A Survey of Timberland Investment Management Organizations Forestland Management in the South

by

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Abstract

The assets of Timberland Investment Management Organizations (TIMOS) have rapidly grown over the past two decades, indicating their increasing importance for timber supply in the South. A TIMOS survey was conducted to assess their current and future investments and forest management approaches. The results indicate that TIMOS currently hold about 4.2 million acres of forestland in the region. Planted pine dominates their holdings, accounting for 69% of the land. Its share is expected to increase, primarily as a result of forest conversion and/or future land transactions. Over time, planted pine management intensities are predicted to increase substantially. Natural pine, oak-pine, and hardwood forests are managed much less intensively. The survey's results also indicate that TIMOS forest management is similar to the forest industry (FI). TIMOS have impressive growth plans and intend to increase their holdings to 12.2 million acres by 2010. This expansion to large extent depends on the availability of land appropriate for acquisition and appears feasible provided that FI will continue to divest its timberland.

Introduction

The assets of TIMOS have rapidly grown over the past two decades, making them an important part of the southern forestry sector (Harris et al. 1989, Zinkhan 1993). While their total holdings are still relatively small compared to industrial and non-industrial forest owners, they continue to display a strong growth potential. This trend arises from a number of factors including their competitive returns and frequent calls to monetize timberland owned by FI, which eventually may increase the amount of land suitable for acquisition (Yin et al. 2000). TIMOS consider forestland primarily as a portfolio asset and in this they differ from other owners. The question is then whether they also differ in their approaches toward forest management. Until recently, TIMOS frequently were classified as a corporate category that resembled non-industrial private forests (NIPF) and were associated with lower management intensity. To answer this question, we have carried out a survey of TIMOS current and future management practices and compared them with both industrial and non-industrial owners.

Methods

To assess current and future institutional forest investments, all major timberland investment organizations in the South were surveyed. The survey gathered information about forestland allocation among forest types, applied management intensities, and conversion of harvested stands to planted pine. There are five major forest types: planted pine, natural pine, oak-pine, upland hardwood and bottomland hardwood (Table 1). Planted pine management intensity is described by three management regimes. Standard regime comprises traditional planted pine management including chemical or mechanical site preparation followed by planting. Superior regime involves more intensive site preparation, planting of genetically improved seedlings, and herbicide and mid-rotation fertilizer applications on about 50% of acres. High-yield regime additionally involves herbicide treatment in the first and second growing seasons and fertilization at age 8 on about 50% of acres. Management intensities applied in natural pine, oak-pine, and hardwood forest types are classified into two intensity regimes. Lower intensity regime represents custodial even aged management, where no treatments have been made and none are planned. Higher intensity regime envisions some management actions taken or planned to promote growth such as fertilization or thinning. Conversion of harvested stands to planted pine represents the percentage of planted pine, natural pine, and oak-pine stands regenerated to planted pine.

Forestland Area

TIMOS manage about 4.2 million acres of forestland in the South. They hold 1.9 million acres in the Southeast and 2.3 million acres in the South Central. It follows that TIMOS currently control about 2% of southern forestland. Even though their current forestland share compared to FI and NIPF is small, TIMOS have plans to substantially increase their holdings in the future. Within a decade, TIMOS expressed intentions to increase their total holdings to 12.2 million acres, which represents a 190% increase. While this expansion is to take place in both the Southeast and South Central regions, the South Central would see more growth with 6.9 million acres versus 5.3 million acres in the Southeast. If these plans indeed are carried out, TIMOS forestland share will increase to 6%.

TIMOS forestland is dominated by planted pine with 2.9 million acres or 69% of their total land (Figure 1). This result indicates that TIMOS control nearly 10% of planted pine area in the region. Planted pine dominance is expected to continue as 84% of planted pine, natural pine, and oak-pine stands after harvest are regenerated to planted pine. Within a decade,

planted pine area is expected to increase to 9.4 million acres, which represents a 224% increase.

The area of other forest types managed by TIMOS is much smaller. For example, TIMOS manage about 0.4 million acres of natural pine and bottomland hardwood. Over time, only bottomland hardwood area is expected to increase more substantially to 1 million acres. Currently, about 0.1 million acres of land are non-stocked, and 0.2 million acres are reserved from harvest in the foreseeable future due to particular preferences, regulatory constraints, or other reasons.

Management Intensities

Table 2 presents TIMOS land allocation and management intensities and compares them with the results of similar surveys for FI and NIPF (Moffat et al. 1998, Siry et al. 2001). TIMOS manage the vast majority of planted pine in superior (38%) and high yield (56%) management regimes. Planted pine management intensity is expected to increase over time. By 2020, 70% of planted pine will be managed in high yield regime and only 2% in standard regime.

Naturally regenerated forest types are managed much less intensively. Only 41% of natural pine and 25% of oak-pine fall into higher management intensity, where some treatments, such as fertilization and thinning, were or will be used to promote growth. Over time, management intensities will increase only moderately, primarily in natural pine where 60% of stands will be managed in higher management intensity.

TIMOS land allocation and management approaches differ somewhat between the Southeast and South Central regions. At present, 73% of the land in the Southeast is in planted pine, which is 7% higher than 66% of the land in the South Central. The Southeast has less natural pine, only 6% of the land versus 12% in the South Central. The reverse holds for bottomland hardwood. These differences disappear to a large extent over the next two decades as the share of planted pine approaches 80% in both regions.

Comparison of TIMOS with Other Forest Owner Groups

To date, TIMOS were usually classified within other corporate ownership, characterized by management intensities similar to NIPF. With TIMOS potential for regional timber supply growing, the comparison of results across forest owners is used to verify this assumption. Since TIMOS, FI, and NIPF surveys used to some extent varying definitions and management categories, assumptions had to be made about how particular management categories in different surveys correspond to one another. As a result, the comparative results should be treated as approximate.

Planted pine dominates TIMOS and FI holdings, accounting for about 69% and 63%, respectively, of their land. During the next two decades, the share of planted pine is expected to increase to 80%. This expansion comes primarily at the cost of natural pine. On the other hand, NIPF land is dominated by upland hardwood, which covers 40% of the land. Over time, upland hardwood share is projected to decrease to 35%. NIPF planted pine is expected to grow from today's 10% to 14% in 2020. TIMOS and FI have only about 2% of land reserved from harvest, while NIPF have as much as 7% of land in the reserved category. The share of NIPF reserved land is expected to double by 2020, while TIMOS and FI will keep their share unchanged.

Planted pine area growth is accompanied by its increasing management intensity. While today TIMOS and FI manage about 56% and 40%, respectively, of their planted pine in high yield regime, 70% of planted pine will be managed in high yield regime by 2020. The result that TIMOS manage planted pine more intensively that FI is somewhat surprising. It may result from recent TIMOS acquisitions of FI planted pine that was managed with high intensity or may be related to survey differences. NIPF planted pine is managed much less intensively. Today, only a quarter of planted pine is managed in high yield regime, but this share may increase by up to 46% over next 20 years. Natural pine, oak-pine, and hardwood forests are managed with low intensity across all ownership groups. Only about a third of TIMOS and FI natural pine management can be classified as higher intensity. Over time, only small management intensity increases are foreseen.

These comparative results demonstrating planted pine domination on TIMOS and FI land, similar management intensities, and rapid conversion to planted pine indicate that TIMOS manage their land much more intensively than previously thought and that their management is quite similar to FI.

Discussion and Conclusions

TIMOS currently hold about 4.2 million acres of forestland in the South. If an average acre of timberland were valued at $1,000, then TIMOS investment in the South would amount to about $4.2 billion. TIMOS land constitutes roughly 2% of the total timberland in the region. While this share is still relatively small, TIMOS holdings correspond to

approximately 11.4% of the regional total managed by FI, which indicates that their timber supply potential is growing.

TIMOS have impressive growth plans and would like to increase their holdings to 12.2 million acres by 2010. The achievement of this target would represent a 190% increase. The major question regards the source of this expansion. It is quite likely that different TIMOS in responding to the survey indicated their real expansion plans, but considered to some extent the same land for acquisition. As a result, the total southern increase may reflect some double counting by TIMOS. Today, as in the past, the source of forestland available for acquisition appears to be the land owned by FI (Zinkhan 1993).

Similar TIMOS and FI management intensities indicate that the total amount of timber grown will probably not differ substantially as a result of changing ownership structure in which TIMOS take over land currently owned and managed by FI industry. However, since TIMOS may use different than FI acquisition and disposition strategies, e.g., because there is no need to feed a particular mill or there are particular institutional investor's objectives for timberland investment, market impacts may be different.

Past experience indicates that such an increase of TIMOS holdings is feasible. In 1990 TIMOS managed 1.8 million acres (Zinkhan 1993). Their holdings increased to 4.2 million acres by 2000, a 136% increase. If suitable land for acquisition is available, this growth rate can be sustained or even exceeded. The potential for TIMOS growth in the South is still considerable.

Literature Cited

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Table 1. Management Intensity Survey Definitions

Management Regime	Definition
1. Planted Pine	
1.1 Standard	Chemical or mechanical site preparation followed by planting; no thinning.
1.2 Superior	Standard plus: site preparation +$30/ac; 1st generation improved seedlings; woody release on acres needing it at age 3; mid-rotation fertilization on about 50% of acres; no pre-commercial thinning.
1.3 High Yield	Superior plus: herbaceous release at ages 1 and 2; fertilization at age 8 on about 50% of acres; pre-commercial or commercial thinning.
2. Naturally Regenerated Pine and Hardwood	
2.1 Lower Intensity	Custodial even aged management; no treatment have been made and none are planned; no thinning.
2.2 Higher Intensity	Fertilization and thinning used to promote growth.
3. Conversion to Planted Pine	Percentage of pine and oak-pine regenerated to planted pine after harvest.

Table 2. Current and Future Forest Management Intensities in the South by Owner and Year

MANAGEMENT CATEGORY		TIMOS (Percent)		FI (Percent)		NIPF (Percent)	
		2000	2020	2000	2020	2000	2020
LAND DISTRIBUTION							
Planted Pine		69	81	63	81	10	14
Natural Pine		9	3	11	2	14	10
Oak-Pine		2	1	4	2	14	13
Upland Hardwood		3	1	6	1	40	35
Bottomland Hardwood		9	8	12	11	14	12
Non-Stocked		3	1	1	1	1	1
Reserved		5	5	3	2	7	15
MANAGEMENT INTENSITY							
Planted Pine	Standard	6	2	14	2	11	8
	Superior	38	28	46	25	64	46
	High Yield	56	70	40	73	25	46
Natural Pine	Lower	59	40	61	71	79	52
	Higher	41	60	39	29	21	48
Oak-Pine	Lower	75	73	95	95	85	76
	Higher	25	27	5	5	15	24
Upland Hardwood	Lower	95	82	97	89	91	86
	Higher	5	18	3	11	9	14
Bottomland Hardwood	Lower	93	81	91	81	88	76
	Higher	7	19	9	19	12	24
PINE FOREST TYPES SHIFT AFTER HARVEST							
Planted Pine			84		78		32
Natural Pine			12		13		12
Oak-Pine			4		7		32
Other			0		2		24
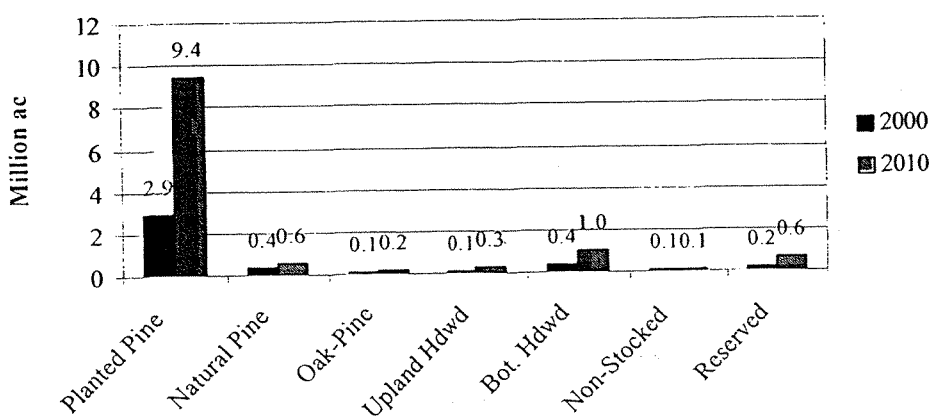
Figure 1. TIMOS Forestland Area in the South