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Brief 71-10377

NASA TECH BRIEF

Marshall Space Flight Center

Computer Program for Discounted Cash Flow/Rate of Return Evaluations

The problem:

To provide a financially sound technique for the economic evaluation and justification of new equipment, processes or systems.

The solution:

The Discounted Cash Flow/Rate of Return (DCF/ROR) technique, which has been incorporated into a set of three computer programs: the discounted cash flow/rate of return evaluations (DCF/ROR) program; the interest factor (INTFAC) program; and the depreciation (DEPREC) program. The technique provides an economic methodology for reducing all parameters to the financially sound common denominator of "present worth," and calculates a resultant rate of return on the investment.

How it's done:

The DCF/ROR program features a running option for either a complete detailed printout of all period cash flows, both net and discounted, or for final values only. The program also provides for choosing the input and output for cash flows, based on annual, semiannual, quarterly, bimonthly, or monthly periods, with the answers converted to an annual basis for greater accuracy when non-annual periods are used. The various advantages of this program include eliminating the lengthy, time consuming and error prone manual solutions for payout and DCF/ROR percentage results, upgrading the economic soundness of the evaluations by permitting other than annual net cash flow periods as well as the conventional annual periods, and providing a continuous rate of return percent in addition to the period rate of return percent.

INTFAC provides calculated data for various interest factor considerations such as compound amount, present worth for any specified initial amount, interest rate, and number of years. The program can provide this information as a table of either dollars, percentages, or factors. Although principally used for component calculations in DCF/ROR evaluations, the program can provide the same data for any desired purpose.

DEPREC calculates the year beginning book value, the annual depreciation amount, and the cumulative depreciation through the year ending. Any of the following methods can be employed: double declining balance, or 200%; declining balance, or 150%; and sum of digits, or sum of year's digits. The program output is a table of either dollars, factors or percentages. If other than annual periods are used, the program will print out the amounts for the annual, quarterly and monthly periods. If only an annual output is required, the other two are omitted, resulting in a faster output.

Notes:

1. This program is written in BASIC language for use on the GE 420 Time Sharing Computer Terminal.
2. Requests for further information may be directed to:

   COSMIC
   112 Barrow Hall
   University of Georgia
   Athens, Georgia 30601
   Reference: B71-10377

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to:

(continued overleaf)

Patent Counsel
Mail Code A&TS-PAT
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Marshall Space Flight Center, Alabama 35812

Source: W. D. Robson of
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