Bank Management Financial Analysis Templates

Computer Spreadsheets for <u>Bank Management</u>, 5th Edition Timothy W. Koch and S. Scott MacDonald

I. PURPOSE OF THE FINANCIAL SPREADSHEET TEMPLATES

One of the biggest hurdles in teaching financial statement analysis is that realistic case problems often require significant amounts of tedious computation time. A typical case involves "spreading" the firm's financial statements, calculating a series of financial ratios, and a funds flow or cash based income statement using several years of historical data. Then, several more years of *pro forma* statements are generated.

If all of these computations are performed by hand, or even with the help of a calculator, so much time is consumed that students often feel that the accounting mechanics are more important than the financial analysis. Moreover, from a practical standpoint, there is so much computational work involved in sensitivity (what if?) analysis that pedagogically it is more frequently talked about than actually performed. The computerized spreadsheets described in this section are designed to help the student and instructor overcome these obstacles.

In order to facilitate the spreading of financial statements and the calculation of key financial ratios and other important measures, many of the cases and examples used in the text have been modeled using Excel¹. In a classroom or microcomputer lab setting, these templates require only a rudimentary knowledge of spreadsheets, yet offer tremendous power in building financial statements and in performing a wide variety of sensitivity analyses. With these simple but sophisticated templates, the students' time is consumed in analysis rather than arithmetic. Furthermore, accuracy is vastly improved over hand calculations. During a semester, students are able to analyze more cases in greater depth than would otherwise be possible.

These computerized spreadsheets are contained in CD ROM available with the Instructor's Manual. The spreadsheets templates are copyrighted. Running the programs requires a PC, Windows 98 or above and Microsoft Excel, Office 2000 or above, sold separately.

In addition to the generic "templates," other templates are provided which model certain examples from the text book. Case specific templates and data are also provided with the Dryden Case Series (http://www.dryden.com/finance/fincase/). The generic templates provided allow the user to perform six types of analysis for any firm: 1) bank performance analysis and evaluation, 2) bank funding-GAP analysis, 3) bank duration gap analysis, 4) risk-based capital calculations, 5) credit analysis, and 6) bank customer profitability analysis for a bank. Each template is designed to model a wide variety of

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¹ The templates are in Microsoft Office 2002 format. These templates will work in both Office 2000 and Office 2002. Excel is a registered trademark of Microsoft Corporation.

situations while maintaining simplicity in the data entry phase. Linking account values through equations where possible, rather than by numeric values, allows sophisticated sensitivity analyses to be performed in a matter of seconds.

The remainder of this section is organized as follows. Section II describes what is required to run the templates and how to get started. Section III is an outline of the loading and saving of the spreadsheet templates. Section IV details features common to all of the templates. Section V explains how to run the credit analysis template (!CREDIT5), Section VI examines the Bank Performance analysis templates (!BANK5), Section VII describes the use of the duration GAP template (!DURGAP5), Section VIII describes the funding-GAP analysis template (!FUNDGAP5), Section IX examines the risk-based capital calculation template (!RBC5), Section X examines the customer profitability worksheet (!CUSTPRO5), and Section XI gives the solution to the Southwest Trading Company problem (SWtrad2002.xls). Experienced spreadsheet users may want to skip Section III, while Sections V - XI may be read in any order.

II. GETTING STARTED

A. Hardware and Software Requirements

To use the *Bank Management Financial Analysis Templates* (frequently called spreadsheets or worksheets) the following are required:

- 1. An PC running Microsoft Windows 98 or above and MS Excel Office 2000 or above,
- 2. CD ROM drive.

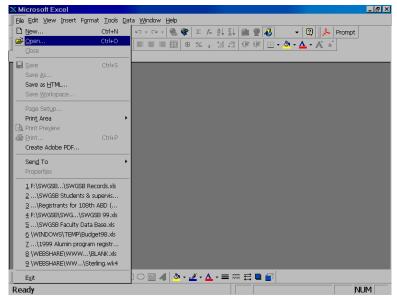
B. Installing the Bank Management Excel Templates:

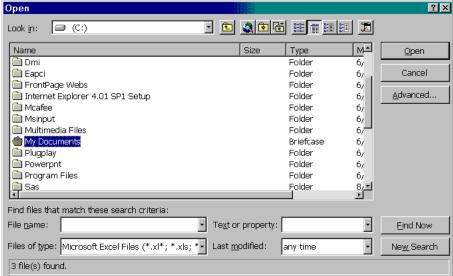
Upgrading From Previous Version of the *Bank Management Templates.*

Many of the spreadsheets included with the current version of the *Bank Management Templates* have been updated from previous versions. You should keep the old templates and cases separate from the new ones since features have been added to the new version of the templates.

III. Loading and Using the Bank Management Template Files







<u>Note</u>: If you save the file with the same name as the original *Bank Management Templates* files, you will destroy these templates. Be sure to save the file with a different name and/or to a different location. Each of the templates (names starting with an '!' are read only files.)

IV. USING THE BANK MANAGEMENT TEMPLATES

There are basically three types of spreadsheet on the CD ROM. The first type are spreadsheets or "templates" that contain formulas and descriptive titles but no data. These blank templates must be setup specifically for the problem to be analyzed. All of the templates are located on the CD-ROM

in the Templates Directory. The second type of spreadsheet is one that contains case data entered into one of the blank templates. This second type is provided to make the process of analyzing and evaluating case data in *Bank Management* less time consuming. These spreadsheets were created using the blank templates, and then the actual case data was entered. All the features available in the blank templates are available in the spreadsheets contain actual case data. All of the data spreadsheet cases are contained on the CD-ROM in the Templates Data Directory. A third type of spreadsheet contains worksheets for specific exhibits from the *Bank Management* textbook.

Templates Directory:

File	Description	Contain Macros
!BANK5.xls	This is a blank template or spreadsheet used for analyzing bank performance (follows Chapter 3)	Yes
!FUNDGAP5.xls	This is a blank template or spreadsheet used to funding GAP using various "time buckets" and to rate sensitivity examples (follows Chapter 8).	No
!DURGAP5.xls	This is a blank template or spreadsheet used to calculate the duration of individual assets and liabilities as well as bank's duration Gap (follows Chapter 9).	Yes
!RBC5.xls	This is a blank template or spreadsheet used to analyze a bank's compliance with the new Risk-Based Capital requirements (follows Chapter 13).	No
!CREDIT5.xls	This is a blank template or spreadsheet used for analyzing credit request (follows Chapter 16).	Yes
!CUSTPRO5.xls	This is a blank spreadsheet used to analyze customer profitability and/or account analysis (follows Chapter 18).	No

All of the "blank" templates have a name that starts with "!". All of the blank templates are on the CD-ROM in the Templates Directory.

The second type of spreadsheets are either examples from Exhibits in the textbook or are created by using the templates and entering case data.

Case Data – Templates Data Directory:

File	Description	Contai n Macros
ABC-rate-sensitive-report-exh 8-7.xls	Exhibit 8.7, Chapter 8.	No
Credit_Cycle5.xls	Spreadsheet containing data for the Credit and Operating Cycle exhibit from Chapter 15.	No
Cust Prof - Banken Ind.xls	Spreadsheet containing data for the Customer Profitability and Loan Pricing example presented in Chapter 18, Exhibit 18.3 (using the CUSTPRO5.xls template).	No
DGAP-exh9-1.xls	Duration Gap Example from Chapter 9 Exhibits 9.1-9.3.	Yes
Exhibit 8-5_Synovus_bank.xls	Exhibit 8.5, chapter 8	No
GAP_Exh-8-3.xls	Exhibit 8.3, GAP example from Exhibit 8.3, Chapter 8	No
GAP_Exh-8-3.xls	Exhibit 8.3, GAP example from Exhibit 8.3, Chapter 8	No
Inc_state_GAP-Exh-8-11.xls	Exhibit 8.11 from Chapter 8. Income Statement GAP.	No
PNC2001.xls	Spreadsheet containing PNC Bank used in Chapter 3 of the text. This spreadsheet contains data using the !bank5.xls template.	Yes
RBC – Regional Nat Bank	Risk-Based Capital Example for Regional National Bank (RNB) from Chapter 13 Exhibit 13.2.	No
Req_res_worksheet.xls	Spreadsheet containing data for the required reserves exhibit from Chapter 14 of the textbook.	No
Sec_swaps5.xls	Security swaps (tax purposes) exhibit 20.11 from chapter 20.	No
SWtrad2002.xls	Spreadsheet containing data for the Southwest Trading Company Problem at the back of Chapter 16. This template is specifically designed for this problem.	No
WADES5.xls	Spreadsheet containing data for Wades Office Furniture case, credit case example from the textbook, Chapter 16 (created using the !CREDIT5 template).	Yes

A. Spreadsheet Layout and Macros

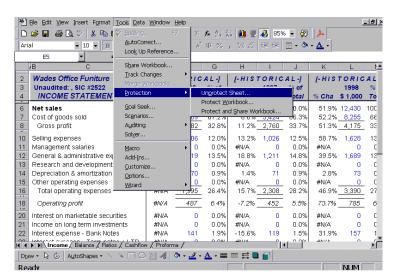
The basic layout of the templates is similar. We will use the WADES5.xls file as our example. When you retrieve the file "WADES5," you will observe that the Excel warning screen appears indicating that the file contains macros. To use the files as designed, you must 1.) be sure that macro security is set to "medium" and 2.) press the "enable Macros" button. To set macro security to "medium" go to "Tools, Macro, Security" and select the



"Medium" button. We encourage you to use a virus protection program. As we all know, even though we have done all we can to reduce the possibility of the templates containing a virus, we can not guarantee they do not. Not all of the files contain macros. The list above indicates which files should contain macros.

B. Unprotecting the worksheet

In order to reduce potential errors, certain cells in the *Bank Management Templates* were designed so as not to be changed. These cells are in black. There is normally no reason to change these cells since they contain **formulas** which will change the value shown as various data are changed. Certain cells, such as the account titles, may need to be modified slightly for a given problem.



We discourage you from writing over protected cells. Changing the value in a protected cell can make changes throughout the spreadsheet and cause the data to be inaccurate. Do not change a value in a protected cell, unless you are certain you know what impact it will have. We can not be responsible for any problems this creates. To unprotect the spreadsheet, use the **Tools**, **Protection**, **Unprotect Sheet...** command.

Warning: Some changes can affect the integrity of the formulas and calculations in the spreadsheet.

C. Building Custom Spreadsheets from the !CREDIT5, !BANK5, and !DURGAP5, Templates

The !CREDIT5, !BANK5 and !DURGAP5 templates (spreadsheets) must be "built" to your specifications. The first time you load (retrieve) the !CREDIT5, !BANK5 and !DURGAP5 spreadsheets, you will be asked a series of questions. These questions will include such items as: 1) The name of the company; 2) The total number of historical periods; 3) The total number of *pro*

forma periods; and 4) the scaling factor (for display purposes only); i.e., \$1, \$1,000 or \$1,000,000.

The following section describes the general types of questions common to the !CREDIT5, !BANK5 and !DURGAP5 templates:

1. Total number of historical periods?

Enter the total number of historical periods you want. For example, you want a

Enter the following data to create the spreadsheet template						
Enter the company name	Enter the bank name here					
Total number of historical periods	1					
Total number of proforma periods	1					
First year of data	1999					
Scale (\$1, \$1000, etc)	\$1,000					
Create Template Enter the bank name and the number of periods to create the template. You must hit "Enter" after you type each variable before you "Create Template"						

spreadsheet for two years; you would enter two (2).

Warning: The total number of historical and *pro forma* periods is limited by the available memory of your computer.

2. Total number of pro forma periods?

You <u>must</u> enter <u>at least one</u> (1) even if you do not need *pro forma*. Enter the total number of *pro forma* periods.

3. First year (example 2001)?

Enter the first year of data you will be entering; e.g., 2001. This is for display purposes only and does not affect spreadsheet values.

4. Scaling factor (1/1000/1,000,000)?

This value is for display purposes only. If values are in \$1's enter 1. For values in \$1,000 enter 1000, etc.

After entering all of the data, press the {Create Template} button and the program will begin building the spreadsheet. This could take several minutes if you request more than a few periods. After the macro has completed building the spreadsheet, you will be in regular Excel mode.

Once you have entered data, you should save the spreadsheet with a DIFFERENT NAME. If you save the spreadsheet with the same name as the blank template, you will erase the blank template and be unable to create anymore custom spreadsheets. ALWAYS KEEP A BACKUP OF THE ORIGINAL FILES.

D. Adding Additional Periods Macro (Ctrl M)

After you have *built* the spreadsheet, you might find you want to add historical periods or *pro forma* periods. **YOU SHOULD ALWAYS USE THE PROGRAM TO ADD PERIODS**. If you copy,

using the copy command, the program will not know how many historical and/or *pro forma* periods are currently in the spreadsheet. This will make the operation of the programs unpredictable.

Enter the following data to add period	s to the	spreadsheet
Number of historical periods TO ADD	1	
Number of proforma periods TO ADD	1	
Add Periods Enter the number of historical and pr	oforma pe	riods to ADD and

To add addition historical or *pro forma*

periods, use the *How_many_more* macro. To access the macro use the **Ctrl M** keys.

Number of historical periods to add?

Enter the number of historical periods you want to add to the spreadsheet and press {Enter}.

Number of pro forma periods to add?

Enter the number of *pro forma* periods you want to add to the spreadsheet and press {Enter}.

After entering all of the data, press the {Add Periods} button and the spreadsheet will add the appropriate periods.

V. USING THE CREDIT ANALYSIS TEMPLATE: !CREDIT5.xls

The Credit Analysis Template (!CREDIT5) is a Excel spreadsheet designed to aid in the evaluation of the financial performance of a non-bank firm, assisting the user in developing historical and *pro forma* financial statements and ratios. Specifically, the user may input balance sheet and income statement data for any number of historical years, as well as key parameters relating to future performance. With this information, the template completes the historical balance sheets and income statements, and then generates cash based income statement and key financial ratios. Using past performance, and parameters specified by the user, it then builds a *pro forma* balance sheet, income statement, cash based income statement and financial ratios for any number of future years.

A. Starting the Credit Analysis Template: !CREDIT5.

The Credit Analysis Template resides on the *Bank Management* CD ROM, with the name "!CREDIT5.XLS."

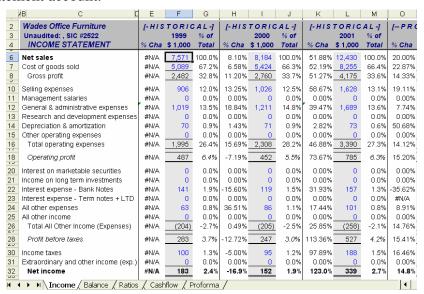
B. Building the !CREDIT5 Template.

As discussed in Section V, you must first "build" the !CREDIT5 template. The spreadsheet or template must be "setup" for the specific case for which you are attempting to analyze. You will be prompted to enter: 1) the total number of historical periods of balance sheet and income statement data which you wish to input 2) the total number of *pro forma* periods, 3) the first year of data and 4) the scaling factor. Respond by typing any number greater than zero. Move from item to item by using the {Enter} key. Hit the {Create Template} button when you have finished filling out the form. See Section IV for a detailed description of each of these questions.

C. Entering Historical Data in the !CREDIT5 Template

Data in the !CREDIT5 template is divided into five (5) sheets or tabs. Looking at the bottom of the spreadsheet you will see an: **Income, Balance, Ratios, Cashflow**, and **Proforma** sheet. Historical data will be entered in the Income and Balance sheets. The Income sheet contains income statement data and the **Balance** sheet contains balance sheet information. The **Ratios** and **Cashflow** sheets will be automatically calculated based on data entered in the **Income, Balance** and **Proforma** sheets. Moving from left to right, the financial statements consist of three columns for each period: 1) "%Cha"—the percent increase (or decrease) in the dollar value of the account from the previous period, 2) "\$1(,000,000)"—the scaled average dollar value of the account and 3) "% of Total"—percent of total assets for balance sheet items and percent of total interest income plus total non-interest income for each income statement account.

Move to the first entry in the first historical year, in the Income sheet, cell F6. Notice that this cell is blue. Any blue cell in the spreadsheet indicates that the user may enter information into that cell. If you attempt to enter data into a black cell, Excel will "beep" and prompt with "Protected cell" to which you must respond by pressing {Enter}. Proceed by entering the firm's historical balance sheet and income statement data into the highlighted cell in column F.



A note about protected cells: the spreadsheets contain formulas that are quite complex. Many formulas depend on other formulas, that is why some cells <u>must</u> be protected. If you write or enter data into a protected cell, the integrating of the spreadsheet may be in question.

As you enter this data you will note that total figures, such as "Gross Profit," need not be entered.

Proceed to the **Proforma** sheet section near the middle of the worksheet. You must supply information for the values: 1) credit sales to net sales (row 9), and 2) dollar amount of that year's lease payments (row 25). The cash based income statement, for years beyond the first, and financial ratios should now be current.

Several comments about the worksheet are in order. Some of the growth rates, or "% Cha" rates, may appear as "NA" when the actual rate of growth was "undefined," as would be the case if the previous year's dollar amount were zero. In some instances, a cell will display an error value, normally the result of a division by zero. This typically occurs in the calculation of financial ratios when the denominator is zero and is not necessarily an indication that your numbers or the spreadsheet are in error. Also remember that in the historical years you must ensure that the balance sheet balances and that retained earnings on the balance sheet increases by the amount of retained earnings calculated from the income statement. If after entering the data you find an inconsistency, then either your input or the source of the data is in error. Note that occasionally account totals displayed will not sum due to rounding.

If you are uncertain of how an amount was calculated on the worksheet, place the cursor on that cell and read the formula displayed at the top left of the screen. For instance, if you wanted to know how the **quick ratio** in cell F10 on the **Ratios** sheet was calculated, place the cursor in that cell. The first status line displays the cell's formula:

=IF(Balance!F39=0,NA(),(Balance!F8+Balance!F9+Balance!F10)/Balance!F39)

This formula is designed to make the spreadsheet look professional. If cell **Balance!F39** is zero, we would get an error in the quick ratio. The formula checks for a zero balance, if so it places **NA** in the cell, otherwise the value is (**Balance!F8+ Balance!F9+Balance!F10**)/**Balance!F39**. The **Balance!** Indicates which sheet the cell is located on. In this case, Cell F8 is Cash for that year, F9 is Marketable securities, **F10** is Accounts Receivable, and **F39** is Total Current Liabilities.

D. Entering Pro forma Data in the !CREDIT5 Template

Click on the **Proforma** sheet section of the Excel spreadsheet. Note that for the historical years, the listed parameters are calculated from the actual historical data. In the *pro forma* years, however, these parameters must be entered by the user. The *pro forma* parameters <u>drive</u> the values of the balance sheet, income statement, ratios and cash flow accounts.

. /	B C D	K L M	N O P	Q R
2	Wades Office Furniture	-HISTORICAL-1	[-PRO FORMA-]	-PRO FOR
3	Unaudited: , SIC #2522	2001	2002	2003
4	FARAMETERS FOR PRO FORMA	\$ 1,000	\$ 1,000	\$ 1,000
6	INCOME STATEMENT			
7	Sales Growth Rate	51.88%	20.00%	20.00%
8	% of Sales:			
9	Credit sales	100.00%	100.00%	100.00%
10	Cost of goods sold	66.41%	68.00%	68.00%
11	Selling expenses	13.10%	13.00%	13.00%
12	General & admin. expense	13.59%	12.20%	12.20%
13	Growth Rates			
14	Management & admin. salaries	0.00%	0.00%	0.00%
15	Research and development expense	0.00%	0.00%	0.00%
16	Other operating expenses	0.00%	0.00%	0.00%
17	All other expenses	17.44%	\$110	\$135
18	All other income	0.00%	0.00%	0.00%
19	Rate of return on long-term invests	0.00%	0.00%	0.00%
21	\$ amount of depreciation	73	110	110
22	Extraordinary and other income (exp.) (growth rate)	0.00%	0.00%	0.00%
23	Tax rate	35.67%	36.00%	36.00%
24	Dividend payout ratio	0.00%	0.00%	0.00%
25	Lease payments	\$ 325	\$ 325	\$ 325
27	BALANCE SHEET			
28 ⋈ ◀	Minimum cash / Annual Net sales ▶ M Income / Balance / Ratios / Cash	0.58%	\$120	\$120

Note that information on the Proform sheet tab below the PARAMETER FOR *PRO FORMA* sections (approximately row 73) are programming instructions for the template and should be ignored, but not erased, by the user.



Unless you manually input the value of a parameter, the program will assume that the pro-forma parameters are the same as those calculated or input for the previous period. If you manually input a parameter value, all future values of that parameter will be changed to that amount, after pressing {F9}.

E. How Account Values Are Calculated

There are two basic types of assumptions used to calculate the *pro forma* balance sheets and income statements. The first type are formulas that involve <u>turnover rates</u> and the second type are formulas that use a <u>growth rate</u> from one year to the next or a percentage of current year sales. All *pro forma* parameters are entered in the **Proforma** sheet. Values for the *pro forma* balance sheet and income statement are calculated using the same basic assumptions discussed in the text. Values such as Accounts receivable, inventory, accruals and accounts payables use either a *Days Outstanding* or *Turnover Times* type assumption such as:

```
Accounts Receivable<sub>t</sub> = \underline{\textit{Days Accounts Rec}} x Average Daily Sales<sub>t</sub> or Inventory<sub>t</sub> = COGS_t / \underline{\textit{Inventory turnover times.}}
```

The values that are bold, italic and underlined are the parameters entered in the PARAMETERS FOR PRO-FORMA section. Some values use a growth rate assumption; *e.g.*, prepaid expenses, other current assets, intangible assets, deferred tax liability, etc. These values are calculated as:

```
Prepaid expenses<sub>t-1</sub> x growth rate on prepaid expenses.
```

Many of the income statement expense values use a percentage of sales assumption; e.g., COGS, selling expenses, etc. These values are calculated using the following general method:

$$COGS_t = COGS_t \times COGS$$
 as a % of sales.

A few values require a dollar amount to be entered, such as depreciation:

Depreciation_t = \$ amount of depreciation

Many values of the balance sheet and income statement can be entered directly into the spreadsheet as well. If, for example, "Gross Fixed Assets" for the first *pro forma* year is assumed to be \$1,000, you would go to the cell containing the first *pro forma* value for "Gross Fixed Assets," row 17 in the **balance** sheet, and enter the value. This value will <u>overwrite</u> the formula for Gross Fixed Assets for that year only. Values can be entered for other years or you can use a growth rate parameter for other *pro forma* years.

There are two possible assumptions available on "Gross Fixed Assets." The first is to use a "Replacement Assumption." This makes the assumption that Gross Fixed Assets will increase by the amount of depreciation, from the income statement for that year. This method assumes that the company simply replaces the fixed assets that wear out. To select the "Replacement Assumption" be sure that the you have entered a "1" in the Replace Assumption cell, **row 16** in the **Proforma** sheet, just above the growth rate for Gross Fixed Assets, **row 17**. If you have entered a "1" in the Replacement Assumption cell, the growth rate on Gross Fixed Assets has no effect on the model. The Replacement Assumption will continue until it is changed at a later *pro forma* period. If you want to enter a given amount of Capital Expenditures in the first *pro forma* year and then use the Replacement Assumption, just enter the dollar amount of Gross Fixed Assets for the first *pro forma* year. The Replacement Assumption is the default and will be used for subsequent years.

F. A Note on the Balance Sheet Account "Plug" Figures

Two additional values from the **balance** sheet for *pro forma* years need explanation. In order to guarantee that the *pro forma* statements exhibit internal consistency, assets must equal liability plus equities. Normally this equality is accomplished by allowing the computer to determine the value of one or more "plug" accounts. In the !CREDIT5 template, both **Marketable securities** and **Notes payable-bank** are plug figures. If the firm generates cash in excess of the amount required, the program assumes that **Notes Payable - Bank** are reduced, with any remaining funds being invested in **Marketable securities**. If the firm generates insufficient cash flow, the program assumes that **Marketable securities** be liquidated with additional funds borrowed short-term if necessary. Thus, for any year, either **Marketable Securities** or **Notes Payable - Bank** will be zero.

<u>Do not</u> enter data (for the *pro forma* periods) in the two accounts: **Marketable securities** and **Notes payable - bank** in rows **9** and **32** (**on the balance sheet tab**) respectively. These two account values are used as accounting plug figures to insure the balance sheet balances in the *pro forma* periods. You may, however, enter values into these accounts for the historical periods.

G. Additional Program Features

1. Term-notes

One of the primary reasons for using the credit analysis template is determination of the appropriate structure of a term loan. The accounts involving term-notes are meant to be altered via the LOAN RATES AND MARKET. SEC. Section of the **Proforma** sheet tab. Two

<u> </u>	atures								
. /	(B C D	K	L	М	N	0	Р	Q	R
2	Wades Office Furniture	<u>-</u> н і	STORIC	A L -]	(- P R	O FOR	M A -J	[- P R	O FOR
3	Unaudited: , SIC #2522		2001			2002			2003
4	PARAMETERS FOR PRO FORMA		\$ 1,000			\$ 1,000		\$ 1,000	
54	LOAN RATES AND MARKET. SE								
56	The following are the historical / ex								
57	Rate on marketable securities		0.00%			5.00%			5.00%
58	Rate on bank notes		17.60%			14.50%			14.50%
60	Enter the details on the "new" term								
61	Rate on term notes (period specific)		0.00%			14.50%			14.50%
62	Num. of periods of the new term loan		1		8			7	
	Enter the amount of cash receipts								
	from new term notes when they		0			400			0
63	are received								
64	Type of loan: 1=fix principal; 2=amori		1			1			1
65	Current maturity term notes		0			50			50
66	Interest on term note					58.00			50.75
68	Enter data on other existing debt /								
69	Rate on existing long-term debt		0.00%			9.00%			9.00%
70	Current maturity LTD		75			75.00			75.00
H 4	▶ ▶ \ Income / Balance / Ratios / Cash	nflow)	Proforma						

types of loans are available: equal periodic principal payments and equal periodic installment payments.

a. Equal principal payments, type 1:

This option will make each period's reduction in <u>principal</u> the same. To select this option, enter a **1** in **row 64** and complete the data entry in the other cells for amount of the loan (Enter the amount of cash receipts from new term notes when they are received); rate on the loan (Rate on term notes (period specific)); number of periods of the loan (Num. of periods of the new term loan); and current maturity of the loan (Current maturity term notes).

b. Equal annual installments, type 2:

The loan principal will be borrowed in the first *pro forma* period and will be repaid in equal annual installments. To select this option, type **2 row 64** and complete the data entry in the other cells for amount of the loan (Enter the amount of cash receipts from new term notes when they are received); rate on the loan (Rate on term notes (period specific)); number of periods of the loan (Num. of periods of the new term loan); and current maturity of the loan (Current maturity term notes).

c. Unequal principal amounts:

The user can also specify by year (or period) the rate of the loan, the current maturity portion of the loan and cash proceeds (principal) of the loan. There is no limit to the number of times you may restructure the loan. Moreover, you may, at any time change the type of loan. This feature is extremely handy since determination of the best term-loan structure is often an iterative one.

2. Adding historical and *pro forma* years

Frequently we may build a case specific !CREDIT5 template requesting initially, say three historical and three *pro forma* years. After more analysis we realize that additional historical and/or *pro forma* years will be required. To add additional historical or *pro forma* periods, use the *Get_How_many_more* macro which you can access using **Ctrl M.** You will then be requested to enter the number of historical or *pro forma* periods to add.

3. Changing protected values

Certain cell values are "protected". The reason the cell values are protected is to prevent the user from accidentally overwriting or deleting formulas that are critical to calculating correct values. If

changes are made to protected values, it is very possible that these changes would cause incorrect values, in the historical period but in particular in the *pro forma* period.

4. Inserting rows or account categories

The *pro forma* plug borrowing or lending is a complicated formula that requires a summation of all values in the spreadsheet. If rows are added incorrectly, the *pro forma* balance sheets will <u>not</u> balance. Insert rows or account categories should not be attempted by the novice user, nor by anyone unfamiliar with the detailed relationships among financial statement accounts.

Before attempting to insert a row in the spreadsheet you should backup the file. To insert a row you must disable global protection by entering the macro command. Generally, you may safely insert a row only between other account categories. Do not insert rows above or below Marketable securities, Notes payable - bank, Interest on marketable securities, and Interest expense - Bank Notes. If you insert a row anywhere else (or even in these places), the balance sheet will likely not balance unless you manually change several formulas throughout the spreadsheet. You should note, however, that inserting a row in the balance sheet will not insert this same row anywhere else. You will have to generate your own *pro forma* assumptions and include this in the cash based income statement before it will balance.

5. Changing *Pro forma* Assumptions

In some cases it is impossible to specify a rate which will produce the required dollar value. This would be the case if the previous year's amount were zero and we wanted this year's amount to be positive. In other instances it is simply easier to input the dollar amount than to calculate the growth rate. Many of the *pro forma* values are already unprotected and by entering a dollar value directly into the balance sheet or income statement you will supersede any growth rate assumption. If you need to put a dollar value in a "protected" cell, simply unprotect the worksheet. Be sure to protect the sheet when you are finished.

Be careful, however, once you have written over the assumption contained in that cell, you will not be able to undo this change unless you type the formula back into the cell.

6. Other templates for credit analysis

Using the !CREDIT5 file discussed above, one *Bank Management* case or exhibit has been computerized and saved as an Excel worksheet. The files dealing with credit analysis include:

File Name	Description
!CREDIT5	Template for any firm—contains no actual data, only equations.
WADES5	Wades' Office Furniture, book example, Chapter 16.

These spreadsheets may be used as the starting point for sensitivity analysis involving different assumptions than those discussed in the *Instructor's Manual*. Since the historical information and many of the *pro forma* parameters have already been entered, the student can spend more time answering "what if?" questions and making more informed lending decisions.

VI. USING THE BANK PERFORMANCE TEMPLATE: !BANK5.

The Bank Performance template, !BANK5, is an Excel spreadsheet designed to aid in evaluating a bank's performance by assisting the user in developing historical and *pro forma* financial statements and ratios, very similar to the Credit Analysis Template. The user enters balance sheet and income statement data for any number of historical years. The template then completes the historical balance sheets and income statements, showing key financial ratios. Using past performance and interest rates specified by the user, it then builds *pro forma* balance sheets, income statements and financial ratios for any number of future years.

A. Starting the Bank Performance Template: !BANK5.

The Bank Performance Template resides on the *Bank Management* CD ROM, under the name "!BANK5.xls." After starting the Excel program, the template may be accessed by the **File**, **Open** command.

B. Building the !BANK5 Template.

As discussed in Section IV, you must first "build" the !BANK5 template. The spreadsheet or template must be "setup" for the specific case for which you are attempting to analyze. You will be prompted to enter: 1) the total number of historical periods of balance sheet and income statement data which you wish to input 2) the total number of *pro forma* periods, 3) the first year of data and 4) the scaling factor. Respond by typing any number greater than zero. Move from item to item by using the {Enter} key. Hit the {Create Template} button when you have finished filling out the form. See Section IV for a detailed description of each of these questions.

After you press the {Create Template} button the program will begin to build the spreadsheet. This may take a few minutes if you requested more than a few periods or so. The program will place you in normal Excel mode and you may begin to enter the historical data.

C. Entering Data in the !BANK5 Template

Data in the !CREDIT5
template is divided into six
(5) sheets or tabs. Looking
at the bottom of the
spreadsheet you will see an:
Inc, Bal, Supp, ROE, and
Profor worksheet.
Historical data will be
entered in the Inc, Bal, and
Supp sheets. The Inc sheet
contains income statement
data and the Bal sheet
contains balance sheet
information. The Supp
sheet contains information

/	С	Р	Q	R	S	Т	U	V
2	PNC Bank		— HISTORICAL—			PRO FORMA		
3	PITTSBURGH, PA	% of		Dec-01	% of		Dec-02	% of
4	Income Statement	Total	% Cha	\$ 1,000	Total	% Cha	\$ 1,000	Total
6	Interest Income:							
7	Interest and fees on loans	62.1%	-22.2%	2,992,253	52.0%	-17.6%	2,467,094	29.9%
8	Income from lease financing	3.4%	24.1%	258,790	4.5%	24.1%	321,219	3.9%
9	Memo: Fully taxable	64.9%	-19.8%	3,224,394	56.1%	-14.2%	2,765,457	33.5%
10	Tax-exempt	0.5%	-16.6%	26,649	0.5%	-14.2%	22,856	0.3%
11	Estimated tax benefit	0.3%	-14.7%	13,394	0.2%	-14.2%	11,488	0.1%
12	Income on Loans & Leases (TE)	65.7%	-19.8%	3,264,437	56.8%	-14.2%	2,799,801	33.9%
13								
14	Other security inc. (data prior to 12/31/00)	5.3%	-100.0%	0	0.0%	0.0%	0	0.0%
15	U.S. Treasury & Agency securities	0.0%	#N/A	65,970	1.1%	136.4%	155,964	1.9%
16	Mortgage Backed Securities	0.0%	#N/A	446,662	7.8%	136.4%	1,055,986	12.8%
17	Estimated tax benefit	0.0%	-19.8%	634	0.0%	-73.7%	166	0.0%
18	All other securities income	0.0%	#N/A	54,082	0.9%	3077.3%	1,718,361	20.8%
19	Tax-Exempt Securities Income	0.0%	-21.6%	1,263	0.0%	-73.7%	332	0.0%
20	Investment Interest Income (TE)	5.3%	71.5%	567,348	9.9%	416.5%	2,930,477	35.5%
22	Interest on due from banks	0.1%	-33.1%	5,447	0.1%	79.0%	9,748	0.1%
23	Interest on Fed funds sold & resales	0.7%	-71.4%	12,664	0.2%	-100.0%	0	0.0%
24	Trading account income	0.0%	-38.2%	1 467	0.0%	_330,2%	6.311	0.1%
H 4	▶ N Inc Bal Supp ROE Profor)

for average assets, number of branches, the number of employees as well as supplemental loan loss data and specific information needed to calculate the bank's Risk Based Capital requirements. The **ROE** sheet contains all the profit and risk ratios described in Chapter 3 of the text. The **ROE** sheet will be automatically calculated based on data entered in the **Inc**, **Bal**, **Supp**, and **Profor** sheets.

Move to the first entry in the first historical year, of the **Inc** sheet, cell **E6**. Notice that this cell is blue. **Any blue cell in the spreadsheet indicates that the user may enter information into that cell.** If you attempt to enter data into a black cell, Excel will "beep" and prompt with "Protected cell" to which you must respond by pressing **{Enter}**. Proceed by entering the firm's historical balance sheet and income statement data into the highlighted cell in column **E**.

A note about protected cells: the spreadsheets contain formulas that are quite complex. Many formulas depend on other formulas, that is why some cells <u>must</u> be protected. If you write, enter data into a protected cell, the integrity of the spreadsheet may be in question.

The !BANK5 template is very similar in format to the !CREDIT5 template. Going down the worksheet, the financial statements closely follow the format of the UBPR. Moving from left to right, the financial statements consist of three columns for each period: 1) "%Cha"—the percent increase (or decrease) in the dollar value of the account from the previous period, 2) "\$1(,000,000)"—the scaled average dollar value of the account and 3) "% of Total"—percent of total assets for balance sheet items and percent of total interest income plus total non-interest income for each income statement account.

Look at the first entry in the first historical year, cell **F7**. Notice that this cell is a different color (blue) than the cells in columns **D** and **F**. These cells are shown in bold in the Exhibit. **Any blue cell in the spreadsheet indicates that the user may enter information into that cell.** If you attempt to enter data into a black cell, Excel will "beep" and prompt with "Protected cell" to which you must respond by pressing {**Enter**}.

D. Entering Historical Data

As you enter this data you will note that total figures, such as "Total loans and leases," need not be entered. After entering data into all of the appropriate unprotected cells in the **Inc, Bal,** and **Supp** worksheets, be sure to verify your work. Make sure that total assets equals total liabilities plus owner's equity. Financial ratios for that year should now be correct as well. If you made a data entry mistake, simply go to the errant input cell and reenter the correct number. Note that occasionally account totals displayed will not sum due to rounding. Also remember that in the historical years you must ensure that the balance sheet balances and that retained earnings on the balance sheet increases by the amount of retained earnings calculated from the income statement. If after entering the data you find an inconsistency, then either your input or the source of the data is in error.

Several comments about the worksheet are in order. Some of the growth, or "% Cha," rates may show up as "NA" when the actual rate of growth has "undefined," as would be the case if the previous year's dollar amount were zero. In some instances, a cell will display the value "ERR," normally the result of a division by zero. This typically occurs in the calculation of financial ratios when the denominator is zero and is not necessarily an indication that your numbers or the spreadsheet are in error.

If you are uncertain of how an amount was calculated on the worksheet, place the cursor on that cell and read the formula displayed at the top left of the screen. for instance, if you wanted to know how the ratio "ROE" in cell **E154** was calculated, place the cursor in that cell. The first status line displays the cell's formula: E112/E57. Cell E112 is Net Income for that year, and E57 is total equity.

If you are uncertain of how an amount was calculated on the worksheet, place the cursor on that cell and read the formula displayed at the top left of the screen. For instance, if you wanted to know how the ratio "ROE" on the **Ratios** sheet was calculated, place the cursor in that cell. The first status line displays the cell's formula:

```
=Ptot(+Inc!F76,Bal!F67,Bal!C67)*Perscale(F$3)

The function "Ptot" is calculated as:

=Ptot(num,den1, den2)

If den2 ? 0 then:

Value = num / (average(den1,den2)) and Perscale() is a constant equal to 1.

If den2 = 0 or is missing:
```

Value = num / den2 and Perscale() is a constant equal to 1.

This formula is designed to make the spreadsheet look professional. If cell **Balance!f36** is zero, we would get an error in the ROE ratio. The formula checks for a zero balance, if so it places **NA** in the cell. The **Bal!** Or **Inc!** indicates which sheet the cell is located on. In this case, cell **Inc!F76** is Net income for that year, **Bal!F67** is Total Equity.

E. Entering Pro forma Data

The most difficult task is to correctly forecast interest rates for future years so that critical investment and financing decisions can be made. The !BANK5 template is designed to simulate the impact of rate changes on various investment and financing decisions with only minimal data entry and computer expertise required by the user.

Examining the worksheet profor, there are three sets of parameters covering the balance sheet. The first column "Growth Rate," is for an annualized rate of growth. The second column of parameters "Interest Rate," are the interest rates on the respective values for the balance sheet. Enter the expected or forecasted growth rate and rate of interest for each account. The third column of data is for the

. /	C C	Q	R	S	Т	U	V
2	PNC Bank	[-HIS	STORIC	AL-J	JPR	O FOR	M A]
3	PITTSBURGH, PA		Dec-01		_	Dec-02	
	PRO FORMA PARAMETERS	Growth	Interest	% of	Growth	Interest	% of
5		Rate	Rate	Total	Rate	Rate	Total
7	PARAMETERS FOR PROFORMA						
8	INCOME STATEMENT						
10	Tay handita of loan and convity income						
11	Tax benefits of loan and security income % of Loan and lease income fully taxable			99.18%			99.18%
12	Growth rate on income from lease financing	24.12%		99.10%	24.12%		99.10%
10	Growth rate on income from lease imancing	24.12%			24.1270		
	Estimated tax benefit on lease financing			50.26%			50.26%
14	(Impl. tax rate (tax benefit. /Tax exmp leas			20.2070			00.2070
	Estimated tax benefit on municial securities			50.20%			50.20%
15	(Impl. tax rate (tax benefit / muni inc))			00.2070			00.2070
16	Growth rate on noninterest income:	3.42%			3.42%		
17	Fiduciary Activities	-52.63%			-52.63%		
18	Deposit service charges	6.02%			6.02%		
19	Trading revenue	132.30%			132.30%		
20	Other foreign transactions	0.00%			0.00%		
21	Other noninterest income	69.25%			69.25%		
23	Growth rate on Non-Interest Expenses:	11.30%			11.30%		
•	Inc Bal Supp ROE Profor				1		

composition or mix of the asset type. Generally, each asset and liability needs a growth rate parameter and many assets and liabilities need an interest rate figure. For example, real-estate loans needs a growth rate assumption and also the expected interest rate on real-estate loans. NOTE: you can enter either rates on the individual loans or the rate on total loans. IF YOU ENTER A RATE IN THE TOTAL LOANS CATEGORY, THEN YOU WILL WRITE OVER THE FORMULA THAT USES A WEIGHTED AVERAGE OF THE RATES ON THE VARIOUS CATEGORIES OF LOANS. But if the analysis is expecting more growth in real estate loans, then a larger percent of the growth would be entered.

You may only enter an <u>interest rate</u> for gross loans **or** individual rates for each loan category **PLEASE KNOW THAT IF ONE INDIVIDUAL RATE IS ENTERED, ALL RATES MUST BE ENTERED.** If individual rates are not entered, the program assumes the weighted average rate on loans will prevail. If you do not have or know the individual rates, you should enter the weighted average rate expected on gross loans. **This also applies to Deposits.** You must enter the weighted average rate expected on all deposits or <u>all</u> individual rates on each deposit account. You can, however, enter individual growth rates on each deposit account.

Move the cursor down to row **55**. Again enter the projected annualized rate of growth for investment and the weighted average <u>annualized</u> interest rate earned on all investments as well as the annualized interest rate earned on each individual investment category such as "U.S. Treasury & Agency securities".

You will notice that there is no value for a growth rate for either category: Fed. Funds sold & RP's or Fed Funds purchased & RP's. The dollar amount is automatically calculated in the *pro forma* years. You must, however, enter an interest rate or the rate from the previous year is used.

The value in the **Proforma** sheet for "Cash & due" in row 71 differs from other rates in this column in that it represents the amount of total deposits in the form of cash. You may specify an amount here, or have the program calculate an amount for you. If you choose the latter, the rate used will be last year's rate and cash & due will be computed as the product of this rate times total deposits from that year. There is no interest rate value for Cash & Due since this is a non interest bearing asset.

For the income statement data, the second column of data has been re-labeled "% of Income" which means you are expected to enter the percentage of net income for the tax rate and dividend rate. Under the Income Statement section of **Proforma** sheet you only need to enter a growth rate on each category for the other items.

The final section, *Loan Loss and Capital Accounts*, the second column to "% of gross loans." You are expected to enter the percentage of gross loans each of these items makes up.

Note that all future years will have the same rate of growth and interest rate for each account unless another rate is entered manually. Moreover, if you change the growth rate or interest rate in a *pro forma* period, that rate will be used in all future *pro forma* periods up until a period in which the growth rate was manually entered. Thus, entering a growth rate of 10% for 2002 will cause the growth rates for 2002 through, say 2004, to be calculated as 10%. If we moved ahead to 2003 and entered 15% for the "due from banks - interest bearing" change, the rate for 2002 would remain at 10% while the years 2003 through 2004 would change to 15%.

Note that information on the Proform sheet tab below the PARAMETER FOR *PRO FORMA* sections (approximately row 175) are programming instructions for the template and should be ignored, but not erased, by the user.

Remember that unless you <u>manually</u> input the value of the *pro forma* parameters, the program will assume that the *pro forma* parameters are the <u>same</u> as those calculated or input for the last historical year.

F. How Account Values are Calculated

Generally there are two basic assumptions used to calculate the pro-forma balance sheet and income statement items. To calculate the dollar amount of Municipal securities on the balance sheet (using the PNC2001 spreadsheet as an example):

=IGR(Profor!T60,R21,U\$3,1)

where IGR(g_rate,base,time_period,type) is defined as:

Value = base * (1+g_rate), and time_period and type do not apply.

Which translates to:

Municipal securities_t = Municipal securities_{t-1} x *growth rate on municipal securities*

Income on municipal securities for the income statement is calculated as:

```
=IvPtot(Profor!I62,Bal!I23,Bal!F23)
where IvPtot(num,den1,den2) is defined as:
If den2 ? 0 then:

Value = num * (average(den1,den2))

If den2 =0 or is missing:

Value = num * den2
```

Which translates to:

Municipal securities incomet

= Average(Municipal securities_t, Municipal securities_{t-1}) x *interest rate on municipal securities*

G. A Note on the Balance Sheet Account "Plug" Figures

In order to guarantee that the *pro forma* statements exhibit internal consistency, assets must equal equities. Normally this equality is accomplished by allowing the computer to determine the value of one or more "plug" accounts. In the !BANK5 template, both "Fed funds sold & security RP's" and "Fed funds purchased & security RP's" are plugs figures. If the bank generates cash in excess of the amount required, the program assumes that "Fed funds purchased" are reduced, with any remaining funds being invested in "Fed funds sold." You may enter different interest rates for Fed funds sold and Fed funds purchased. If the firm generates insufficient cash, the program assumes that "Fed funds sold" will be liquidated with additional funds obtained through "Fed funds purchased" if necessary. Thus, for any year, either "Fed funds sold & security RP's" or "Fed funds purchased & security RP's" must be zero.

H. Additional Program Features

1. Adding historical and pro forma years

Frequently we may build a case specific !BANK5 template requesting initially, say three historical and three *pro forma* years. After more analysis we realize that more historical and/or *pro forma* years will be required. To add additional historical or *pro forma* periods, use the *Get_How_many_more* macro which you can access using **Ctrl M.** You will then be requested to enter the number of historical or *pro forma* periods to add.

2. Changing protected values

Certain cell values are "protected". The reason the cell values are protected is to prevent the user from accidentally overwriting or deleting formulas that are critical to calculating correct values. If changes are made to protected values, it is very possible that these changes would cause incorrect values, in the historical period but in particular in the *pro forma* period.

3. Inserting rows or account categories

The *pro forma* plug borrowing or lending is a complicated formula that requires a summation of all values in the spreadsheet. If rows are added incorrectly, the *pro forma* balance sheets will <u>not</u> balance. Insert rows or account categories should not be attempted by the novice user, nor by anyone unfamiliar with the detailed relationships among financial statement accounts.

Before you can insert a row in the spreadsheet, you must unprotect the spreadsheet.

Additional account categories, or rows, may safely be inserted into the spreadsheet only at certain points. Generally, you may safely insert a row only between other account categories. Do not insert rows above or below Federal Funds Sold, Federal Funds Purchased, Interest expense on Fed Funds, and Interest Income on Fed Funds. Place the cursor on the row you want to insert before and issue the insert command. If you insert a row, even in any of these places, the balance sheet will likely not balance unless you manually change several formulas through out the spreadsheet. You should note, however, that inserting a row in the balance sheet will not insert this same row anywhere else. You will have to generate your own *pro forma* assumptions and include this in the cash based income statement before it will balance.

4. Changing *Pro forma* Assumptions

In some cases it is impossible to specify a rate which will produce the required dollar value, as would be the case if the previous year's dollar amount were zero and we expect this year's amount to be positive. In other instances it is simply easier to input the value than to calculate the growth rate. Many of the *pro forma* values are already unprotected and by entering a dollar value you will supersede any growth rate assumption. If you need to put a dollar value in a "protected" cell, you must first unprotect the spreadsheet.

Be careful, however, once you have written over the growth rate assumption, you will not be able to undo this change unless you type the formula back into the cell. In general, it is safe to replace a formula with a number (constant) provided of course that the number is initially correct and that you change it if later changes elsewhere on the spreadsheet make the number inappropriate. Thus, changing a formula to a constant means that you must **manually** reenter the cell value when it is no longer correct.

5. Other templates for bank performance analysis

Using the !BANK5 file discussed above, several *Bank Management* cases and examples have been computerized and saved as accessible Excel worksheets. The files dealing with bank performance analysis include:

File Name	Description
!BANK5	Template for any bank—contains no actual data, only equations.
PNC2001	PNC bank performance analysis case from Chapter 3.

These spreadsheets may be used as the starting point for sensitivity analysis involving different assumptions than those discussed in the *Instructor's Manual*. Since the historical information and many of the forecasted interest rates have already been entered, the student can spend more time answering "what if?" questions and in making more informed investment and financing decisions.

VII. USING THE DURATION GAP ANALYSIS TEMPLATE: !DURGAP5.

The Duration Gap Analysis template, !DURGAP5, closely follows the examples and exhibits used in Chapter 9 of the *Bank Management* text. This template is an Excel spreadsheet designed to speed up the time consuming process of calculating the duration of assets, duration of liabilities and the Duration Gap at a bank. This template allows the users to enter multiple years of data and any number of Earning Assets, Non-Earning Assets, Interest Bearing Liabilities, Non-Interest Bearing Liabilities, as well as estimated changes in future short term interest rates. Using this information as well as interest rate and maturity data that must be entered, the duration of each asset and liability is calculated as well at the weight average duration of total assets and liabilities.

A. Starting the Duration Gap Template: !DURGAP5

The Duration Gap Template resides on the *Bank Management* CD ROM, under the name "!DURGAP5.xls." After starting the Excel program, the template may be accessed by the **File**,

Open command.

B. Building the !DURGAP5 Template.

You must first "build" the !DURGAP5 template. The spreadsheet or template must be

Enter the following data to create the spreadsheet template				
Enter the bank name	Bank Name			
Total number of earning assets	1			
Total number of nonearning assets	1			
Total number of interest bearing liab	1			
Total number of noninterest bearing liab	1			
Create Template Enter the bank name and the number of periods to create the template. You must hit "Enter" after you type each variable before you "Create Template"				

"setup" for the specific case for which you are attempting to analyze. When you retrieve the !DURGAP5 template you should proceed initially much the same as with the !CREDIT5 and !BANK5 templates. You will be prompted to enter: 1) the number of historical years of balance sheet data which you wish to input 2) the number of earning and non - earning assets, 3) the number of interest bearing and non - interest bearing liabilities, 4) the first year of data and 5) the scaling factor. Respond by typing any number greater than zero, followed by {Enter}. See Section IV for a detailed description of each of these questions.

In addition to the question outlined in the previous Section IV, four additional questions will be asked before the building of the !DURGAP5 template can be completed. You will be asked to give the number of Earning assets, Non-earning assets, Interest bearing liabilities and Non-interest bearing liabilities.

1.) Number of earn assets?

Respond with the total number of Earning Assets you want this spreadsheet to contain.

2.) Number of non-earn assets not including Cash?

Respond with the total number of Non-earning Assets you want to be included in this spreadsheet not including cash. You will notice that there will **always** be at least one Non-earning Asset even if you enter zero. Do not delete this row or the formulas will be affected.

3.) Number of interest bearing liabilities?

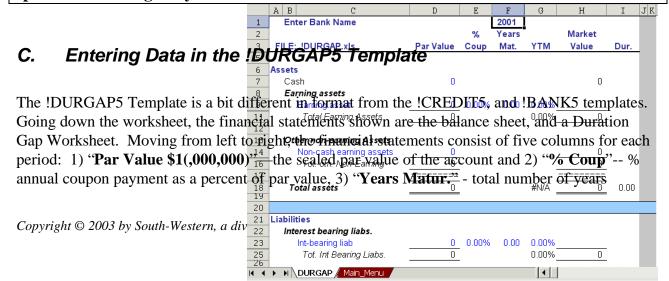
Respond with the total number of Interest Bearing Liabilities you want this spreadsheet to contain.

4.) Number of non-interest bearing liabilities?

Respond with the total number of Non-Interest Bearing Liabilities you want to be included in this spreadsheet. You will notice that there will **always** be at least one Non-earning Asset even if you enter zero. Again do not delete or remove this row or the formula values will not be correct.

After entering all of the data, press the {Create Template} button and the program will begin to build the spreadsheet. This may take a few minutes if you requested more than a few periods. The program will place you in normal Excel mode and you may begin to enter the historical data.

NOTE: You may not add additional asset or liability categories after the spreadsheet has been create. Be sure you add the total number of categories needed when the spreadsheet is originally created.



remaining to maturity, 4.) "**YTM**" - yield to maturity (is assumed to be the same as % coupon unless changed), 5) "**Market Value**" - present value of the security using the yield to maturity and, 6) "**Dur**" - calculated duration of the security.

Note: There a two additional columns after column I, "DUR." These two columns have a width of 1 and are hidden. These two columns are necessary to calculate the weighted average duration of assets and liabilities. Do not erase or write over these two columns.

Note that information on the spreadsheet below the Duration Calculation Worksheet section are programming instructions for the template and should be ignored, **but not erased**, by the user.

Look at the first entry in the first historical year, cell **D7**. Notice that this cell is blue and the cells in column **H** and **I** are black. **Any highlighted cell in the spreadsheet indicates that the user may enter information into that cell.** If you attempt to enter data into a protected cell, Excel will "beep" and prompt with "Protected cell" to which you must respond by pressing {**Enter**}.

D. Entering Historical Data

You should enter data in the columns market: 1.) "**Par \$1(000,000)**, 2 "% **Coup**", 3) "**Years Maturity**" and optionally you can enter data in 4) "**YTM**". If you do not enter data in the column "YTM" the security will be assumed to be trading at par such that the coupon rate equals the yield to maturity; i.e., % Coup = YTM.

Two additional areas need to be mentioned with the !DURGAP5 template. Since the template allows any number of earning and non-earning assets as well as any number of interest bearing and non-interest bearing liabilities, you must also enter the names of each of these asset and liability categories. Go to the first earning asset cell **C9**. If you want the first asset earning to be Treasury bills, you must first move the cursor to cell **C9** and type: **Treasury bills{Enter}**. Use the arrow keys to go to the next unprotected title.

The second area concerns the cell at the top of the section "Duration Gap Calculations" titled "**Payments per year.**" If the earning assets and interest bearing assets have <u>semi-annual coupon</u> payments enter "2" in that cell. Enter "1" for annual payments. Note that duration values will be adjusted to annualized figures even if you have semi-annual payments; i.e. annualized duration will equal unadjusted duration times the number of payments per year.

Note: You may enter only one value of "Payments per year." If you have more that one historical year, all securities will be assumed to have the same number of payments per year as listed in the H column. If you have entered more than one account category for each type of securities, the "Payments per year" cell, H42, will be shifted down by the number of account categories you entered.

As you enter this data you will note that total figures, such as "Total Earning Assets," need not be entered.

After entering data into all of the appropriate cells in column **D**, **E**, **F** and **G** of the balance sheet and income statement, make sure that total assets equals total liabilities plus owner's equity. Calculated duration for that year should now be correct as well. If you made a data entry mistake, simply go to the errant input cell, reenter the correct number. Note that occasionally account totals displayed will not sum due to rounding.

E. Entering Pro forma Data

The !DURGAP5 template does not allow for pro forma analysis.

F. Examining the impact of changes in short term interest rates

The row containing, "Expected Change in Rates," allows one to do sensitivity, or what if?, analysis on different anticipated changes in interest rates. Enter the expected change in interest rates and the

approximate change in the market value of assets and liabilities will be calculated and totaled in the following cells using the following definition of duration:

D Mkt value = (-DUR) x
$$\frac{\Delta i}{(1 + i)}$$
 x value.

Two values for the approximate change in the market value of equity are available. The first is simply the difference in approximate change in assets and liabilities using the definition of duration. The second uses the formula:

D Mkt value of equity = (-DGAP) x
$$\frac{\Delta i}{(1 + i^*)}$$
 x total assets.

where i* is the weight average rate on earning assets.

3. Changing protected values

Changing protected cells should not be attempted by the novice user, nor by anyone unfamiliar with the detailed relationships among financial statement accounts. If you are daring, you may selectively disable the protection of cells. This will allow you to enter a different formula or a simple constant in place of the existing formula. In general, it is safe to replace a formula with a number (constant) provided of course that the number is initially correct and that you change it if other changes elsewhere on the spreadsheet make the number inappropriate. Thus, changing a formula to a constant means that you must manually reenter the cell value when it is no longer correct.

H. Other templates for Duration Gap analysis

Using the !DURGAP5 file discussed above, one *Bank Management* exhibit has been computerized and saved as an accessible Excel worksheet. The files dealing with Duration Gap analysis include:

File Name	Description
!DURGAP5	Duration Gap analysis template for evaluating any bank. Contains no data.
DGAP-exh9-1	Duration Gap Example from Chapter 9 Exhibits 9.1-9.3.

These spreadsheets may be used as the starting point for sensitivity analysis involving different assumptions than those discussed in the *Instructor's Manual*. Since the historical information and many of the forecasted interest rates have already been entered, the student can spend more time answering "what if?" questions and in making more informed investment and financing decisions.

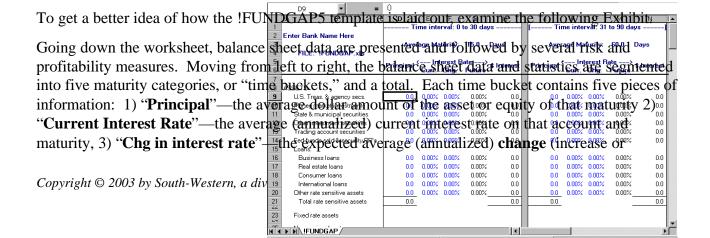
VIII. FUNDING GAP ANALYSIS TEMPLATE: !FUNDGAP5

The Funding Gap Analysis Template, !FUNDGAP5, is an extension of the example presented in Chapter 8 in the text, *Bank Management*. This is an Excel spreadsheet designed to simulate the financial performance of a bank faced with uncertain interest rates. Specifically, the user may input values of assets and liabilities with up to six different maturities, along with current and forecasted rates for each. With this information, the template generates risk and profitability measures for each maturity class and the total. The template incorporates features to enable the user to see very quickly the results of different rate scenarios.

A. Starting the Funding Gap Analysis Template: !FUNDGAP5.

The Funding Gap Analysis Template resides on the *Bank Management* CD ROM, with the name "!FUNDGAP5.xls." After starting the Excel program, the template may be accessed by the **File**, **Open** command. You do not need to build the !FUNDGAP5 template.

B. Entering Data in the !FUNDGAP5 Template



decrease) in the interest rate on that account and maturity, 4) "**Future Interest Rate**"—the expected average (annualized) interest rate on that account and maturity, effective at maturity of the account,

Move to the first time bucket, "*Time interval: 0- to 30-day maturities*", and place the cursor in cell **D9**. Notice that this cell is blue. Any blue cell in the spreadsheet indicates that you may enter information into that cell. If you attempt to enter data into a black cell, Excel will "beep" and prompt with "Protected cell" to which you must respond by pressing{**Enter**}. Proceed by entering the value of the bank's shortest maturity assets and liabilities into the highlighted cells in column **D**. At this time, enter into column **E** the average annualized interest rate associated with each non-zero account. Values may be entered in any order.

As you enter this data you will note that total figures, such as "Total assets," need not be entered. The spreadsheet will calculate these amounts. The totals across all maturities will be calculated automatically (columns **AH** and **AI**). If, after entering all of the data, you find an inconsistency, then either your input or the source of the data is in error. (Note that occasionally account totals displayed will not sum due to rounding.)

Toward the bottom of the worksheet several measures of risk and profitability are displayed for each of the five time buckets and the total. If you are uncertain of how an amount was calculated on the worksheet, place the cursor on that cell and read the formula displayed at the top left of the screen. For instance, if you wanted to know how total rate sensitive assets in cell **D21** was calculated, place the cursor in that cell. The first status line displays the cell's formula: @SUM(D9..D20), representing the sum of cell **D9** through **D20**.

C. Entering Interest Rate Forecasts in the !FUNDGAP5 Template

The spreadsheet now shows how the bank will perform if interest rates over the upcoming year remain constant. If rates change though, the forecast of "interest" (meaning asset revenues and liability and equity costs) will change. You may input the expected increase or decrease in any rate in the "Chg." column of each time bucket. The program assumes that the current rate will apply for a time equal to the average maturity of that time bucket, while the "Future" rate applies to the remainder of the year. The future rate is calculated automatically as the sum of the current rate and the rate you specify as the expected change.

For example, enter "100" as principal in cell **D9** and "0.10" as the current rate in cell **E9**. You will observe that the future rate is assumed to be 10% as well, making total interest from U.S. Treasuries for the year \$100. Now change the future rate to 12% by entering ".12" in cell **F9**. Note that interest changed to \$119.2, equal to \$1,000 at 10% for 15 days and \$1,000 at 12% for 350 days.

D. How Risk/Return Measures Are Calculated in the !FUNDGAP5 Template

The following is a summary of the formulas used to calculate the financial measures displayed at the bottom of the !FUNDGAP5 template. Note that "(m-1)" represents a variable's value in the previous time bucket.

Measure	Formula
Periodic GAP	Rate sensitive assets - Rate sensitive liabilities
Cumulative GAP	Periodic GAP + Cumulative GAP _{m-1}
GAP ratio	Rate sensitive assets / Rate sensitive liabilities
RSA / Total Assets	Rate sensitive assets / Total Assets
Net interest income	Interest income - Interest expense
Net interest margin	Net interest income / (Rate sensitive assets - Fixed rate assets)
Yield rate	Interest income / (Rate sensitive assets - Fixed rate assets)
Cost of funds	Interest expense / (Rate sensitive liabilities - Fixed rate liabilities)
Spread	Yield rate - Cost of funds

E. Additional Program Features

1. Entering expected rate changes

Since one of the primary uses of the !FUNDGAP5 template is to determine the effect of different interest rate scenario, the spreadsheet allows two additional methods for quickly changing future rate.

- a. **Individual time buckets.** If the rate in any maturity category is expected to change by a given amount for **all** assets or for **all** liabilities, it need be entered only once. Rows 69 and 70 each contain one cell for every time bucket for this purpose. For example, if short-term rates (first time bucket) are expected to **decrease** by 50 basis points for assets and 60 basis points for liabilities, enter "-.5%" in cell F69 and "-.6%" in cell **F70**.
 - It is important to note that any expected changes entered in column **F** will be **in addition** to those specified in cells **F69** and **F70**. For example, assume as in the previous example that all assets and liabilities will decrease by 50 and 60 basis points respectively, **except** for "money market investments," which should decrease by only 30 basis points. Entering "-.5%" in cell **F69** and "-.6%" in cell **F70** as before, and then ".2%" in cell **F10** quickly accomplishes this scenario.
- b. **All time buckets**. If the rate in **all** maturity categories is expected to change by a given amount for **all** assets or for **all** liabilities. Note that all time buckets may be entered only in these two cells, although the values entered will be displayed in rows 73 and 74 for the other buckets as well.

As with the individual time bucket adjustments in part (a) above, any expected as well as **F73** and **F74**. Thus the future rate computed in column **G** will be the sum of the current rate plus any expected change for the individual account, that particular time bucket, and/or all time buckets.

2. Changing average maturities

Each of the five time buckets has an average maturity defined by the number in row 3. The first four of these, cells **G3**, **M3**, **S3**, and **Y3**, may be changed by the user, but the fifth, in cell **AE3** must remain "365" since fixed rate accounts are included there. To change these maturities, enter the correct maturity for the first time bucket and move directly to the next category. At this time you should also change the respective descriptions in cells **D1**, **I1**, **P1**, and **V1**.

3. Changing protected values

Many of the cell on the !FUNDGAP5 template have purposely been "protected" to guard against inadvertent damage to the formulas and to make data entry simpler. You may selectively disable the protection of cells, for instance to change an account name or a cell formula.

4. Other templates for funding gap analysis

Using the !FUNDGAP5 file discussed above, several *Bank Management* exhibit has been computerized and saved as accessible Excel worksheets. The files dealing with funding gap analysis include:

File Name	Description
!FUNDGAP5	Template for any firm—contains no actual data, only equations and formulas for Funding GAP analysis.
GAP_Exh-8-3.xls	Exhibit 8.3, GAP example from Exhibit 8.3, Chapter 8
Exhibit 8-5_Synovus_bank.xls	Exhibit 8.5, chapter 8 No
GAP_Report-Exh-8-6.XLS	Example funding gap problem, Chapter 8 Exhibit 8.6.
ABC-rate-sensitive-report-exh 8-7.xls	Exhibit 8.7, Chapter 8.
Inc_state_GAP-Exh-8-11.xls	Exhibit 8.11 from Chapter 8. Income Statement GAP.

IX. RISK-BASED CAPITAL ANALYSIS TEMPLATE: !RBC5

The Risk-Based Capital Analysis template, !RBC5, is a worksheet that follows the example presented in Exhibit 13.2 of Chapter 13 of the *Bank Management* text. This worksheet is a Excel spreadsheet designed to speed up the time consuming process of calculating risk adjusted assets and off-balance sheet conversion factors using the new Risk-Based Capital standards. By entering the different types of assets and off-balance sheet items the bank holds, Risk-Adjusted Assets and the corresponding Capital Requirements are calculated.

A. Starting the Risk-Based Capital Template: !RBC5

The Risk-Based Capital
Template resides on the *Bank Management* CD ROM, under
the name "!RBC5.xls." After
starting the Excel program, the
template may be accessed by the **File, Open** command.

B. Building the !RBC5 Template.

The !RBC5 template does not require "building. You can

	c6 ▼ = 104525				
	A B		С	D	E
1					
2	Enter Bank Name Here		1999		
					Risk
3			Assets	Risk	Weighted
4			\$1,000	Weight	Assets
5	Category 1: Zero Percent				
6	Cash & reserve		104,525	0.00%	0
7	Trading Account		830	0.00%	0
8	U.S. Treasury & agency secs.		45,882	0.00%	0
9	Federal Reserve stock		5,916	0.00%	0
10	Total category 1		157,153	-	0
11				-	
12	Category 2: 20 percent				
13	Due form banks / in process		303,610	20.00%	60,722
14	Int. bearing Dep./F.F.S.		497,623	20.00%	99,525
15	Domestic dep. institutions		38,171	20.00%	7,634
16	Repurchase agrements (U.S. Treas	329,309	20.00%	65,862	
17	U.S. Agencies (gov. sponsored)	412,100	20.00%	82,420	
18	State & Muni's secured tax auth		87,515	20.00%	17,503
19	C.M.O. backed by agency secs.		90,020	20.00%	18,004
H	N RISKC_EX		1	1	

begin entering data as soon as you load the spreadsheet. Be sure to **SAVE THE FILE WITH A DIFFERENT NAME** or you will overwrite the !RBC5 template.

C. Entering Historical Data in the !RBC5 Template

The !RBC5 Template is a bit different in format from the other templates. Going down the worksheet, a risk-based capital balance sheet, a capital requirements section and an off-balance sheet worksheet, are shown. This template follows the example given in Chapter 13 of the text. Moving from left to right, the worksheet statements consist of three data columns: 1) "Assets \$1,000", - the total scaled value of the asset account, 2) "Risk Weight" - the Risk-Based Capital required risk adjustment percent, 3) "Risk Weighted Assets" - the dollar amount of risk adjustec its, the product the dollar amount the particular assets and the risk weight. In the top portion of the spreadsheet, you will only enter data in the C column. If the risk weights change, you may also enter data in the D column.

Do not enter assets amounts in the "Off-balance Sheet Contingencies" section in rows 44 through 48. You should enter data in the "Off-balance Sheet - worksheet area." Risk-adjusted assets of off-balance sheet items are calculated in a two step process. The off-balance sheet item must first be converted to an on-balance sheet or credit equivalent amount before the risk weight can be applied. Two categories of off-balance sheet items are available under the worksheet section: 1) "Contingencies 100 percent category" and 2) "Contingencies 50% category." The 100 percent and 50 percent categories refer to the type of collateral the item is secured by. The 100 percent category items will carry a risk weight of 100 percent and the 50 percent category items will carry a risk weight of 50%. Enter the amount of the off-balance sheet item under the "\$ Amt." column, C, in the off-balance sheet worksheet section. The values will be updated in the top section of the spreadsheet under "Off-balance sheet Contingencies."

Look at the first entry in the first historical year, cell **C7**. Notice that this cell is blue(or a different color than the cells in column **E**. **Any blue cell in the spreadsheet indicates that the user may enter information into that cell.** If you attempt to enter data into a black cell, Excel will "beep" and prompt with "Protected cell" to which you must respond by pressing **{Enter}**.

As you enter data you will note that total figures, such as "Total Category 1," need not be entered. After entering data into all of the appropriate cells in column **C**, verify your work. If you made a data entry mistake, simply go to the errant input cell, reenter the correct number. Note that occasionally account totals displayed will not sum due to rounding.

D. Entering Pro forma Data

The !RBC5 template does not allow for *pro forma* analysis.

E. Additional Program Features

1. Changing protected values

Changing protected cells should not be attempted by the novice user, nor by anyone unfamiliar with the detailed relationships among financial statement accounts. If you are daring, you may selectively disable the protection of cells. This will allow you to enter a different formula or a simple constant in place of the existing formula. In general, it is safe to replace a formula with a number (constant) provided of course that the number is initially correct and that you change it if later changes elsewhere on the spreadsheet make the number inappropriate. Thus, changing a formula to a constant means that you must manually reenter the cell value when it is no longer correct.

2. Other templates for Risk-Based Capital analysis

Using the !RBC5 file discussed above, one *Bank Management* example has been computerized and saved as accessible Excel worksheets. The files dealing with Risk-Based Capital analysis include:

File Name	Description
!RBC5	Risk-Based Capital template for any bank, contains no actual data.
RBC – Regional Nat Bank	Risk-Based Capital Example for Regional National Bank (RNB) from Chapter 13 Exhibit 13.2.

This spreadsheet may be used as the starting point for sensitivity analysis involving different assumptions than those discussed in the *Instructor's Manual*. Since the example information has

been entered already, the student can spend more time answering "what if?" questions and in making more informed investment and financing decisions.

X. CUSTOMER PROFITABILITY ANALYSIS AND LOAN PRICING TEMPLATE: !CUSTPRO5

The Customer Profitability Analysis template, !CUSTPRO5, follow the example given in Exhibits 18.3 and 18.4 of Chapter 18 in the *Bank Management* text. This template is an Excel spreadsheet designed to speed up the time consuming process of calculating transaction expenses and revenues, loan revenues and expenses as well as target profit for a customer. Customer Profitability and Loan Pricing analysis consists of identify all expenses, revenues and the target profit of a customer. Revenues less expenses less the target profit gives the net profit of a customer relationship at the bank. This template allows the users to enter loan fees, base rate, the percent interest over base rate, compensating balance requirements, per unit transaction costs, administrative fees, yield on average ledger balances, and the target profit.

A. Starting the Customer Profitability Template: !CUSTPRO5

The Customer Profitability Template resides on the *Bank Management* CD ROM, under the name "!CUSTPRO5.xls." After starting the Excel program, the template may be accessed by the **File**, **Open** command.

B. Building the !CUSTPRO5 Template.

The !CUSTPRO5 template does not require "building." You can begin entering data as soon as you load the spreadsheet. Be sure to **SAVE THE FILE WITH A DIFFERENT NAME** or you will overwrite the !CUSTPRO5 template.

C. Entering Historical Data in the !CUSTPRO5 Template

The !CUSTPRO5 Template is a bit different in format from the other templates. Going down the worksheet, the financial statements shown are the: 1) Loan agreement, 2) Loan and Deposit Activity, 3) Transaction Expenses, 4) Revenues and 5) Target profit sections. This template follows the example given in Chapter 18 of the *Bank Management* text. Moving from left to right, the worksheet statements consist of four columns. In the top of the spreadsheet, under the Loan agreement and Loan and Deposit Activity sections only enter data in the **H** column. Most values in the **H** column are parameters necessary to evaluate the case. Under the Expenses heading you will find the four columns: 1.) "# items" - the number of transaction items, 2) "\$ per " - the dollar cost,

per transaction item, 3) "Cost" - the calculate total cost of the item, and 4) "Total" - summary sub totals of the individual accounts such as "Total transaction exp." in row 53.

Look at the first entry in the first historical year, cell **H5** "Line of Credit". Notice that this cell is blue or a different color than the cells in columns **H** and **I** below the "**Expense**" section. **Any blue cell in the spreadsheet indicates that the user may enter information into that cell.** If you attempt to enter data into a black cell, Excel will "beep" and prompt with "Protected cell" to which you must respond by pressing {**Enter**}.

As you enter data you will note that total figures, such as "Contractual interest rate," need not be entered. After entering data into all of the appropriate cells in column **F**, **G**, and **H** of the worksheet, verify your work. If you made a data entry mistake, simply go to the errant input cell, reenter the correct number. Note that occasionally account totals displayed will not sum due to rounding.

	H6 ▼	=		500000	10
	ABCD E	F G		Н	- 1
1	Banken Industries				
3	Customer Profita	bilite Anales	cie		
4	00010201110111			1999	
5	Loan agreement				
6	Line of credit		> C	5.000.000	
7	Conversion period (years)		>	3	
8	Banks base rate		>	8.00%	
9	% over base rate		>	2.00%	
10	Contractual interest rate		>	10.00%	
11	Fees:				
12	Facilityfee		>	0.125%	
13	Conversion fee		>	0.250%	
14	Compensating balances				
15	% of facility		>	3.00%	
16	\$ bal reqforfacility		>	150,000	
17	% of actual borrowing		>	2.00%	
18	\$ bal reafor borrowing		>_	82,000	
19	Total Comp Bal Req.		>_	232,000	
20					
21	Loan and Deposit Activity:			Jan. 1 -	Mar. 1
22	Number of days in period		>	90	
23	Average Borrowings		>	4,100,000	
24	Loan admin. (annual)		>	0.70%	
25	Risk expense (annual)		>	1.00%	
26	Average ledger demand dep. bz		>	174,516	
27	Average float		>	60,112	
29	Required reserve ratio		>	10.00%	
30	Earnings credit rate		>	5.80%	
31	Weigh, Avg. cost of debt		>	7.04%	
32	Percent of financing in debt		>	92.00%	
33	Weigh, marg, cost of debt		>	6.48%	
34	Bank tax rate		>	35.00%	
35					
37	Expenses	‡ items per	un	Cost	Total
38	Demand Deposit Expense				
39	Home debits	4,187 0.3	23	963.01	
41			35		
42			50		
14 4					
40 41	Transit items Deposits Returned items	15,906 0.1 90 0.3	12 35	1,908.72 31.50 115.50	

Note that information on the spreadsheet below the "Revenue - Expenses - Target Profit" cell (approximately row 83) are programming instructions for the template and should be ignored, but not erased, by the user.

D. Entering Pro forma Data in the !CUSTPRO5 Template

The !CUSTPRO template does not allow for *pro forma* analysis.

E. Additional Program Features

1. Changing protected values

Changing protected cells should not be attempted by the novice user, nor by anyone unfamiliar with the detailed relationships among financial statement accounts. If you are daring, you may selectively disable the protection of cells. This will allow you to enter a different formula or a simple constant in place of the existing formula. In general, it is safe to replace a formula with a number (constant) provided of course that the number is initially correct and that you change it if later changes

elsewhere on the spreadsheet make the number inappropriate. Thus, changing a formula to a constant means that you must manually reenter the cell value when it is no longer correct.

2. Other templates for Customer Profitability analysis

Using the !CUSTPRO5 file discussed above, one *Bank Management* example has been computerized and saved as accessible Excel worksheet. The files dealing with Customer Profitability Loan Pricing analysis include:

File Name	Description
!CUSTPRO5	Customer Profitability and Loan pricing template for use with any
:C0511 R05	bank. Does not contain any actual data.
	Spreadsheet containing data for the Customer Profitability and Loan
Cust Prof - Banken Ind	Pricing example presented in Chapter 18 (using the CUSTPRO5.xls
	template).

This spreadsheet may be used as the starting point for sensitivity analysis involving different assumptions than those discussed in the *Instructor's Manual*. Since the example information has been entered already, the student can spend more time answering "what if?" questions and in making more informed investment and financing decisions.

XI. Southwest Trading Template: SWtrad2002.xls

The Southwest Trading Template, "SWtrad2002.xls," is an Excel spreadsheet designed to simulate the Southwest Trading loan case in Chapter 16 of the text. Specifically, the user may input assumptions about various parameters and examine the impact on various financial statements.

A. Starting the Southwest Trading Company Template

The Southwest Trading Company Template resides on the *Bank Management* CD ROM, with the name "SWtrad2002.xls." After starting the Excel program, the template may be accessed by the **File**, **Open** command. The SWtrad2002.xls worksheet will be retrieved and you are ready to begin entering data.

B. Using the SWtrad2002.xls Spreadsheet

The Southwest Trading Spreadsheet is divided into nine (9) worksheets or tabs: Southwest, Inc., Bal., CashFlow, Inv., Collateral, S&Uses gr, WC, and ROE. All of the *pro forma* parameters have been entered in the Southwest sheet or tab. *Pro forma* results are listed in the Inc., Bal., CashFlow, Inv., and Collateral sheets. The Inc. sheet contains all income statement data while the Bal. sheet

	Southwes	st Trading	Compar	ıy
Assumptions:				
Cost of Goods Sold	63.00	% of sales		
Days A/R	48.00) Days		
Inventory turnover	3.00) times		
Days Accts Pay	28.00) Days		
	2002	2003	2004	2005+
Sales Projections	\$275,000	\$675,000	\$800,000	\$900,000
G&A Expenses	\$70,000	\$100,000	\$120,000	\$120,000
Other Expenses	\$30,000	\$0	\$0	\$0
Selling expenses	12.00	% of sales		
Depreciation	10	yr. straight l	line	
Tax Rate	34.00	%		

contains all balance sheet data. The **CashFlow** sheet contains *pro forma* data for the statement of changes while Inv. is an inventory worksheet. The **Collateral** sheet contains a summary of Southwest's borrowing base and the **S&Uses gr**. is a graphic of the sources and uses of funds over the life of the loan. This graphic is complicated but quite useful in allowing students to "see" the use of the loans proceeds. We encourage you to study this graph before presenting it. The **WC** sheet is a graphic of working capital needs while the **ROE** sheet is a graphic of **ROE** over the life of the loan.

At the top of the Southwest worksheet in **rows 4** through **17** are the parameters which drive the model. To change an assumption, simply enter the value of the new parameter in the appropriate cell and press **{Enter}**. This change will be reflected almost in all of the financial statements on the worksheet.

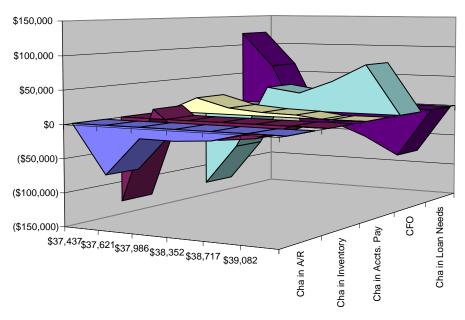
	Southwest Trading Company								
Pro Forma Income Statement									
	06/30/02	12/31/02	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07		
Sales	\$0	\$275,000	\$675,000	\$800,000	\$900,000	\$900,000	\$900,000		
Cost of Goods Sold	\$0	\$173,250	\$425,250	\$504,000	\$567,000	\$567,000	\$567,000		
Gross Margin	\$0	\$101,750	\$249,750	\$296,000	\$333,000	\$333,000	\$333,000		
Selling & Administrative	\$0	\$33,000	\$81,000	\$96,000	\$108,000	\$108,000	\$108,000		
G&A Expenses	\$0	\$70,000	\$100,000	\$120,000	\$120,000	\$120,000	\$120,000		
Depreciation	\$0	\$14,750	\$29,500	\$29,500	\$29,500	\$29,500	\$29,500		
Other	\$0	\$30,000	\$0	\$0	\$0	\$0	\$0		
Total Operating Expenses	\$0	\$147,750	\$210,500	\$245,500	\$257,500	\$257,500	\$257,500		
Earnings Before Taxes	\$0	(\$46,000)	\$39,250	\$50,500	\$75,500	\$75,500	\$75,500		
Taxes @ 34%	\$0	\$0	\$0	\$14,875	\$25,670	\$25,670	\$25,670		
Net Income	\$0	(\$46,000)	\$39,250	\$35,625	\$49,830	\$49,830	\$49,830		
Taxable Income	\$0	(\$46,000)	(\$6,750)	\$43,750	\$75,500	\$75,500	\$75,500		
Average Daily Sales		\$1,507	\$1,849	\$2,192	\$2,466	\$2,466	\$2,466		

Southwest Trading Company							
		Pro Forma	a Balance S	Sheet			
	06/30/02	12/31/02	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07
		*	*		*		
Cash	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Accounts Receivables	\$0	\$72,329	\$88,767	\$105,205	\$118,356	\$118,356	\$118,356
Inventory	\$130,000	\$115,500	\$141,750	\$168,000	\$189,000	\$189,000	\$189,000
		*	•	*		•	•
Gross Fixed Assets	\$295,000	\$295,000	\$295,000	\$295,000	\$295,000	\$295,000	\$295,000
less Accumulated Dep.	\$0	\$14,750	\$44,250	\$73,750	\$103,250	\$132,750	\$162,250
Net Plant and Equipment	\$295,000	\$280,250	\$250,750	\$221,250	\$191,750	\$162,250	\$132,750
Total Assets	\$445,000	\$488,079	\$501,267	\$514,455	\$519,106	\$489,606	\$460,106
Accounts Payable	\$0	\$24,356	\$34,636	\$40,677	\$45,107	\$43,496	\$43,496
Notes Payable	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000
Equity	\$235,000	\$189,000	\$228,250	\$263,875	\$313,705	\$363,535	\$413,365
Total Liabs & Eq.	\$325,000	\$303,356	\$352,886	\$394,552	\$448,812	\$497,031	\$546,861
Loan Needs (mkt. sec's.)	\$120,000	\$184,723	\$148,382	\$119,904	\$70,294	(\$7,425)	(\$86,755)
Total Liabs & Eq.	\$445,000	\$488,079	\$501,267	\$514,455	\$519,106	\$489,606	\$460,106
including new loan needs			-				
Change in Loan Needs	\$120,000	\$64,723	(\$36,341)	(\$28,478)	(\$49,609)	(\$77,719)	(\$79,330)

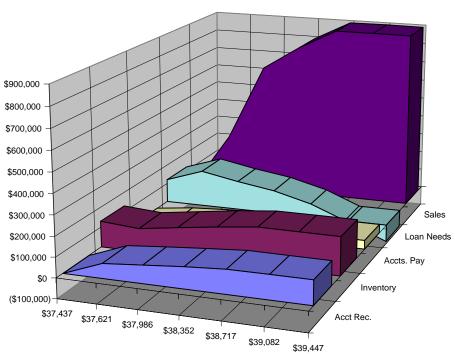
Southwest Trading Company							
		Pro Form	a Cash Bu	dget			
	06/30/02	12/31/02	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07
Cash Sales							
Net Sales	\$0	\$275,000	\$675,000	\$800,000	\$900,000	\$900,000	\$900,000
less Change in A/R	\$0	(\$72,329)	(\$16,438)	(\$16,438)	(\$13,151)	\$0	\$0
Total Cash Receipts	\$0	\$202,671	\$658,562	\$783,562	\$886,849	\$900,000	\$900,000
Cash disbursements							
COGS	\$0	(\$173,250)	(\$425,250)	(\$504,000)	(\$567,000)	(\$567,000)	(\$567,000)
less change in Inventory	(\$130,000)	\$14,500	(\$26,250)	(\$26,250)	(\$21,000)	\$0	\$0
<i>plu</i> s change in A/P	\$0	\$24,356	\$10,279	\$6,041	\$4,430	(\$1,611)	\$0
Total Cash Purchases	(\$130,000)	(\$134,394)	(\$441,221)	(\$524,209)	(\$583,570)	(\$568,611)	(\$567,000)
Total Operating Expenses	\$0	(\$147,750)	(\$210,500)	(\$245,500)	(\$257,500)	(\$257,500)	(\$257,500)
		, ,	, ,	. ,	(, , ,	. ,	. ,
plus Depreciation	\$0	\$14,750	\$29,500	\$29,500	\$29,500	\$29,500	\$29,500
less Taxes Paid	\$0	\$0	\$0	(\$14,875)	(\$25,670)	(\$25,670)	(\$25,670)
Total Cash Disbursements	(\$130,000)	(\$267,394)	(\$622,221)	(\$755,084)	(\$837,240)	(\$822,281)	(\$820,670)
Cash Flow from Operations	(\$130,000)	(\$64,723)	\$36,341	\$28,478	\$49,609	\$77,719	\$79,330
Capital Expenditures	(\$295,000)	\$0	\$0	\$0	\$0	\$0	\$0
Change in Stock and LTD	\$325,000	\$0	\$0	\$0	\$0	\$0	\$0
Change in loan needs	\$120,000	\$64,723	(\$36,341)	(\$28,478)	(\$49,609)	(\$77,719)	(\$79,330)
Change in Cash	\$20,000	\$0	\$0	(\$0)	\$0	\$0	\$0

Southwest Trading Company								
	Pro	Forma In	ventory So	chedule				
	06/30/02	12/31/02	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07	
Beginning Inventory Purchases	\$0 \$130,000	\$130,000 \$158,750	\$115,500 \$451,500	\$141,750 \$530,250	\$168,000 \$588,000	\$189,000 \$567,000	\$189,000 \$567,000	
Goods Available for Sale Cost of Goods Sold	\$130,000 \$0	\$288,750 \$173,250	\$567,000 \$425,250	\$672,000 \$504,000	\$756,000 \$567,000	\$756,000 \$567,000	\$756,000 \$567,000	
Ending Inventory	\$130,000	\$115,500	\$141,750	\$168,000	\$189,000	\$189,000	\$189,000	
	Sout	thwest T	rading C	ompany	•			
	Pr	o Forma C	ollateral So	chedule				
	06/30/02	12/31/02	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07	
Collateral Schedule								
Cash Accounts Receivable @ 75%	\$20,000 \$0	\$20,000 \$54,247	\$20,000 \$66,575	\$20,000 \$78,904	\$20,000 \$88,767	\$20,000 \$88,767	\$20,000 \$88,767	
Inventory @ 75%	\$97,500	\$86,625	\$106,313	\$126,000	\$141,750	\$141,750	\$141,750	
Building (historical cost 80%)	\$236,000	\$236,000	\$236,000	\$236,000	\$236,000	\$236,000	\$236,000	
Total available	\$353,500	\$396,872	\$428,888	\$460,904	\$486,517	\$486,517	\$486,517	
Loan from the bank	\$120,000	\$184,723	\$148,382	\$119,904	\$70,294	(\$7,425)	(\$86,755)	
Excess over loan (deficit)	\$233,500	\$212,149	\$280,506	\$341,000	\$416,223	\$493,942	\$573,272	
Coverage Ratio	2.95 x	2.15 x	2.89 x	3.84 x	6.92 x	#N/A	#N/A	

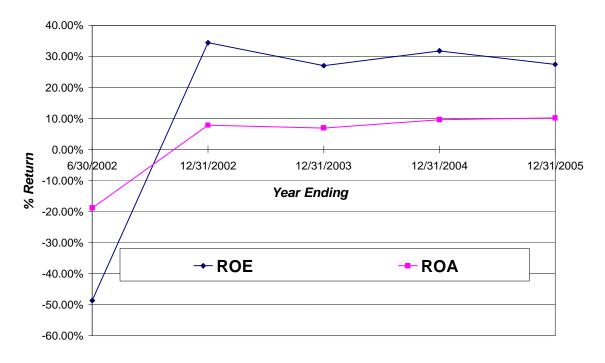
Sources and Uses of Cash at Southwest Trading Company







Return on Equity and Return on Assets



XII. SUMMARY

By using the templates and cases included with this manual, much more time can be devoted to evaluating the numbers rather than entering data and calculating the values needed to complete the analysis. "What if" scenarios can be performed rather than just talked about.

There are a total of 20 computer spreadsheet files included. Additional case data files are available through the Dryden Case Series (http://koch.swcollege.com). There are 6 templates addressing: Credit Analysis, Evaluation of Bank Performance, Duration Gap analysis, Funding GAP analysis, Risk-Based Capital calculations, and Customer Profitability and Loan Pricing Analysis. The remaining files contain actual data entered into one of the blank templates.