber industry.

3.1 The auction: Path dependence and the timber industry structuring.

The path dependence theory was used for the first time to explain the influence of small historical events on the future, concerning the development of some technological choices. In the timber industry, this theory allows to understand the reasons of why the auction has remained the fundamental institution to sell public timber. This institution takes an active part in shaping of the timber industry.

The origin of the path dependence theory and its transposition to the timber sales.

Taking into consideration past decisions to understand present choices and the future projects is related to a historical perspective in social sciences. But for the orthodox economic reasoning, the disembodiedness of the economy to the society – made possible by a regulated merchant area – has deleted the impact of history in the economic analysis (Granovetter 1985). The permanence of a utility order viewed as unchanging has eliminated all interest towards historical events. In fact with the utilitarian paradigm no significant difference in the actors' economic behavior can be underlined, which ever period might be studied.

Contesting this un-historical view, criticism from economists qualified more or less as heterodox appeared trying to give importance to history to explain economic situations. For these authors (David 1985; Granovetter 1985; North 1994), the aim is to give a central position to the problematic of institutions and to consider that these are the result of choices realized in specific historical context. The aim of the approach is to study the evolution of a historical situation to identify the reasons and the consequences of the changes made.

Applying this approach to the case of the analysis of technological choices has allowed to show the concept of path dependence (Arthur 1983). The latter has since then been expanded to different subjects, notably to merchant rules (Abolafia 1996).

In the article “*Competing technologies, increasing returns and lock-in by historical events*” Arthur (1989) demonstrates that as the consequence of historical ‘small events’ the adoption of a technology could lead to the monopoly of an inferior technology as a consequence of increasing returns. The analysis permits to reconsider the neoclassical postulate where the equilibrium constitutes necessarily an optimal result. In this case, “*what makes competition between technologies interesting is that usually technologies become more attractive – more developed, more widespread, more useful – the more they are adopted*” (Arthur 1988: 590).

Few years earlier David (1985) had demonstrated – with the use of Qwerty as a standard for the keyboard of typewriters – that the initial choice made between different technologies was not necessarily the result of an optimal selection but the consequence of past decisions. In his historical study David specified that the aim of the alphabetical key ordering in Qwerty was not to reduce the time of type but avoid type bar clashes. Moreover, it gave a commercial argument during the demonstration because it was possible to type quickly with the first row of letters: “*TYPE WRITER*” (David : 1985, 333).

Thus when in 1932 A. Dvorak and W. L. Dealey registered the Dsk model which allowed typing 20 to 40% faster, the logic of a selective process – like it is proposed by the neoclassical theories – should have led to the substitution of Qwerty by the Dsk keyboard.

However, the Dsk keyboard was never as widely used as its creators would have wished. This situation could be explained by the existence of increasing returns as a technology is being used over a longer period of time. By choosing to learn typing skills on a Qwerty keyboard, typists were sure to find a job more easily because most companies were using the Qwerty model. The choice for typists was quite easy to do because of the learning methods of typewriting which were adapted to the Qwerty model.

The generalization of this choice led to increasing returns in terms of learning. At the same time, companies preferred to buy typewriters with a Qwerty keyboard because of the skills acquired by typists on this keyboard. The interdependence between technology and its users contributed to the existence of increasing returns. This fact confirms the principle mentioned above according to which a technological choice is not naturally efficient but becomes efficient due to the increasing returns obtained as long as people use it. The existence of increasing returns in the case of the Qwerty keyboard should be interpreted as an illustration of the path dependence. The path opened by the Qwerty keyboard in particular circumstances has durably influenced the evolution of keyboards. And today, in spite of the fact that the problem of type bars getting clashed and jammed has been solved with numeric keyboards, Qwerty has still maintained its dominant position.

Although the theory of path dependence is mainly used in studies concerning a technological choice, it is not its only field of studies. In fact, it is possible to apply this theory to a variety of contexts, like the development of economic institutions (North 2005) or the evolution of law (Hathaway 2003).

In the case of the sales of French public timber, a historical approach leads to consider that historical events in the past centuries still have an impact on the evolution of the sale mechanisms and the structure of the timber industry. Whereas the auction has been institutionalized to limit frauds during sales, it appears that this sale mechanism is still present three centuries later while fraud seems contained.

The persistence of the auction despite numerous changes to the forest legislation leads us to question whether there is a possible path dependence concerning the legislation in the field of public timber sales. This path dependence could be explained by increasing returns gained by members of the timber industry who in time learned the specificities of the auction mechanism.

In practice, the stability given by keeping the same sale mechanism during several generations has facilitated the appearance of a “*learning by using*” effect in the descending auction. The specific character of the descending auction mechanism – where an auctioneer tells different prices very quickly – requires experimented staff because of the high rhythm of the sales. In general during a session an average of 80 lots per hour are sold. Each lot corresponds to a quantity of standing timber or harvested timber originating from domanial or communal forests. According to the buyers, learning how to be in control of the descending auction could take many years. Moreover, even with the necessary level of experience this sale mechanism is often referred to as stressful and dangerous: “*It is easy to lose one’s mind*” (Buyer). To this difficulty, among with the specificity of the sale protocol, it is possible to add the fact that using the auction over a long period of time improves the buyers’ knowledge about the timber industry’s other members’ needs. Because of the unchanging character of the sales calendar, comparing the sales results of the current year with the ones of previous years is fairly easier, especially because the number of participants varies very slightly in the timber industry.

The fact that the buyers know each other allows them to guess more easily who will make a bid, depending on the lot, and to anticipate the level of competition. This situation is particularly true in the descending auction because it is necessary to be physically present in the room to buy lots. Unlike the sealed-bid first price auction where it is feasible to make a bid by mail, creating a doubt on the level of the competition, the descending oral auction

deletes this lack of information. Thus, it is easier to adjust one's own bid considering the other competitors in the sale room. This stability of information could partly explain why the descending oral auction is requested by some buyers.

The majority of the buyers are family-owned companies in which the auction mechanisms are explained from generation to generation. Buyers have mentioned that since they are young they learn the auction mechanism due to their recurrent presence at sales. This training is made in the auction room: *“By seeing my father making bids, I learned the mechanisms”* (Buyer). Finally, the skills developed by the buyers concerning their competitors' bids leads them to share out tacitly the lots when the quantity proposed is weighty. As each buyer knows exactly the supplying locations of all the competitors, the divide of lots is executed without difficulties. The auction is not only a sale mechanism but represents – as an institution – a way to act, which has integrated into the participants' habits through an intergenerational learning process.

The existence of those skills – gained as a result of several years of practice or even intergenerational experience – explains why some professionals wish to keep the auction as the institutional matrix to sell public timber.

Concerning the seller, increasing returns are possible due to the skills compiled during many sales organized by agency chiefs at the French Public Forest Service. Order in the catalog, rhythm of sales, management of the reserve price – all those are elements, which allow the sale director to influence the results of the auctions. Moreover, like buyers, agency chiefs can estimate the level of the competition for some lots, based on the results recorded the previous years. All this information leads to a domestication of this sale mechanism and contributes to the development of a social inertness around the auction system. In this situation only a major event could make the agents change the sale protocol. In the case of timber sales, this kind of event took place during the storm in 1999. The big quantity of timber pulled up to this occasion has obliged the French Public Forest Service to use private agreements to sell timber. In this occasion, the exception of using private agreements became the rule. This fortuitous event has permitted the development to a larger scale of a sale mechanism normally rarely used. Furthermore, in Lorraine, this situation coincided with the arrival of new sales staff: *“There are people like me in the North-East of France who were born in this private agreement mechanism. [...] These people had never left this system”* (ONF staff). The latter did not have the experience of the auction and did not benefit from the learning effect like some of their colleagues.

But this distinction now has a considerable impact on the attitude of the ONF staff towards the growing use of supply contracts through private agreements, which was the purpose of the law of 23 February 2005. On the one hand, there are agents with a great experience of the auction mechanism who are still not very confident about the modalities of supply contracts and the risk linked to the limited knowledge about private agreements. On the other hand, we find agents who have begun their career during the storm in 1999 and who seem less dependent of the auction system. The influence of past events is clearly present in the choices concerning the sale mechanism. Nevertheless, even if it is correct to consider that agents could historically spark off an institutional change, it is also important to take into consideration the influence of the institution on the organization of the timber industry.

Institution and timber industry organization.

The study of the institutions is not limited to strictly identifying the original reasons of their appearance to better understand their consequences. The linear link “cause and effect” is not enough to understand the reality of the institution and its context because effects also take part in modifying the reasons in a cumulative process (Veblen 1909). In consequence, we should consider that the setting up and the keeping of the auction as a merchant institution, during more than two centuries, participated in the organization of the timber industry. The provision of heterogenous timber lots and the development of an intermediary network in the backing of timber industry represent the visible consequences of the persistence of the auction as the mechanism to sell public timber.

Unlike several countries (Germany, Austria, England), which sell harvested timber, in France a major role has been given to the sale of standing timber. Indeed, french public timber is sell in the majority of cases standing timber (88% of the timber volume in public forest in 2005). Only Alsace and Moselle, which are départements (administrative subdivisions), sold massively harvested timber. This difference is explained by the fact that these two départements – annexed by Germany between 1871 and 1918 – have kept German traditions concerning timber sale.

Several reasons could explain the importance of standing timber sale. For sellers, this availability of timber transfers the logging cost to the buyers. The ONF staff pointed up that it is not really profitable for them to log because of the costs linked to the using of machineries and personnel: “*With our labour costs – we have nobody who is moonlighting*

like in private companies, all the staff does not do free extra-hours and rules are strictly applied – we can lose out when we sell harvested timber” (ONF Staff).

In addition it gives security to the timber owner about the timber value. Indeed, as long as the timber is not harvested, the seller can wait and rarefy the supply of timber. Besides, during this waiting time the quantity of timber increases naturally. On the opposite, as soon as the timber is harvested, the risk of decay is high, which might compell the seller to sell timber at a lower price.

Standing timber sale make it possible for buyers to constitute a stock that they will cut down in a near future depending on their needs. This supply model avoids the risk of a decline of in quality once the timber is harvested. However, this supply model has a limit, namely the constitution of heterogeneous lots (mix of hardwood and softwood species).

However, this heterogeneity points the selection of the sale mechanism. In the case of standing timber sale it is not possible to pick over timber before sale. In consequence, this mechanism limits the possibility to use private agreements for a specific quantity and species of timber. Indeed, almost all the supply contracts through private agreements are about harvested timber. Only few homogeneous lots meant for slushing are sold standing. This characteristic explains perhaps why there is confusion in people’s mind between the sale method “private agreements” and the product “harvested timber” because it would be possible to see supply contracts of harvested timber proposed through an auction protocol.

This heterogeneity of timber lots has led to the use of the auction to sell timber. There is a causality between the goal to propose heterogenous standing timber and the choice of sale mechanism favored to sell public timber. This causality explains partly why in France – where the majority of lots are standing timber – the forest legislation has remained focused on the auction.

However, this “cause and effect” link between the timber supply (standing timber) and the sale mechanism (auction) must not be interpreted in a strictly linear way. In reality –as it was mentioned above – the context has structured the institution which guarantees the commercialization of timber. The institution has also conditioned the environment where it takes place.

Therefore, the auction – first considered as a consequence linked to the standing timber sale – has determined the shape taken by the timber industry during the supply. The almost exclusive use of the auction as sale mechanism has finally led the forestry administration to concentrate its action on the management of the silvicultural capital and left the timber allotment to the backing of the timber industry.

To better understand the impact of the auction on the allotment of timber and its consequences on the organization of the timber industry, it is interesting to compare the role played by the ONF until now and its future missions linked to the development of supply contracts through private agreements.

In terms of supply contracts, the quality of timber sold by private agreements is determined in advance by the buyers and the ONF. The buyer obtains a homogeneous lot of timber constituted usually by one species and one quality of timber. His choice is made depending on the opportunities and the specificities of his production machinery. This avoids having to find potential clients for timber, which does not correspond to his needs of raw materials. The buyer can refocus on his specific main field, i.e. the timber processing. Thus, the selection work of timber in national and communal forests is devolved to the ONF according to the criteria listed in the contract. The engagement of the forestry administration in the buyers' supply needs is even bigger. In Lorraine the setting up of supply contracts will modify the organization of the ONF agencies. Each sale manager will be in charge of a certain number of buyers and will be responsible of the follow-up. This change proves the will of the ONF to have a closer relationship with the buyers.

Until now, taking into consideration the buyers' needs was less apparent during the constitution of the timber lots. The constitution of homogeneous lots was not a priority for the ONF who sells timber mainly through the auction system. The forestry administration was simply not interested in promoting the allotment work before sales. Indeed, in the auction system, the role of the ONF agents was for long limited to choosing the timber to be harvested, with regards to the principles of a reasonable silvicultural management. In this configuration of heterogeneous standing timber sales, buyers have to select timber in the lots according to their production machinery and find new buyers for the rest of the lot. This position in the timber industry has favored the loggers and participated in the vertical integration between loggers and sawyers. The massive use of standing timber sales meant that the processing firms had to find loggers in order to cut, haul and carry timber to the factory. But beyond this work, the logger appears incontrovertible to the timber industry. Due to his knowledge of the timber industry's needs and know-how to enhance the value of timber lots, the logger became the agent who is in charge of the timber allotment.

Many professionals consider the logger as the main character in the supplying of the timber industry. Loggers have developed skills to enhance the value of standing timber lots which leads them to give value to the whole lot. This is more frequent speaking of hardwood in which case the variety of uses of a log lead to the allotment of portions according to the

activities: peeled veneer, slicing, sawing. Due to the constitution of buyer networks beyond French borders, loggers have guaranteed that all the timber is sold in spite of heterogeneous lots.

The presence of loggers as the link between forest production and its processing has been reinforced with the auction system. Indeed, in the auction sales the risk of not obtaining lots obliges the buyers to visit numerous lots in hope of acquiring enough lots for their activity. It is not rare for a buyer to visit dozens of lots to finally acquire during the auction sales only 2 or 3 lots. In consequence of this high cost of estimating lots and the risk of not obtaining the visited lots during the auction sales, many industries have preferred to give this job to the loggers.

The heterogeneity of lots, the evaluation cost of timber and the lack of guarantee to acquire the desired lots led to the development of an intermediary between the ONF and the processing industries. In fact, loggers have benefited of the auction system to enhance the value of public timber and make themselves irreplaceable for the ONF and the processing industries.

The auction has finally led to the faintness of the possibility for the ONF to give value to timber lots in favor of the loggers. Indeed sales director had few informations during the sales concerning the future using of timber sold : *“There is a buyer who begins to buy a block – it happens like that in standing timber sales – he buys and immediately while the session is not finished he has already resold the part of the timber he does not care about”* (ONF Staff). As it is very difficult for the ONF to know the allotment of timber after the first sale is done, the administration is deprived of an essential information to enhance the value of public timber. Nevertheless the present choices of the sales policy show that the ONF wishes to take back the control the enhancement action due to the raise of supply contracts in private agreements. This new orientation raises objections in the timber industry especially for the loggers who are pushed aside of this new sale mechanism. Indeed, the supply contracts are reserved to the processing industries.

The auction – consequence of a tradition which consists to sell heterogeneous standing timber – by reason of a cumulative causality has consolidated the central role of loggers in the timber industry supplying. In fact the adaptation of the timber industry to the standing timber auction stayed during more than two centuries unchanged: *“The attachment of buyers and sellers to this single sale mechanism – despite its defects – is not explained by a collective blindness phenomenon [...] but by a very good adaptation of all of them to the present situation”* (Badré 1984).

In such a case the new law adopted in 2005, allowing the ONF to freely use private agreements, seems like a factor which reconsiders the stability of the timber industry's structure. The will of the ONF to take back a part of the enhancing action of timber with the raise of supply contracts through private agreements causes in the timber industry a strong resistance to this change, particularly from the loggers making timber transactions. Whereas the latter had a major role in the auction system, they are pulled away now because of the supply contracts being reserved to the processing industries. This situation could be considered as an institutional change contesting the path shaped around the auction system.

3.2 Lock-in effect in the timber sales.

Although the problematic of the evolution is now being taken into account in the economic approach to understand the changes made on the market, it is only true in the way that the adaptation is always efficient to the new situation. But this efficient postulate is not inevitably acceptable in reference to the social reality where the existence of a lock-in can generate a sub-optimal situation.

In the case of timber sales the persistence of the auction can be interpreted as the result of an institutional lock-in where the institutional opposition decreases the competitiveness of a part of the timber industry. In the classical evolutionary paradigm it is considered that whatever survives is efficient. A technology or a law which is not efficient is quickly competed by solutions more competitive which should supplant it. This economic thought refers to biology where the principle of an efficient selection is applied to economic facts. Thus, the choices made in the old days should correspond to a regular and increasing process which guarantees to the merchant institutions a performance that is ever better towards their environment. However, this postulate – present in the neoclassical thought – can be challenged.

In reality the analogy made with the evolution of species in biology is not obvious because people have a better capacity than plants or animals to take part in the changes throughout history. Unlike animals or plants characterized by a limited capacity to constrain the environment, people can more easily act on the institutions which are not the result of a natural process but of the head to head of human actions: *“If turtles become extinct, they will not reappear suddenly when circumstance change to make it advantageous to have a shell.*

But if people stop using large gas guzzling engines because gasoline has become expensive, or extend patent protection to “look and feel” of software, they can always revert to their old ways if they came to regret the switch” (Liebowitz: 1999, 983). This demonstration shows that the selective process described by biologists can be different for people because of the possibility given to them to influence the evolution of history.

Moreover, it is feasible – referring to some historical events – to find situations for which the economic actions taken have caused the adoption of a technology, a rule which will lock the market and will limit the raise of innovation or new rules (Arthur 1989). This kind of situation is characterized by a technology or institution. But this rigidity runs the risk of obstructing the development of solutions which could be superior while maintaining an inferior system. This fact puts into doubt the principle of the optimum equilibrium (Roe 1996).

In the example of the standard keyboard for typewriters David demonstrates that the lack of success for the DSK keyboard proposed by Dvorak – in spite of the reduced typing time – is linked to the technological lock-in focused on the Qwerty keyboard (P. David 1985 : 334). In the public timber sales the existence of a sub-optimal situation for a part of the timber industry could be explained by an institutional lock-in, which is based on the auction system. A proof of that is the criticism by the representatives of the processing industry who have big timber needs and who criticize the auction for their lack of visibility concerning the quantity obtained during the sales: *“200 sawmills go out of business each year [...] The obsolete sale system kills the sawmills. A firm cannot invest if it is not sure to have supply”* (Buyer). This criticism is especially consequent in Lorraine because of the high presence of public timber. The part of public timber (68% in Lorraine in 2005) is the opposite in comparison with the rest of France (74% of private forest for only 26% of public forest in 2005).

This point is not new because it is possible to find it in several expert reports about timber: (Duroure 1982 ; Bianco 1998 ; Juillot 2003). They insist on the difficulties linked to supply modes, making the auction the primary mechanism to sell public timber. The repeating of this analysis in different periods is significant of the social inertness created by the institution (Chavance 2007 : 20).

Well adapted to a local network constituted by family-owned sawmills, which need small quantities, the auction did not pose a supply problem until the 1980's and seemed to be suitable to the timber industry. But due to the raise of the processing industries' working capacities and the appearance of an international competition the auction system was contested. Indeed, the impact of the fixed costs demands high visibility of the price you have to pay and

the quantities you can buy. Big sawmills need approximately 1 million m³. As a consequence of the fixed cost these companies have a thin profit margin and need to have a guarantee concerning the prices over longer periods. Unlike the supply contracts through private agreements the auction system does not guarantee a certain quantity and price to the people present at sales.

Thus, the formal rule adapted to past context has great chances because of its rigidity to be inefficient to regulate the present situation. However, it would be incorrect to believe that the institutional blockade has generated annoyances to the totality of the timber industry. Indeed, depending on whether the business activity is about softwood or hardwood and according to the occupation in the timber industry the social inertness linked to the institution has favored some professionals to the detriment of others.

First, the differences between softwood and hardwood industries represent a limit to a global point of view of the professionals concerning the choice of the sale mechanisms. While the softwood industry is characterized by relatively homogeneous raw material providing standard products, hardwood industry can give rise to many products with high value added. In consequence, in softwood industry – except for small structures making customized products – big companies are restrained by the auction system which does not guarantee the stability of quantities and prices. The institutional lock-in on the sale mechanisms causes these companies' competitiveness to drop.

On the other hand, this problem is less weighty for hardwood industries, especially for finewood, because the quantities that are needed are lower. Moreover, the heterogeneity of wood often leads to huge price differences for finewood. Indeed, it is difficult to make a supply contract with a fixed price when the appraisals fluctuate heavily depending on whether the using of the timber. In this case the risk to underestimate the value of timber is so big that the sellers apply the auction system for finewood and refuse to use any other mechanism.

Besides, the auction system is particularly positive for loggers having a trade activity. Unlike the processing companies the logger does not have to spend the majority of his time in the plant to run the machines. He can spend more time in the forest to estimate lots proposed during the sales. This work gives him the possibility to reduce the danger of making a mistake in the evaluation of timber and allows him to benefit of some opportunities at the moment of the auction sales.

Likewise, loggers manage to limit the estimate costs more easily, which is not the case of processing companies, whatever their size. For instance, in a small company it is usual to see the entrepreneur who estimates the timber while continuing his work in the sawmill. This

timeshare does not allow him to visit as much timber lots as a logger, reducing his participation at the auction sales. Some prefer not to take part in the auction sales buying timber directly from the loggers.

For bigger processing industries the valuation is made by special employees. The latter are an additional cost because they do not participate directly in the wood processing. Besides, confronted with the risk inherent to the auction system of not getting any timber lots, the potential buyers have to visit a large number of lots. This cost linked to valuation explains why some processing companies refuse to buy themselves at the auction reinforcing the weight of the loggers in these sales.

The last element concerns the advantage given by the auction system to the local buyers. This preference is due to the fact that the auction is about standing timber sales coming from local areas.

The first argument is to say that the carriage cost from the forest to the factory has a significant impact on the valuation of a lot. A buyer who has forest close to his factory could propose a higher bid in comparison with the average of the bids due to the savings made on the carriage cost of timber. In the end, the number of competitors present at the auction sales does not matter because the competition is partly rigged due to the lack of equality in the operating cost of timber. The other argument concerns the knowledge of the forests wherein the lots are constituted. This is particularly obvious in Lorraine because of the presence of scrap metal in timber due to the numerous battles during the First World War. Local buyers have a precise knowledge of the timber affected by the existence of scrap metal due to their intergenerational knowledge. This information is vital especially in the case of standing timber sales. This illustration shows clearly the interest for local buyers to see the auction system persist to sell public timber.

Finally, if it is true that the institutional lock-in of the timber sales results in a lack of competitiveness for some people, keeping the auction mechanism to sell timber is still wished by the rest of the timber industry.

4 CONCLUDING REMARKS

The sale mechanisms used to sell public timber are not the result of a simple economic arbitrage (trade-off) “cost – advantage” at a moment in time but constitute a social

construction in which the weight of past decisions has a significant influence on future choices.

Thus, in the form of an institutional matrix the auction has contributed to the organization of the timber industry's structuring during more than three centuries. This stability in the choice of the sale mechanism retained has made the apparition of a path dependence in the auction system – due to the learning effect – fairly easier.

However, the present evolution of the power struggle inside the timber industry seems to lead to a deep change of the organization of sale mechanism, although an institutional lock-in around the auction is judged positive by some people. Indeed, although it is undeniable that an institutional lock-in causes difficulties to leave the path once the first steps are done, it might be possible to see this lock-in disappear in the future under the influence of timber professionals. The sale mechanism – seen as an institution – remains most of all the result of a social construction made by the professionals of the timber industry. In consequence, it is absolutely conceivable that under the effect of an evolution of the power struggle between economic and political special-interest groups there will be an enduring change of the sale mechanisms (Fligstein 2001). For all of that the institutional settlements developed cannot guarantee that the institutional change made is going to give an optimal solution for all the timber industry's members.

The massive implementation of the supply contracts through private agreements is already provoking opposition from professionals of the timber industry. Emphasizing the power struggle in the timber industry and the elements of moral and economic justifications could help better understand the new stakes linked to the evolution of the institutional matrix used to sell public timber.

5 REFERENCES

Abolafia Mitchel Y,

1996 Making markets: opportunism and restraint on Wall Street, Cambridge: Harvard University Press.

Arthur Brian W,

1989 'Competing technologies, increasing returns, and lock-in by historical events'. Economic Journal 99: 116-131.

Badré Michel,

1984 Forêt et marché du bois. Economie d'une matière première: le bois, la filière bois française et le marché mondial, Editions Hatier.

Baudrillart J.J,

1825. Dictionnaire général, raisonné et historique des Eaux et Forêts, 2 vol Paris: chez Madame Huzard libraire rue de l'Éperon-Saint-André-des-Arts.

Bianco Jean Louis,

1998 La Forêt une chance pour la France : rapport au Premier ministre, Paris: La Documentation française.

Chavance Bernard,

2007 L'économie institutionnelle, Paris: La Découverte.

David Paul A,

1985 'Clio and the Economics of QWERTY'. The American Economic Review 75/2: 332-337.

Dockès Pierre,

1998 'La nouvelle économie institutionnelle, l'évolutionnisme et l'histoire'. Revue européenne des sciences sociales Cahiers V Pareto 36/111.

Durore Roger,

1982 'Propositions pour une politique globale forêt-bois. Rapport Durore'. Revue Forestière Française Special Issue.

Estrade Alfred and Georges André Morin,

2006 'Historique de l'évolution du cadre législatif et réglementaire des modes de ventes des bois des forêts publiques'. Revue Forestière Française 58/3 : 245-256.

Granovetter Mark,

1985 'Economic Action and Social Structure: The Problem of Embeddedness'. American Journal of Sociology 91/3: 481-510.

Hathaway Oona A,

2003 'Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System'. Center for Law, Economics and Public Policy Research Paper 270.

Liebowitz Stan J,

1995 'Path dependence'. Journal of Law, Economics and Organization 1: 205-226.

North Douglass C,

1990 Institutions, Institutional Change and Economic Performance, New York: Cambridge University Press.

North Douglass C,

2005 Le processus du développement économique, Paris: Editions d'Organisation.

Roe Mark,

1996 'Chaos and Evolution in Law and Economics'. Harvard Law Review 109: 641-668.

Saint-Yon (de) Antoine,

1610 Les édits et ordonnance des roys, coutumes des provinces, règlements, arrêts et jugements notables des eaux et forêts.

Veblen Thorstein,

1909 'The limitations of marginal utility', *Journal of Political Economy*, 17/9: 620-636.