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ENVIRONMENTAL PERFORMANCE AND STRATEGY  
AT WEYERHAEUSER

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## SECTION 1

### Introduction

Two things are true of the Weyerhaeuser Company: one, it has made a commitment to environmental management and leadership for many years; two, it has experienced a turnaround in financial fortunes in the last five years and is competing in its industry much closer to its potential. To what extent are these two dynamics related?

It would be an overstatement to simply say that Weyerhaeuser's financial performance improved as a result of its efforts to proactively manage environmental issues. However, it does appear that the Company's commitment to sustainability, within the context of refocused organization and management, was a contributing factor in an overall business strategy that was successful. One may say that the environmental component of Weyerhaeuser's strategy was an important, but not sufficient, factor in improving the company's financial fortunes.

### Background

With its title to 5.3 million acres of highly productive commercial forest land in the US, and long-term license arrangements covering about 9 million acres in Canada, Weyerhaeuser is the world's largest private owner of merchantable softwood timber, the world's largest producer of pulp, and a major producer of paper products. Potentially, the company could be one of the richest businesses in the country. Yet for many years the firm lagged behind its industry in profitability. The firm has also long been an environmental leader, seeking to proactively manage environmental issues. In the 1990s, the firm made a financial turn-around and emerged as a more formidable power in its industry.

Weyerhaeuser is an upstream, highly integrated forest and paper products firm. Its primary business is growing and harvesting timber, as well as manufacturing, distributing and selling forest products. The breakdown of Weyerhaeuser's business units is detailed in Table 1.

**TABLE 1: Weyerhaeuser Business Units**

<b>Business Unit</b>	<b>Number of Employees</b>	<b>Key Products</b>
Timberlands	over 3,000	Wood and Wood Fiber
Wood Products	over 13,000	Softwood lumber, plywood and veneer; oriented strand board (OSB); composite panels and hardboard; hardwood lumber and doors; wholesale building materials
Pulp, Paper, Packaging & Recycling	18,500	Market pulp; newsprint; bleached paperboard; printing and writing papers; containerboard and corrugated packaging; collection and marketing of recyclables; chemicals
Real Estate	800	Single family homes and planned communities
Mortgage	1,100	Retail, wholesale and consumer loans and single family mortgages (For Sale)

(Source: Weyerhaeuser Annual Report 1995)

Chart 1 (in Appendix A), displays annual sales and revenue, and operating income for Weyerhaeuser over the last ten years. Table 2 has figures for sales by business segment for 1985, 1990, and 1995. From these charts it is clear how much the pulp and paper businesses contribute to total net income.

**TABLE 2: Sales by Business Segment; 1985, 1990, 1995**  
(in thousands)

<b>Business Segment</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>
Raw Materials	\$451,000	\$834,000	\$1,102,000
Softwood Lumber	\$991,000	\$1,096,000	\$1,648,000
Softwood plywood and veneer	\$399,000	\$411,000	\$591,000
OSBs, panels	\$246,000	\$381,000	\$752,000
Hardwood lumber	\$42,000	\$117,000	\$193,000
Engineered wood Products	-	-	\$207,000
Pulp	\$355,000	\$865,000	\$1,616,000
Newsprint	\$219,000	\$293,000	\$508,000
Paper	\$440,000	\$751,000	\$1,001,000
Paperboard and containerboard	\$279,000	\$366,000	\$325,000
Packaging	\$787,000	\$1,183,000	\$1,863,000
Recycling	\$40,000	\$88,000	\$266,000
Personal Care Products	\$197,000	\$338,000	-
Nursery and garden supply	\$149,000	\$228,000	\$74,000
Marine Shipping	\$144,000	\$77,000	\$182,000
Chemicals	\$20,000	\$28,000	\$63,000
Miscellaneous	\$447,000	\$391,000	\$478,000

(Source: Weyerhaeuser Company Statistical Information 1995)

## SECTION 2

## Environmental Challenges Facing Weyerhaeuser

Although environmental issues are a factor in every aspect of Weyerhaeuser's business, the Company faces two primary areas of environmental challenge. One set of issues is related to its pulp and paper business and includes pollution regulation and compliance. The second set of issues is related to its forestry business and covers issues of sustainability and forest management.

For decades, Weyerhaeuser has sought to establish itself as a corporate environmental leader. As President and CEO John W. Creighton, Jr. stated in Weyerhaeuser's 1995 Annual Environmental Performance Report:

We have pledged to actively protect and enhance the environment through forestry excellence, pollution reduction and prevention, and increased conservation and recycling. Our ultimate goal is to operate sustainably, without harm to the environment. This commitment is our responsibility as a member of the community. (1995 AEPR)

The Company established an environmental group in the early 1980s to provide environmental policy guidance for its various business segments. This group has grown to a staff of over 250, including scientists, technicians and researchers. These experts seek innovative solutions to the environmental challenges facing Weyerhaeuser that arise from federal, state and local mandates for the following: pollution control; solid and hazardous waste management, disposal and remediation; endangered species protection; wetlands preservation; chemical content requirements; and recycled fiber.

To specifically outline its goals for environmental management, Weyerhaeuser has an Environmental Policy Statement, which is included in Appendix B.

### Pollution Regulation and Compliance

The US pulp and paper industry faced substantial regulatory challenges over the last 25 years, primarily in the form of pollution control enforcement. In the 1970s, the industry invested about one-third of its capital expenditure in pollution abatement and reduction technology in response to Clean Air Act and Clean Water Act standards. By the early 1980's, most firms had completed the technology upgrade process and were in compliance. During this time, no new regulations had a significant impact on the industry.

The push for regulation of dioxin in the late 1980's posed another challenge to all firms in the pulp and paper industry. Public concern grew when the chlorine bleaching process used in pulp production was identified as a major source of the highly toxic chemical. Under threat of regulation, pulp and paper firms individually moved to new processes that greatly reduced dioxin creation. These efforts were successful, cutting total annual US releases of dioxin from pulp and paper mills by over 90% by 1993 (Bonifant, 1995). This result, however, was only made possible by substantial capital investment and technological innovation.

The pollution reduction regulations of the 1970s and the dioxin issue of the late 1980s and early 1990s both had major financial impacts on the industry. Chart 2 shows expenditures on pollution abatement and control as a percentage of total capital investment (Appendix A). These issues remain unsettled, however. The pulp and paper industry has been the target of a US EPA Cluster Rule,<sup>®</sup> which would outline a comprehensive regulatory scheme for emissions into all media. Dioxin creation and air emissions are likely to be addressed in this rule when finalized, which could mean costly pulp production process changes for the industry, depending upon the final form of the rule. Other environmental regulations, such as Superfund and the Toxics Release Inventory, also impacted the industry.

In response to dioxin concerns, Weyerhaeuser took a strategy of oxygen delignification to decrease dioxin and improve general environmental performance. As of May, 1996, all of Weyerhaeuser's pulp bleaching processes used elemental chlorine-free (ECF) processes. The firm has reduced dioxin emissions at U.S. and Canadian mills to non-detectable levels (defined as 10 parts per quadrillion in the U.S. and 15 parts per quadrillion in Canada) (Bonifant, 1995). While many firms within the industry have lobbied to prevent the enactment of cluster rules in their current form, Weyerhaeuser's pro-active operational changes have

positioned the company relatively well to meet future environmental standards requirements. Nevertheless, the Company expects that it could require an additional capital investment of up to \$400 million if the Cluster Rule is implemented in its current form.

Weyerhaeuser also faces substantial challenges from Superfund enforcement. The firm has been involved in the remediation of 41 Superfund sites at which it was named a potentially responsible party (PRP). Weyerhaeuser spent \$39 million in 1995 and expects to spend \$29 million in 1996 for the remediation of these sites. As part of its proactive management strategy, Weyerhaeuser has sought to voluntarily clean up some sites where the firm had not yet faced legal action. In one such case, the firm claimed part of the clean-up costs on its property liability insurance. The insurance firm denied coverage and the case went to court. In a landmark decision, the Washington State Supreme Court ruled that the insurance company was liable to pay the claim despite the fact that no legal action had been taken against Weyerhaeuser regarding the site. In this decision, the court set an important precedent, arguing that remediation of the site would have been mandated eventually, thereby holding the insurer liable anyway.

In another example of Weyerhaeuser's proactive management strategy, the Company joined the US EPA's voluntary 33/50 Program, and reduced emissions of priority chemicals from 2.2 million pounds in 1988 to less than one million pounds in 1994 (AEPR 1995). The Company currently spends about one-fifth of capital expenditures on environmental compliance, and expects that this proportion of total capital expenditures will continue for 1997. (Industry Interviews)

### Sustainability and Forest Management

As a result of being an upstream firm, owning or operating several million acres of forest, Weyerhaeuser was better insulated than some competitors from the Endangered Species Act (ESA) controversy of the early 1990s. While environmentalists successfully urged the Federal Government to limit harvesting on public lands to protect the northern spotted owl, Weyerhaeuser does not log on public lands, and in fact supplies over half of its wood needs off of its own private forest holdings. About 40% of Weyerhaeuser's private timberland is in the Pacific Northwest of the United States. Despite being protected somewhat from the controversy, the Company faced challenges regarding the endangered species issue from negative public opinion, restrictions on land adjacent to public land, and even the possibility of Federal takings. However, the negative impact from the ESA appears to have been considerably less for Weyerhaeuser than it was for its competitors who depend on public forests.

The restrictions on public lands may have actually benefitted Weyerhaeuser because the price of timber was driven up by the decrease in supply. From 1993 to 1994, the composite price of softwood lumber rose from \$300 per million board feet to over \$500 per million board feet (AFPA 1996). This advantage appeared to be threatened when sawmill owners and environmentalists began to support a tax on exported timber -- a major segment of Weyerhaeuser's operations -- in an attempt to maintain domestic supply. As of 1996, however, there were only export restrictions on logs from federal lands, which again may have benefitted Weyerhaeuser by restricting market supply without affecting Weyerhaeuser's private stock.

This market dynamic demonstrated the potential benefit of upstream forestry operations such as Weyerhaeuser's. Traditionally, analysts tend to discount ownership of land as a low performance asset; the unstated preference of these analysts would be that such lands be liquidated either by harvesting in the immediate future or selling the timberlands outright. The ESA episode, involving restrictions on logging on public lands, demonstrated that well-managed private forest lands can be a sound investment strategy for highly integrated forest products firms. The long-term (over 30 years) investment by Weyerhaeuser in its Timberlands established a dependable and sustainable supply of timber for the Company's operations.

To better pursue sustainability and ensure that it is fulfilling its commitments to the community, Weyerhaeuser Timberlands has adopted a comprehensive program called Weyerhaeuser Forestry. This commitment continues to evolve and stresses such principles as preservation, sustainable productivity, and stakeholder involvement.

## SECTION 3

### Market Exposure

Weyerhaeuser operates in a highly cyclical industry in which financial fortune is closely related to the health of the economy as a whole. Put simply, in a growing economy more people are employed, businesses use more paper, and more housing and construction projects are undertaken. By contrast, in a recession, markets for forest and paper products shrink as businesses downsize and fewer construction projects are undertaken. Overall, the forest and paper products industry tends to experience substantial price fluctuations over relatively short amounts of time.

The early 1990s was a period of worldwide oversupply in pulp and paper which drove down prices significantly. Many firms had increased capacity in the 1980s, expecting demand to continue to grow. Instead, the market stagnated during the recession, driving prices down to their lowest levels since WWII, and requiring downtime at many plants (Salwen, 1996). Increased foreign competition could be seen from new entrants in Asia and from established mid-size European firms. The success of recycling programs in Germany was partly responsible for oversupply in Europe, further increasing the competition for new markets. Nevertheless, Weyerhaeuser's financial turnaround allowed it to aggressively pursue expansion into foreign markets in pulp and paper.

Fluctuations in foreign exchange also played a role in Weyerhaeuser's competitive position, having both positive and negative effects depending on the circumstances. The devaluation of the Swedish and Finnish currencies in the early 1990s dramatically improved the Scandinavian firms' export cost position, and due to oversupply in Europe they sought to penetrate US markets. The value of US wood products exports to the EEC dropped from \$100 million to below \$80 million in July 1994; although it later recovered to \$120 million by mid-1995 (AFPA 1996). During these fluctuations in the international market, some European firms were successful in capturing a portion of the US market previously held by domestic firms. Conversely, weakened currency in Canada, where Weyerhaeuser is a producer, gave the Company a competitive advantage in the 1990s. In Japan, where the yen was strong, Weyerhaeuser benefitted as a major supplier of timber. These examples demonstrate how Weyerhaeuser gained some advantage from currency fluctuation.

Despite these events, the volume of US softwood lumber exports to the Pacific Rim dropped to almost 50 million board feet at the end of 1995 from a previous high of 100 million earlier that year. By mid-1996, export volumes to the Pacific Rim returned to 100 million board feet (AFPA 1996).

Notwithstanding these challenges, the outlook for Weyerhaeuser and other US firms remains positive, as a substantial increase in paper and paperboard consumption can be expected over the next 10-15 years with consequent implications for pulp and fibre requirements. (IIED, 1995). The North American pulp industry is expected to continue to grow in the future. From 1992 to 1994, the North American market increased its share of the world market from 21% to 23%.



## SECTION 4

### Business Strategy and Performance

Behind Weyerhaeuser's efforts at pollution reduction and capital expenditure is a commitment to a long-term sustainable strategy. The Company has incorporated proactive environmental management into the overall vision and direction of the business. Over many years, Weyerhaeuser has frequently altered its business strategy -- first diversifying, then refocusing -- but has consistently remained committed to environmental stewardship.

#### Diversification: 1900s to 1980s

In 1900, Frederick Weyerhaeuser and 15 partners bought 900,000 timbered acres near Tacoma, Washington, from the Northern Pacific Railway. The venture was named the Weyerhaeuser Timber Company. At the time, Frederick Weyerhaeuser is said to have declared that the purchase was, "not for us, not for our children, but for our children's children." This anecdote, although likely apocryphal, shows how the long term vision of the Company was in place early on.

The need to diversify first arose as a matter of survival in the 1930s during the Depression. In order to offset losses in the deflated timber market, the firm began to sell softwood pulp. Around the same time, JP Weyerhaeuser Jr. championed the reforestation and management of cut-over timberlands. He was also responsible for a visionary replanting program in Grays Harbour County, WA. The Clemons tree farm was dedicated in 1941 and was the first in the US.

Soon afterward the company diversified further into the production of containerboard (1949), particleboard (1949), paper (1961) and other products. The firm went public in 1963 and opened its first overseas office in Tokyo, Japan, the same year.

Increased efforts at diversification came in the 1970s; this time in an attempt to shield the company from the cyclical downturns in the forest and paper products industry. Weyerhaeuser produced diapers, pet supplies, gypsum board, and milk cartons as well as nursery plants and garden supplies.

During this time, Weyerhaeuser also became one of the first pulp and paper companies to invest in recycling operations. At the time, the supply of recycled paper was inconsistent, forcing Weyerhaeuser to maintain a focus on virgin fiber supply. Nonetheless, the Company began to develop technology that would be useful for future recycling efforts.

In the 1980s, Weyerhaeuser suffered from depressed earnings due to a soft US lumber market; and the firm's stock price dropped to a ten year low. Operating income fell from \$724 million in 1979 to \$200 million in 1980. The fall was caused in part by a dramatic decline in timber prices from \$345 per thousand board feet to \$76 per thousand board feet.

The firm reacted to this crisis by cutting salaries, reducing its workforce and diversifying further away from its original core competencies. Weyerhaeuser became involved in the savings and loan, real estate and single family home construction businesses. These new ventures would not be the solution to Weyerhaeuser's financial woes.

Having moved into the service industry sectors of real estate and finance, Weyerhaeuser had strayed considerably from the activities that it excelled in. In the mid- to late-1980s, there was little cohesiveness to the array of business units throughout the corporation. Inefficiencies from organizational difficulties persisted until management made substantial changes in the 1990s.

#### Competitive Refocusing on Core Competencies: late 1980s to Present

During the second half of the eighties, Weyerhaeuser ranked last among forest products companies in return on equity, and near the bottom of the industry in earnings-per-share growth. Among analysts, the firm's problems were believed to be rooted in a conservative and risk-averse management philosophy, focused more on preserving assets than producing profits. By the end of the 1980s, the waves of diversification had created a vast and complex organization at Weyerhaeuser that limited financial success.

Since management of the company changed hands to J. Creighton Jr. in 1989, Weyerhaeuser has pursued a strategy that has appealed to shareholders and environmentalists alike. New management has restructured operations extensively, while increasing efforts to reduce pollution and minimize damage to timberlands. The early 1990s were spent on refocusing the firm on timberland, wood and paper products and also on streamlining operations. Minimum Impact Manufacturing (MIM) became a part of the Company's strategy at pulp and paper facilities. A renewed emphasis on environmental excellence, through programs like Weyerhaeuser Forestry, was part of the Company's refocusing efforts.

Managers at mills and tree farms underwent an 18 month re-engineering process for their operations. At the same time, the incentive system of the company was overhauled to reward business units for profitability, rather than production volume. Weyerhaeuser also sold off less successful ventures in milk cartons, hardwood, gypsum board and financial services.

During the same period, the firm focused on strengthening its market position in the pulp and paper industry. In 1992, it outbid Georgia-Pacific and purchased 2 pulp mills, 3 sawmills, and over 200,000 acres of Georgia forest land. This expansion, as well as a greenfields expansion in Columbus, Ohio, and others, boosted Weyerhaeuser's market pulp capacity by 40%. The Company initiated a major mill modernization program to put the itself in a strong competitive position in terms of product and process quality and the environmental performance in its mill system (AEPR, 1995).

The Company continued to expand its pulp and paper capacity, buying its 23rd recycling facility in North America in 1994. By 1996, Weyerhaeuser was one of the largest US recyclers, recovering nearly 4 million tons of waste paper per year. In addition, its containerboard materials and packaging products averaged 33% recycled paper content.

Still, in its continuous effort to secure raw materials, Weyerhaeuser began discussions with private investors to establish a \$1.5 billion fund (Weyerhaeuser Forestlands International) to help it diversify beyond North America. Potential international projects included the purchase of timberland in New Zealand, as well as partnerships with European and Japanese firms to pursue the Chinese market.

While refocusing on its core competencies, Weyerhaeuser adapted to its changing environment by altering its product mix to accommodate shifting tastes and the supply of certain wood species. For example, the Company expanded its production of engineered wood products, which not only were higher value-added, but were also more environmentally sound because they required less virgin material. As strong proponents of Total Quality Management (TQM), Weyerhaeuser fosters strong relationships with its key customers, domestic and foreign. Sales in engineered wood products doubled between 1993 and 1995 (Table 2).

Recycling and packaging have also achieved significant growth over the last 10 years. Weyerhaeuser's packaging division more than doubled from 1985 to 1995, and accounted for the highest sales of any one division at almost \$2 billion. Recycling, while only accounting for \$266 million in sales in 1995, increased six-fold from 1985 when sales were only \$40 million.

By refocusing and improving efficiency, Weyerhaeuser improved environmental performance without creating a burden on the Company's operations. As Chart 3 (Appendix A) shows, the cost of goods sold (measured as a percentage of sales) remained fairly constant over the last decade while toxic emissions were reduced substantially.

## **SECTION 5**

### **Financial Performance**

In essence, the large integrated forest products companies that own pulp and paper mills, lumber and plywood manufacturing facilities, and timberlands, like Weyerhaeuser, Georgia Pacific, Boise Cascade and Champion, are hardly the favorites of Wall Street. Part of stock analysts' concern with these highly diversified companies is due to the perception that their large timberland bases add bulk to their balance sheets without contributing much cash flow. Instead, Wall Street analysts favor "monetizing" timber assets, either through more rapid harvest or by selling the land outright.

Overall, however, the company's earnings have improved since the late 1980s, with a slight dip in 1991 due to the recession. Weyerhaeuser's average quarterly price has shifted upward in the last 5 years (Chart 4 in Appendix A).

Over the last 20 years, the share value of large integrated forest products companies have tended to lag behind both industrial stocks in general and behind more downstream firms. This fact is highlighted in Chart 5 (Appendix A), where wealth (measured by cumulative total return to shareholders) seems to favor specialized and relatively smaller companies.

Charts 6 and 7 (Appendix A) offer a closer look at this dynamic by comparing assets and sales to total shareholder returns. The first chart shows five and ten year average returns to shareholders for selected firms. The second chart shows assets and sales. The companies are ranked along 6-year average assets and sales and 5 and 10-year total return to shareholders. An almost systematically inverse relationship exists between total return to shareholders and assets size.

Notwithstanding these factors, Weyerhaeuser has experienced a significant improvement in financial performance relative to similar firms. By comparing the ranking of Weyerhaeuser in the industry over time, we get a sense of the impressive performance of the company over the last five years. Restructuring, boosted by an upswing in the market, paid off for Weyerhaeuser in the nineties. Charts 8 and 9 compare Weyerhaeuser with two of its competitors in terms of Return on Equity and Return on Assets (Appendix A).

While Weyerhaeuser's returns in each category fell to the lowest levels during the 1991 recession, in both ROA and ROS there was a quick rebound by the end of 1992. The financial upswing that began with the new management in 1990 was able to sustain itself through the down-turn in the economic cycle, indicating that Weyerhaeuser's improvement can be sustainable in the long term. In relation to two of its competitors, Weyerhaeuser's performance stands out.

## SECTION 6

### Conclusions

#### Measuring Environmental Performance and Financial Performance

Weyerhaeuser operates in industries (timber, pulp and paper) that are highly cyclical. Even very proactive environmental management which succeeds in cutting costs substantially could not be differentiated out of the overall financial performance of the firm.

While improvements in efficiency and pollution reduction may reduce costs, these savings are orders of magnitude smaller than the swings in the market. Timber prices, perhaps the most important factor in all of Weyerhaeuser's business, increased dramatically in the 1990s. It is very difficult to identify marginal cost reductions resulting specifically from environmental investments for an industry experiencing this level of growth. Nevertheless, environmental management remains a significant component of Weyerhaeuser's business strategy.

#### Weyerhaeuser

This assessment of Weyerhaeuser reveals a number of details about the importance of environmental performance to its success. However, it is important to view this performance in the context of overall business strategy.

While some managers view compliance with environmental regulations as always involving tradeoffs between environmental and economic performance, Weyerhaeuser has pursued environmental management in terms of Minimum Impact Manufacturing (MIM), sustainable forestry and TQM and as an integrated part of their overall strategy for business excellence.

This strategy included ongoing programs such as continuous monitoring of processes, worker training and environmental audits. According to Michael Epstein (1996), environmental performance, as a function of these efforts, is revealed as a long-term proactive endeavor. This form of environmental management can enhance financial performance through three pathways. First, revenues may improve, as evidenced by increasing demand for environmentally correct products. So far, little evidence exists that consumer support for Agreen® products will create premiums for Weyerhaeuser.

Second, costs may be reduced both through gains in productivity (Porter and van der Linde, 1994) and through waste minimization and improved efficiency (Schmidheiny, 1992). Third, environmental excellence is a necessary aspect of an overall strategy of business excellence, enhancing quality and fostering innovation (WBCSD, 1996).

These aspects of strategy were consistent with management's commitment to refocusing on core competencies of the business. For example, the training process that was developed throughout Weyerhaeuser's business units was evidence of their commitment to continuous improvement. Training and continuous learning became an integral part of the implementation of business strategy, necessary for TQM (See Kinlaw, 1992, for a more detailed explanation of training and learning as necessary aspects of TQM).

These efforts at the implementation of a new business strategy and focus demonstrate the linkage between environmental management and the total quality management paradigm. The firm pursued a proactive strategy where product design, manufacturing processes, marketing, worker training and empowerment, customer service and post-consumer product disposition were integrated with environmental concerns. Through these efforts Weyerhaeuser emerged as an environmental and business leader.

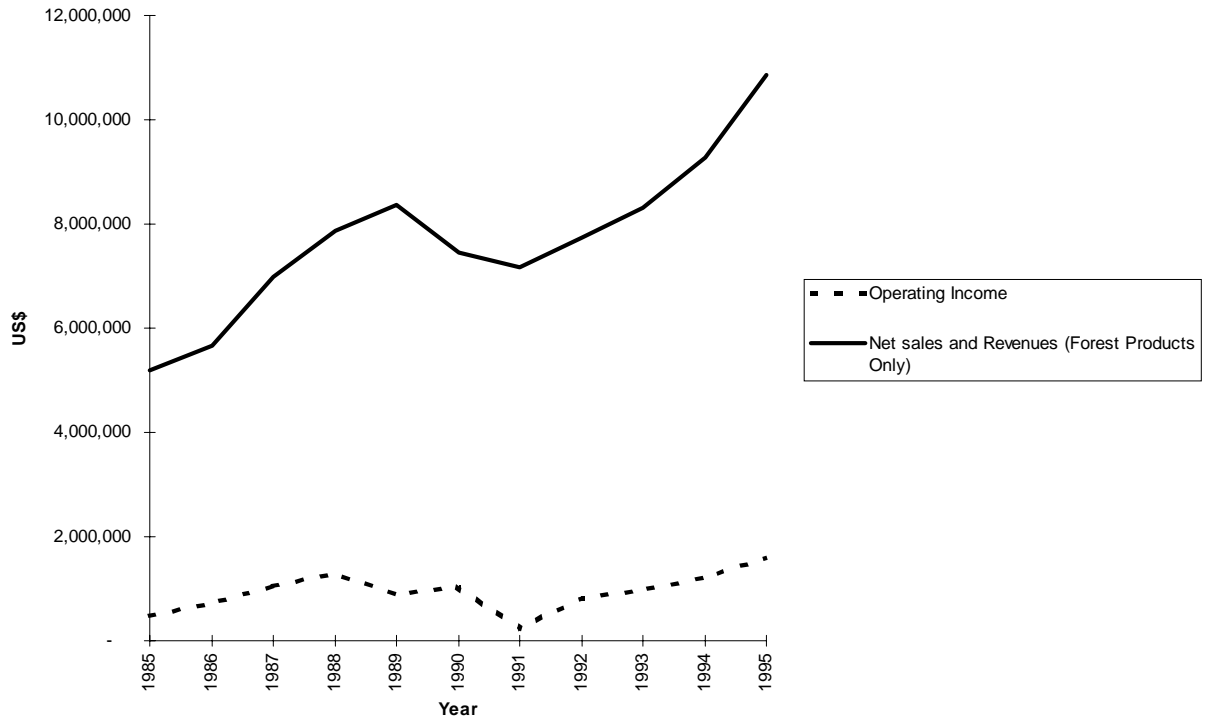
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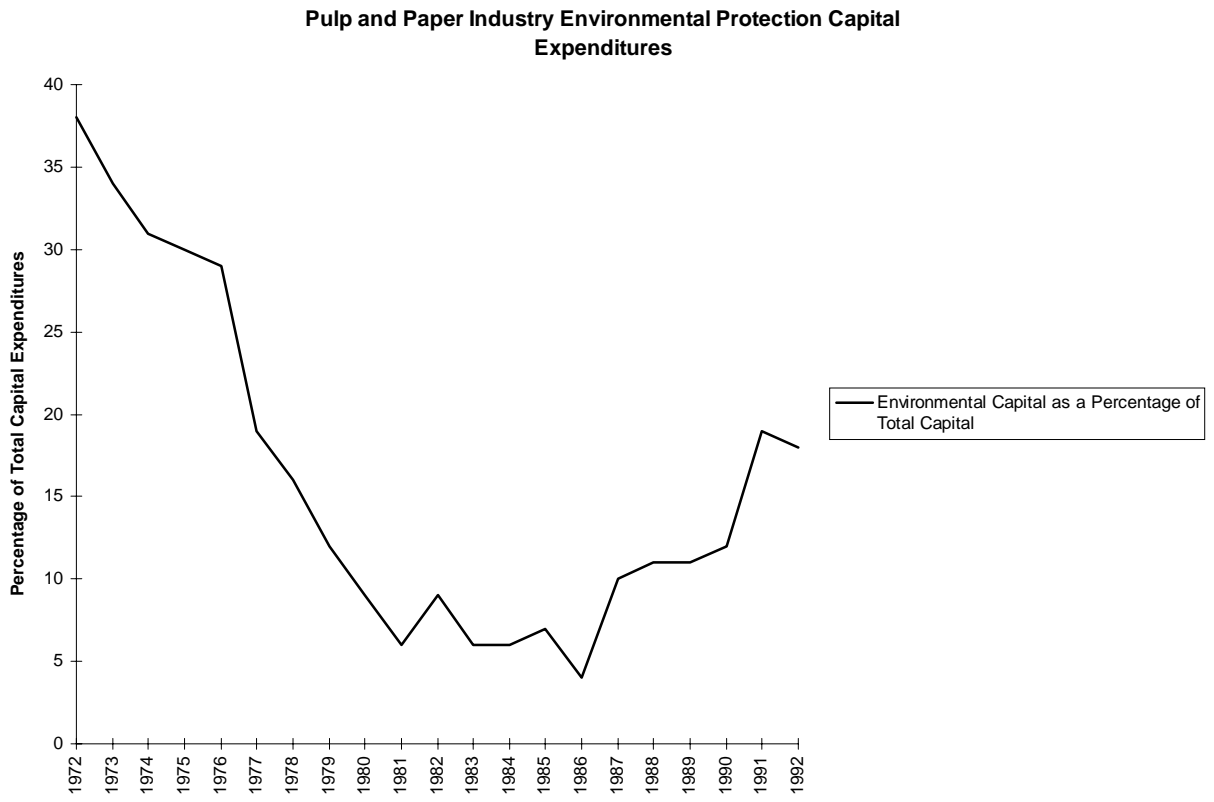
Appendix A - Charts

Appendix A  
Chart 1

Net Sales / Revenue and Operating Income

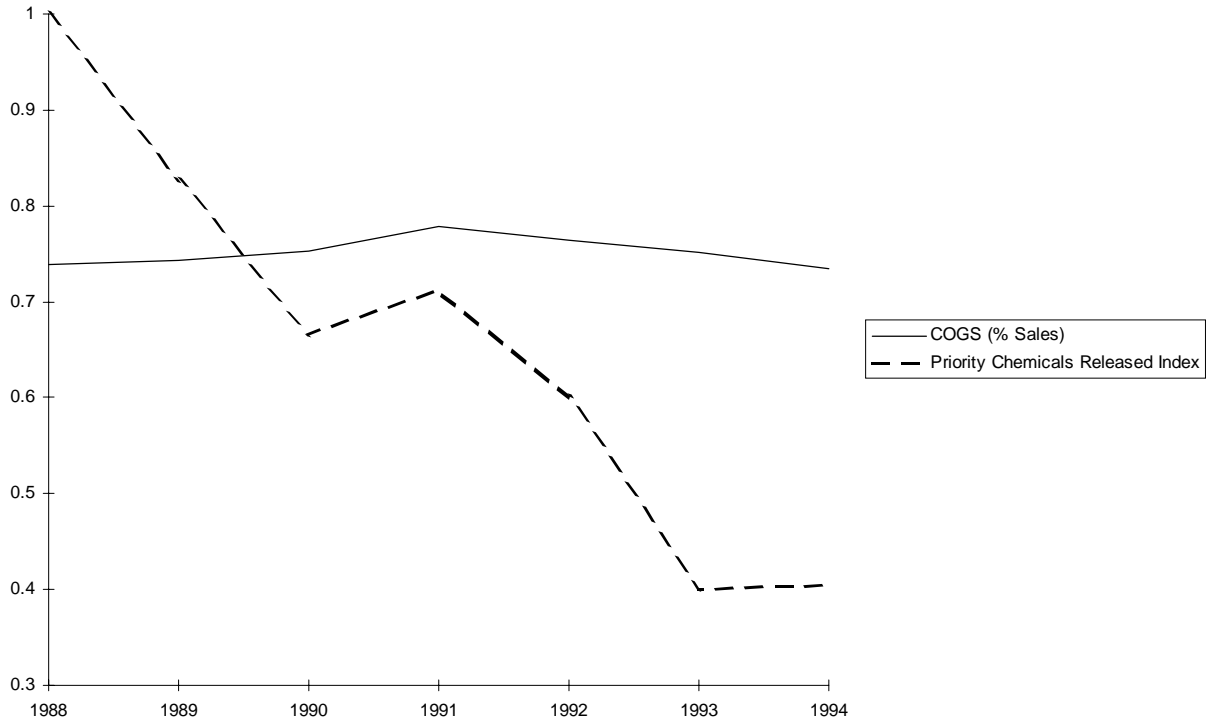


**Chart 2**



**Chart 3**

**Costs of Goods Sold (As a Percentage of Sales) and  
Priority Chemicals Released (Indexed to 1988)**





# Chart 4

Weyerhaeuser's average quarterly price; 1985 - 1995

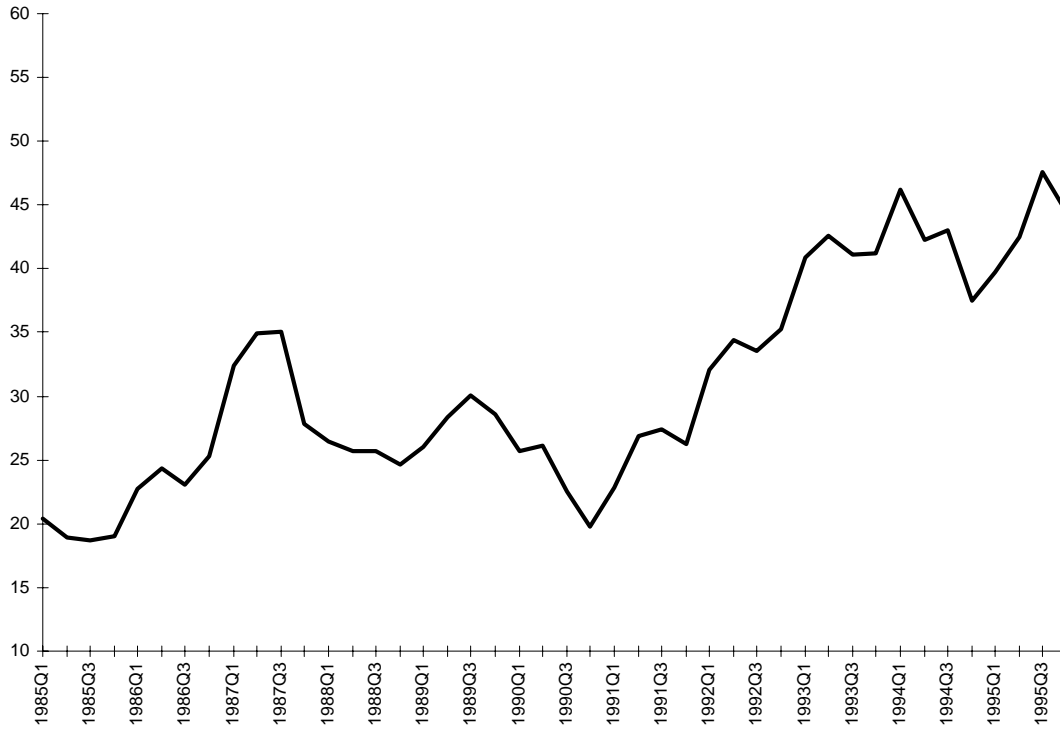
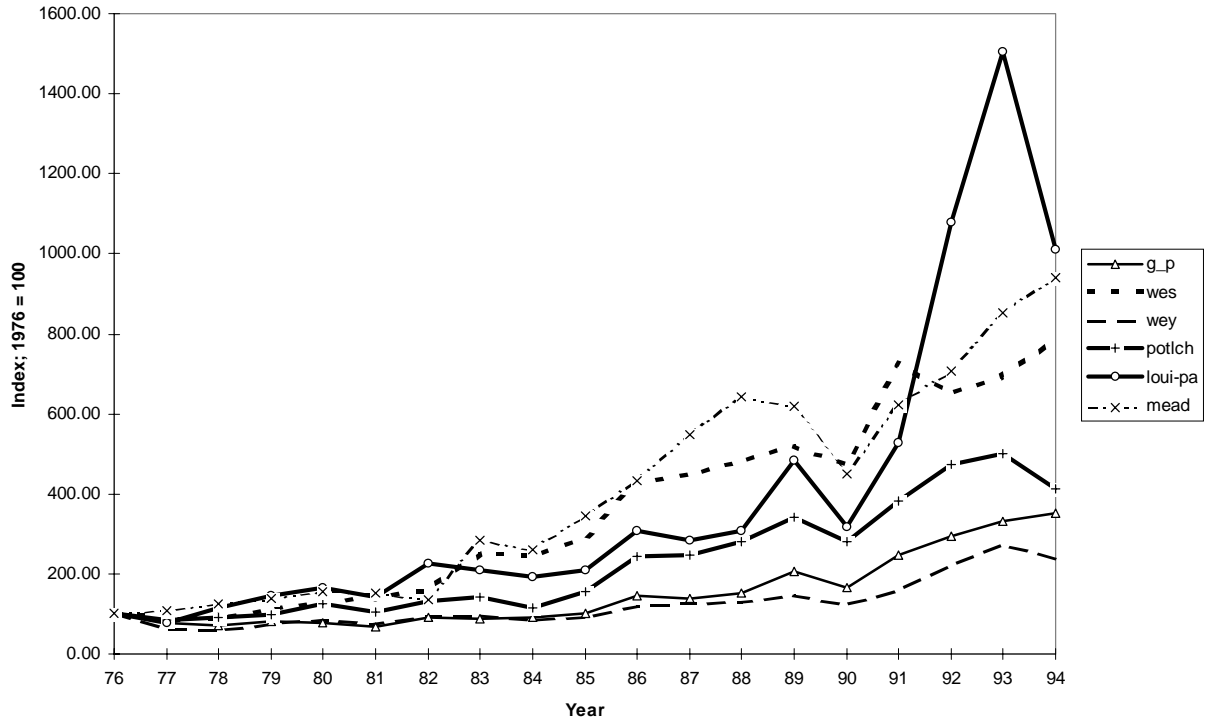


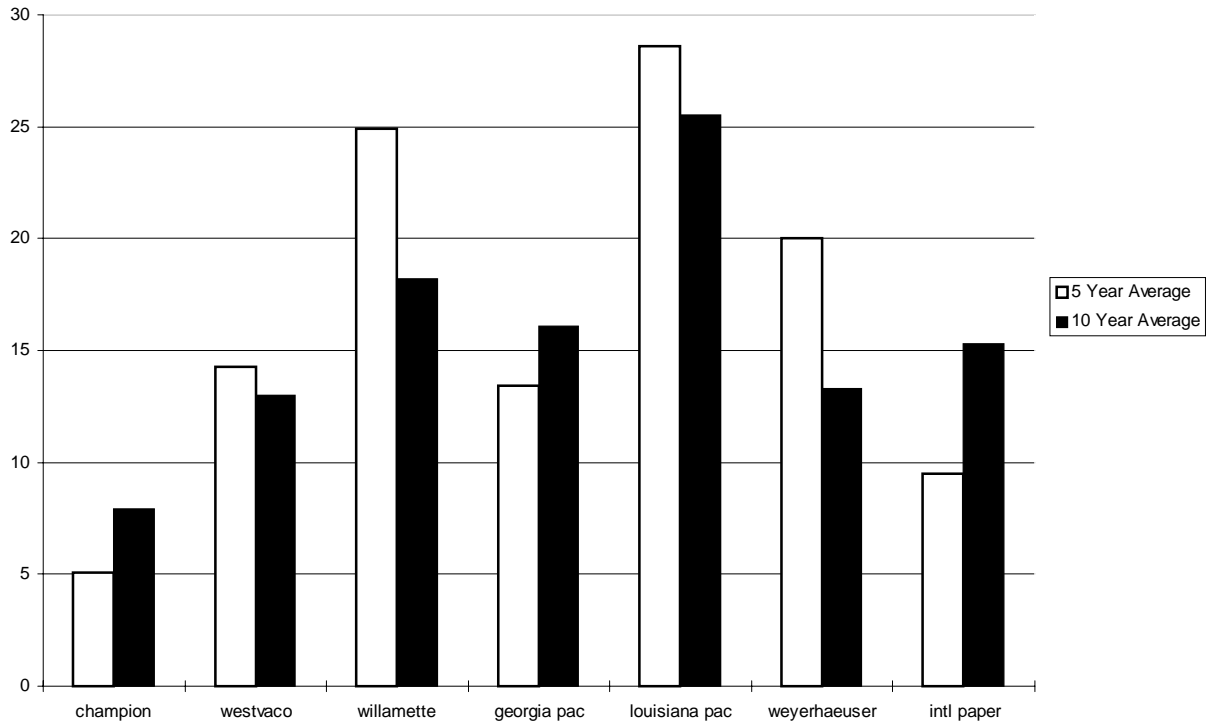
Chart 5

Wealth Index; 1976 - 1994

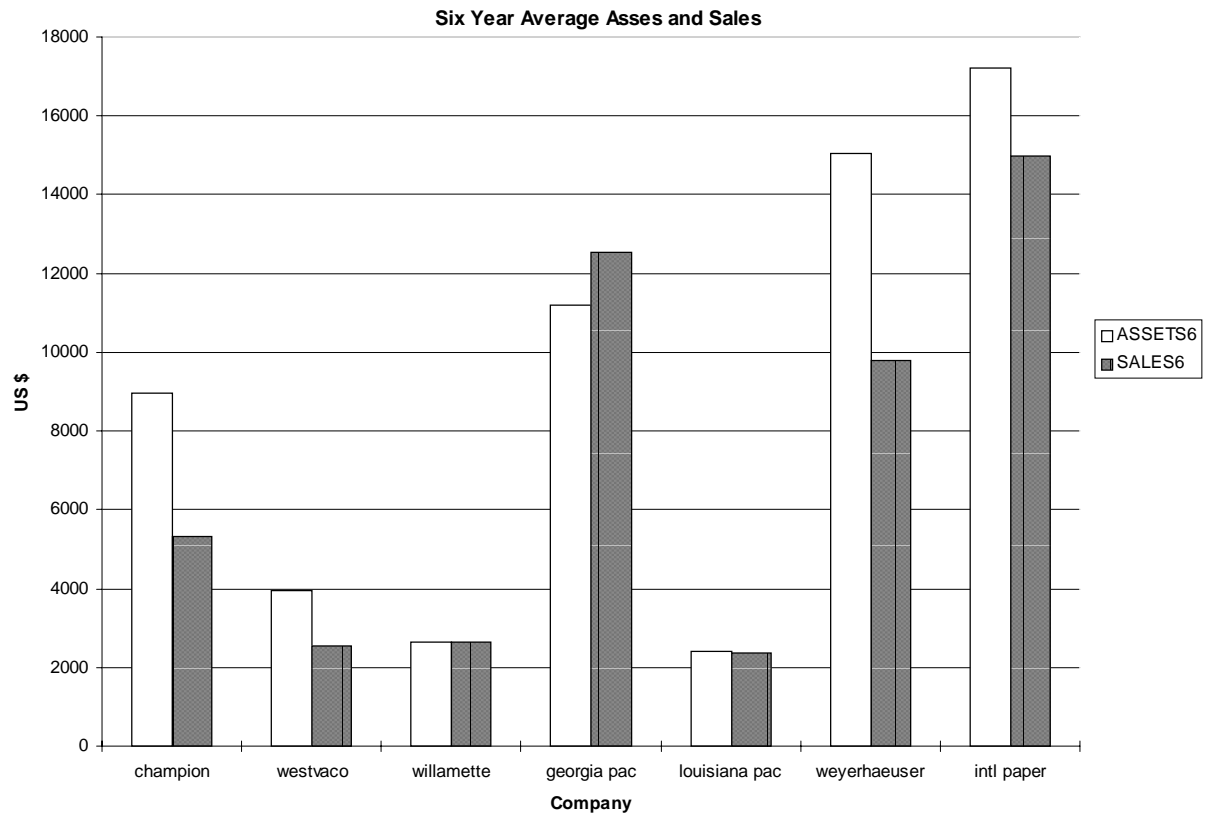


# Chart 6

## Five and Ten Year Average Return to Shareholders



**Chart 7**



**Chart 8**

**Return on Assets**

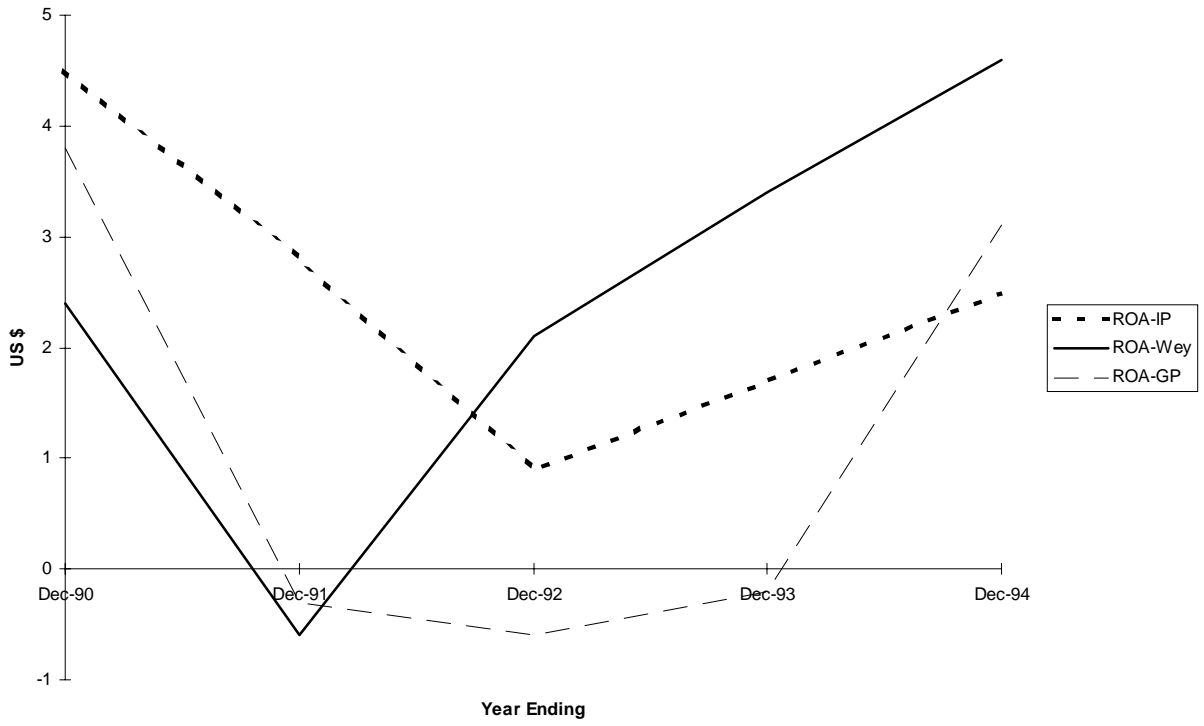
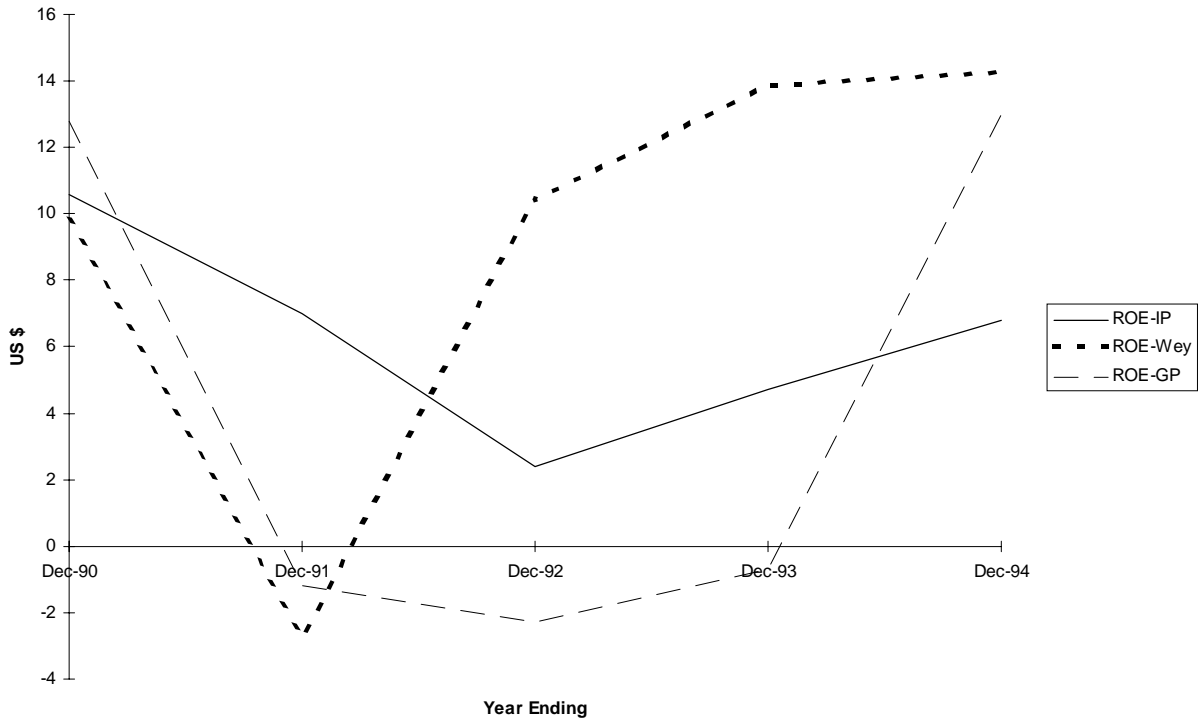


Chart 9

Return on Equity



## Appendix B