Forestland ownership changes in the United States and Sweden

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ABSTRACT

This article examines the changing structure and ownership of the forest products industry in North America and the Nordic countries. The authors explore company-specific perspectives on why some private forest products companies divest themselves of timberland ownership and others do not. The focus is on the United States, where the forest products industry has divested itself of substantial amounts of timberland, and on Sweden, where divestitures have been smaller. In both the United States and Sweden, forest products industries are large and forestland ownership has traditionally been an important component of the portfolio of an integrated forest products firm. The analysis presented here is based in part on literature about the vertical integration of markets.

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1. Introduction

As early as the mid-1800s, industrial wood processors in the United States began to accumulate timberland to secure a fiber resource for lumber, panels, pulp, paper, and paperboard. Typically, only about one-third of fiber for pulp, paper, and paperboard manufacture came from privately owned timberland. Lumber-panel facilities were more integrated with timber resources, especially in the western states. Wood raw material costs relative to product costs were typically high for lumber and lower for pulp and paper (Kirk, 2001).

Forestland ownership has been an important feature in the forest products industry, accompanied by recurring questions such as the following: What size forest is appropriate for supplying wood to a mill? What is the optimal amount of wood feedstock that a mill must control and how much can it obtain from less certain suppliers? Although the answers to these questions have varied in place and time, they were generally thought to depend on the reliability of wood resources that are not owned by a mill. The greater the unreliability, the more of its wood supply the mill needs to control. In recent years the forest products industry has seen major changes in ownership, with the industry undertaking a sweeping divestiture of its timberlands. These changes, though most dramatic in the United States, are also occurring elsewhere, particularly in Sweden.

2. Overview of forestland ownership types

The Nordic and North American countries under consideration in this article essentially operate under capitalist systems, in which private property is an important type of ownership. Forest ownership in these countries, however, takes a variety of forms. For example, most Canadian forestlands—particularly in the western part of the country—are “crown lands” that are controlled by the provinces, with access commonly given to private managers on a concession basis. But substantial areas of Canadian forestlands are still owned by local governments or private entities.

Ownership is mixed in the United States. About 58% of U.S. forestlands are nonindustrial private forests (NIPFs), private forest ownerships that do not have wood processing facilities. In addition, the federal government owns a large portion of U.S. forestlands, and state and local governments own some small areas. The U.S. forest products industry once owned fairly large areas of forest but now holds a declining portion as a result of recent divestitures of forestland to private investment vehicles such as Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs) (Harris et al., 2011).

TIMOs are partnerships of institutional investors that buy, manage, and sell forest and timber on behalf of various institutional investors (e.g., insurance companies, pension funds, endowments, and foundations) for returns on timberland (Block and Sample, 2001; Wilent, 2004). A REIT is a tax designation for a corporation investing in real estate that reduces or eliminates corporate income taxes (http://www.investopedia.com/terms/r/reit.asp 2011).

REITs buy, manage, and sell real estate or related assets (e.g., mortgages) on behalf of private investors (Zinkhan, 1993). Various distinctions between TIMOs and REITs are brought to light in this article, but
one difference worth noting at the outset is that TIMOs do not actually own forestland; instead, it is owned by the individual investors represented by the TIMOs. REITs, however, do own forestlands directly.

Ownership is mixed in the Nordic countries as well, where forestlands are owned primarily by small private companies and larger industrial entities. The proportion of institutional ownership is somewhat higher in Sweden than in the other Nordic countries (Lönnstedt, 2001).

Traditionally, most of these owners have supplied some industrial wood for processing, with industrial owners typically providing wood for their processing mills and nonindustrial private owners contributing to that flow through various local markets. In Canada, public entities supply wood directly to concession mills; in the United States, various industry mills obtain wood from public owners via market transfers.

3. Vertical integration in the forest products industry

Generally defined, a "vertical integration" strategy keeps all aspects of management, production, sales, and distribution within a business, making the company less vulnerable to outside forces. For the forest industry the term usually refers to firms that provide large portions of their wood needs from their own forests.

Andresson and Fredriksson (2000) stress that the basic driving force behind vertical integration is the desire to reduce transaction costs by replacing market pricing mechanisms with internal decisions. Especially if the market is characterized by a high degree of uncertainty and transaction-specific capital, ownership is often seen as the only way to protect a company against opportunistic behavior when the profit of the supply chain is being divided. Blair and Kaserman (1985) support this conclusion, arguing that a company has an incentive to vertically integrate between two stages of production if both stages are monopolized before integration, but not if they are competitive. If the stages are competitive, the market will be efficient and the price the upstream company would charge the downstream company for the input is the marginal cost.

Muhammad (2003) finds that, historically, firm size, market share, and the ratio of equity to sales are the principal factors contributing to the profitability (net income) of U.S. pulp and paper firms. Timberland ownership also influences the profitability of these firms. Net incomes, equity-to-sales ratios, mergers, firm sizes, and relative firm capacities are the most significant factors related to timberland ownership and management. Firms that own or manage timberlands have a significant advantage in terms of net income over those that do not.

Recent divestitures of timberland, however, suggest that these traditional relationships have changed. Although Sedjo and Bael (2007) argue that these changes result in opportunities for conservation and environmental amenities, this article does not examine this aspect. Until the 1980s corporate annual reports focused on the benefits of timberland ownership and the financial community viewed this ownership favorably. In the United States wood income was taxed at lower capital gains rates. Because of firm integration, however, the actual financial rewards from timberland ownership were not disclosed. To estimate income derived from wood harvests, then, analysts had to delve into corporate income taxes. Analysts in Europe regularly described timber as a "hidden asset."

Corporate reporting has advanced since the 1980s, and larger private companies now disclose income from timberlands. Timberland is no longer a hidden asset because the financial community now views the land as an asset that can be sold if shareholders will benefit. Timberland has unique properties as an asset, including relatively low risk and the potential for high returns.

Since January 1, 2005, public companies in Europe have been required to apply the International Financial Reporting Standard and the International Accounting Standard. This means that companies must disclose the market value of their timberland in their financial reports, and these changes will affect the profit they report (Kirk, 2001).

Although there are various company-specific reasons for some of the major timberland transactions, there are also some general key drivers for these divestitures. Because the financial performance of the forest products industry was weak during much of the 1990s (Lönnstedt, 2007a, 2007b, 2007c), companies looked for ways to improve profits. Many companies have started to move capital away from domestic timberlands into lower cost, higher productivity timberlands in other regions of the world. Companies are also making yield-enhancing investments in biotechnology research.

Both strategies would allow companies to produce more fiber on fewer acres. Furthermore, in the latter part of the twentieth century, strategic restructuring among forest products companies led many firms to focus more on manufacturing their core products and less on securing their wood supplies. The same time period also saw a substantial number of mergers and acquisitions around the world—in, for example, Canada, Finland, Japan, Sweden, and the United States—which has led to the “monetization” of nonstrategic assets (e.g., the sale of timberlands) to alleviate debt (Block and Sample, 2001). In this context, monetization means making sure that timberlands are fairly valued in financial markets.

In addition, in recent decades the North American forest products industry has not constructed any new greenfield pulp–paper mills and only a few new paper machines are planned. As a result, the industry is not required to assemble timberland basins to support new mills or add to timberland holdings to support major plant expansions. Also, at the beginning of the twenty-first century, recycled fiber accounted for about 40% of the total fiber used, compared with 25% at the beginning of the 1990s. Most of the recent growth in paper and paperboard production is based on recycled fiber, which is consistent with the projections that pulpwod demand has remained flat (Kirk, 2001).

For many companies in the U.S. forestland divestiture appears to be a strategy to separate itself from ownership of the resources, e.g., International Paper and Georgia Pacific. In the Nordics the strategy of other integrated companies appears to be to rationalize the combination of forest resources and processing facilities. Thus, a pulping or paper facility may be divested and replaced if a better fit can be found, either in country or offshore. Note, however, that Weyerhaeuser, a company that views its principal product as structural wood where the globalization hypothesis appears far less applicable than for pulp (Sedjo and Bael, 2007), nevertheless became a REIT in 2010.

4. The theoretical and empirical principles at work

Theoretically the boundary of a company is defined by balancing the costs for using the market solution (the transaction costs) with the costs for internal coordination in a vertically integrated corporate structure (Coase, 1937; Williamson, 1985; see also Richardson, 1972; Bjuggren, 1985; Perry, 1989;Wikström et al., 1994; Mintzberg et al., 1995). Transaction costs are defined as those incurred through running a company’s economic system (i.e., costs besides production costs). If the market is internalized, meaning that the company’s boundary is widened, other costs will arise, such as those for administration and nonoptimal resource allocation. Internal transaction costs tend to be dynamic in size and character. Although changes in economies of scale, possibilities for organizing geographically dispersed activities, and new management techniques will result in larger companies, these types of innovations will also influence the market solutions.

Transaction costs are related to the concepts of contact, contract, and control:
- costs for contacting (i.e., for finding information about possible products, sellers, and buyers)
- costs for contracting (i.e., for negotiating conditions and writing a contract)
– costs for controlling (i.e., for implementing, supervising, and enforcing the contract).

In a seminal work on the economic institutions of capitalism, Williamson (1985) theorized that the behavior of an individual is characterized by bounded rationality and opportunism (compare with Simon, 1961). From Williamson’s basis, it follows that transaction difficulties can be present in the exchange process. In an uncertain world it is impossible to forecast all possible outcomes of a decision, which means that uncertainty in ex ante expectations can be costly in ex post realities. This explains the existence of bounded rationality. Opportunism means that some people can take advantage of a situation at the expense of others. For example, limited distribution of information can result in the possibility of one party making excessive profits.

Ansoff (1965) defined the concept of synergy as the effect from combined production instead of from separate parts. In other words, the sum is bigger than the parts (i.e., $1 + 1 \geq 2$). The explanation is economies of scale in its widest interpretation. Ansoff distinguishes four types of synergies: selling, operative, investment, and management. Other types of synergies—such as financial and cartel—are also mentioned in the literature (Chatterjee, 1988). Synergies can have negative as well as positive effects.

Identifying the most efficient organizational form (inter- or intrafirm) is important for each specific transaction. According to Williamson (1985), three dimensions distinguish different types of transactions: transaction-specific capital (asset specificity); uncertainty about the future; and transaction frequency. The first dimension is the most important. Transaction-specific capital refers to lasting investments that have a specific use or user (i.e., the investment costs are “sunk” because no alternative use exists). A special concept, “quasi rents,” is related to transaction-specific capital. This term refers to the difference between the value of an asset at its best use compared with its value at its second best use. For assets with very specific purposes, such as pulp and paper mills, the second-best-use value can be close to salvage value. One consequence of asset specificity can be less competition in that other assets cannot be readily shifted into certain areas. In extreme cases one buyer and one seller can characterize the market situation. From the transaction–cost perspective this is important only when assuming bounded rationality, opportunism, and uncertainty (Williamson, 1985).

5. Brief review of existing empirical studies

Empirical studies on “vertical integration” (the hypothesis that return on total assets is associated with ownership or control of timberlands) are few e.g., Ohanian (1994) deals with the vertical integration between pulp and paper. Globerman and Schwindt (1986) present what they characterize as a test of the transaction–cost approach. They observe that (at that time) all but one of Canada’s largest forest products enterprises—in terms of sales—were integrated into the ownership of timber rights. This may, however, reflect the nature of the Canadian concession system. These investigators conclude that the transactional considerations, particularly asset specificity, are robust empirical determinants of governance structures.

Murray (1995) studied the effects of vertical integration for U.S. pulpwod markets. One of Murray’s conclusions was that pulpwod buyers benefit in a market where there are relatively few buyers and relatively more timber growers (compare with Dawson, 2003, on fisheries). Another reason for timberland ownership is to create some stability in the procurement divisions of pulp companies in light of natural supply shocks in pulpwod markets that result from weather and other random events. The penalty for a wood procurement shortfall can be substantial (e.g., temporary mill closure).

After studying three Mississippi-based lumber companies, Schmelzle and Flesher (2001) concluded that the main reason for backward integration was to gain better control over, and ensure a constant supply of, raw materials. It was only when the company purchased its own timberland that the problem of uncertain raw materials supplies is finally removed. Lönnstedt (2001) studied three large pulp and paper companies and three family-owned lumber companies in Sweden (discussed later in this article). The results show that company managers choose backward integration because they wish to influence pricing and secure deliveries.

Furthermore, the chief executive officers (CEOs) of lumber companies mention the information advantage of owning timberland. But this is not stressed by the CEOs of the pulp and paper companies. The same applies to control and coordination advantages. Lönnstedt (2001) raises the question of whether these advantages are marginal compared with the influence on pricing and secure deliveries. And in a hypothetical calculation for one of the bigger Swedish pulp and paper companies (Holmen AB, Stockholm), Eriksson and Kreij (2004) show that selling off part of the timberland ownership might improve the company’s rate of return. Subsequent to these studies, Stora Enso, another large forest products company, sold large portions of its domestic timberlands in Sweden.

Lönnstedt (2007a, 2007b, 2007c) analyzed determinants of profitability among 16 forest products companies based in the United States, and found that the backward vertical integration hypothesis does not hold. A statistical analysis indicates that the best model fit is found when asset utilization rate is used as the dependent variable. Another study of 13 Japanese pulp and paper companies indicates that large companies have weaker profitability than smaller companies (Lönnstedt and Nordvall, 2004).

Possible advantages and disadvantages for forest product companies with timberland ownership are summarized in the list that follows. Actual market conditions can turn these advantages into disadvantages and vice versa.

- **Advantages:**
  - reduced risk for price increase because of opportunistic behavior
  - knowledge about the cost structure
  - no contacting, contracting, and controlling costs
  - secured wood deliveries (to a certain extent)
  - reduced costs for planning and coordination of different operations
  - more accurate information available more quickly.

- **Disadvantages:**
  - management and operation costs
  - costs resulting from nonoptimal allocation of resources
  - increased sunk cost share
  - negative tax treatment in the United States.

6. Changes in U.S. forestland ownership

Today, four different forestland buyer categories can be distinguished: institutions, REITs, TIMOs, and vertically integrated forest products firms. The institutional owners of timberland are typically large public and private pension plans, foundations, endowment banks, and insurance companies. Institutional ownership is not usually via a simple direct fee, but rather through an interest or share in a fund, a partnership, a limited liability corporation, or an insurance company’s group annuity contract. Such institutions have large asset values and are considered good candidates for investing a small percentage of their portfolios in timber.

As explained in Section 1, institutions often hire TIMOs to buy, manage and sell timberlands on their behalf, and REITs are emerging tax-efficient vehicles through which to own timberland. In recent decades integrated forest products firms have made very few domestic forestland purchases in the United States. In Finland and Sweden only two major buyer categories exist: integrated forest products firms and NIPF owners (only in minor areas). TIMO and REIT holdings have spread across all commercial forest regions of the United States with the biggest concentrations occurring as pine plantations in the Southeast.
conifer plantations in the Pacific Northwest (west of the Cascades), and mixed softwood and hardwood stands in the Northeast (Block and Sample, 2001).

During the past two decades the holdings of the TIMOs and REITs grew from nothing to more than 25 million acres (10 million ha) in 2005—with the proportion of land being held by each being roughly equivalent to their relative investment levels (Mendell, 2006).

Of the roughly 10.1 million ha of forestland that integrated firms sold in the United States by 2005, TIMOs acquired an estimated 6.1 million ha; privately held forest products companies bought about 0.8 million ha; and conservation groups, other private owners, and government agencies purchased the remaining 4 million ha (Mendell, 2006).

The financial magnitude of the ownership shift has been substantial. As recently as 1985 the total investment in forestland and timber by TIMOs and REITs was less than $1 billion. By 2005, it had grown to exceed $25 billion, with TIMOs having invested approximately $15.0 billion and publicly traded REITs having invested $10.2 billion (Mendell, 2006). Whereas vertically integrated forest products companies (VIFPCs) held 57 million acres (23 million ha) of U.S. forestland in 1980, by 2005 their holdings had dropped to 21 million acres (8.5 million ha)—a reduction of roughly 60%.

The process of forestland conversion to TIMOs and REITs has continued through the end of the first decade of the century as more than 40 million acres of U.S. timberland have shifted ownership during that decade (Harris et al., 2011; Stein, 2010).

6.1. An overview of driving factors

Hickman (2007) points out that many vertically integrated forest products companies (VIFPCs) in the United States have chosen to (1) sell off all, or a large part, of their forestland holdings; or (2) restructure themselves so as to legally separate ownership and control of their forestland and timber from that of their manufacturing facilities. Where sales occurred, TIMOs now hold much of the land. Other buyers have included government agencies, privately held (i.e., family-owned) forest products companies, and various conservation organizations like the Nature Conservancy and the Conservation Fund.

Hickman identifies a number of financial factors, including accounting and taxing conventions, as key motives for the elected sell-off of some or all of the integrated firms’ forestlands in the United States. These factors are discussed in the list that follows:

- Relatively weak financial performance and the need to improve returns to stockholders. From 1995 to 2005, stockholder returns averaged +6.2% for the Forestry and Paper Group as compared to +12.1% for the S&P 500, and +13.1% for the Dow Jones Industrial. To ensure continued flow of investment capital into the industry, it was essential that stockholder returns be increased. The sale of timber holdings has been seen as a means to this end.

- Generally accepted accounting principles (GAAPs). Related to the preceding factor, GAAPs for subchapter C corporations preclude such entities from recognizing any appreciation in the value of the timberland assets they hold. As these corporations compute their returns on their investments, only the profit realized from harvesting and processing trees can be considered. This treatment contrasts with the conventions that apply to subchapter S and limited liability corporations and to TIMOs and REITs.

- Rising forestland values. Related to both of the preceding factors, forestland values have been rising throughout much of the United States in response to what has been characterized as “the grand tidal wave of sprawl now sweeping over the nation” (Irland, 2005). As forestland values rose, so did the value of what was arguably the primary asset held by integrated firms. GAAPs prevented these companies from recognizing this appreciation in value in their formal accounting. GAAPs, however, did not stop these firms from “cashing in” through the sale of some of their lands, especially tracts with good access, proximity to urban areas, water frontage, scenic value, or outdoor recreation potential.

- Response to consolidations made to enhance international competitiveness that also increased debt burdens. Over the last 10 to 15 years, the integrated firms in the United States have faced increasing competitive pressure from low-cost timber suppliers and forest products manufacturers in other parts of the world. In response, a way to reduce corporate debt has been through substantial consolidation that included the sale of domestic timber holdings.

- Federal income tax policies. Federal income tax policies also appear to have encouraged many U.S. forest products companies to divest themselves of their timber holdings. Of greatest importance is the fact that the traditional integrated forest products firms are classified as subchapter C corporations for income tax purposes. For this type of entity, any profits obtained from the sale of timber are taxed twice—once at the corporate level (35%) and once at the stockholder level when dividends are disbursed (15%). The practical effect of this tax policy is that investors in integrated firms that own both manufacturing plants and forestland often recoup as little as 50 cents out of every dollar of profit made from cutting trees. Investors who own only forestland, on the other hand, can normally pocket at least 85 cents out of every dollar. Note that before passage of the Tax Reform Act of 1986, the effect of the double tax on subchapter C corporations was greatly moderated by the fact that such entities paid a significantly lower tax rate on capital gains income, which ordinarily included any income received from the harvesting of timber. The elimination of this rate differential in combination with the double tax has created a heavy burden on the subchapter C corporations. To date, efforts to restore a rate differential for capital gains income have proven unsuccessful.

In addition, Hickman identifies motives and factors influencing the efficacy of TIMOs as a vehicle for increased forestland investments, discussed in the following list.

- Passage of the Employee Retirement Income Security Act (ERISA) of 1974. This federal law, and similar pieces of state legislation, encouraged institutional investors—such as pension fund managers—to seek increased returns by diversifying their investment portfolios to include more than just fixed-income securities like government and corporate bonds. Collectively these statutes opened the door for institutional investment in timberlands.

- Increased recognition of the advantages of stand-alone timberland investments. Experience suggests that investments in timberland offer the following advantages for the patient investor:
  - Favorable returns. Over time, investments in timberland—considering both income generated and appreciation in value—have compared favorably to other investment options. To illustrate, from 1987 to 1999 (when much of the shift in timberland ownership was occurring), total returns to timberland investments averaged +20.1% per year. Income generated accounted for +7.8% of this total and +12.3% resulted from appreciation in value. (Note that integrated firms that retain their forestlands cannot capture appreciation.)
  - Lower risks. Foresters tend to think of timberland investments as being fairly risky because of hazards such as wildfire, insects, and disease. To financial managers, though, who view timberland investments as one part of a diversified investment portfolio, they are generally seen as a way to reduce risk. Experience suggests that returns on timberland investments tend to run counter to the returns realized through many other types of investments.
  - Inflation protection. Experience also indicates that timberland investment returns are highly correlated with the rate of inflation, which makes such investments a good hedge against inflation.
Hickman also identifies key motives and factors influencing those forest products firms that restructured to form timber REITs:

- Passage of the Real Estate Investment Trust Simplification Act (REITSA) of 1997. This legislation removed a provision of previous law known as the "Thirty Percent Gross Income Test." The provision had effectively precluded integrated forest products firms from forming timber REITs because it required the firms that desired REIT designation to forgo any timber harvesting for 4 years. REITSA also allowed large institutional investors such as pension funds to hold shares in a REIT. This statutory change had the effect of increasing the liquidity of timberland investments for those REITs that are open to public trading. (Four publicly traded timber REITs currently exist: Plum Creek Timber Company, Inc.; Rayonier Inc.; Longview Fibre Paper and Packaging, Inc.; and Potlatch Corporation.)

- More favorable tax treatment and enhanced after-tax investment returns. REITs are single-tax entities, meaning that the REITs themselves pay no income tax, only the shareholders. The single tax is normally computed at a rate of not more than 15%, compared to the 35% rate applicable to any income realized by subchapter C corporations. REITs did not always enjoy single-tax status; the Real Estate Investment Trust Act of 1960 authorized this benefit. The legislation’s goal was to encourage the creation of special-purpose companies that would make it possible for average Americans to invest in real estate. Previously, only wealthy individuals and corporations had been able to make real estate investments.

- Desire to ensure timberlands were fairly valued in financial markets. When an integrated forest product firm restructures to form a timber REIT, two changes take place that help to ensure its timberlands will henceforth be fairly valued in financial markets. First, GAAPs no longer preclude recognizing appreciation in value as part of return on investment. Second, allowing public trading enhances liquidity because a wide array of investors can now participate directly in "pure" timberland investments.

Note that most of the drivers Hickman identified are of recent vintage and relate to accounting procedures, tax treatment, or both. Hickman also mentions that there was a “rethinking of the long held belief that ownership of timberlands was essential to ensure future availability of an essential raw material at reasonable cost, particularly in regions where log markets were well developed and reliable” (page 4).

6.2. Additional analysis

Seneca Creek Associates (2005) offers another analysis of forces that are changing corporate timberland ownership. Seneca has identified several real factors, in addition to changing tax treatment, which have led to the divestiture of large blocks of corporate timberland and continue to contribute to a very dynamic timberland market. Seneca’s analysis is presented in the list that follows:

- Change in tax treatment of corporate capital gains. A major turning point in the way ownership of timber and timberland was viewed coincided with the enactment of the Tax Reform Act of 1986. This legislation dramatically changed the rules on how income from timber is treated by corporations for tax purposes.

- Undervaluation of timberland and timber assets. For much of the twentieth century, timber and timberland were relatively inexpensive. A fully integrated company could control a significant portion—or all—of its production stream from the stump to the finished product. Producers held timberland for a variety of strategic reasons, but one of the most important was that direct ownership formed a hedge against periods of tight supply. Because the wood business is cyclical, companies could access fiber from their own properties to avoid rising costs on the open market. By the middle of the 1980s, however, corporate managers began to take a different view of timberland ownership as they struggled with the fact that timber and timberland assets were not being adequately reflected in stock prices. Industry also needed to attract capital for modernizing manufacturing facilities, consolidating operations, and making new investments (sometimes overseas).

- The impact of intensive forest management. The application of science-based forest management has changed the way in which timber can be produced as a feedstock for the paper and wood industry. It has enabled much higher production of wood fiber on less land, meaning that fewer lands were needed to meet minimal requirements for mill supplies. As a result, many forest products companies began to focus their timber energies on fewer acres—those that grew the best timber and those closest to mills—and sold off the others.

- Attractive returns from stand-alone timberland and forest management. Recognition that attractive returns are also possible from directing capital into intensive forest management became more widespread. To attract investors into the sector, new investment vehicles were created, beginning at a gradual pace and then gaining momentum in the 1990s. Timber and the underlying real estate became a tradable asset similar to bonds, stocks, apartment buildings, or other kinds of real estate. Managers of pension funds also discovered that timber investing could be a relatively low-risk hedge against inflation and a new type of asset management company—the TIMO—emerged. Originally formed primarily to manage institutional investments in timberland, TIMOs later broadened their client base to include wealthy individual investors and other sources of capital.

- Economics of specialization. In a global economy, the more successful companies tend to specialize in one or a few markets or market niches. This has not been lost on the wood and paper business where a trend toward increased product specialization has been seen. In these cases, the return to investors or shareholders is enhanced by focusing all capital, technology, and human resources on timber growing. Another advantage of specialization is that financial analysts and investors can more easily understand the risks and potential returns of specialized entities.

- High carrying costs of land and forest management. According to Seneca Creek Associates (2005), the costs of maintaining land and complying with increasing complex land use regulation have escalated. High property taxes and regulatory burdens related to endangered species and water quality, for example, increase the risks of owning timberland. From a strategic perspective, some companies have determined that the open market offers adequate opportunity for procuring raw material without having to incur the ongoing and seemingly ever-rising costs associated with outright timberland ownership. The significant volume of wood fiber that is becoming available from intensively managed domestic and international plantations has weakened the rationale for directly controlling timberland to hedge against market fluctuations. Specifically, imports of low-cost, high-quality wood fiber from South America are changing the sourcing mix for some pulp companies.

In addition, with higher yields available on fewer acres and a growing demand for primary housing and second home development, a significant share of what were once isolated, generally low-value properties has gained attractiveness for other uses. As the suburban–rural fringe has widened the value of timberland as a real estate asset has also increased (and at a much faster rate than the value of timber). Divestitures of timberland have been driven by the reality that the highest and best use of many forested parcels (i.e., the highest return) is as a transferable or developable real estate asset.

6.3. International considerations

A potentially powerful factor consistent with the discussions to this point is the globalization of the forest products industry and the
movement of large integrated firms beyond their traditional forest holdings (Sedjo and Bael, 2007). In recent decades there has been increasing recognition that regions outside North America and Europe can have significant cost advantages in growing timber. As forestry shifts from harvesting existing stands to growing forests de novo, the advantages are found in generally superior biological growth and yield conditions together with low-cost land. These conditions are sometimes found in tropical and subtropical regions including portions of South America, Asia, and South Africa. As a result, large integrated multinational firms have moved substantial portions of their timber facilities to offshore locations. Most net increases in global timber production in recent decades have come from these emerging regions. These new sources of supply have raised questions about future prices and financial returns to Nordic and North America forestlands. In this context integrated firms could justify reduced holdings of forestlands in traditional regions.

6.4. Market availability

As wood markets become more perfectly functioning, one of the principal reasons for holding timberlands disappears. As discussed earlier, a guaranteed wood supply is critical because mill shutdowns are extremely costly. With well-functioning markets wood supply is ensured at reasonable (competitive market) prices. Under these conditions, the need to control timberlands to reduce risks and transaction costs gradually disappears, as does one of the major reasons for integrating.

6.5. Future timber markets

In the last 20 years, overall timber demand has increased only modestly. Greater recycling has driven down demand for virgin fiber for pulp and paper. The electronic revolution has also had an impact on paper demand. Demand for newspapers has declined in the United States, and other regions of the developed world may soon follow. Furthermore, more substitutes are being used for wood (e.g., steel struts in construction). Global demand for wood has been relatively flat and, despite some concerns of large consumption increases in China, rapid overall increases appear very unlikely. The prospects of a flat overall market for the timber feedstock could offer integrated firms incentives to reduce their holding in this asset.

The serious development of cellulosic biofuels, though, could inflate global demand for wood. The European Union (EU) and Sweden currently have ambitious goals for replacing fossil fuels with biofuels and biofuels (such as ethanol) produced from cellulosic feedstocks other than corn are being investigated in the United States.

6.6. Four U.S. case studies

Lönnstedt interviewed representatives of two major pulp and paper and two lumber companies based in the United States. Three of the companies are based in the Southeast and one operates in the Northwest. The subsections that follow summarize these interviews and details can be found in Lönnstedt (2007a), and an analysis of the information gathered is presented at the end of this section. While this is by no means a representative sample and the selections do nevertheless provide some useful insights of the behavior of specific large firms.

6.6.1. Lumber Company 1

This family-run business, established by the current owner’s father more than 50 years ago, produces lumber and owns about 28,000 ha of timberland. The company also owns chipping mills, the first of which was built about 30 years ago at a time of increased demand for chips. Company 1 has three subsidiaries—one for manufacturing, one for old timberland, and one for new timberland. It is organized in this way to minimize taxes. The company is well known in the region and has no difficulties in borrowing money.

During its first three decades the company did not own any timberland. Since acquiring its first timberland at the end of the 1960s, the company has purchased an average of about 450 ha per year. The owner said that “We could not afford to buy more.”

In 2000 Company 1 owned about 14,200 ha of timberland. In 2002 the company was able to double its timberland holdings, buying another 14,200 ha from a pulp and paper company (as chipping mills became more common, supply increased and the pulp mills no longer needed to own timberland). If any of the big pulp and paper companies were interested in acquiring timberland, however, Company 1 would not be able to compete.

The company now meets slightly more than one-third of its demand for sawn timber from its own timberland. Nonindustrial private owners are the company’s major external suppliers, and about one-third of the company’s external deliveries originate from industrial timberland owners.

The influence of Company 1 on the market is marginal. The capital costs or alternative use of capital invested in timberland is not a major concern for the owner. Publicly held companies—including most pulp and paper concerns—might sell off their timberland based on economic analyses from financial institutions and pressures from stockholders. But because Company 1 is privately held, it does not have to report profits each year, allowing the owner to take a long-term view. The owner is convinced that investments in timberland are financially profitable in the long run. He also expects the prices of wood to increase. Finally, he mentioned that he acquired the latest parcel of timberland to prevent another firm from becoming a major holder in the neighborhood.

6.6.2. Lumber company 2

This company in the southeastern United States is a subsidiary of another company. The holding company has its roots in the 1930s and 1940s when several families joined together to build a sawmill and launch a lumber business. At the beginning of the twenty-first century, the company was reorganized to more effectively manage its four different businesses. Today Company 2 runs three sawmills and a finger-joint stud plant as stand-alone entities.

The company does not own timberland, although company officials acknowledge that procurement would be much easier with owned timberland. But investing in timberland requires significant capital, and the owners choose to invest that capital in lumber production and other businesses in which they believe they do well. In addition, the company has no experience with forest management.

Because the saw log market in the Southeast is robust, the lumber division has no problem receiving the necessary deliveries. The company builds up the inventory in fall and uses water to increase storage time. Although timber prices might be somewhat lower with owned timberland, company managers do not believe this would outweigh the higher capital and staff costs.

6.6.3. Pulp and paper Company A

This company was founded about 75 years ago as a wholesaler of hardwood lumber. Having grown substantially through expansion and acquisitions, the company is now one of the world’s leading manufacturers and marketers of tissue, packaging, paper, building products, and related chemicals. Company A employs about 50,000 people at more than 300 locations in North America and Europe. Net sales in 2003 were almost $20 billion.

More than 75% of the company’s wood-using facilities are in the south and south central United States. These facilities manufacture plywood, oriented strand board, laminated veneer lumber, softwood and hardwood lumber, pulp and paper, particleboard, medium-density fiberboard (MDF), and several other specialty panel products. The company’s wood and fiber procurement group supplies timber and wood fiber to more than 80 manufacturing operations.
In 1990 Company A merged with another pulp and paper company, acquiring different types of production facilities, additional distribution centers, and a substantial area of timberland. After the merger the company held 3.6 million ha of timberland. Note that at that time, forestland management was a separate operation managed by forestry specialists.

At the end of the twentieth century, a separate operating group was created with its own common stock, allowing the performance and value of the company’s timber business to be tracked. This can be seen as the first transition step away from a traditional forest company. The formation of this special timber company made between $600 and $700 million available for debt repayment. In subsequent years, the timber company completed its strategic sale of timberlands in parts of North America—divesting itself of all its timberland—and merged with a real estate company, creating a tax-efficient REIT.

This company sold its timberland for economic reasons. The market was somewhat depressed at the time, with more infrequent highs and deeper lows. In addition, the company’s financial division had questioned the economic benefits of forestland ownership for some time. After a thorough study and discussion, company executives decided that even if risk aspects were included, reliance on externally held timber was preferred from an economic perspective. The favorable tax treatment gained by forming a REIT was important for this conclusion.

One consequence of the spin-off was that the market-expressed value of the company’s shares did not decrease while that of the former subsidiary increased substantially. The result was a $3 to $4 billion increase in value. The variability of the stock, however, also increased.

The company that merged the former timber subsidiary supplies 10% to 15% of the company’s pulpwood consumption. In three of four U.S. regions the company has long-term supply agreements. In the Southeast where the roundwood market is functioning, however, fiber availability for the company is good even with limited access to timberland. Furthermore, company managers claim that improved procurement has offset increased open market dependence.

6.6.4. Pulp and paper Company B

This company is also an international forest products company with annual sales of about $20 billion. Company B was founded more than 100 years ago with a singular focus—timberlands. The company’s name is the same as that of the founding family, which still owns a substantial number of shares even though the major holders are all institutional and mutual funds.

Company B currently employs about 50,000 people in many different countries. The company is principally engaged in growing and harvesting timber, and in manufacturing, distributing, and selling forest products. Real estate construction, development, and related activities are another company business line. The following business groupings are distinguished: building products; pulp, paper, and packaging; timberlands; real estate; and transportation.

The company is among the world’s largest private owners of merchantable softwood timber and manages millions of acres of privately and publicly owned forests in North America. In the United States, the company manages almost 2.4 million ha of company-owned and leased commercial forestland in 10 states. Much of the timberland has a low book value.

The company describes itself as a “timberland owner company,” meaning that the primary interest is profit from and value of timberland. Company representatives view their management of timberland as a strategic advantage, and point out that they take advantage of the supply chain all the way back to its genesis. The timberland strategy focuses on solid wood, not pulp, although fiber for pulp is a by-product. The company plans for unique mills to take advantage of unique timberland assets. A large R&D component focuses not only on capacity but also on finding unique, premium markets.

The company sells logs internally and externally. Transfer prices within the company reflect timberlands as a separate profit center, thereby sending correct economic signals internally and externally. The firm’s experience suggests that 20% to 30% of its wood supply needs to be obtained from very reliable supplies, including its own lands.

The saw log market of the northwestern United States is dominated by few and large timberland owners with Nonindustrial Private Forest Owners holding only about 20% of the timberland. Because environmental protection is the main purpose for federal ownership of timberland today, the Pacific Northwest Region favors firm timberland ownership, which ensures wood availability. Another way of influencing the price formation is to export offshore, particularly to Asia. Company representatives stress that allowing other pulp and paper companies to dominate the roundwood market is not in their firm’s best interest, as this could be harmful for the availability of timber (as opposed to pulp) resources. They went on to note, however, that engineered products could reduce the specific asset value of timberland in the future.

6.6.5. Analysis of the four U.S. case studies

Securing wood deliveries is one important reason for owning timberland. The land can be viewed as insurance should people withdraw their timber. Certainly, if market prices go up, a company has the alternative to cut its own timber. Timberland ownership in itself can be profitable in the long run because the prices of land increase even in the face of declining commodity prices. Timberland has been recognized as a tremendous investment, even though it can vary in the short run.

Lönnstedt interviews reveal differences in attitudes among companies. Some companies find some transactional advantages in forest ownership while others believe that these advantages are outweighed by the advantages of drawing on existing markets for their wood supply. The general trend, however, is toward reducing domestic forestland ownership, and, indeed, many companies are divesting entirely of their forest holdings. In addition to transactional considerations, the tax treatment of wood obtained from integrated forestland holdings appear to be an important consideration in a divestiture decision for some formerly vertically integrated firms (Fig. 1).

6.7. Perspectives on changing U.S. ownership patterns

As noted, the structure of the U.S. forest industry has begun to change markedly in recent years, with a trend toward large vertically integrated firms divesting themselves of domestic forests. According to one estimate based on Security and Exchange Commission filings (Seneca Creek Associates, 2005), the corporate sector as a whole divested itself of close to 12.1 million ha in 25 years (ending in 2005). Today, TIMOs are estimated to hold about 4 million ha of timberland in the United States—more than any of the multinational forest products companies.

The reasons for the changes in private forestland ownership that have occurred in the United States can be viewed from at least three different perspectives: (1) that of the former integrated firm that elected to sell off all or part of its forestland holdings; (2) that of the TIMOs and the institutional investors they represent; and (3) that of the former integrated firm that elected to restructure and create timber REITs.

6.8. Summary and conclusions for the United States

Not only are integrated firms in the United States divesting all or part of their timberland holdings, but many firms are reducing their degree of integration by essentially totally eliminating their timberland holdings (e.g., International Paper). Other firms have moved into timberland specialization by restructuring or dropping their processing facilities and becoming REITs (e.g., Plum Creek). These changes are undoubtedly driven by the host of considerations discussed in this section, including accounting procedures, tax treatments, real changes in the potential supply and cost of timber, new
southern Sweden is insignificant. In essence, Stora Enso, one of the world’s largest forest products firms, divested itself of substantial forest assets in Sweden, Finland, and Canada while using the proceeds generated to expand its ownership elsewhere. The company did, however, maintain substantial partial ownership in forestland assets in the Nordic regions through ownership interests in related companies.

For other Nordic integrated companies the strategy appears to be to rationalize the combination of forest resources and processing facilities. A pulpizing or paper facility might be divested and replaced if a better fit can be found, either in-country or offshore. An example is SCA’s use of only Nordic long fiber in a mill together with exclusive use of imported Brazilian short-fiber pulp.

8. Summary and conclusions

It is clear that substantial divestiture of timberlands from integrated forest products companies is occurring in the U.S. and to a lesser extent in the Nordic countries, or at least Sweden. Vertical disintegration is occurring in the U.S. as TIMOs and REITs assume ownership of U.S. forest lands. The drivers for forest land divesture appear to include improved financial worth. Note, however, that the International Accounting Standards that took effect on January 1, 2007, now require EU companies to value biological resources on the balance sheet at market values.

7.2. Summary and conclusions for the Nordic countries

In essence, Stora Enso, one of the world’s largest forest products companies, have kept their forestland, a major exception is Stora Enso, a giant global forest products company, which has made substantial forestland divestitures in the temperate world and acquisitions elsewhere. For example, in July 2002 Stora Enso transferred its forest assets in Finland—approximately 600,000 ha of forestland—into an established subsidiary, Tornator Oy. Through a rather complex chain of transactions, the Tornator Group was formed. Stora Enso subsequently sold the majority of the equity component in the Tornator Group to a group of Finnish institutional investors consisting of insurance companies and pension funds, and retained a nonmajority interest of approximately 40% in Tornator Timberland Oy. The arrangement also involved a ten-year wood procurement agreement between Stora Enso and Tornator Oy, an arrangement similar to that in the U.S. between some newly formed TIMOs and the wood processors. Stora Enso also sold off 146,000 ha of forestland in Ontario, Canada.

Subsequently, Stora Enso and Korsnäs, a forestland holding company, established and sold its Swedish forestland to Bergvik Skog, a company that owns and manages forestland as its only business line. Bergvik’s entire annual harvesting volume is sold in the form of long-term timber-harvesting supply contracts to Stora Enso and its partner. A total of approximately 1.9 million ha of productive forestland (about 8% of Sweden’s total productive forestland) was acquired, most from Stora Enso, making Bergvik Sweden’s second-largest forest owner in terms of annual harvest volume. The acquisition also included approximately 0.4 million ha of other land, three tree nurseries, and a large number of buildings. With the investment in the associated company Bergvik Skog AB and as a result of its reduction in its interest-bearing net liabilities, as well as higher income from Bergvik, Stora Enso’s enterprise value increased. The proceeds of the timberland sales and transfers have been used to develop Stora Enso’s core business areas, mainly outside Europe and North America, including substantial assets in South America and Asia.

The divestitures taking place in Sweden, where integrated corporations have decreased their ownership of the forestland, cannot be attributed to the Nordic tax structure. Unlike the tax code in the United States, the Swedish tax system does not penalize integration. The driving forces, then, are at least partially different. Nevertheless, a common complaint in both regions has been that the financial markets do not properly assess the value of the forestlands when assessing a company’s financial worth. Note, however, that the International Accounting Standards took effect on January 1, 2007, now require EU companies to value biological resources on the balance sheet at market values.

7.2. Summary and conclusions for the Nordic countries

In essence, Stora Enso, one of the world’s largest forest products firms, divested itself of substantial forest assets in Sweden, Finland, and Canada while using the proceeds generated to expand its ownership elsewhere. The company did, however, maintain substantial partial ownership in forestland assets in the Nordic regions through ownership interests in related companies.

For other Nordic integrated companies the strategy appears to be to rationalize the combination of forest resources and processing facilities. A pulpizing or paper facility might be divested and replaced if a better fit can be found, either in-country or offshore. An example is SCA’s use of only Nordic long fiber in a mill together with exclusive use of imported Brazilian short-fiber pulp.

8. Summary and conclusions

It is clear that substantial divestiture of timberlands from integrated forest products companies is occurring in the U.S. and to a lesser extent in the Nordic countries, or at least Sweden. Vertical disintegration is occurring in the U.S. as TIMOs and REITs assume ownership of U.S. forest lands. The drivers for forest land divesture appear to include improved wood markets, which diminish risk, and importantly changes in
accounting and tax treatment, which tend to favor TIMO and REIT organ-
ization forms over the corporation form associated with integrated wood production and processing. In the Nordic countries timberlands are also being divested, particularly by the giant Sora Enso, and forest sector investments are increasingly being made offshore. The rationale appears to be a general reallocation of assets to regions believed to be capable of generating higher returns.

Interviews with firms in both the U.S. and Sweden about advantages and disadvantages of forest ownership indicate that, in addition to taxes and accounting which are relevant for U.S. firms, reasons for forest owner-
ship are importantly the desire to influence pricing and secure deliveries.
However, real factors that are having an influence on ownership, including increased more efficient wood markets, forest productivity, which necessitates less land for a given timber requirement, and dimmed expectations regarding future timber demand, suggest reduced advantages to forest ownership. In the Williamson and Coase tradition, more efficient timber markets in most of the U.S. suggest reduced costs of market transactions and thus, a decreased incentive for the integrations of the timber feedstock. Increased forest productivity suggests less land required for control while dimmed expectations regarding future timber demand reduce the probability of tight markets that make obtaining adequate wood supply difficult and involving high transac-
tions costs.

With no compelling tax rationale, changes in Sweden appear to be influenced by the desire to diversify offshore and obtain access to low cost timber resources grown in areas with more favorable climates. The interviews revealed some differences in motivation between the forest
land divestitures in North America and Sweden. Perhaps the quintessential example of the application of the globalization hypothesis is one where temperate forestlands are divested even as lands in more productive re-
gions, e.g., the subtropics, are acquired. Behavior of this type seems to be followed primarily by Stora-Enso. One can view Stora-Enso behavior as that of partial divestiture of lands in the Nordic region while adding to its forestland holdings in fast-growing tropical regions such as South America. Some U.S. companies, e.g., Weyerhaeuser Company, appear to have a similar strategy of acquiring forestlands in fast-growing regions while simultaneously changing their mode of ownership of timberlands.

It is clear that integrated forest products companies in the United States are divesting substantial amounts of timberlands, and that this trend is occurring to a lesser extent in the Nordic countries, particularly in Sweden. As TIMOs and REITs assume ownership of transferred forestlands, U.S. forest products companies are undergoing vertical disintegration. The drivers for forestland divestiture appear to include improved wood markets, which diminish risk, and changes in accounting practices and tax treatments, which tend to favor TIMOs and REITs. In the Nordic countries timberlands are also being divested, particularly by the giant Stora Enso, and forest sector investments are increasingly being made offshore. The rationale appears to be a general reallocation of assets to regions believed to be capable of generating higher returns.

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