

# ***Measure What You Manage!***

## **The Financial Management Toolbox You Can't Do Without**

by Alan W. Hodges, PhD  
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Program on Risk Management  
for Horticultural Specialty Crop  
Producers in the Southern  
United States



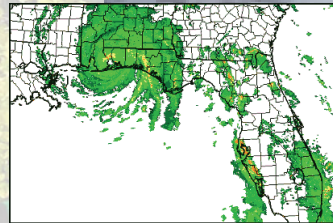
## **Wisdom On Measurement and Knowledge**

- “If you can not measure it you can not improve it”  
--Lord Kelvin
- “You got to be careful if you don't know where you're going, because you might not get there”  
--Yogi Berra
- “It's not enough to be good if you have the ability to be better”  
--Alberta Lee Cox

**SURVIVING DIFFICULT TIMES IN THE GREEN INDUSTRY**  
Managing Risk And Uncertainty In A Maturing Marketplace

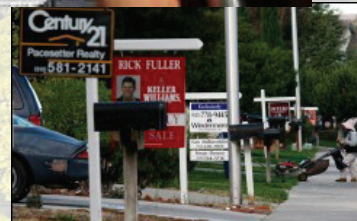
## Financial Analysis Concepts

- Performance metrics
- Accountability
- Good financial practice
- Uncertainty / Probability
- Time horizon
- Value of information



## Financial Analysis Applications

- Determination of product mix
- Unit cost analysis
- Budgeting and cost control
- Evaluation of business units
- Pricing and bidding
- Capital expansion & borrowing
- Business re-organization
- Evaluation of insurance needs
- Industry benchmark analysis & trend analysis



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## Benefits of Analysis and Strategic Planning

- Identify strengths and weaknesses
- Establish goals for improvement
- Increase business profitability
- Reduce risk of business failure
- Improve product mix
- Control costs
- Increase availability of capital financing
- Enhance employee job satisfaction
- Increase physical efficiency



## Good Financial Practice

- Compile financial information with a reliable accounting system
- Valuation of assets: cash vs. accrual basis; inventories
- Periodically review financial statements and adjust operations as appropriate
- Identify appropriate cost categories and focus on items that are significant and subject to control.
- Adjust for inflation when comparing across long periods



## **Standard questions to ask when reviewing your company's financial performance**

- **What are the total income, total expenses, net income and profitability (net margin, rate of return on equity) of the firm in the most recent period?**
- **Are these values growing, stable or declining since the previous period and over time? If so, is there a reason for the change? Is income growing in inflation-adjusted terms?**
- **What is the firm's cost structure? Are any cost items excessively high or rapidly increasing over time? What is the relationship between direct costs (COGS) and indirect, overhead or general operating expenses?**
- **What is the general financial solvency of the firm? Is the company's net worth or equity growing over time?**

## **Standard questions to ask (cont.)**

- **What is the structure of capital managed in the firm? What is the condition of the company's long term assets such as machinery, equipment and buildings with respect to accumulated depreciation? Are any assets depleted and in need of replacement?**
- **What is the liquidity situation of the firm-can current liabilities be met with expected cash flow?**
- **What is the firm's accounts receivables in relation to sales, and is the company maintaining timely cash collections on accounts?**
- **What is the firm's labor situation with respect to costs for employee wages and benefits?**
- **Are there any changes observed in productivity/efficiency indicators such as output per worker, output per square foot, or inventory turnover?**
- **How does the company's performance compare to industry standards or financial benchmarks?**

## “Insider Information”

### Company Financial Statements

- Income Statement (Profit & Loss)
- Statement Of Financial Position (Balance Sheet)
- Cash Flow Statement

### Other Business Records

- Product sales shipments
- Inventories (plants, supplies; physical and value)
- Payables / Receivables
- Payroll (wages, hours)
- Production areas (net usable space)



### Example Woody Container Nursery Income Statement

	Year				
	1	2	3	5	8
<b>Income</b>	<b>\$619,050</b>	<b>\$748,724</b>	<b>\$1,224,107</b>	<b>\$885,410</b>	<b>\$715,645</b>
Plant sales	\$587,145	\$681,874	\$680,646	\$860,994	\$835,675
Change in inventory value	\$30,932	\$15,181	-\$79,199	\$12,124	-\$124,673
Miscellaneous income	\$974	\$51,669	\$622,660	\$12,292	\$4,643
<b>Operating Expenses</b>	<b>\$554,777</b>	<b>\$613,852</b>	<b>\$861,505</b>	<b>\$854,299</b>	<b>\$896,259</b>
Labor (employee wages, benefits, taxes)	\$209,069	\$224,051	\$282,492	\$324,993	\$356,306
Supplies	\$155,691	\$189,581	\$312,164	\$271,615	\$190,240
Facility & Equipment (R&M, vehicle)	\$42,720	\$63,795	\$87,900	\$46,567	\$63,515
Administrative & Overhead	\$48,853	\$38,831	\$65,833	\$72,736	\$121,409
Capital (depreciation, interest)	\$23,576	\$59,044	\$35,116	\$66,166	\$48,524
Management (owner compensation)	\$74,868	\$38,550	\$78,000	\$72,222	\$116,265
<b>Net Income</b>	<b>\$64,273</b>	<b>\$134,872</b>	<b>\$362,602</b>	<b>\$31,111</b>	<b>-\$180,614</b>
Net margin	10.4%	18.0%	29.6%	3.5%	-25.2%
ROI	9.1%	17.6%	44.1%	3.6%	-16.4%
ROE	19.9%	52.6%	69.2%	7.1%	-21.9%

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### Example Woody Container Nursery Statement of Financial Position

	Mid-Year Value				
	1	2	3	5	8
<b>Current Assets</b>	<b>\$491,981</b>	<b>\$569,093</b>	<b>\$550,907</b>	<b>\$763,709</b>	<b>\$896,857</b>
Cash on Hand	-\$22,759	\$3,758	\$15,022	\$100,846	\$6,855
Accounts receivable	\$21,953	\$48,373	\$52,961	\$133,123	\$83,612
Plant inventory value	\$475,859	\$499,916	\$467,907	\$512,356	\$786,759
Supply inventory value	\$16,929	\$17,047	\$15,018	\$17,385	\$19,631
<b>Long Term Assets (cost basis)</b>	<b>\$213,689</b>	<b>\$197,123</b>	<b>\$271,657</b>	<b>\$98,696</b>	<b>\$202,783</b>
Machinery & Equipment	\$109,535	\$99,934	\$120,047	\$200,294	\$246,576
Buildings & Fixtures	\$77,975	\$65,352	\$129,293	\$130,209	\$248,677
Land	\$179,271	\$179,649	\$177,788	\$0	\$0
Total Original Cost	\$366,780	\$344,935	\$427,128	\$330,503	\$495,253
Accumulated Depreciation	-\$153,091	-\$147,812	-\$155,472	-\$231,807	-\$292,471
<b>TOTAL ASSETS</b>	<b>\$705,670</b>	<b>\$766,216</b>	<b>\$822,564</b>	<b>\$862,405</b>	<b>\$1,099,639</b>
<b>LIABILITIES</b>	<b>\$382,109</b>	<b>\$509,815</b>	<b>\$298,254</b>	<b>\$426,007</b>	<b>\$275,554</b>
Current Liabilities	\$78,286	\$222,191	\$92,315	\$251,864	\$236,974
Long Term Liabilities	\$303,823	\$287,624	\$205,939	\$174,143	\$38,580
<b>NET WORTH</b>	<b>\$323,562</b>	<b>\$256,402</b>	<b>\$524,310</b>	<b>\$436,399</b>	<b>\$824,086</b>

## Financial Ratios

- **Profitability:** net income, net margin, return on investment or equity
- **Solvency (long term viability):** asset/debt ratio, leverage factor
- **Liquidity (short term payment capacity):** current ratio, quick ratio
- **Productivity:** production time, value produced per unit time-area, turnover
- **Efficiency:** resource use, operating cost ratios

## Profitability Indicators

**Gross Income = Total Income – Direct Expenses**

**Net Income = Total Income - Total Expenses**

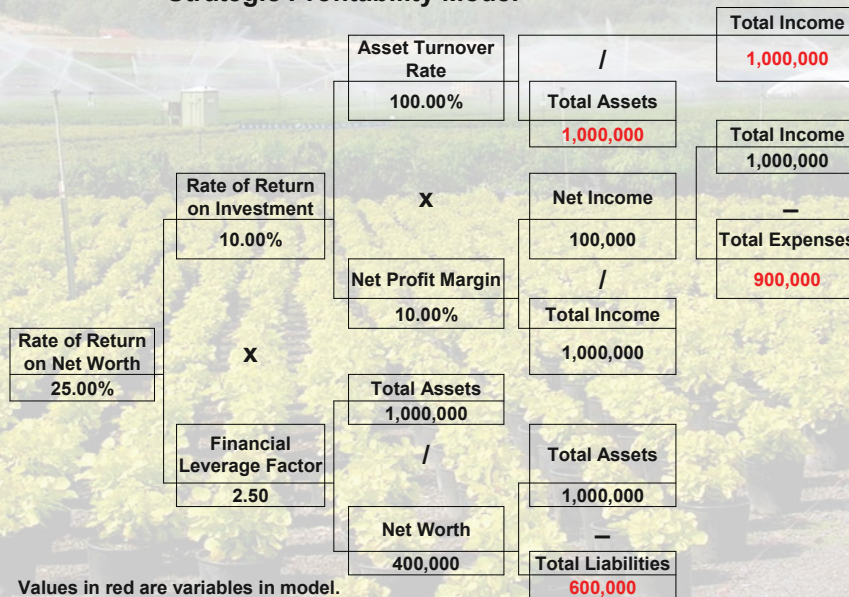
**Net Margin = Net Income / Total Income**

**Rate of Return On Investment = Net Income / Assets**

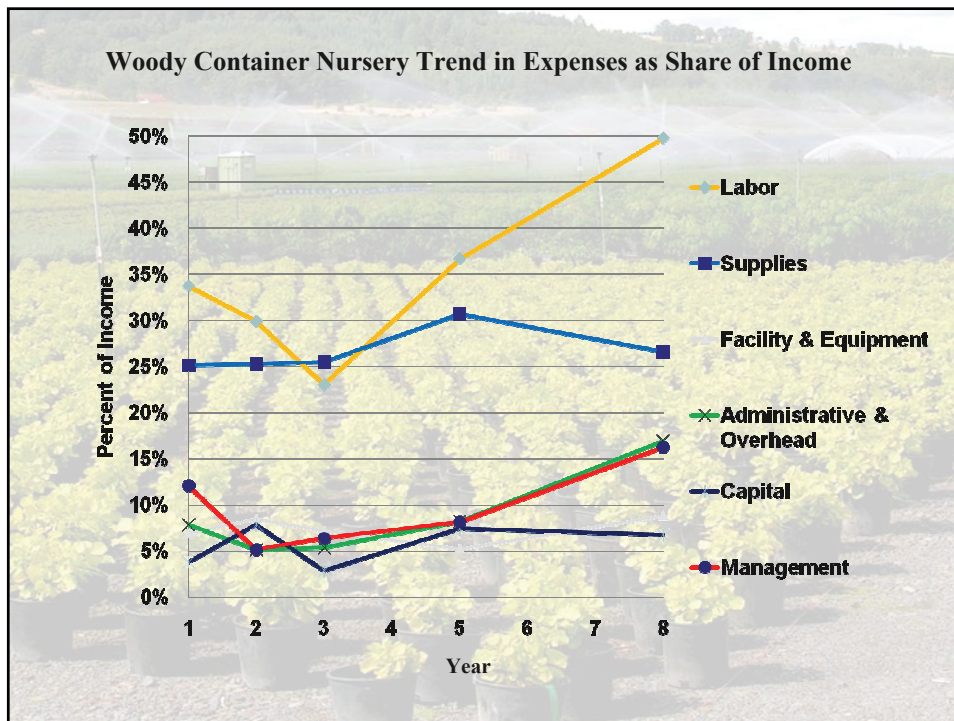
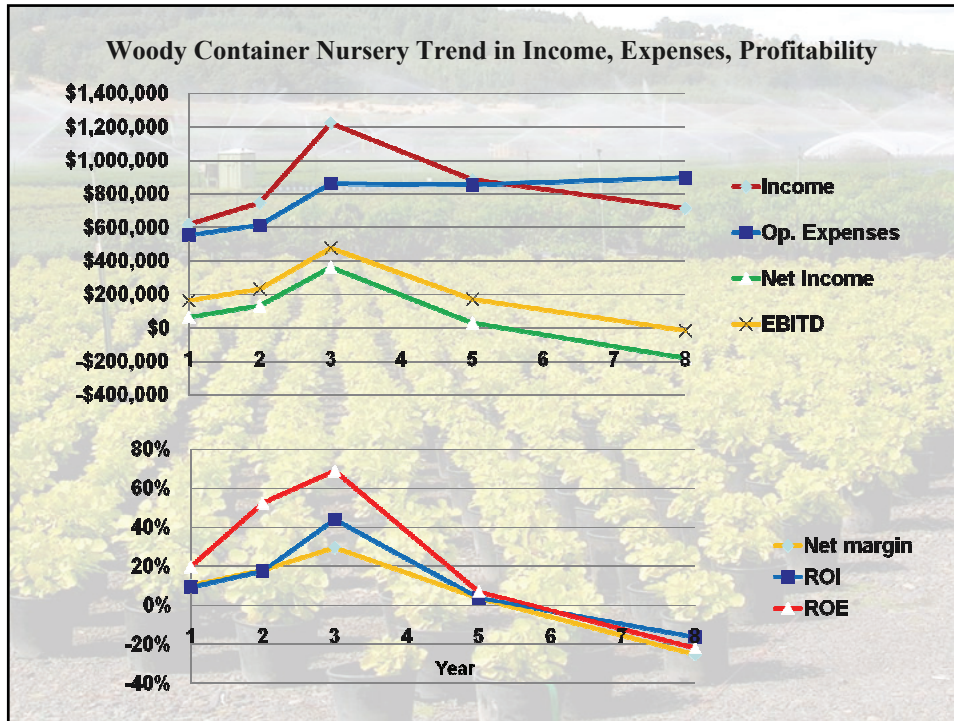
**EBITDA = Net income + Interest + Taxes +  
Depreciation + Allowances**

**Return on Equity = Net Income / Net Worth**

### Strategic Profitability Model



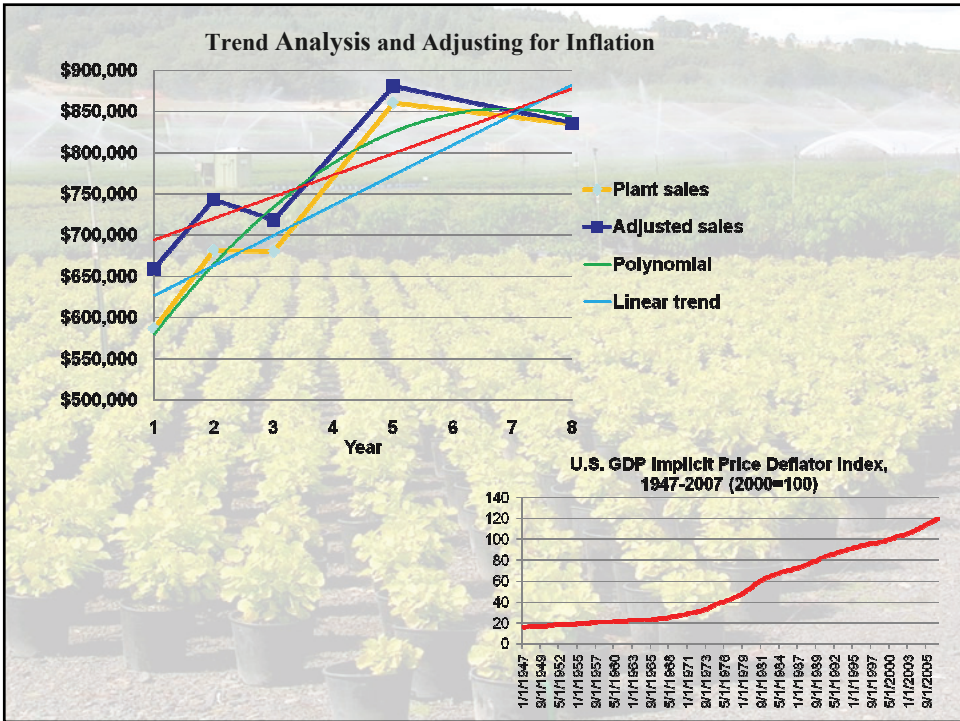
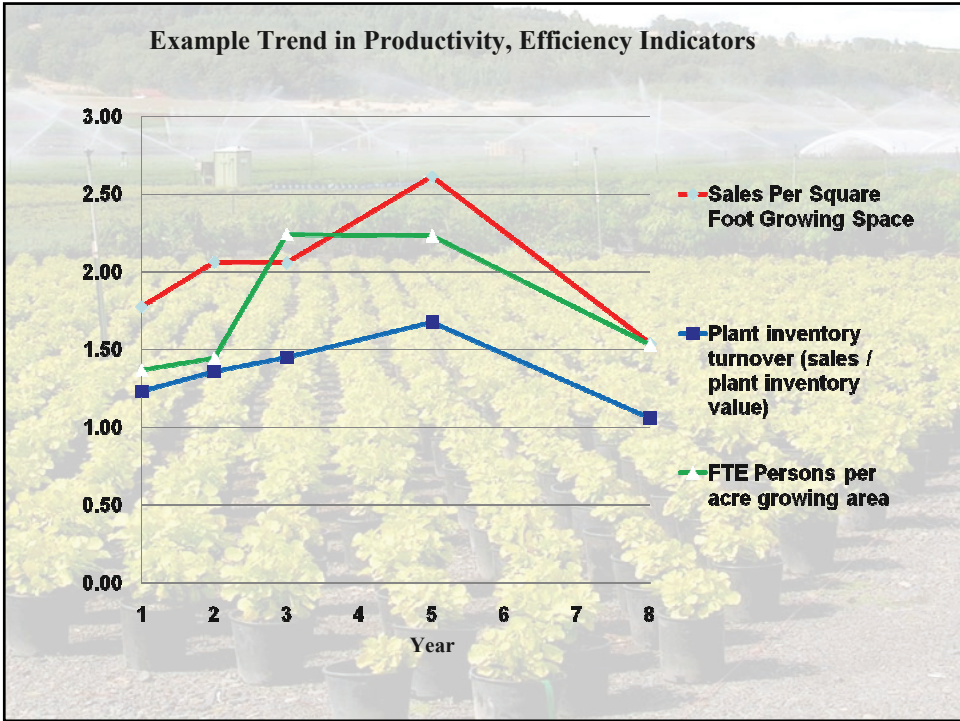
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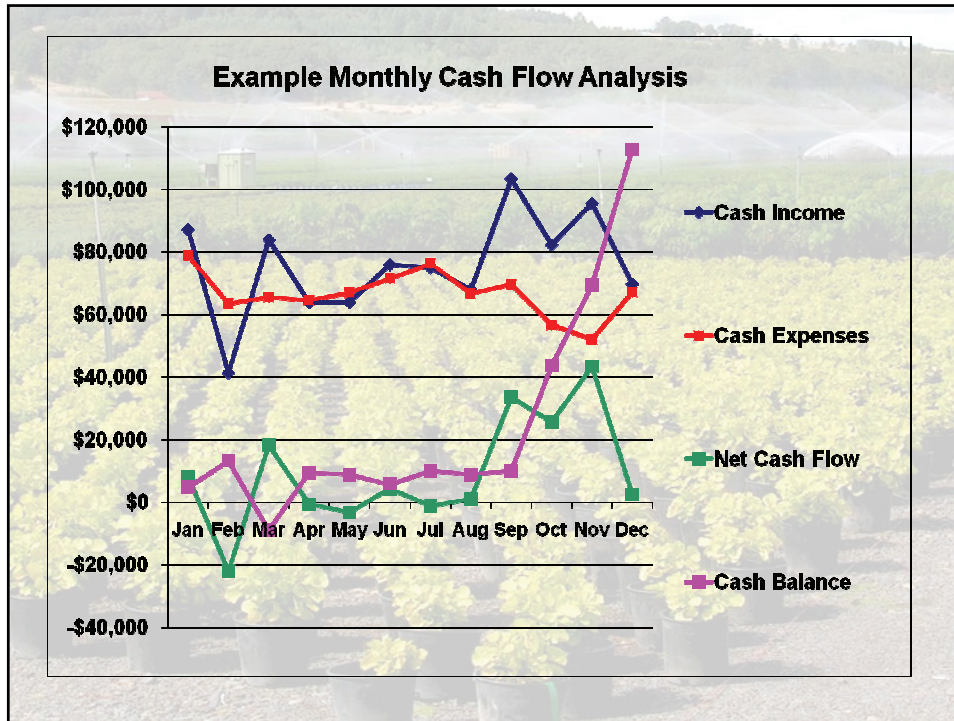
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### Industry Benchmark Analysis

- Performance indicators for key business practices in specific industries and regions.
- Nursery, retail, landscape industry benchmarks established by HRI (1980's).
- Florida Nursery Business Analysis (UF/IFAS, 1980-present).

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### **Woody Container Nursery Financial Ratio Benchmarks\***

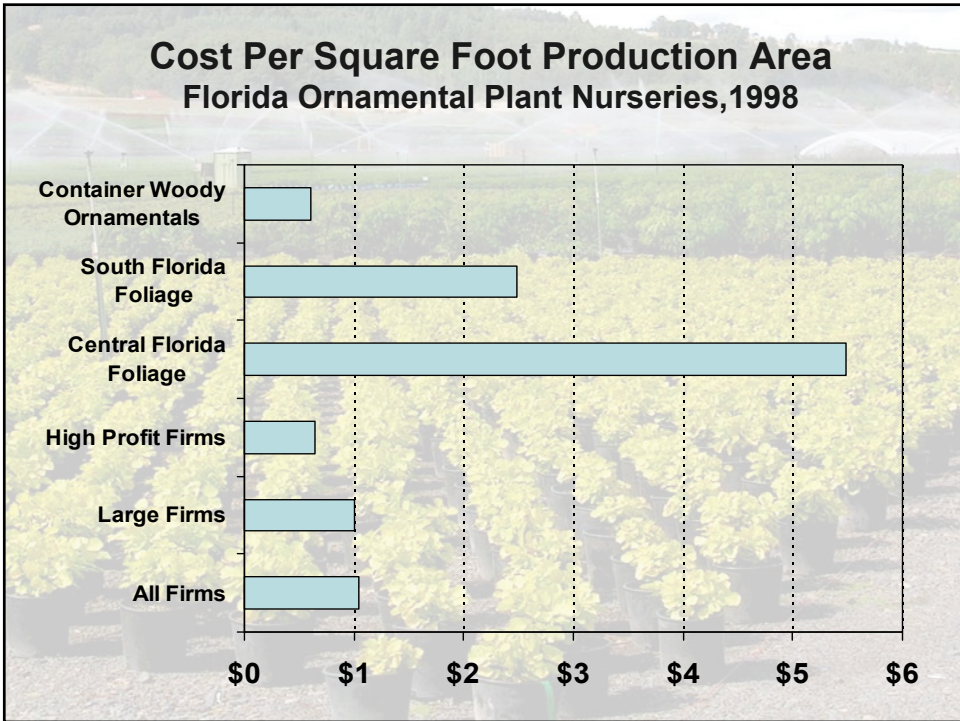
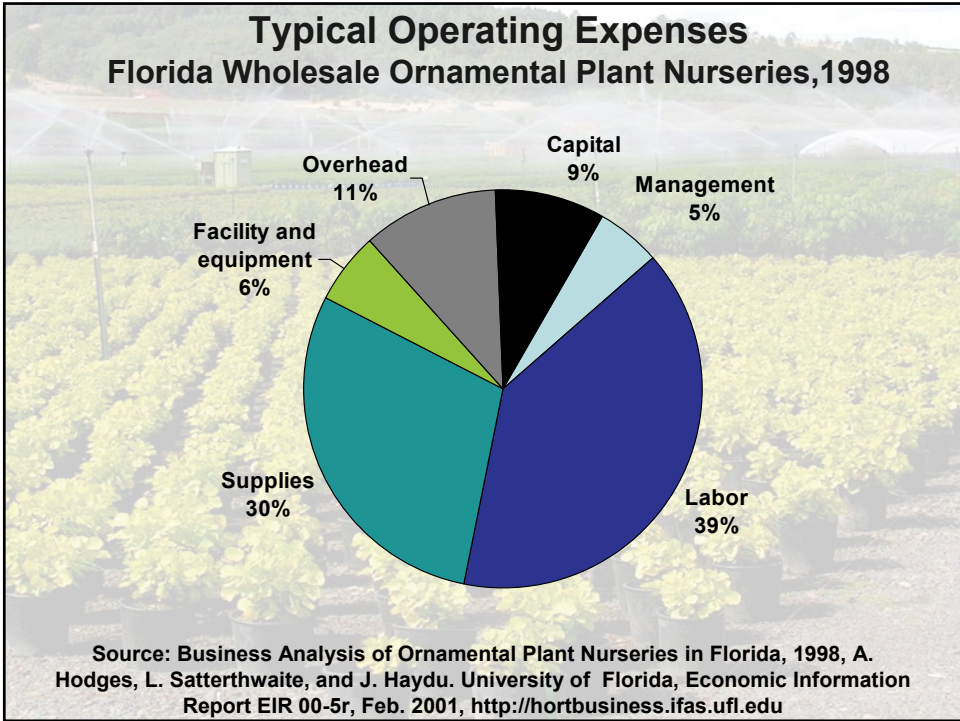
Solvency Ratio (total assets / total liabilities)	7.41
Current Ratio (current assets / current liabilities)	23.12
Cash on Hand / Current Liabilities	0.56
Accounts Receivable/Sales	0.36
Asset Depletion (current value / original cost long term assets)	0.52
Asset Turnover (sales / assets)	0.60
Inventory Turnover (sales / inventory)	0.64
Leverage (assets/net worth)	1.16

\* Average for Florida container nurseries (1990-98)

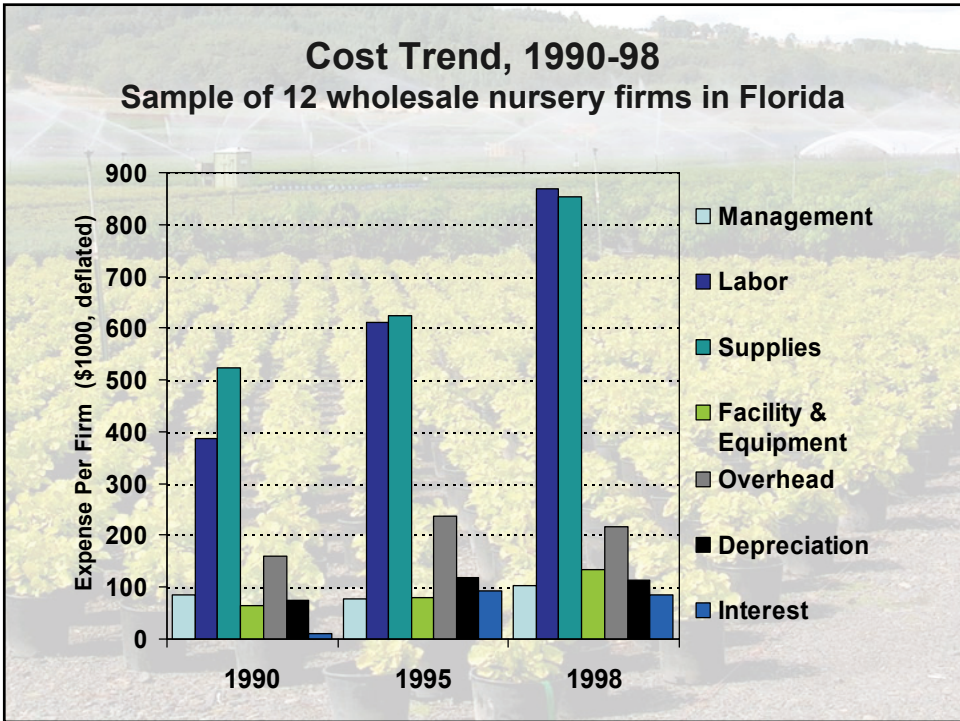
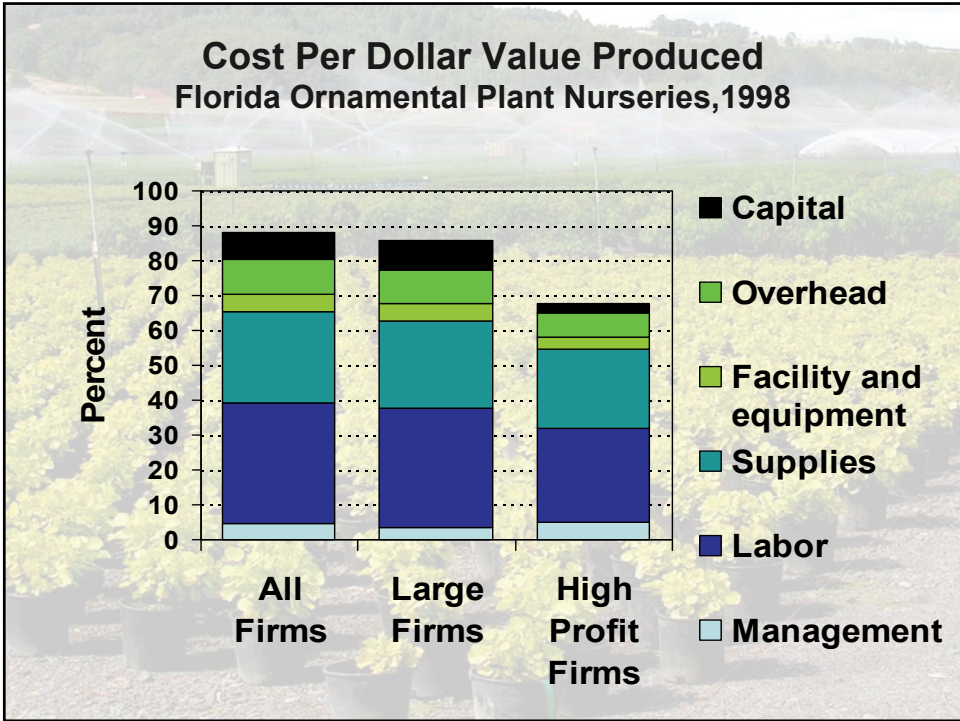
### **Woody Container Nursery Productivity and Efficiency Benchmarks\***

Sales Per Square Foot Growing Space	\$0.643
Production (sales + inventory change) Per Acre Growing Area	\$37,032
Sales Per FTE Person*	\$46,099
Plant inventory turnover (sales / plant inventory value)	64.2%
FTE Persons per acre growing area	0.61
Capital Investment Per FTE Person*	\$106,854
Capital Investment Per Acre Growing Area	\$64,949

\* Average for Florida container nurseries (1990-98)

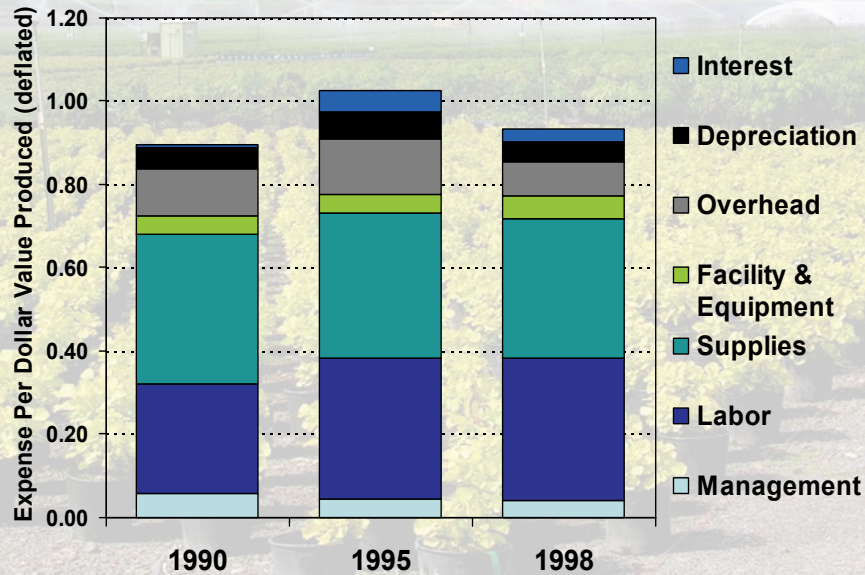


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## Trend in Costs Per Dollar Value Produced, 1990-98 12 Fla. Wholesale Florida Nurseries



### An Internet-Based System for Financial Benchmark Analysis of Wholesale Nurseries

- Database of 300+ firm-year records for Florida wholesale nurseries, 1990-98
- Query system for generating analysis reports by firm type, size, profitability
- Data entry/editing forms
- Security encryption
- Website address  
<http://hortbusiness.ifas.ufl.edu/hortnba>



#### Reports Available

##### Industry Groups:

- Container Woody Ornamentals
- Field Woody Ornamentals
- Flowering Plants
- South Florida Foliage
- Central Florida Foliage

##### Time Series Reports (1990, 95, 98)

##### Custom Reports (login required):

- Comparisons of client firm with up to three industry groups

Horticultural Business Analysis System



Log In

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## Unit Cost Analysis

- ◆ Identify and sum direct costs for each product.
- ◆ Determine space and time requirements for each product.
- ◆ Calculate indirect cost rate
- ◆ Apply indirect cost rate to each product on a time-area basis.
- ◆ Sum direct and indirect costs.
- ◆ Adjust for plant loss factor.

### Example Case

- Grow woody plant in 1 gal. container from liners for 50 weeks.
- Plants “pot-tight” for 25 weeks, then spaced 24 inches for remainder.
- Crop loss rate of 5%.

Direct Costs (\$)	
Liner	.90
Pot (1 gal)	.30
Soil	.11
Fertilizer	.10
Chemicals	.08
Packaging	.05
<b>Total</b>	<b>1.54</b>

## Two-Stage Plant Growing Cost Analysis

	Stage 1	Stage 2
Production period (weeks)	25	25
Area required per plant (sq.ft.)	X 0.25	4.0
Rental rate (\$/sq.ft./week)	X \$0.00842	
Indirect cost	= \$0.053	\$0.842
<b>Total Indirect Cost</b>		<b><u>\$0.895</u></b>
Direct Cost	+ \$1.540	
<b>Gross cost</b>	=	<b><u>\$2.435</u></b>
Loss factor (5%)	X 1.05	
<b>Total cost per plant</b>	=	<b><u>\$2.557</u></b>

**Calculation of Indirect Cost Rental Rate  
(Fla. Woody Ornamental Container Nurseries, 1998)**

<b>Total annual expenses</b>		<b>\$3,221,000</b>
<b>Less total itemized material expenses (plant, pot, soil, fertilizer, chemicals, packaging)</b>	<b>-</b>	<b>(\$847,000)</b>
<b>Total indirect (unallocated) costs</b>	<b>=</b>	<b><u>\$2,374,000</u></b>
<b>Production area (sq.ft.)</b>	<b>/</b>	<b>5,418,864</b>
<b>Rental rate (per sq.ft. per year)</b>	<b>=</b>	<b>\$0.438</b>
<b>(per sq.ft. per week)</b>		<b>\$0.00842</b>



# Analyzing Financial Statements For Better Management In Horticultural Businesses



# **Analyzing Financial Statements for Better Management in Horticultural Businesses**

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As the Green industry in the United States has grown and matured in recent years, business conditions have become increasingly competitive, with many companies experiencing depressed prices, reduced profitability, and increasing rates of bankruptcy. In this environment it is imperative that business owners and managers make the effort to regularly evaluate the company's performance. Without such measurement it is impossible to know whether the business is succeeding or where it is going. Analysis of company financial statements and other business records is a proven approach to achieving greater efficiency, productivity, profitability and financial security. Managers can use this information to guide financing of business expansions, developing marketing strategies, selecting an appropriate mix of products, controlling costs, and planning operations. Financial analysis can assist in identifying common problems, such as low output, poor pricing, excessive costs, waste, poor cash flow, undercapitalization, and imbalanced debt structure. When done correctly, this exercise will often yield benefits in terms of increased profitability, reduced risk of business failure, better customer service and increased job satisfaction of employees.

## **Comprehensive Review**

A comprehensive review of your company's financial situation should be done at least twice a year, quarterly, or ideally every month. It is not frequent enough to do once a year at tax time, because that is too late to spot problems and take corrective action. Often, the changes in financial indicators from one period to the next are as important as their absolute level. It is good practice to arrange for a formal meeting between the business owners, its financial advisors and management team to do this evaluation thoroughly and systematically. When reviewing your company's financial statements, there are a number of simple but important questions that should be asked routinely:

- What are the total income, total expenses, net income and profitability (net margin, rate of return on equity) of the firm in the most recent period?
- Are these values growing, stable or declining since the previous period and over time? If so, is there a reason for the change? Is income growing in inflation-adjusted terms?
- What is the firm's cost structure? Are any cost items excessively high or rapidly increasing over time? What is the relationship between direct costs (COGS) and indirect, overhead or general operating expenses?

- What is the general financial solvency of the firm? Is the company's net worth or equity growing over time?
- What is the structure of capital managed in the firm? What is the condition of the company's long term assets such as machinery, equipment and buildings with respect to accumulated depreciation? Are any assets depleted and in need of replacement?
- What is the liquidity situation of the firm? Can current liabilities be met with expected cash flow? Is there a seasonal pattern or trend in sales or total income? What is the firm's accounts receivables in relation to sales, and is the company maintaining timely cash collections on accounts?
- What is the firm's labor situation with respect to costs for employee wages and benefits?
- Are there any changes observed in productivity/efficiency indicators such as output per worker, output per square foot, or inventory turnover?
- How does the company's performance compare to industry standards or financial benchmarks?

### **Where to Begin**

The starting point for financial analysis of any business is to gather the most accurate and recent information available from financial statements. Using these together with other company records, one can readily calculate the standard financial ratios and other meaningful metrics. The financial statements that are provided by most in-house accounting systems or professional accountants are the income statement, the balance sheet, the cash flow statement and sometimes the statement of change in financial position. The income statement, also known as the "profit and loss", is probably the single most important one, as it summarizes the company's revenues, expenses, and net income for the year or the accounting period of interest. The balance sheet or statement of financial position is a snapshot in time at the end of the accounting period that shows the company's assets, liabilities (debts) and equity or net worth. Assets and liabilities are typically classified as current, intermediate and long-term, because these different types are managed differently. The cash flow statement indicates the sources of cash from operations, financial lenders and savings, and the uses of cash for operations, investments, debt service and payments to business owners. The statement of change in financial position shows how the balance sheet items change from one accounting period to the next. For a thorough analysis, it is necessary to look at all of these financial statements together because each provides a different type of information, and many of the financial measures are calculated from items on different statements.

The financial statements are supposed to conform to Generally Accepted Accounting Principles (GAAP) developed by the accounting profession and governed by the Financial Accounting Standards Board (FASB). These standards assure that the financial information has a consistent meaning such that valid comparisons can be made over time or across different businesses, and for publicly-held companies that there is full disclosure of information that may be important to stockholders and potential investors. Within

the standards, however, there is considerable latitude to customize the financial statements to meet your company's particular needs. For example, in a wholesale nursery it may be important to have a very detailed itemization of production expenses, whereas a retailer would have a listing of major groups of merchandise purchased for resale and the gross margin on sales. It may be necessary to work with your accountant or accounting software vendor to find the right form for your financial statements. Businesses may elect to use either a cash-basis or accrual basis for accounting. The cash-basis is more commonly used for small businesses because of its simplicity in tracking of cash transactions and may avoid some tax liability for gains on unsold product, however, the accrual system is usually more accurate since it accounts for changes in inventories, receivables, and payables.

### **Net Income**

The "bottom line" for financial performance of a company is usually net income, simply the difference between total income and total costs. Net margin is the ratio of net income to total income, or in other words the share of income that is profit. Sometimes, the income statement may show net income before taxes, management expenses and interest expenses, in which case it is termed return to capital. Rate of return on investment is the net income or return to capital divided by the total capital investment (assets owned). Rate of return on net worth or equity is an even more refined measure of profitability, calculated by dividing net income into the net worth (total assets less liabilities). This measure expresses profitability in relation to the equity of owned assets, and is comparable to annualized yields on stocks, bonds, or savings deposits.

### **Cost Analysis**

Evaluation of operating costs is especially important for managers, because costs are typically subject to control more than is income. For effective analysis of costs, it is important that the expenses be identified in meaningful categories. As a general rule, any cost that represents 5 percent or more of total costs should be itemized. In many nursery businesses, there may be perhaps 20 to 50 individual expense categories, which could generally be grouped into a reasonable number of major categories such as management, employee labor & benefits, materials/supplies, facility/equipment, administrative overhead, depreciation, and interest. The costs should be expressed as a percentage of total costs or income in order to evaluate meaningfully. The cost per unit of growing space is also a useful measure for estimating individual plant growing costs or comparing cost efficiencies of different production systems.

## **Asset Valuation**

In order to have an accurate calculation of profitability, the relationship between net income and investment or net worth, there must be a realistic valuation of the company's assets. Green industry firms have special challenges in accounting for inventories of growing plants because they difficult to value as they are constantly changing. Changes in plant inventory may be an especially significant factor in a nursery that is rapidly growing. A recommended approach is to use the degree of completion method of valuation, based on average market prices and average production times. So, for example, if a particular crop normally requires 20 weeks to produce, and at the end of the accounting period it has been in production for 10 weeks, then we would say that this product is 50 percent finished, and would be assigned an inventory value equal to half of its ultimate sales value.

If the firm is rapidly growing and expanding its inventory, a representative measure of financial position can be taken as an average of values at the beginning and end of the accounting period. If you are evaluating financial statements over an extended time period, say 3 or more years, changes in values should be stated in inflation-adjusted terms, using a price index such as the Consumer Price Index (CPI) or the GDP Implicit Price Deflator (US Commerce Dept.). Owned capital in buildings, improvements, and equipment are usually assessed at original purchase cost less depreciation, known as book value. Sometimes when these assets are rapidly depreciated under IRS rules for accelerated cost recovery (ACR) over 3, 5 or 7 years, the useful life and true value of the asset may be understated. Also, the value of land owned by the company is typically stated at original purchase price, which may be far below its real market value, especially during times of rapid growth in real estate prices as we have experienced over the past few years.

## **Financial Ratios**

Relationships among the values on a company's balance sheet express measures of financial solvency and liquidity. Leverage is the ratio of total assets to net worth and is an indicator of long-term solvency, which takes into account the financial risk of the venture. Higher values indicate greater risk, with potential for both greater returns and greater losses. The impact of financial leverage on profitability can be understood as a multiplier (leverage multiplied by the rate of return to capital assets equals the rate of return on net worth). Leverage factors below 2.0 are generally considered to represent a very safe financial position. The quick ratio is a measure of liquidity, or a firm's ability to meet short-term debts, calculated by dividing cash and accounts receivable by current liabilities. Cash and accounts receivable are the most liquid of current assets, which are usually available on short notice, but inventories are not included in this measure because they may not be immediately salable. A value for this ratio below 1.0 would indicate an illiquid position.

Beyond strictly financial information, other kinds of information on the physical and labor resources of your company may enter into an evaluation of productivity and efficiency. For nursery operations, the plant production area should be measured as the net usable growing space within growing beds and fields,

and excluding non-productive space in aisles, driveways, and other service areas. This can be used to evaluate costs and sales per square foot, or the level of capital investment per acre of growing area. Labor is often the most important resource in a horticultural business, and it is important to track it in terms of physical quantity (hours) as well as monetary cost, in order to measure its productivity or efficiency. The total payroll hours of labor employed should include production, administrative, sales, and management personnel. Labor is often expressed in terms of fulltime equivalent (FTE) persons, representing the number of employees working for a year at 40 hours per week, or 2,080 hours per year.

### **Benchmark Analysis**

Financial benchmark analysis is the use of key indicators to evaluate a company's operational and financial performance in comparison to industry standards or benchmark values. Benchmark data are available for most major industries, for different types and sizes of businesses, and regions of the country. Ideally, comparisons should be made with the leading or most profitable firms in an industry. Some sources of information for agricultural sector industries include the Farm Credit Bank, the Risk Management Association's Annual Financial Statement Studies ([rmaq.org](http://rmaq.org)), as well as land grant university research and extension programs. The University of Florida's *Horticultural Business Analysis System* is an internet-based system for financial analysis of wholesale nursery firms (available at <http://hortbusiness.ifas.ufl.edu/hortnba/>), with benchmark data available for Florida growers (1990-2004), including large and highly profitable firms, and for several types of plants, such as woody ornamentals, flowering plants, and tropical foliage.





## **Notes**

Surviving Difficult Times in the Green Industry:  
Managing Risk and Uncertainty in the Maturing Marketplace

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