How Globalization is Changing the U.S. Forest Sector

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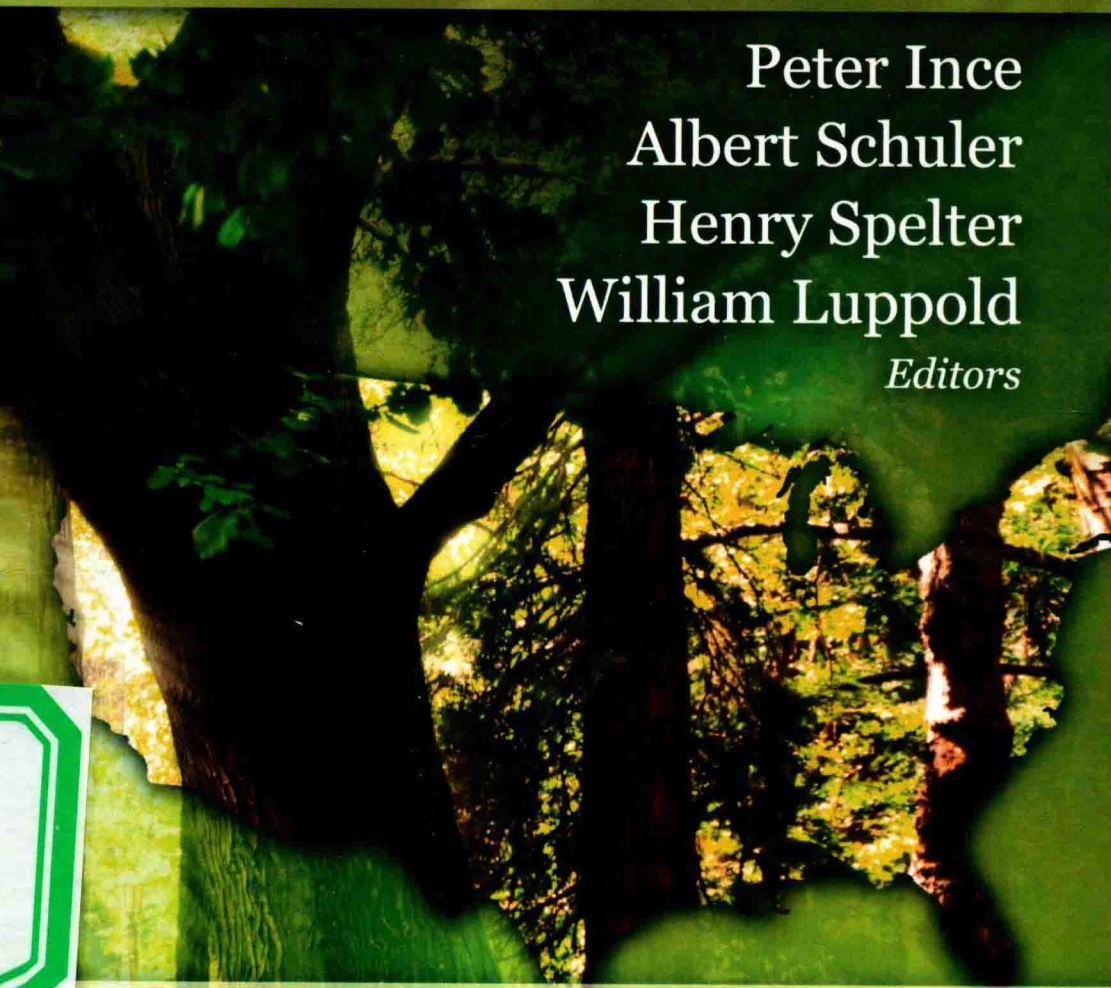

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ENVIRONMENTAL SCIENCE, ENGINEERING AND TECHNOLOGY

HOW GLOBALIZATION IS CHANGING THE U.S. FOREST SECTOR

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PREFACE

This book examines the economic implications for sustainable forest management of globalization and related structural changes in the forest sector of the United States. Globalization has accelerated structural change in the U.S. forest sector, favored survival of larger and more capital-intensive enterprises, and altered historical patterns of resource use. These changes reflect deep impacts on the economic, social, and environmental context of forest management in the U.S., suggesting that more in-depth strategic monitoring and analysis of economic globalization is warranted in planning sustainable forest management policies for the future.

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Chapter 1

EXECUTIVE SUMMARY

ABSTRACT

This chapter examines economic implications for sustainable forest management of globalization and related structural changes in the forest sector of the United States. Globalization has accelerated structural change in the U.S. forest sector, favored survival of larger and more capital-intensive enterprises, and altered historical patterns of resource use.

Keywords: globalization, structural change, forest sector, sustainability

UNITS OF MEASURE

All dollar amounts are United States currency. Measurements in billions (10^9) use the U.S. system.

This chapter examines economic implications for sustainable forest management of globalization and related structural changes in the forest sector of the United States. The report covers a broad range of topics, but this summary focuses on three hypotheses.

One hypothesis is that economic globalization accelerated structural (largely irreversible) change in the overall economy and in forest product

markets since the early 1990s, with exposure to import competition on a wider scale. Evidence for this hypothesis includes the following points.

Since the early 1990s, rapid expansion of goods imports and competition in export markets contributed to a recent downturn in U.S. industrial production (from 2000 to 2002). Import competition and loss of growth in exports quelled price inflation and reduced profits for U.S. manufacturers during that period. In that context, U.S. manufacturers were compelled to pursue production efficiencies and cost cutting more aggressively through structural changes, including productivity-enhancing technological changes, consolidation, outsourcing, and restrained capacity growth.

Acceleration of structural change was evidenced by nearly a tripling in the ongoing rate of labor displacement or productivity gains in U.S. manufacturing since the early 1990s, as goods imports tripled and the trade deficit expanded 10-fold. Structural change was evidenced also by the loss of historical correlation between U.S. industrial output and gross domestic product (GDP) growth over the past decade. After increasing for much of the previous century, U.S. output of forest products such as wood pulp and wood furniture also peaked in the past decade and then declined. Imports were the fastest growing component of softwood lumber and structural wood panel supply to U.S. markets.

By 2002, total U.S. timber harvest was estimated to be nearly 10% less than it was a decade earlier. With limited capacity growth, forest product markets exhibited cyclical volatility, but productivity gains and imports offset long-run inflationary pressures, and timber market volatility was relatively subdued in recent years with fairly adequate supplies and slower growth in demand. Current projections of future timber demand and prices are much lower than a decade ago (before the recent era of economic globalization and structural change in the forest sector).

A second hypothesis is that globalization and import competition favored survival of forest product enterprises in the United States that are more capital-intensive, less labor- intensive, and generally larger, more productive, and globally connected. Evidence for this hypothesis includes the following points.

The import share of U.S. consumption rose across the entire forest product sector in the past decade, but domestically produced shares of consumption remained higher for more capital-intensive and globally robust industries such as pulp and paper or structural wood panels, while falling to lower levels for less capital-intensive or more labor-intensive industries such as sawmills and furniture plants.

A commonly referenced business strategy was to develop customized products or to seek niche markets as a refuge from volatile global commodity markets, but average output capacities of lumber mills, pulp mills, and paper mills all increased and the number of mills declined, as smaller, less efficient mills were closed. Ongoing structural changes in computing, electronic communication, and product distribution accelerated the design, production, and delivery of goods, such that larger firms gained flexibility to rapidly exploit customized or niche market opportunities. Meanwhile, foreign firms or subsidiaries of multinational firms in other countries also obtained the means to quickly and efficiently develop customized products and exploit niche markets, as evidenced by expanded outsourcing of custom wood furniture production and expansion of U.S. wood furniture imports.

An implication of these trends is that markets for the primary product of forestry and forest management activities on private lands, namely timber, will be driven by future development (or lack of development) in larger scale forest- product enterprises that serve increasingly global markets. There is little evidence for the notion that globalization and structural change will lead to expansion of smaller scale forest enterprises. Instead, the focus on niche markets or customized products should be understood as a commercial strategy that is being pursued aggressively by larger globally oriented enterprises to develop branding, product identity, and product value in increasingly competitive global markets.

The last hypothesis is that economic globalization and ongoing structural changes altered familiar patterns of resource use, economic pathways, and opportunities to advance sustainable forest management in the United States. Evidence for this hypothesis includes the following points.

Structural changes stemming from economic globalization over the past decade included consolidation and realignment of production capacity in the interest of competitive cost savings in forest product manufacturing. Such changes have contributed recently to a notable decline in the real economic value of forestry outputs such as timber, as well as other measures such as forest sector employment, economic feasibility of forest management, and gross output of forestry (the contribution of forestry to U.S. GDP). Economic globalization and the structural trade deficit also made U.S. housing construction increasingly dependent on foreign purchases of U.S. financial assets.

All of these changes reflect deep impacts on the economic, social, and environmental context of forest management in the United States, suggesting that more in-depth strategic monitoring and analysis of economic globalization

is warranted in planning sustainable forest management policies for the future, with careful consideration given to ways to cope with the challenges of globalization and structural change. For example, careful consideration needs to be given to what strategic approaches should concern forest managers and policy makers in this context, how those approaches will improve the opportunity for sustaining forests, and how structural changes will alter future management opportunities. To a large extent, the efficacy of different approaches will depend on their success in sustaining the global competitiveness of the U.S. forest sector.

Eight different categories of strategic approaches are identified that might be aimed at sustaining the global competitiveness of the U.S. forest sector, including (1) considering import duties, wage or benefit constraints, tax incentives, or subsidies; (2) promoting U.S. environmental and labor standards globally; (3) liberalizing trade; (4) achieving free currency exchange; (5) gaining in automation, efficiency, and productivity; (6) developing global enterprise; (7) promoting product differentiation and certification; and (8) advancing the resource and technology infrastructure as well as training and skills needed for future sustainable forest sector development. All of these strategic approaches have limitations or drawbacks. Without more detailed analysis, there is little basis for speculation about the effects of the strategies on the competitiveness of the U.S. forest sector, and it would be misleading to suggest that any particular approach is recommended. However, a mix of these approaches is already being pursued to some extent; thus, understanding consequences of globalization and structural change for sustainable forest management will require monitoring and evaluating a spectrum of behavioral responses and forest management options that will unfold in the evolving context of forest sector globalization, consolidation, and structural change.

Following is a summary of important points about economic globalization and structural change that were derived from this chapter and that appeared also in the Interim Update of the Resources Planning Act (RPA) Assessment (USDA Forest Service 2007).

There is a long history of structural change in the U.S. forest products industries as timber harvesting moved around the country and as technology and consumer demands evolved. At times, these market forces led to consolidation of capacity. Structural change is generally thought to result in economic gains over the long run, but possible negative consequences can include local job losses, economic instability, shifts in capital flows, or declines in local market demands for resources. Globalization can accelerate or alter the nature of structural change.

Globalization, consolidation, and structural change during the past decade contributed to a recent downturn in domestic consumption of certain forest products and corresponding loss of industrial capacity and related jobs, increased imports, decreased exports, and lower stumpage prices. Globalization and structural change contributed to the following:

Domestic consumption of paper and paperboard declined by 7% from a peak of 103 million tons in 1999 to 96 million tons in 2003, and then increased by 4% in 2004. By 2006, consumption still remained below the 1999 peak level.

According to the Forest Resources Association (2003), by 2002 annual volumes of pulpwood receipts at U.S. pulp mills had declined by 16% since peaking in 1994, although volume rose by 4% from 2002 to 2004.

Domestic hardwood lumber consumption in furniture declined from 3.3 billion board feet in 2000 to about 1.7 billion board feet in 2003; for pallets, the decline was from about 5 billion board feet to 3 billion board feet.

Economic globalization contributed to significant abatement of growth in U.S. timber harvest because some processing capacity was lost to competitors in other countries.

About one out of six U.S. paper and paperboard mills have closed since the mid-1990s.

One out of every three jobs at U.S. pulp and paper mills have been eliminated since the early 1990s because of consolidation, cost-cutting, and productivity improvements.

Nearly 40 North Carolina furniture plants have closed since 2001.

The number of major softwood sawmills in the United States declined from 850 in 1995 to 700 in 2004, with a 37% increase in average capacity as older mills were replaced with larger ones.

In a decade, the percentage of U.S. sales of wood household furniture imports, primarily from China, increased from 20% to more than 50% and continues to expand.

Since 1990, imports of softwood lumber increased from 27.1% (12.1 billion board feet) of consumption to 38% (25 billion board feet).

Imports of oriented strandboard (OSB) increased from 1.3 billion ft^2 (19% of consumption) in 1990 to 8.5 billion ft^2 (39% of consumption) in 2002.

Southern Pine pulpwood stumpage prices peaked about 1997, declined to half that level by 2002, and have not recovered to previous peak levels.

Globalization and structural change have contributed to declines in exports of timber products from the United States. New suppliers have emerged in world markets, and the nature of demand has changed for some

countries. For example, softwood log export volume from the four West Coast states declined from 3.7 billion board feet in 1990 to less than one billion board feet in 2003. Much of the decline was due to reduced shipments to China, Japan, and South Korea. Exports of softwood lumber, plywood, and wood chips from the United States have also declined.

Structural change and economic globalization have many implications for evaluation of the status and trends of renewable resources. For example, imports of timber products decrease domestic harvest and thereby affect commonly used measures of resource condition such as the growth removal ratio for roundwood. Structural change and globalization should also be key considerations in evaluation of future returns from forest management because they affect stumpage prices and costs of forest management.

Implications of economic globalization and structural change summarized in the Interim Update of the RPA Assessment (USDA Forest Service 2007) included the following. Expansion of free trade policies has affected U.S. competitiveness in forest products and mineral and energy resources, and accelerated restructuring and consolidation of the U.S. forest products industries. The United States is expected to continue to be a net importer of timber products, as well as numerous mineral and energy products. High levels of goods imports and continued high rates of paper recycling resulted in U.S. timber harvest increasing at a slower rate than in the last half of the 20th century. Imports and loss of domestic processing capacity reduce domestic timber harvest, which affects the age–class distribution of domestic forests, which in turn affects habitat for plants and animals, biodiversity, and other measures of forest resource condition. A slowing in the growth of stumpage prices caused by imports reduces expectations for long-term returns for forest management, raising questions about incentives for sustainable forest management. Globalization has been associated with the loss of domestic capacity in forest industry and several mineral industries. The historic comparative advantage of some U.S. industries is now challenged by rising imports and structural changes in manufacturing. Related effects are loss of jobs and income, which is particularly problematic for natural-resource-dependent communities with few other economic development options.

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Chapter 2

INTRODUCTION

ECONOMIC GLOBALIZATION

Globalization refers to the ongoing expansion of global interconnectedness in society and culture (Held and others 1999), and economic globalization refers to expansion of global interconnectedness in commerce, business, and capital investments. Economic globalization was advanced in recent years by free trade policies and rules of commerce that helped expand global trade and global competition. One key hypothesis is that economic globalization accelerated business responses to competition. As markets were exposed to more global competition, businesses were compelled to become more efficient and cost-competitive than they might be in a strictly local or regional context. The following observations appear, for example, in a recent U.S. Department of Commerce report on manufacturing in America:

> Barriers to trade have fallen rapidly over the past decade. Innovations in communications, computing, and distribution have accelerated the design, production, and delivery of goods. Improved production processes have spread rapidly throughout the world. Private investment now flows largely unimpeded across national borders as investors seek the highest rates of return. All these factors equate to unprecedented global competition for capital and markets. Because manufactured goods make up the bulk of international trade, the competition is especially strong. Taken together, the effects of technology and globalization accelerate the competitive pressures

to lower costs and increase productivity (U.S. Department of Commerce 2004).

Globalization and free trade have also a strong economic rationale, apart from any other benefits or consequences, as they tend to yield economic prosperity worldwide. Former U.S. Treasury Secretary John Snow made the following statement recently:

> The world economy is more connected than ever before, as a result of the dramatic expansion of trade are now closely integrated and businesses increasingly serve customers across the world . . . On the matter of the importance of trade, here are some cold hard facts: trade benefits both emerging and industrial nations, trade leads to increased global prosperity, trade raises global standards of living, and trade creates jobs.[1]

The competitive response of businesses to economic globalization exemplifies free enterprise, the continuous process of economic optimization through reallocation of capital. Many years ago the noted economist Joseph Schumpeter described this general process as "creative destruction"—the continuous liquidation and reinvestment of capital into more efficient and profitable enterprises using newer technology or more modern equipment or shifting production from one region to another. Newer technology and more efficient production capacity will typically push out the older and less efficient. Ever since the dawn of the modern industrial era, capital stock has continuously undergone renewal through investment of cash flow from existing enterprises into larger or more efficient production facilities, or from one region to another depending on comparative advantage. For example, the U.S. textile industry witnessed the first large-scale factory development in New England in the early 19th century (Tucker 1984), but later shifted to the South in pursuit of cheaper labor, and then eventually lost ground in more recent years to firms in Asia and Latin America. Likewise, forest product industry capacity growth shifted from the Pacific Northwest to the South in the 1980s and 1990s, associated with reduced access to timber supply from public forest- lands in the Northwest, with more readily available timber resources and newer production facilities in the South.

As import competition intensified since the early 1990s, major U.S. industrial sectors such as textiles and forest products experienced a wave of reduced profits, declining capacity growth, and business consolidation. Competition and reduced profitability compelled U.S. manufacturers to

consolidate, to more rapidly reduce labor inputs and production costs, to outsource supplies of materials or goods to other countries, or move production capacity abroad. Wood household furniture production, for example, declined in the United States, as it was offset by a surge in wood furniture imports. Throughout, manufacturing costs commonly were reduced through consolidation or adoption of technologies that provided increased automation and efficiency, such as computerized controls in manufacturing. Many older or less efficient pulp and paper mills were closed in recent years. Efficiency gains, shifts in capacity, and other technological changes deeply affected employment, capacity growth, resource use, and local opportunities for sustainable resource development. Meanwhile, a U.S. housing boom was stimulated in recent years by cheap financing, made available in large part by record trade deficits and expanded foreign purchases of U.S. financial assets. Recent surges in demand for softwood lumber and structural wood panels in housing construction with limited capacity expansion contributed to strong cyclical inflation in lumber and wood panel prices and rising imports. Shifts in foreign investment, higher interest rates, and limited growth in payroll employment might contribute to an eventual decline in housing construction, among other potential future legacies of economic globalization.

Structural Change

Largely irreversible changes in economic relationships can arise from the process of "creative destruction," the competitive replacement of older and less efficient means of production by more efficient means of production. As more efficient technologies are adopted, more efficient business relationships are established, or more cost-efficient production facilities are built, the changes become largely irreversible because it stands against the logic of economic behavior to abandon efficiency gains or cost savings. Such change in an economy is called structural change (as opposed to more transitory cyclical change). Structural change can have lasting social, economic, or environmental consequences. Structural change or "creative destruction" is generally thought to result in economic gain over the long run, but other negative consequences can stem from structural change, at least in the short run, including local job losses, economic instability, shifts in capital flows, or declines in local market demands for resources.

The initial hypothesis in this chapter is that structural change was accelerated by economic globalization since the early 1990s, as import competition compelled U.S. manufacturers to pursue more rapid cost reduction through consolidation, productivity gains, reshaping of production capacity, and outsourcing of labor or material supply, with related shifts in historical patterns of resource demands. The genesis of recent trends in globalization and structural change in manufacturing is highlighted in the following excerpt:

> Over the past two decades, three separate, powerful trends have reshaped the manufacturing sector globally. The first is the revolution in technology that has been under way for two decades, raising productivity in manufacturing and reducing costs worldwide. The second is the significant reduction in barriers to trade, particularly with respect to trade in manufactured goods. The third is the end to political divisions that have segmented markets for more than 70 years and the corresponding emergence of Russia, China, and other countries in the world trading system . . . The practical effect on U.S. manufacturers of the three trends described above has been to increase the availability of new sources of low-cost labor and manufacturing capacity. Indeed, the trends have not only made it available, they have also made it an important competitive issue. In a global economy in which both goods and capital are mobile, but labor is not, manufacturers' tapping of lower cost labor by importing it in the form of lower cost parts, components, and—increasingly—finished goods is simply a function of trying to stay competitive in a global economy. Hence, the trend toward sourcing parts and components globally is driven by powerful competitive forces and is here to stay. Manufacturers now have the ability to manage global supply chains effectively, which allows them to source from the lowest cost supplier globally and, as a competitive matter, forces hem to do so in order to remain competitive themselves (U.S. Department of Commerce 2004).

Job losses and job instability are among obvious social consequences of structural change in manufacturing. Federal Reserve Chairman Alan Greenspan recognized, for example, that elevated rates of return offered by newer technologies during the 1990s were largely because of reduced labor inputs and costs per unit of output.[2] Investment returns for the same technologies were lower in Europe and Japan because businesses there faced higher costs of displacing workers than in the United States, where displacement was more readily countenanced both by law and by culture. Because costs of dismissing workers were lower, costs of hiring and risks associated with expanding employment were also lower. Thus, a benefit of "creative destruction" with