

Lauri Hetemäki: Creative destruction in Finland's forest sector

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Prologue

One autumn night in 1868, in the northern Finnish town of Oulu, tar merchant Mauno Niska was about to make one of the most important decisions of his life. His family had been involved in the business of exporting tar from Finland since the 17th century, but now he sensed that this activity would soon be a thing of the past, bringing an entire era to a close. These thoughts had crystallised in his mind during his visit to England the previous summer to meet local shipowners. He had learned from them how new technology was allowing iron-hulled ships to be built that were more durable, efficient and economical than conventional ships built of wood.

The value and use of the forests was also changing fast. Tar burning had begun to be superseded by more profitable forest businesses, such as felling timber for sawmill production. On his business travels, Mauno Niska had become acquainted with mining engineer Fredrik Idestam and pharmacist Gustaf Serlachius in the town of Tampere. They had explained how wood fibre would inevitably displace rags in papermaking, regardless of widely expressed opinions to the contrary. Idestam had already built a groundwood pulp mill by the Tammerkoski rapids in Tampere, while Serlachius was soon to build one in Mänttä. And so, on this autumn night, Mauno Niska decided to give up tar exporting altogether and invest his assets in a groundwood pulp mill and sawmill.



Tar being collected into a barrel



From the point of view of creative destruction, it is important to distinguish those economic activities that can no longer exist in the new structure from those that can, considers Metla's Senior Researcher Lauri Hetemäki

Two decades later, when, due to ailing health, he transferred the business to his son, Niska had every reason to be satisfied with his earlier decision. The groundwood pulp mill and the sawmill had turned out to be a growth business. That decision could very well have been quite different though, which was the case with his business friend Sven Nylander. A fervent believer in tar exporting, Nylander had continued the business until his company eventually slid into bankruptcy, plagued by the continuous financial woes of the tar export business. Just a few years before this, however, few would have believed such a turn of events to be possible. After all, the history of tar exporting had been so impressive and the business so successful, being perpetuated from one generation to the next.

Schumpeter and creative destruction

While the prologue may blend fact with fiction in places, it does highlight certain key features of a period in history which could be called 'creative destruction'. The concept of creative destruction was used by **Joseph Schumpeter** in his book 'Capitalism, Socialism and Democracy', published in 1942. It refers to the process of transformation in which an established economic structure is destroyed by the emergence of a new, improved structure. This is a continuous evolutionary process that serves to maintain the vitality of capitalism. Instead of focusing on price competition in the market, it highlights the importance of new products

and technologies, new combinations of production inputs and the organisation of production.

The Finnish forest sector appears to be currently undergoing yet another 'creative destruction' process, perhaps even the most powerful since the late 19th century. As before, the process does not concern Finland alone. Similar developments are under way in Sweden and North America, largely for the same reasons. This conclusion is based on an examination of forest sector statistics and indicators covering the present decade, and on consideration of these in the context of changes occurring in global markets and certain technological and political developments.

It is important to note that the process of creative destruction discussed here concerns Finland's forest industry in particular, and not necessarily the entire Finnish forest sector. There are also clear differences between the different branches of the industry.

Importance of forest industry to Finnish economy

As recently as 1990, the forest industry accounted for well over a third of the total value of Finnish exports, and the industry employed 102,000 people directly. The corresponding figures today are less than half of these, as shown in the table below.

Table: Forest Industry in Finnish Economy, 1998 and 2008

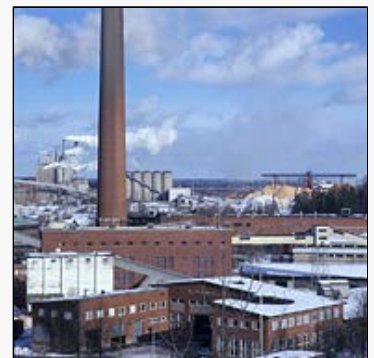
	1998	2008
Gross value of forest industry production (real, EUR bn.)	22.522	20.398
<i>Percentage of gross value of all industries</i>	<i>21.1</i>	<i>14.3</i>
Value of forest industry exports (real, EUR bn.)	14.241	11.388
<i>Value of forest industry exports as percentage of the total value of all Finnish exports</i>	<i>29.3</i>	<i>17.4</i>
Forest industry's value added as percentage of gross value added in the GDP	5.6	2.9
Forest industry employment (personnel employed)	65,872	50,391
<i>As percentage of total industrial employment</i>	<i>15.1</i>	<i>12.1</i>
<i>As percentage of total employment</i>	<i>3</i>	<i>2</i>
<i>In production of pulp, paper and paper products</i>	<i>38,227</i>	<i>24,919</i>
<i>In production of sawnwood and wood products</i>	<i>27,645</i>	<i>25,472</i>

Data source: Statistics Finland. The 2008 figures are preliminary data. The real values in the table were obtained by adjusting the nominal values using the wholesale price index

The figures indicate that the real value of the forest industry's production and its exports have declined over the past decade. Even more significant than this, however, are the proportional changes. For example, the forest industry currently accounts for only about one sixth of the total value of Finnish exports and less than three per cent of the value added in the gross domestic product GDP. It accounts for just 12 per cent of all industrial jobs, and only two per cent of total employment. The pace of change has indeed been rapid.

The forest industry's export figures also reveal another significant development: while pulp and paper industry production grew by three per cent between 1998 and 2008, its real value shrank by more than one fifth. This is because of the real prices of paper and paperboard products have fallen: in 2008 they were down by about a quarter on their 1998 levels. The figures highlight the importance of focusing attention on the value of products instead of their quantities. Sawnwood, however, has not undergone a corresponding structural change, which shows that developments in different branches of the industry can differ considerably.

The number of jobs lost in the Finnish forest industry in the present decade is running at 15,481, i.e. almost the population of towns the size of Kuusamo or Uusikaupunki. But here, too, the picture varies from one section of the industry to another. A majority of the job cuts, 13,308, have taken place in the pulp and paper industry. Ten years ago the pulp and paper industry was a considerably bigger employer than the wood products industry, but the roles have since reversed. In reality, however, the workforce required by the pulp and paper industry has not declined as drastically as would appear, because a proportion of the jobs have been outsourced and are now recorded under other lines of business. In the wood products industry though, jobs in value added processing – specifically in joinery product manufacturing – have increased, by more than 1,700. On the other hand, 4,000 jobs have been lost in the sawmilling and plywood industries.

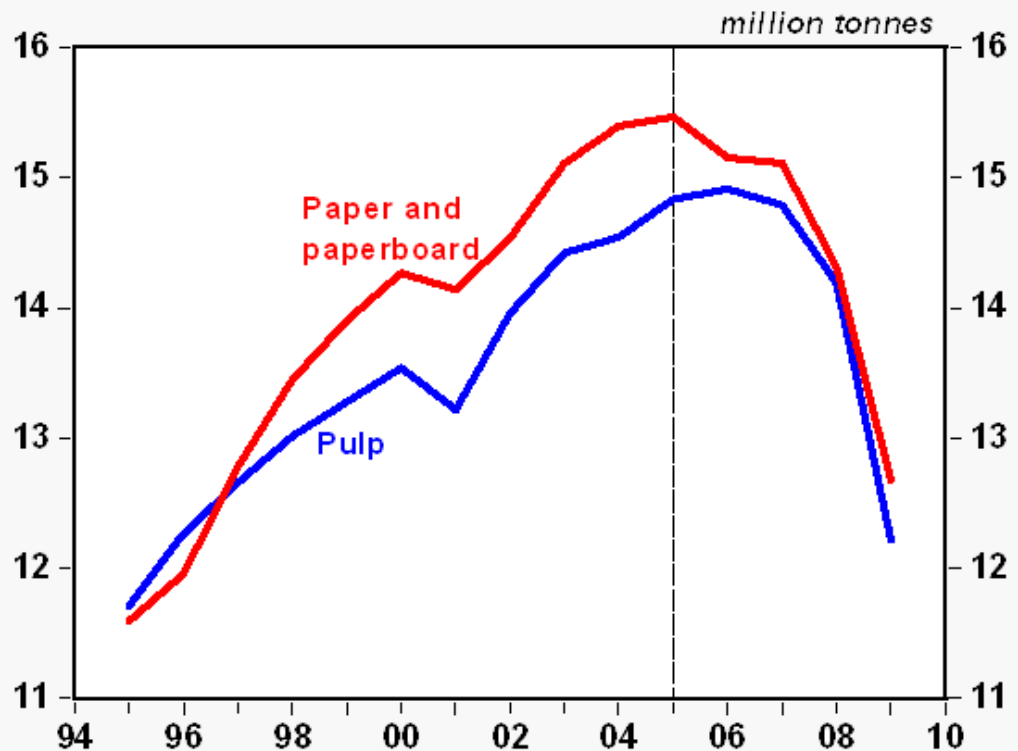


Three factors in particular have been driving the changes in the forest industry. Firstly, the structure of the Finnish

economy has become more diverse due to the rise of other industries such as electronics and services. This has reduced the relative importance of the forest industry. Secondly, increasing globalisation in the present decade has spawned new forest industry production in countries where production costs are lower, thereby increasing competition. As a result, the structural weaknesses inherent to production in Finland have become more apparent.

The third, and equally important, reason behind the changes is the development of new technologies, as was the case when iron-hulled ships replaced those made of wood. Now, owing to the advances in electronic communication technology, print media are being displaced. This is reflected in the demand and prices for communication (graphics) papers, which are the most important paper products for Finland. Contrary to what some still suggest, this concerns not simply the demand for newsprint in the United States but also increasingly – as borne out by the statistics and analyses – all graphics papers, and Western European markets, too.

Graph: Finnish Pulp and Paper Industry Capacity, 1995–2009:I



Graph: Hetemäki, METLA; Capacity estimates: Pöyry 1995–2008:1; Hetemäki 2008–2009:1

Due to the above factors, the relative competitiveness of Finnish-based production has deteriorated. Attempts have been made to improve competitiveness by, for example, shutting down capacity (see graph above).

The inescapable conclusion is that the forest industry's relative economic importance to the Finnish economy has diminished substantially over the past decade. Clearly, if the analysis were to include forestry and the forest industry related cluster, the role of the forest sector in the Finnish economy would appear much greater than that illustrated in the table. Here, however, these have been omitted from the figures, because this is important for the analysis of creative destruction. By this I mean the following.

New opportunities

Tar production created wealth not only for tar producers, but also for forest owners, forest workers, tar barrel makers and tar transporters, i.e. for the entire 'tar cluster'. When the need for tar subsided as a result of technological advances, parts of this cluster were also lost, such as the making of tar barrels. But for a substantial part of the cluster, the change did not close off all opportunities. Forest owners, those working in forests, and traders and merchants were now able to derive their livelihood, directly or indirectly, from new forest industry products. The economic structure built around tar was *destroyed*, but a whole new economy was *created* around forest industry products – a textbook example of Schumpeter's theory.

Similarly, the 'destruction' now evident in the paper industry will lead to the destruction of parts of the related cluster. But for many operating in today's forest industry cluster, new opportunities will become available in new forest-based energy and chemical products and services. This is why, from the point of view of creative destruction, it is important to distinguish those economic activities that can no longer exist in the new structure from those that can.



The paper industry will undoubtedly continue to have opportunities in Finland, and ten years from now it will still be a major sector in many locations around the country. But it will be distinctly smaller than it is now.

Finland's forest sector is currently undergoing a change in which the negative, or destructive, side of the creative destruction process is very evident, while the positive, creative side is, for the most part, just starting to sprout in the form of various new opportunities.

Forest biorefineries making products such as biodiesel in conjunction with integrated pulp-and-paper mills could become reality in just a few years. Wood-based energy production and chemical products in general appear to provide substantial opportunities for increasing production. Some of the new potential will be based on new technologies, while some will rely on novel combinations of production inputs. The former could include synthetic gasification plants and the latter replacing coal with wood in municipal power plants.

Important in this process, too, is that some parts of the wood processing industry will not face the same kind of technology-related structural *destruction* as that encountered by the paper industry. No such destruction is within sight in the packaging industry or the wood products industry. On the contrary, climate change, among other things, will probably boost the market for the latter. But even in these sectors, the strengths of goods produced in Finland will be in areas other than price competitiveness through low production costs. A key question here is whether the industry can find ways of improving the pricing power of its products by developing its business models and product-related services. To put it another way: how can the industry do an Ikea?

The creative destruction process in the Finnish forest sector may also lead to an economic structure in which the forests create wealth increasingly through services and to a decreasing extent through wood processing. Recent developments would suggest this. Even though some wood processing has been transferred outside Finland, the related R&D, design and service operations remain here in many cases.

Other prospects in services may include forest-related tourism and recreation services. The demand for these in Europe and Finland is expected to grow much faster than the demand for forest industry products in the industry's main markets. If a comparison similar to the one [in the table](#) were to be made of the importance of tourism and recreation services to the Finnish economy, the results would show that these sectors are clearly growing. Nevertheless, the economic impact would be clearly smaller than that of the forest industry. But even the forest industry had small beginnings.

Steering through creative destruction

In its early stages, creative destruction presents considerable challenges for all concerned. The forest industry is having to contemplate how best to get through the transition. Forest owners are unsure about the future, and they do not have the opportunity to relocate their operations (forests) to other countries. Politicians and civil servants are faced with formulating decisions in an environment of great uncertainty. How can the forest sector successfully steer through creative destruction under these circumstances? What would [Schumpeter](#) do?

His idea of creative destruction being inherent to the very essence of capitalism would naturally lead to a policy discouraging government involvement. But Schumpeter's thinking was not as black and white as that. In his book he did support government measures to secure the return on investments, even though he was doubtful about the government's ability to successfully hold the reins of the national economy. If we were able to consult Schumpeter on the current state of the Finnish forest sector, it would be easy to envisage him asking the question: How can the industry's current production be supported in a way that would not hinder or hamper the inevitable transition, which also needs to be supported? This is likely to be one of the questions that the government is currently grappling with.

Another key characteristic of creative destruction is that there are both winners and losers. Given this, policies should seek to prevent and mitigate the harmful effects (e.g. by subsidising re-employment and providing start-up aid for new businesses), and at the same time accelerate the creation of new business (by supporting new growth industries that entail above-average risks). But it is unlikely that policies can change the direction of development, though they could perhaps slow the pace of change.

So far, the forest-related and industrial policies appear to have focused more on slowing change rather than creating new areas of business. Considerably more resources have been targeted at



roundwood supply measures and transport infrastructure issues than those supporting new business models, services and demand factors. Moreover, policy-making has not yet focused enough on forest sector diversification, even though this has been declared important.

This is understandable in part, as the harmful effects of *destruction* in the forest sector are plain to see. Reducing the impact of the current economic recession is clearly important, but it is equally important to enhance the future opportunities. Here, the problem is that facilitating renewal usually requires long-term measures whose impact can only be seen after many years. For politicians, the long-term may be too long. The return on the political capital involved would not be evident by the time of the next parliamentary elections in 2011.

This being the case, it is especially important that there will be found to undertake measures supporting renewal and transition. There needs to be a readiness to make even radical changes to already agreed programmes and strategies if the medication they seek to provide is based on an outdated diagnosis. To do this requires extraordinary firmness and courage from politicians and civil servants. It would be much easier to continue on a business-as-usual basis and not to have to encounter strong opposition from the different interest groups in the forest sector. Resistance is something inevitably faced with reforms.

Epilogue

“Re-examining historical processes that appear seemingly irrelevant can in fact prove useful for human activities that look to the future,” writes historian [Markku Kuisma](#) in his history of the Finnish forest industry (Kuisma 1993 ,p. 22). The initial development of the Finnish forest industry in the 1860s and the well-documented history of creative destruction exhibit many features of relevance to today’s situation in the forest sector. This is why they can help us examine the ongoing structural transition in the forest sector from a new perspective. They help to analyse the transition as part of a more general and recurring economic development. Structural change has happened before, and it will happen again. They also infuse faith and optimism in us, for troubled times have always generated new vitality and a better tomorrow!

Joseph Schumpeter (1883–1950) was an Austrian-born economist who in his later years moved to the United States. He was a professor in Austria, held a chair at a German university and taught at Harvard in the United States. He also served briefly as Austrian Minister of Finance and as President of the Vienna-based Biedermann Bank. He wrote about the process of creative destruction in ‘Capitalism, Socialism and Democracy’ (New York: Harper, 1942).

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