MINI CASE

DONNA JAMISON, A 1997 GRADUATE OF THE UNIVERSITY OF TENNESSEE WITH FOUR YEARS OF BANKING EXPERIENCE, WAS RECENTLY BROUGHT IN AS ASSISTANT TO THE CHAIRMAN OF THE BOARD OF COMPUTRON INDUSTRIES, A MANUFACTURER OF ELECTRONIC CALCULATORS.

THE COMPANY DOUBLED ITS PLANT CAPACITY, OPENED NEW SALES OFFICES OUTSIDE ITS HOME TERRITORY, AND LAUNCHED AN EXPENSIVE ADVERTISING CAMPAIGN. COMPUTRON'S RESULTS WERE NOT SATISFACTORY, TO PUT IT MILDLY. ITS BOARD OF DIRECTORS, WHICH CONSISTED OF ITS PRESIDENT AND VICE-PRESIDENT PLUS ITS MAJOR STOCKHOLDERS (WHO WERE ALL LOCAL BUSINESS PEOPLE), WAS MOST UPSET WHEN DIRECTORS LEARNED HOW THE EXPANSION WAS GOING. SUPPLIERS WERE BEING PAID LATE AND WERE UNHAPPY, AND THE BANK WAS COMPLAINING ABOUT THE DETERIORATING SITUATION AND THREATENING TO CUT OFF CREDIT. AS A RESULT, AL WATKINS, COMPUTRON'S PRESIDENT, WAS INFORMED THAT CHANGES WOULD HAVE TO BE MADE, AND QUICKLY, OR HE WOULD BE FIRED. ALSO, AT THE BOARD'S INSISTENCE DONNA JAMISON WAS BROUGHT IN AND GIVEN THE JOB OF ASSISTANT TO FRED CAMPO, A RETIRED BANKER WHO WAS COMPUTRON'S CHAIRMAN AND LARGEST STOCKHOLDER. CAMPO AGREED TO GIVE UP A FEW OF HIS GOLFING DAYS AND TO HELP NURSE THE COMPANY BACK TO HEALTH, WITH JAMISON'S HELP.

JAMISON BEGAN BY GATHERING FINANCIAL STATEMENTS AND OTHER DATA. ASSUME THAT YOU ARE JAMISON'S ASSISTANT, AND YOU MUST HELP HER ANSWER THE FOLLOWING QUESTIONS FOR CAMPO. (NOTE: WE WILL CONTINUE WITH THIS CASE IN CHAPTER 3, AND YOU WILL FEEL MORE COMFORTABLE WITH THE ANALYSIS THERE, BUT ANSWERING THESE QUESTIONS WILL HELP PREPARE YOU FOR CHAPTER 3. PROVIDE CLEAR EXPLANATIONS, NOT JUST YES OR NO ANSWERS!)

BALANCE SHEETS

	2001	2000
ASSETS		
CASH	$ 7,282	$ 9,000
SHORT-TERM INVESTMENTS	0	48,600
ACCOUNTS RECEIVABLE	632,160	351,200
INVENTORIES	1,287,360	715,200
TOTAL CURRENT ASSETS	$1,926,802	$1,124,000
GROSS FIXED ASSETS	1,202,950	491,000
LESS ACCUMULATED DEPRECIATION	263,160	146,200
NET FIXED ASSETS	$ 939,790	$ 344,800
TOTAL ASSETS	$2,866,592	$1,468,800
LIABILITIES AND EQUITY		
ACCOUNTS PAYABLE	$ 524,160	$ 145,600
NOTES PAYABLE	720,000	200,000
ACCRUALS	489,600	136,000
TOTAL CURRENT LIABILITIES	$1,733,760	$ 481,600
LONG-TERM DEBT	1,000,000	323,432
COMMON STOCK (100,000 SHARES)	460,000	460,000
RETAINED EARNINGS	(327,168)	203,768
TOTAL EQUITY	$ 132,832	$ 663,768
TOTAL LIABILITIES AND EQUITY	$2,866,592	$1,468,800

INCOME STATEMENTS

	2001	2000
SALES	$5,834,400	$3,432,000
COST OF GOODS SOLD	5,728,000	2,864,000
OTHER EXPENSES	680,000	340,000
DEPRECIATION	116,960	18,900
TOTAL OPERATING COSTS	$6,524,960	$3,222,900
EBIT	($ 690,560)	$ 209,100
INTEREST EXPENSE	176,000	62,500
EBT	($ 866,560)	$ 146,600
TAXES (40%)	(346,624)	58,640
NET INCOME	($ 519,936)	$ 87,960
EPS	($5.199)	$0.880
DPS	$0.110	$0.220
BOOK VALUE PER SHARE	$1.328	$6.638
STOCK PRICE	$2.25	$8.50
SHARES OUTSTANDING	100,000	100,000
TAX RATE	40.00%	40.00%
LEASE PAYMENTS	$40,000	$40,000
SINKING FUND PAYMENTS	0	0

STATEMENT OF RETAINED EARNINGS, 2001

BALANCE OF RETAINED EARNINGS, 12/31/00	$203,768
ADD: NET INCOME, 2001	(519,936)
LESS: DIVIDENDS PAID	(11,000)
BALANCE OF RETAINED EARNINGS, 12/31/00	($327,168)

STATEMENT OF CASH FLOWS, 2001

OPERATING ACTIVITIES	
NET INCOME	($ 519,936)
ADJUSTMENTS:	
NON-CASH ADJUSTMENTS:	
DEPRECIATION	116,960
CHANGES IN WORKING CAPITAL:	
CHANGE IN ACCOUNTS RECEIVABLE:	(280,960)
CHANGE IN INVENTORIES	(572,160)
CHANGE IN ACCOUNTS PAYABLE	378,560
CHANGE IN ACCRUALS	353,600
NET CASH PROVIDED BY OPERATING ACTIVITIES	($ 523,936)
LONG-TERM INVESTING ACTIVITIES	
CASH USED TO ACQUIRE FIXED ASSETS	($ 711,950)
FINANCING ACTIVITIES	
CHANGE IN SHORT-TERM INVESTMENTS	$ 48,600
CHANGE IN NOTES PAYABLE	520,000
CHANGE IN LONG-TERM DEBT	676,568
PAYMENT OF CASH DIVIDENDS	(11,000)
NET CASH PROVIDED BY FINANCING ACTIVITIES	$1,234,168
SUM: NET CHANGE IN CASH	($ 1,718)
PLUS: CASH AT BEGINNING OF YEAR	9,000
CASH AT END OF YEAR	$ 7,282

A. WHAT EFFECT DID THE EXPANSION HAVE ON SALES, NET OPERATING PROFIT AFTER TAXES (NOPAT), NET OPERATING WORKING CAPITAL (NOWC), OPERATING CAPITAL, AND NET INCOME?

ANSWER: SALES INCREASED BY $2,402,400.

$NOPAT_{01}$ = EBIT (1 - TAX RATE)
= (-$690,560)(0.6) = -$414,336.

$NOPAT_{00}$ = $209,100(0.6) = $125,460.

$$NOWC_{01} = \left(\text{CASH} + \begin{matrix}\text{ACCTS}\\ \text{RECEIVABLE}\end{matrix} + \text{INVENTORIES}\right) - \left(\begin{matrix}\text{ACCTS}\\ \text{PAYABLE}\end{matrix} + \text{ACCRUALS}\right)$$

= ($7,282 + $632,160 + $1,287,360) - ($524,160 + $489,600)
= $913,042.

$NOWC_{00}$ = $9,000 + $351,200 + $715,200) - ($145,600 + $136,000)
= $793,800.

OC_{01} = NET OPERATING WORKING CAPITAL + NET PLANT AND EQUIPMENT
= $913,042 + $939,790 = $1,852,832.

OC_{00} = $793,800 + $344,800 = $1,138,600.

$NI_{01} - NI_{97}$ = (-$519,936) - $87,960 = -$607,896.

NOPAT DECREASED BY $539,796.
NET OPERATING WORKING CAPITAL INCREASED BY $119,242.
CAPITAL INCREASED SUBSTANTIALLY FROM 2000 TO 2001.
THERE WAS A HUGE DROP IN NET INCOME IN 2001.

B. WHAT EFFECT DID THE EXPANSION HAVE ON NET CASH FLOW, OPERATING CASH FLOW, AND FREE CASH FLOW?

ANSWER: NCF_{01} = NI + DEP = ($519,936) + $116,960 = ($402,976).

NCF_{01} = $87,960 + $18,900 = $106,860.

OCF_{01} = EBIT(1 - T) + DEP = (-$690,560)(0.6) + $116,960
= ($297,376).

OCF_{00} = ($209,100)(0.6) + $18,900 = $144,360.

FCF_{01} = NOPAT - NET INVESTMENT IN OPERATING CAPITAL
= (-$414,336) - ($1,852,832 - $1,138,600)
= (-$414,336) - $714,232 = -$1,128,568.

BOTH NCF AND OCF ARE NEGATIVE IN 2001, BUT THEY WERE POSITIVE IN 2000.

FREE CASH FLOW WAS -$1,128,568 IN 2001.

C. JAMISON ALSO HAS ASKED YOU TO ESTIMATE COMPUTRON'S EVA. SHE ESTIMATES THAT THE AFTER-TAX COST OF CAPITAL WAS 11% IN 2000 AND 13% IN 2001.

ANSWER: EVA_{01} = EBIT(1 - T) - AFTER-TAX COST OF CAPITAL
= (-$690,560)(0.6) - ($1,852,832)(0.13)
= (-$655,204).

EVA_{00} = EBIT(1 - T) - AFTER-TAX COST OF CAPITAL
= ($209,100)(0.6) - ($1,138,600)(0.11)
= $214.

IN 2000, EVA WAS SLIGHTLY POSITIVE; HOWEVER IN 2001 EVA WAS SIGNIFICANTLY NEGATIVE.

D. LOOKING AT COMPUTRON'S STOCK PRICE TODAY, WOULD YOU CONCLUDE THAT THE EXPANSION INCREASED OR DECREASED MVA?

ANSWER: DURING THE LAST YEAR, STOCK PRICE HAS DECREASED BY OVER 73 PERCENT, THUS ONE WOULD CONCLUDE THAT THE EXPANSION HAS DECREASED MVA.

E. COMPUTRON PURCHASES MATERIALS ON 30-DAY TERMS, MEANING THAT IT IS SUPPOSED TO PAY FOR PURCHASES WITHIN 30 DAYS OF RECEIPT. JUDGING

FROM ITS 2001 BALANCE SHEET, DO YOU THINK COMPUTRON PAYS SUPPLIERS ON TIME? EXPLAIN. IF NOT, WHAT PROBLEMS MIGHT THIS LEAD TO?

ANSWER: COMPUTRON PROBABLY DOES NOT PAY ITS SUPPLIERS ON TIME JUDGING FROM THE FACT THAT ITS ACCOUNTS PAYABLES BALANCE INCREASED BY 260 PERCENT FROM THE PAST YEAR, WHILE SALES INCREASED BY ONLY 70 PERCENT. COMPANY RECORDS WOULD SHOW IF THEY PAID SUPPLIERS ON TIME.

BY NOT PAYING SUPPLIERS ON TIME, COMPUTRON IS STRAINING ITS RELATIONSHIP WITH THEM. IF COMPUTRON CONTINUES TO BE LATE, EVENTUALLY SUPPLIERS WILL CUT THE COMPANY OFF AND PUT IT INTO BANKRUPTCY.

F. COMPUTRON SPENDS MONEY FOR LABOR, MATERIALS, AND FIXED ASSETS (DEPRECIATION) TO MAKE PRODUCTS, AND STILL MORE MONEY TO SELL THOSE PRODUCTS. THEN, IT MAKES SALES WHICH RESULT IN RECEIVABLES, WHICH EVENTUALLY RESULT IN CASH INFLOWS. DOES IT APPEAR THAT COMPUTRON'S SALES PRICE EXCEEDS ITS COSTS PER UNIT SOLD? HOW DOES THIS AFFECT THE CASH BALANCE?

ANSWER: IT DOES NOT APPEAR THAT COMPUTRON'S SALES PRICE EXCEEDS ITS COSTS PER UNIT SOLD AS INDICATED IN THE INCOME STATEMENT. THE COMPANY IS SPENDING MORE CASH THAN IT IS TAKING IN AND, AS A RESULT, THE CASH ACCOUNT BALANCE HAS DECREASED.

G. SUPPOSE COMPUTRON'S SALES MANAGER TOLD THE SALES STAFF TO START OFFERING 60-DAY CREDIT TERMS RATHER THAN THE 30-DAY TERMS NOW BEING OFFERED. COMPUTRON'S COMPETITORS REACT BY OFFERING SIMILAR TERMS, SO SALES REMAIN CONSTANT. WHAT EFFECT WOULD THIS HAVE ON THE CASH ACCOUNT? HOW WOULD THE CASH ACCOUNT BE AFFECTED IF SALES DOUBLED AS A RESULT OF THE CREDIT POLICY CHANGE?

ANSWER: BY EXTENDING THE SALES CREDIT TERMS, IT WOULD TAKE LONGER FOR COMPUTRON TO RECEIVE ITS MONEY--ITS CASH ACCOUNT WOULD DECREASE AND ITS ACCOUNTS RECEIVABLE WOULD BUILD UP. BECAUSE COLLECTIONS WOULD SLOW, ACCOUNTS PAYABLE WOULD BUILD UP TOO.

INVENTORY WOULD HAVE TO BE BUILT UP AND POSSIBLY FIXED ASSETS TOO BEFORE SALES COULD BE INCREASED. ACCOUNTS RECEIVABLE WOULD RISE AND

CASH WOULD DECLINE. MUCH LATER, WHEN COLLECTIONS INCREASED CASH WOULD RISE. COMPUTRON WOULD PROBABLY NEED TO BORROW OR SELL STOCK TO FINANCE THE EXPANSION.

H. CAN YOU IMAGINE A SITUATION IN WHICH THE SALES PRICE EXCEEDS THE COST OF PRODUCING AND SELLING A UNIT OF OUTPUT, YET A DRAMATIC INCREASE IN SALES VOLUME CAUSES THE CASH BALANCE TO DECLINE?

ANSWER: THIS SITUATION IS LIKELY TO OCCUR AS SUGGESTED IN THE SECOND PART OF THE ANSWER TO QUESTION G.

I. IN GENERAL, COULD A COMPANY LIKE COMPUTRON INCREASE SALES WITHOUT A CORRESPONDING INCREASE IN INVENTORY AND OTHER ASSETS? WOULD THE ASSET INCREASE OCCUR BEFORE THE INCREASE IN SALES, AND, IF SO, HOW WOULD THAT AFFECT THE CASH ACCOUNT AND THE STATEMENT OF CASH FLOWS?

ANSWER: GENERALLY, A COMPANY LIKE COMPUTRON COULD NOT BE EXPECTED TO INCREASE ITS SALES WITHOUT A CORRESPONDING INCREASE IN INVENTORY AND OTHER ASSETS. (SEE QUESTION G.)

J. DID COMPUTRON FINANCE ITS EXPANSION PROGRAM WITH INTERNALLY GENERATED FUNDS (ADDITIONS TO RETAINED EARNINGS PLUS DEPRECIATION) OR WITH EXTERNAL CAPITAL? HOW DOES THE CHOICE OF FINANCING AFFECT THE COMPANY'S FINANCIAL STRENGTH?

ANSWER: COMPUTRON FINANCED ITS EXPANSION WITH EXTERNAL CAPITAL RATHER THAN INTERNALLY GENERATED FUNDS. IN PARTICULAR, COMPUTRON ISSUED LONG-TERM DEBT RATHER THAN COMMON STOCK, WHICH REDUCED ITS FINANCIAL STRENGTH.

K. REFER TO THE INCOME STATEMENTS AND THE STATEMENT OF CASH FLOWS. SUPPOSE COMPUTRON BROKE EVEN IN 2001 IN THE SENSE THAT SALES REVENUES EQUALED TOTAL OPERATING COSTS PLUS INTEREST CHARGES. WOULD THE ASSET EXPANSION HAVE CAUSED THE COMPANY TO EXPERIENCE A CASH SHORTAGE WHICH REQUIRED IT TO RAISE EXTERNAL CAPITAL?

ANSWER: EVEN IF COMPUTRON HAD BROKEN EVEN IN 1998, THE FIRM WOULD HAVE HAD TO FINANCE AN INCREASE IN ASSETS.

L. IF COMPUTRON STARTED DEPRECIATING FIXED ASSETS OVER 7 YEARS RATHER THAN 10 YEARS, WOULD THAT AFFECT (1) THE PHYSICAL STOCK OF ASSETS, (2) THE BALANCE SHEET ACCOUNT FOR FIXED ASSETS, (3) THE COMPANY'S REPORTED NET INCOME, AND (4) ITS CASH POSITION? ASSUME THE SAME DEPRECIATION METHOD IS USED FOR STOCKHOLDER REPORTING AND FOR TAX CALCULATIONS, AND THE ACCOUNTING CHANGE HAS NO EFFECT ON ASSETS' PHYSICAL LIVES.

ANSWER: THIS WOULD HAVE NO EFFECT ON THE PHYSICAL STOCK OF THE ASSETS; HOWEVER, THE BALANCE SHEET ACCOUNT FOR NET FIXED ASSETS WOULD DECLINE BECAUSE ACCUMULATED DEPRECIATION WOULD INCREASE DUE TO DEPRECIATING ASSETS OVER 7 YEARS VERSUS 10 YEARS. BECAUSE DEPRECIATION EXPENSE WOULD INCREASE, NET INCOME WOULD DECLINE. FINALLY, THE FIRM'S CASH POSITION WOULD INCREASE, BECAUSE ITS TAX PAYMENTS WOULD BE REDUCED.

M. EXPLAIN HOW (1) INVENTORY VALUATION METHODS, (2) THE ACCOUNTING POLICY REGARDING EXPENSING VERSUS CAPITALIZING RESEARCH AND DEVELOPMENT, AND (3) THE POLICY WITH REGARD TO FUNDING FUTURE RETIREMENT PLAN COSTS (RETIREMENT PAY AND RETIREES' HEALTH BENEFITS) COULD AFFECT THE FINANCIAL STATEMENTS.

ANSWER: INVENTORY VALUATION METHODS, SUCH AS LIFO AND FIFO, CAUSE COST OF GOODS SOLD TO BE HIGHER OR LOWER, WHICH THEN AFFECTS NET INCOME, TAXES, AND THE BALANCE SHEET INVENTORY FIGURE.

IF RESEARCH AND DEVELOPMENT IS CAPITALIZED, THIS REDUCES THE CURRENT EXPENSE WHICH INCREASES NET INCOME AND TAXES. THIS CAUSES ASSETS TO APPEAR LARGER.

WITH RESPECT TO RETIREMENT PLAN COSTS, A COMPANY CAN "FUND" THE RETIREMENT PLAN, WHICH MEANS PAY NOW FOR FUTURE COSTS, OR PUT OFF REPORTING THE COST UNTIL PEOPLE RETIRE.

N. **COMPUTRON'S STOCK SELLS FOR $2.25 PER SHARE EVEN THOUGH THE COMPANY HAD LARGE LOSSES. DOES THE POSITIVE STOCK PRICE INDICATE THAT SOME INVESTORS ARE IRRATIONAL?**

ANSWER: THE POSITIVE STOCK PRICE DOES NOT INDICATE THAT SOME INVESTORS ARE IRRATIONAL. RATHER, THE POSITIVE STOCK PRICE MEANS THAT PEOPLE EXPECT THINGS TO GET BETTER IN THE FUTURE.

O. **COMPUTRON FOLLOWED THE STANDARD PRACTICE OF PAYING DIVIDENDS ON A QUARTERLY BASIS. IT PAID A DIVIDEND DURING THE FIRST TWO QUARTERS OF 2001, THEN ELIMINATED THE DIVIDEND WHEN MANAGEMENT REALIZED THAT A LOSS WOULD BE INCURRED FOR THE YEAR. THE DIVIDEND WAS CUT BEFORE THE LOSSES WERE ANNOUNCED, AND AT THAT POINT THE STOCK PRICE FELL FROM $8.50 TO $3.50. WHY WOULD AN $0.11, OR EVEN A $0.22, DIVIDEND REDUCTION LEAD TO A $5.00 STOCK PRICE REDUCTION?**

ANSWER: THE DIVIDEND CUT WAS A "SIGNAL" THAT MANAGEMENT THINKS OPERATIONS ARE IN TROUBLE. STOCK VALUES DEPEND ON FUTURE PROFITS AND DIVIDENDS. THE DIVIDEND CUT LOWERED EXPECTATIONS FOR FUTURE PROFITS WHICH CAUSED THE STOCK PRICE TO DECLINE.

P. **EXPLAIN HOW EARNINGS PER SHARE, DIVIDENDS PER SHARE, AND BOOK VALUE PER SHARE ARE CALCULATED, AND WHAT THEY MEAN. WHY DOES THE MARKET PRICE PER SHARE *NOT* EQUAL THE BOOK VALUE PER SHARE?**

ANSWER: NET INCOME DIVIDED BY SHARES OUTSTANDING EQUALS EARNINGS PER SHARE. DIVIDENDS DIVIDED BY SHARES OUTSTANDING EQUALS DIVIDENDS PER SHARE, WHILE BOOK VALUE PER SHARE IS CALCULATED AS COMMON EQUITY DIVIDED BY SHARES OUTSTANDING.

MARKET PRICE PER SHARE DOES NOT EQUAL BOOK VALUE PER SHARE. THE MARKET VALUE OF A STOCK REFLECTS FUTURE PROFITABILITY, WHILE BOOK VALUE PER SHARE REPRESENTS HISTORICAL COST.

Q. **HOW MUCH NEW MONEY DID COMPUTRON BORROW FROM ITS BANK DURING 2001? HOW MUCH ADDITIONAL CREDIT DID ITS SUPPLIERS EXTEND? ITS EMPLOYEES AND THE TAXING AUTHORITIES?**

ANSWER: TO DETERMINE HOW MUCH MONEY THE COMPANY BORROWED FROM THE BANK AND HOW MUCH CREDIT THE FIRM OBTAINED FROM ITS SUPPLIERS AND TAXING AUTHORITIES, ONE CAN EXAMINE THE STATEMENT OF CASH FLOWS. BY LOOKING IN THE SECTION TITLED "FINANCING ACTIVITIES," WE SEE THAT THE FIRM'S NOTES PAYABLE INCREASED BY $520,000--THIS IS HOW MUCH IT BORROWED FROM THE BANK. ALSO, ITS SHORT-TERM INVESTMENTS DECREASED BY $48,600, WHICH MEANS COMPUTRON RAISED CASH BY SELLING SHORT-TERM INVESTMENTS. BY LOOKING IN THE "OPERATING ACTIVITIES" SECTION UNDER "ADDITIONS," WE SEE THAT THE FIRM'S ACCOUNTS PAYABLE INCREASED BY $378,560--THIS IS THE AMOUNT OF CREDIT IT OBTAINED FROM SUPPLIERS. BY LOOKING IN THE "OPERATING ACTIVITIES" SECTION UNDER "ADDITIONS," WE SEE THAT THE FIRM'S ACCRUALS INCREASED BY $353,600--ACCRUALS WOULD INCLUDE ACCRUED TAXES.

R. IF YOU WERE COMPUTRON'S BANKER, OR THE CREDIT MANAGER OF ONE OF ITS SUPPLIERS, WOULD YOU BE WORRIED ABOUT YOUR JOB? IF YOU WERE A CURRENT COMPUTRON EMPLOYEE, A RETIREE, OR A STOCKHOLDER, SHOULD YOU BE CONCERNED?

ANSWER: YES. IF THE STATEMENT OF CASH FLOWS IS EXAMINED, YOU CAN SEE THAT THE NET CASH FLOW FROM OPERATIONS WAS A NEGATIVE $523,936--THE FIRM IS SPENDING MORE THAN IT IS TAKING IN. IF THE COMPANY GOES BANKRUPT, THE BANK AND SUPPLIERS COULD SUFFER LOSSES. FOR EMPLOYEES, RETIREES, AND STOCKHOLDERS, JOBS COULD BE LOST, RETIREE PENSIONS COULD BE CUT IF THE PLAN WERE NOT FULLY FUNDED, AND STOCKHOLDERS COULD LOSE THEIR INVESTMENTS.

S. **THE 2001 INCOME STATEMENT SHOWS NEGATIVE TAXES, THAT IS, A TAX CREDIT. HOW MUCH TAXES WOULD THE COMPANY HAVE HAD TO PAY IN THE PAST TO ACTUALLY GET THIS CREDIT? IF TAXES PAID WITHIN THE LAST 2 YEARS HAD BEEN LESS THAN $346,624, WHAT WOULD HAVE HAPPENED? WOULD THIS HAVE AFFECTED THE STATEMENT OF CASH FLOWS AND THE ENDING CASH BALANCE?**

ANSWER: FOR THE FIRM TO ACTUALLY OBTAIN THIS TAX CREDIT, IT WOULD HAVE HAD TO PAY $346,624 IN TAXES DURING THE LAST TWO YEARS. IF THE FIRM'S TAX PAYMENTS DURING THE LAST TWO YEARS DID NOT ADD UP TO $346,624, IT WOULD NOT HAVE OBTAINED A FULL REFUND. RATHER, THE FIRM WOULD HAVE HAD TO CARRY FORWARD THE AMOUNT OF ITS LOSS NOT CARRIED BACK IN ORDER TO REDUCE FUTURE TAXES, IF THE COMPANY BECOMES PROFITABLE.

IF THE FIRM HAD NOT RECEIVED A FULL REFUND OF ITS TAXES, THE CASH DRAIN FROM OPERATIONS WOULD HAVE BEEN LARGER. THE FIRM WOULD HAVE HAD TO MAKE THIS UP ELSEWHERE (BY BORROWING FROM THE BANK, ISSUING MORE BONDS, ETC.).

T. **WORKING WITH JAMISON HAS REQUIRED YOU TO PUT IN A LOT OF OVERTIME, SO YOU HAVE HAD VERY LITTLE TIME TO SPEND ON YOUR PRIVATE FINANCES. IT'S NOW APRIL 1, AND YOU HAVE ONLY TWO WEEKS LEFT TO FILE YOUR INCOME TAX RETURN. YOU HAVE MANAGED TO GET ALL THE INFORMATION TOGETHER THAT YOU WILL NEED TO COMPLETE YOUR RETURN. COMPUTRON PAID YOU A SALARY OF $45,000, AND YOU RECEIVED $3,000 IN DIVIDENDS FROM COMMON STOCK THAT YOU OWN. YOU ARE SINGLE, SO YOUR PERSONAL EXEMPTION IS $2,800, AND YOUR ITEMIZED DEDUCTIONS ARE $4,550.**

1. **ON THE BASIS OF THE INFORMATION ABOVE AND THE 2000 INDIVIDUAL TAX RATE SCHEDULE, WHAT IS YOUR TAX LIABILITY?**

ANSWER: CALCULATION OF TAXABLE INCOME:

SALARY	$45,000
DIVIDENDS	3,000
PERSONAL EXEMPTION	(2,800)
DEDUCTIONS	(4,550)
TAXABLE INCOME	$40,650

TAX LIABILITY = $3,862.5 + ($40,650 - $26,250)0.28 = $7,969.5.

T. 2. WHAT ARE YOUR MARGINAL AND AVERAGE TAX RATES?

ANSWER: MARGINAL TAX RATE IS 28 PERCENT; AVERAGE TAX RATE = $7,969.5/$40,650 = 19.6%.

U. ASSUME THAT A CORPORATION HAS $100,000 OF TAXABLE INCOME FROM OPERATIONS PLUS $5,000 OF INTEREST INCOME AND $10,000 OF DIVIDEND INCOME. WHAT IS THE COMPANY'S TAX LIABILITY?

ANSWER: CALCULATION OF THE COMPANY'S TAX LIABILITY:

TAXABLE OPERATING INCOME	$100,000
TAXABLE INTEREST INCOME	5,000
TAXABLE DIVIDEND INCOME (0.3 × $10,000)	3,000
TOTAL TAXABLE INCOME	$108,000

$$\text{TAX} = \$22{,}250 + (\$108{,}000 - \$100{,}000)0.39 = \$25{,}370.$$

$$\begin{aligned}\text{TAXABLE DIVIDEND INCOME} &= \text{DIVIDENDS} - \text{EXCLUSION}\\ &= \$10{,}000 - 0.7(\$10{,}000)\\ &= \$3{,}000.\end{aligned}$$

V. ASSUME THAT AFTER PAYING YOUR PERSONAL INCOME TAX AS CALCULATED IN PART T, YOU HAVE $5,000 TO INVEST. YOU HAVE NARROWED YOUR INVESTMENT CHOICES DOWN TO CALIFORNIA BONDS WITH A YIELD OF 7 PERCENT OR EQUALLY RISKY EXXON BONDS WITH A YIELD OF 10 PERCENT. WHICH ONE SHOULD YOU CHOOSE AND WHY? AT WHAT MARGINAL TAX RATE WOULD YOU BE INDIFFERENT TO THE CHOICE BETWEEN CALIFORNIA AND EXXON BONDS?

ANSWER: AFTER-TAX RETURN INCOME AT T = 28%:

$$\text{EXXON} = 0.10(\$5{,}000) - (0.10)(\$5{,}000)(0.28) = \$360.$$

$$\text{CALIFORNIA} = 0.07(\$5{,}000) - \$0 = \$350.$$

ALTERNATIVELY, CALCULATE AFTER-TAX YIELDS:

$$\text{A-T YIELD}_{\text{EXXON}} = 10.0\%(1 - T) = 10\%(1 - 0.28) = 7.2\%.$$

A-T $YIELD_{CALIF.}$ = 7.0%.

AT WHAT MARGINAL TAX RATE WOULD YOU BE INDIFFERENT?

7.0% = 10.0%(1 - T). SOLVE FOR T.

7.0% = 10.0% - 10.0%(T)

10.0%(T) = 3%

T = 30%.