FINANCIAL MANAGEMENT FOR SMALL COMPANIES

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ABSTRACT

The wood-products industry is characterized by many small manufacturers that lack the staff to compile and analyze information on their operations and investments. Two computer programs, FRAN and JEFFI, have been developed by the USDA Forest Service at Princeton, West Virginia, to help small companies better analyze and monitor current performance, and better evaluate opportunities to expand operations, move into new product areas, or otherwise make additional investments. These financial management tools are described in detail.

INTRODUCTION

Many small companies need a tool with which they can assess their business performance or analyze the potential for new investment. A computer program called FRAN (Financial Ratio Analysis) allows companies to analyze their financial performance. FRAN differs from similar programs because it uses information from forms filed with the Internal Revenue Service. A second program; JEFFI (Just Enough Fine Financial Information) provides discounted and non-discounted measures of investment potential. As with FRAN, there is a minimum of data entry and some inputs can literally be taken from the "back of an envelope."

Both computer programs are user friendly and operate under Microsoft Windows. Minimum system requirements include an IBM or IBM-compatible PC with a 3.5-inch disk drive, Windows 3.1, a 486 processor, at least 8 megabytes of RAM, 4 megabytes of hard disk space, and a color monitor.

FRAN

FRAN computes a variety of financial measures to help bankers, investors, and business owners and operators better examine ongoing activities. In addition to using data from IRS forms, FRAN allows the user to choose among three income measures: operating income, total income, and net operating income.

Operating income includes only income generated by the normal operation of the business. It does not include non-operating income from outside revenue sources or other positive cash flows such as those resulting from the sale of assets. Total income includes both operating and non-operating income. Keown et al. (1994) recommended the use of net operating income, which excludes non-operating income but includes interest expense. They agree that this eliminates the effect of financial structure when comparing the income of one firm with another. However, Hansen and West (1999) found that operating income was closest to that published by both Dunn and Bradstreet and Robert Morris Associates. Thus, FRAN allows the user to choose one or all income measures when computing profitability measures.

Six basic categories of measures are provided. The first four are widely available in financial and accounting texts, but workforce and capital investment measures are unique to FRAN:

- Profitability measures
- Finance/leverage measures
- Liquidity/short-term solvency measures
- Activity measures
- Workforce measures
- Capital investment measures

Within these categories, FRAN includes the following measures

Profitability Measures	Gross margin (gross profit) Return on sales Return on assets Return on equity
Finance or Leverage Measures	Equity ratio Fixed assets divided by equity Current liabilities to equity Debt to equity Times-interest-earned
Liquidity Measures	Current ratio Quick ratio
Activity Measures	Accounts receivable turnover Collection period Inventory turnover Inventory in days Asset turnover Fixed asset turnover.
Workforce Measures	Sales per employee Average payroll per employee Average employment Employment turnover
Capital Investment Measures	Total dollar of asset additions Asset additions to depreciation Asset additions to net sales Estimated cost of capital (composite long and short-term debt)

Use of Financial Measures

Financial measures can be used in one of three ways. First, they may convey an immediate message. For example, a return on equity of 20% is easily put into perspective, but a current ratio of 3.48 may not be as easy to understand. Second, to help clarify the latter situation, comparison with others in the same or similar industries may be valuable. For example, a current ratio of 3.48 would be high if the average for others in the industry was 2.5. Third, it may be best to compare the most recent value with the same measure

computed in past periods. If in the past the current ratio was 4.8, 3.5 may indicate an improvement, especially with an industry average of 2.5. Keown et al. (1994) cited the following limitations for financial measures:

- it is sometimes difficult to identify the industry category to which the finn belongs;
- published industry averages are only a.pproximations and, therefore, general guides;
- financial ratios can be too high (i.e., there may be a limit to how high is good) or too low (i.e., there may be a limit to how low is good); and. . .
- the industry average may not represent a desired target level or norm.

JEFFI

As mentioned, JEFFI provides a quick, first look at investment potential, yet it produces both discounted (internal rate of return and net present value) and non-discounted (payback period) measures of investment performance. This program also calculates separate measures of returns for the overall project and equity investors; the latter provides explicit recognition of debt amortization and periodic payments to interest and principal. JEFF! also is unique in its treatment of final year cash flows, depreciation, working capital set-asides, repayment of borrowed capital, derivation of the project discount rate, and treatment of negative before-tax income.

Final Year Cash Flows

Regardless of the length of the investment (users can specify 3 to 30 years), final year cash flows assume the following:

Return of all working capital outlays;
Return of the value of the land at its original cost; and
Return of assets at the user specified salvage rate or their depreciated book value (appropriate tax treatment also is provided).

Depreciation

JEFF! intentionally uses annual totals for depreciation to preserve the program's simplicity. Although accountants treat depreciation as an expense, depreciation is not a true annual cost. The cost represented by depreciation is taken into account by the initial investment in plant and equipment. Depreciation, or capital recovery as it is otherwise known, is recognized in discounted cash flow analyses for its role in shielding a portion of before tax revenue from taxation. Thus, it is deducted from before-tax cash flows but added back to the after-tax profit to arrive at a value for after-tax earnings.

Working Capital

In accounting, working capital refers to a firm's short-term assets. Gross working capital is defined as the firm's total current assets, while net working capital is the difference between current assets and current liabilities. In addition to accounts receivable and inventories, gross working capital may include cash or short-term securities. With JEFFI, the term "working capital" is narrower and reflects the need to cover the cost of raw material inventories, work in process, finished goods inventories, and receivables.

When using JEFFI, the user is required to establish an initial amount for working capital. This becomes part of the initial investment. As the business grows and sales increase, so does the working capital needed to support expanded inventories, work in process, and receivables. JEFF! automatically increases (decreases)

working capital outlays in support of higher (lower) levels of sales. The adjustment is based on the relationship (during the first year) between total sales and the initial working capital set aside.

Repayment of Borrowed Capital

JEFFI recognizes that when money is borrowed, its after-tax cost may be included in the discount rate as part of the weighted average cost of capital (WACC), or it may be accounted for explicitly through periodic repayment (amortization) of interest and principal. When the latter approach is used, the overall return measures apply exclusively to the equity portion of the investment. Conversely, when the cost of capital includes interest costs, return measures apply to the overall project.

Derivation of the Project Discount Rate

The discount rate used to derive the net present value for the overall project is based on the WACC concept, which recognizes that investments usually include debt and equity contributions. JEFFI uses a user-specified borrowing rate (average rate charged by lenders), equity rate (the average return desired by investors), and debt position (the percent of the total investment that is borrowed) to compute an after-tax WACC according to the following formula:

WACC = ((borrowing rate * (1 - tax rate)) * debt position)
+ (equity rate * (1 - debt position))

Negative Before-tax Income

It is possible for the investment to generate negative before-tax income, particularly in the early years of an investment. Should this occur, JEFFI sets the tax to zero. In reality, negative eamings could be brought forward and used to lessen the tax burden in future years. Or negative earnings could be used in the year they occur to offset positive income from other activities of the firm. In either case, the impact of negative income would be lessened to some degree. However, because such treatment calls for additional information that is outside the parameters of the investment itself, JEFFI does not assume any write-off or carry forward of the negative before-tax income.

Inputs

The following data are needed to run JEFFI: cost of land, cost of building and equipment, salvage value, working capital, effective tax rate, borrowing rate, percent of the total investment that is borrowed, equity rate, and project life (we recommend 10 years). Also required are annual sales revenues (you may itemize by product), annual variable and fixed costs (these may be itemized), any building and equipment additions after the initial investment is made, and annual depreciation (remember to include depreciation for any building and equipment additions).

Outputs

Users can choose any or all of the following outputs: cash flow table, cash flow summary, and graphic display.

Cash Flow Table
The cash flow table displays annual data beginning with a recap of revenues, costs, capital additions, and depreciation inputs. Following this are the resulting cash flows to the project that begin with before-tax revenue and end with accumulated net cash flows, a schedule of debt repayment including interest and

principal, and a second set of cash flows that incorporate explicit treatment of loan interest and principal repayment. Interest is deducted from before-tax income and the repayment of principal is deducted from the after-tax cash flow. What remains is the return to equity.

Cash Flow Summaries

The one-page cash flow summary provides a side-by-side display of the cash flow data for the project and equity holders. It includes a total sales and total cost summary along with a loan amortization schedule. Users must choose a specific year in the life of the investment as only one year can be displayed at a time. At the bottom of the page is a summary of project and equity return measures based on the entire life of the project regardless of the year specified for the side-by-side cash flow display. This summary includes the computed project discount rate (WACC) and three measures of performance: internal rate of return, net present value, and payback period.

Graphic Display

This section provides a graphic display of gross sales and after-tax returns to the project and to equity holders.

CONCLUSION

FRAN and JEFFI enable owners of small businesses to gain a better understanding of their operating performance and the potential for new investment. Both programs are easy to use, yet they provide comprehensive financial information. FRAN's major advantage is that it uses financial data readily available from forms filed with the Internal Revenue Service. Thus, at tax time, it would take little extra effort for a manager to take a quick look at financial performance. After only several years, the firm would have valuable historic data with which to evaluate current and future performance.

JEFFI requires a minimum of data yet produces sophisticated and useful measures of financial performance. These include the internal rate of return, net present value, and payback period. Also, the weighted average cost of capital is used to compute a discount rate.

Both FRAN and JEFFI are available free of charge and can be obtained by contacting Jeff Palmer at the USDA Forest Service, Northeastern Research Station, Forestry Sciences Laboratory, 241 Mercer Springs Road, Princeton, WV 24740 (Phone: 304-431-2732; e-mail: jpalmerOl@fs.fed.us).

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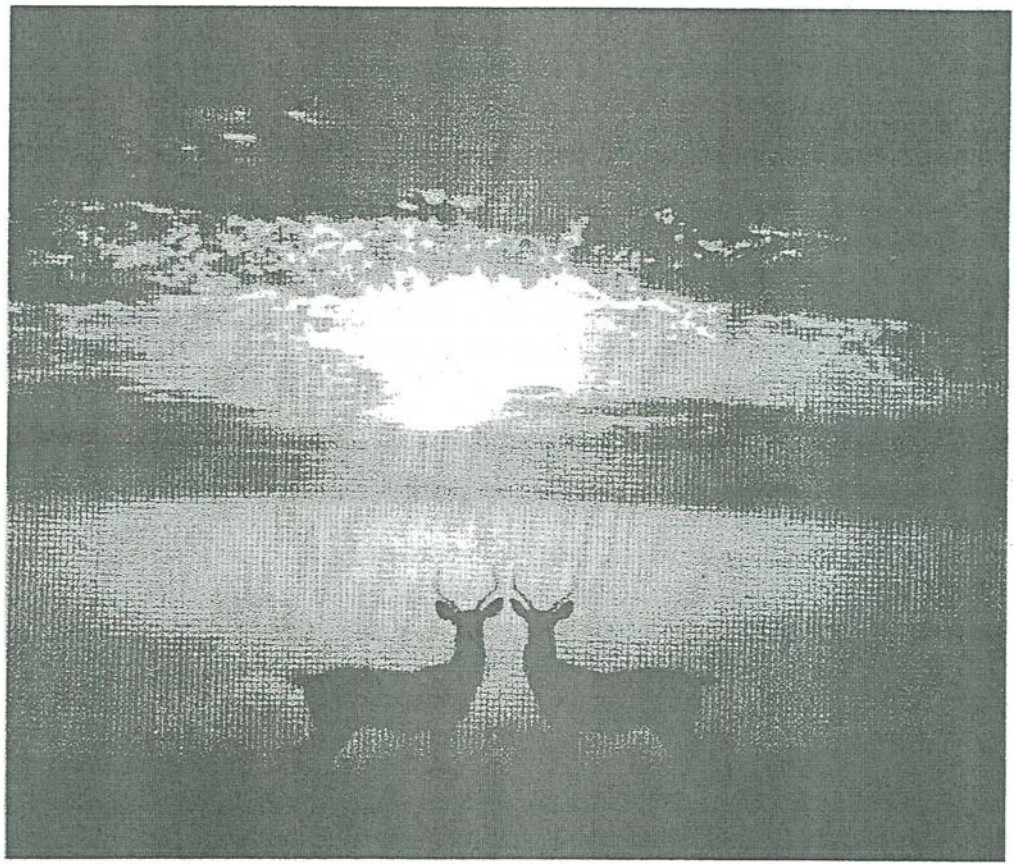

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