

Balance Sheet Projections – Excel Notes

Much of what we do the rest of this semester will depend on our balance sheet projections, and our ability to easily update them. In practice these projections will provide a forecast of additional funds needed and when we need to seek those outside funds. If we coordinate the timing of needed funds with our understanding of capital structure, we will be able to access funds in such a way as to maximize shareholder wealth. As with the income statement projections, we will generate *pro forma* projections, making these balance sheets appear as if they have already occurred.

Asset Projections:

To produce the income statement projections we made a series of assumptions. The biggest assumption was about the level of sales for the firm's products and services. This assumption will play a pivotal role in projecting the level of assets. Sales levels demand a certain level of support in fixed assets (do we have capacity to reach that level of sales?), inventory (how much inventory will be needed to support that sales level, and when will it be needed?), accounts receivable (how much of current sales will be on account, and how long will it take to collect?).

Setting Things Up:

Many current assets could be projected using a little algebra and the projected income statement. To document these assumptions, financial analysts might consider adding a sheet to their worksheet, containing assumptions that might be easily changed. This will allow us to assess the wealth impact of changes already suggested. For example, we might want to be able to easily change accounts receivable, and inventory. These and other assumptions are listed on the following example. Note this is called the *Driver* page.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Accounts Receivable	79 Days										
2	Inventory	323 Days										
3	Accounts Payable	42 Days										
4												
5	Interest on MS	4%										
6	Interest on RL	7.38%										
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												

For convenience, we have moved a copy of our income statement projections to this new worksheet, on the tab "Income Statement." And to save ourselves some time, we have copied the row headings from the balance sheet (used in the ratio assignment) to this new

worksheet. Look at the current assets. If there is not a row for marketable securities (or something that essentially means the same thing – such as short-term securities), then we will need to add a row and label it. At this point leave this row blank, but tie it in to the sum of current assets (include its address in the sum), and format it so that figures placed in it look like the other cells.

Projecting Current Assets:

Most current assets can be projected using either algebra – along with an assumption about a ratio, using a percent of sales, or by holding constant from the last balance sheet. These methods will be outlined here, but make sure you use what makes sense in your company – especially if none of these methods might work.


First, let's consider using past ratios. Both inventory and accounts receivable can be projected, or assumed to be approximately constant from last year's turnover ratios. Based on our sales projections, we could then project current asset accounts. We could estimate the receivables by taking the original DSO formula, make it quarterly (since we will be projecting quarterly balance sheet levels), and solve for receivables:

$$DSO = \frac{\text{Receivables}}{\text{Quarterly Sales} / 92.25}$$

$$\text{Receivables} = DSO \left(\frac{\text{Quarterly Sales}}{92.25} \right)$$

The same procedure can be used to find a consistent projection for inventory.

There is a problem with this methodology. Often we do not calculate quarterly ratios. Therefore, the DSO and inventory turnover figures are based on year-end balance sheet figures. If there is a significant seasonal sales component, this method may produce a poor estimate. Make sure you compare the projected fourth quarter amounts of both accounts receivable and inventory to that reported on the firm's year-end balance sheet for the most recent year. If they are off, you will probably want to adjust the ratio amount on your *Driver* page by using goal seek (if you don't understand what this means, either come see me or come to class more often).

All other accounts in the current assets section are usually projected using a percent of sales method (if their levels are assumed to depend on the level of sales), or held constant (if they have nothing to do with sales). In all cases, we may want to leave ourselves a note as to what our assumptions were, so we can adjust them if appropriate – or explain them in the text. To leave yourself a note, bring up the reviewing toolbar, click on the cell where you want to leave the note, and then click on the icon for a new comment, . Then simply add your comment.

In all instances, make sure that your projections appear to be realistic, by comparing fourth quarter projections for your first year, with the last actual year end balance sheet. The figures should be close. One of the most oft made mistakes at this junction is that students think they must adjust their balance sheet for quarterly data. The only adjustment we have made was sales, and the number of days in a period. Both of those come from the income statement. ***If your fourth quarter amounts are approximately one-fourth of those reported on the most recently disclosed balance sheet, they are most likely wrong!***

Microsoft Excel - bsproj06 section 01

File Edit View Insert Format Tools Data Window Help

Type a question for help

B11 =Driver!\$B\$1*Income Statement!B4/91.25

	A	B	C	D	E	F
1		ROCKY SHOES & BOOTS, INC.				
2		AND SUBSIDIARIES				
3						
4		CONSOLIDATED BALANCE SHEETS				
5						
6		2005				2004
7		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
8	CURRENT ASSETS:					
9	Cash and cash equivalents	\$2,727,636	\$3,058,264	\$3,630,121	\$3,965,396	\$4,155,121
10	Marketable Securities					
11	Accounts receivable - trade, net	17,168,402	23,316,346	37,056,378	27,956,337	18,189,121
12						
13	Other receivables					
14	Inventories			43,649,739	32,930,548	21,426,121
15	Deferred income taxes - current			230,151	230,151	230,151
16	Other current assets			2,853,149	2,853,149	2,853,149
17	Total current assets			87,419,538	67,935,582	46,854,121
18						

Cell A14 commented by Redbird

NUM

Fixed Assets:

There are several accepted ways of projecting fixed assets. Some suggest using a percent of annual projected sales approach. If you are projecting growth in sales, chances are, there will also be growth in net fixed assets. Others like to project fixed assets according to past trends, either using a time-series regression or merely eyeballing the annual growth. Perhaps the best method would take into account the actual plan for capital expenditures, given the capacity requirement implied by our sales projections. Fixed assets tend to be purchased in clumps, not according to sales. Either way, the fixed assets projections should generally NOT contain seasonal adjustments.

Depending on the balance sheet convention used thus far, this account level may be projected net of depreciation. At any rate, the net fixed assets should never be constant throughout the projection period. Either gross assets are roughly constant; in which case, after depreciation net fixed assets is declining. Or gross assets are growing; in which case, after depreciation net fixed assets are also growing.

One quick modeling note: financial statements disclosed to investors invariably use straight-line depreciation. For tax purposes, the firm will usually use accelerated depreciation, but you can project the net fixed assets using straight-line.

The starting point for any fixed assets should be what the last reported level was. In the example shown on the top of the next page, \$500,000 was added to the last actual gross fixed asset level from the last balance sheet. Each additional quarter the gross amount was augmented by a similar amount. This estimate was used because the firm's fixed assets tended to grow about \$2,000,000 per year. As the gross fixed assets increase, the periodic depreciation also increases. But remember that accumulated depreciation is a sum of last period's amount, plus this period's depreciation expense. If your income statement projections have a line for depreciation, make sure these figures agree. Whatever you project here, you will have to justify. Make sure your justification is consistent with what you have said in earlier assignments.

Microsoft Excel - bsproj06 section 01

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Type a question for help

B11 =Driver!\$B\$1*Income Statement!B4/91.25

	A	B	C	D	E	F
1		ROCKY SHOES & BOOTS, INC.				
2		AND SUBSIDIARIES				
3						
4		CONSOLIDATED BALANCE SHEETS				
5						
6		2005				2006
7		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
17	Total current assets	43,202,475	56,922,883	87,419,538	67,935,582	46,854,125
18						
19	FIXED ASSETS, AT COST:					
20	Property, plant and equipment	53,232,896	53,732,896	54,232,896	54,732,896	55,232,896
21	Less accumulated depreciation	-33,405,136	-34,264,863	-35,132,589	-36,008,315	-36,892,125
22	Total fixed assets - net	19,827,760	19,468,033	19,100,307	18,724,581	18,340,771
23						
24	DEFERRED PENSION ASSET		1,347,824	1,347,824	1,347,824	1,347,824
25						
26	DEFERRED INCOME TAXES					
27						

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At this point you should be ready to sum the assets needed for each quarter.

Liabilities Projections:

Many of the methods used to project liabilities are the same as those already discussed. Accounts payables can be projected using the payables turnover, and using a little algebra. Many of the other accounts can be estimated using either a percent of sales method or simply holding them constant. Make sure you use some common sense, and discuss the assumptions you used for each line.

There are some lines you must estimate differently. Most importantly, the liabilities that we have amortized, we should insert at this junction. In addition, we will want to model the firm's use of short-term debt for working capital purposes.

Setting Things Up:

Again we will start by copying the row headings of both liabilities and equity sections from the last balance sheet used as inputs in our ratio analysis homework. Look through the current liabilities for an account that is used for short-term financial planning (like revolving loan, credit line, etc.). If the company does not have such a line, input an additional line, label it "revolving loan," and leave it blank. Make sure the cells to the right are tied into the sum of total current liabilities formula, and appropriately formatted.

Liabilities:

Start with those inputs you have already projected quarterly for the next few years. These figures are found in your amortization schedule from that homework assignment. They will include the current maturity of long-term debt (which should be placed in the current liabilities section), the long-term portion of long-term debt, any interest accrued on bonds, and any bonds. If bonds are being paid off over the next three years, make sure that they find their way into the current liabilities at the appropriate time.

The accounts payable should be handled the same way as the accounts receivable was in the example above. You may want to put the estimated accounts payable turnover

ratio on the *Driver* page as we did in the example. Please be careful when solving algebraically that you use the cost of goods sold, not sales, since sales are not in the original formula. Again look to make sure that the fourth quarter of the first projected year, the accounts payable are close to the reported figure for the last reported year. If they are off, you may again want to goal seek them closer.

The other lines of the liabilities, both current and long-term, will usually be estimated using the percent of sales method (primarily for current liabilities), or simply held constant. Some students have used a regression when tying some of these numbers to sales, so that a fixed and variable portion of levels might be ascertained. If you want to do that, you may have to collect additional data from the 10-Q (quarterly balance sheets) for regression inputs.

ROCKY SHOES & BOOTS, INC. AND SUBSIDIARIES					
CONSOLIDATED BALANCE SHEETS					
	2005				
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
CURRENT LIABILITIES:					
Accounts payable	\$2,629,634	\$3,571,297	\$5,675,818	\$4,281,991	\$2,786,...
Current maturities - long-term debt	451,061	459,191	467,475	475,917	446,...
Accrued expenses:					
Income taxes	0	0	0	0	0
Taxes - other		422,692	422,692	422,692	422,...
Salaries and wages		1,295,722	1,295,722	1,295,722	1,295,...
Plant closing costs		0	0	0	0
Co-op advertising		263,000	263,000	263,000	263,...
Interest		82,904	82,904	82,904	82,...

Equity Projections:

For the most part, we will assume that equity accounts are held constant. The only account we need to allow to vary is the retained earnings. Retained earnings cumulate. That means that the retained earnings this period are based on what they were last period, adjusted by the change in retained earnings we calculated near (or at) the bottom of our income statement from last homework assignment. **One of the most often occurring modeling errors is getting this portion wrong.** I will check these on your homework!!

These should work the same way accumulated depreciation worked. Start with the last reported retained earnings balance. Add the change in retained earnings for the current period. All future retained earnings estimates look back one period to the last retained earnings level, and add the current period's change in retained earnings to it.

Microsoft Excel - bsproj06 section 01

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C64 $\text{=B64+Income Statement!C27}$

	A	B	C	D	E	F
1		ROCKY SHOES & BOOTS, INC.				
2		AND SUBSIDIARIES				
3						
4		CONSOLIDATED BALANCE SHEETS				
5						
6		2005				2004
7		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
57						
58	SHAREHOLDERS' EQUITY:					
59	Preferred stock, Series A, no par value, \$.06 stated value;					
60	none outstanding 2003 and 2002	0	0	0	0	
61	Common stock, no par value; 10,000,000 shares authorized;					
62	outstanding 2003 - 4,360,400 and 2002 - 4,489,065	38,399,114	38,399,114	38,399,114	38,399,114	38,399,114
63	Accumulated other comprehensive loss	-1,077,586	-1,077,586	-1,077,586	-1,077,586	-1,077,586
64	Retained earnings	41,140,420	51,329,450	68,398,580	81,082,008	89,019,000
65	Total shareholders' equity	78,461,948	88,650,978	105,720,108	118,403,536	126,340,528
66	TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$90,921,190	\$101,942,118	\$121,004,029	\$132,179,877	\$138,505,528
67						

Ready NUM

Balancing the Balance Sheet:

When you learned accounting, you would debit and credit everything. It was therefore impossible for the balance sheet not to be balanced. We did not debit or credit anything in this exercise. It is virtually impossible for our balance sheet to be balanced. To make a consistent projection, we will have to write a macro. But before we do that, we will have to add some lines to our income statement.

Setting Things Up:

To begin with you will want to add two lines to the income statement projections. One will be for interest income from marketable securities (or short-term investments – whichever you called the line in the current assets). The other will be interest expense on revolving loan (or line of credit, etc.). In our case, we had to pull the interest expense associated with the revolving loan out of the regular interest expense. You will have to do the same if such a line was amortized. The adjusted income statement for an example company is found at the top of the next page.

Next we will want to go back to our balance sheet projections. We will add four additional segments. The first will calculate the absolute difference between the assets and liabilities for each period, then find the maximum absolute difference. The second will calculate the total assets other than the marketable securities (or short-term investments), and the total liabilities and equities other than any revolving debt (or line of credit). The third will calculate how much marketable securities and revolving debt will be needed to bring the balance sheet into balance. And the fourth will calculate the interest income and expense amounts consistent with the balances calculated in the third segment.

We will now describe the formulas needed to calculate these amounts. In the first segment, the first line is merely a simple difference where the address of the total assets is subtracted from that of the total liabilities (e.g. =B30-B66). The next line calculates the absolute difference (e.g. =ABS(B69)). And a check figure is merely the maximum absolute difference (e.g. =MAX(B70:M70)).

Microsoft Excel - bsproj06 section 01

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Type a question for help

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	A	B	C	D	E	F	G
2		2005				2006	
3		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
4	Net Sales	19,830,590.37	26,931,855.37	42,802,461.70	32,291,339.03	21,010,555.42	28,111,820.42
5	Cost of Sales	5,713,193.08	7,759,067.53	12,331,389.22	9,303,134.78	6,053,141.02	8,099,015.46
6	Gross Profit	14,117,397.28	19,172,787.84	30,471,072.48	22,988,204.26	14,957,414.41	20,012,804.96
7							
8	OTHER OPERATING EXPENSES:						
9	Selling, general and administrative expenses	4,624,896.69	5,295,880.59	6,795,461.49	5,802,287.16	4,736,389.16	5,407,373.06
10	Total other operating expenses	4,624,896.69	5,295,880.59	6,795,461.49	5,802,287.16	4,736,389.16	5,407,373.06
11	INCOME FROM OPERATIONS	9,492,500.59	13,876,907.25	23,675,611.00	17,185,917.10	10,221,025.25	14,605,431.90
12							
13	OTHER INCOME AND (EXPENSES):						
14	Interest expense	112,617.48	110,415.28	108,167.67	105,873.72	103,532.48	101,142.97
15	RL Interest Expense	139,872.14	139,872.14	139,872.14	139,872.14	139,872.14	139,872.14
16	MS Interest Income						
17	Other - net	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00
18	Total other - net	147,510.38	149,712.58	151,960.19	154,254.13	156,595.37	158,984.88
19	INCOME BEFORE INCOME TAXES	9,640,010.97	14,026,619.83	23,827,571.18	17,340,171.23	10,377,620.62	14,764,416.79

Ready NUM

Microsoft Excel - bsproj06 section 01

File Edit View Insert Format Tools Data Window Help

Type a question for help

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Reply with Changes... Egd Review... Security...

B71 fx =MAX(B70:M70)

	A	B	C	D	E	F
1		ROCKY SHOES & BOOTS, INC.				
2		AND SUBSIDIARIES				
3						
4		CONSOLIDATED BALANCE SHEETS				
5						
6		2005				2006
7		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
61	Common stock, no par value; 10,000,000 shares authorized;					
62	outstanding 2003 - 4,360,400 and 2002 - 4,489,065	38,399,114	38,399,114	38,399,114	38,399,114	38,399,114
63	Accumulated other comprehensive loss	-1,077,586	-1,077,586	-1,077,586	-1,077,586	-1,077,586
64	Retained earnings	40,893,678	50,852,578	67,770,153	80,081,675	87,449,114
65	Total shareholders' equity	78,215,206	88,174,106	105,091,681	117,403,203	124,771,642
66	TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$90,674,447	\$101,465,246	\$120,375,602	\$131,179,544	\$136,935,956
67						
68						
69	balance Check	(\$20,525,886)	(\$17,962,908)	(\$6,748,882)	(\$37,423,663)	(\$64,661,114)
70	Absolute Difference	20,525,886	17,962,908	6,748,882	37,423,663	64,661,114
71	Check Figure	131,162,705				

Ready NUM

The second segment has but two lines, both simple differences. The first line is the difference between the total assets, and the marketable securities (make sure you use the cell addresses on all of these formulas). The second line is the difference between the total liabilities and equity and the revolving debt. The spreadsheet thus far is demonstrated at the top of the next page.

Microsoft Excel - bsproj06 section 01

File Edit View Insert Format Tools Data Window Help

Type a question for help

B74 fx =B66-B46

	A	B	C	D	E	F
1		ROCKY SHOES & BOOTS, INC.				
2		AND SUBSIDIARIES				
3						
4		CONSOLIDATED BALANCE SHEETS				
5						
6		2005				2006
7		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
64	Retained earnings	40,893,678	50,852,578	67,770,153	80,081,675	87,449,153
65	Total shareholders' equity	78,215,206	88,174,106	105,091,681	117,403,203	124,771,153
66	TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$90,674,447	\$101,465,246	\$120,375,602	\$131,179,544	\$136,935,953
67						
68						
69	balance Check	(\$20,525,886)	(\$17,962,908)	(\$6,748,882)	(\$37,423,663)	(\$64,661,153)
70	Absolute Difference	20,525,886	17,962,908	6,748,882	37,423,663	64,661,153
71	Check Figure	131,162,705				
72						
73	All But Assets	\$70,148,561	\$83,502,338	\$113,626,720	\$93,755,881	\$72,274,153
74	All But Liab/Equity	\$90,674,447	\$101,465,246	\$120,375,602	\$131,179,544	\$136,935,953
75						

Ready NUM

The third segment requires a logical formula, and is therefore a bit more complex. The logic is rather simple. If we have more liabilities and equity (more sources of funds) than assets (uses of funds), then we will invest in marketable securities. Using the example presented thus far, we would say =IF(B74>B73,B74-B73,0). If on the other hand, we will require more assets than we currently have liabilities and equity, we will need to raise more money, and over the short-term we will assume it is revolving debt. Therefore, the next line should be calculated as =IF(B73>B74,B73-B74,0). You should quickly check to see that for each quarter only one of those two lines has a non-zero entry.

Microsoft Excel - bsproj06 section 01

File Edit View Insert Format Tools Data Window Help

Type a question for help

B77 fx =IF(B73>B74,B73-B74,0)

	A	B	C	D	E	F
1		ROCKY SHOES & BOOTS, INC.				
2		AND SUBSIDIARIES				
3						
4		CONSOLIDATED BALANCE SHEETS				
5						
6		2005				2006
7		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
67						
68						
69	balance Check	(\$20,525,886)	(\$17,962,908)	(\$6,748,882)	(\$37,423,663)	(\$64,661,153)
70	Absolute Difference	20,525,886	17,962,908	6,748,882	37,423,663	64,661,153
71	Check Figure	131,162,705				
72						
73	All But Assets	\$70,148,561	\$83,502,338	\$113,626,720	\$93,755,881	\$72,274,153
74	All But Liab/Equity	\$90,674,447	\$101,465,246	\$120,375,602	\$131,179,544	\$136,935,953
75						
76	Marketable Securities	\$20,525,886	\$17,962,908	\$6,748,882	\$37,423,663	\$64,661,153
77	Revolving Loan Estimate	\$0	\$0	\$0	\$0	\$0
78						

Ready NUM

The final segment contains interest income and expense estimates based on the balances we estimated in segment three above. These will obviously depend on the interest

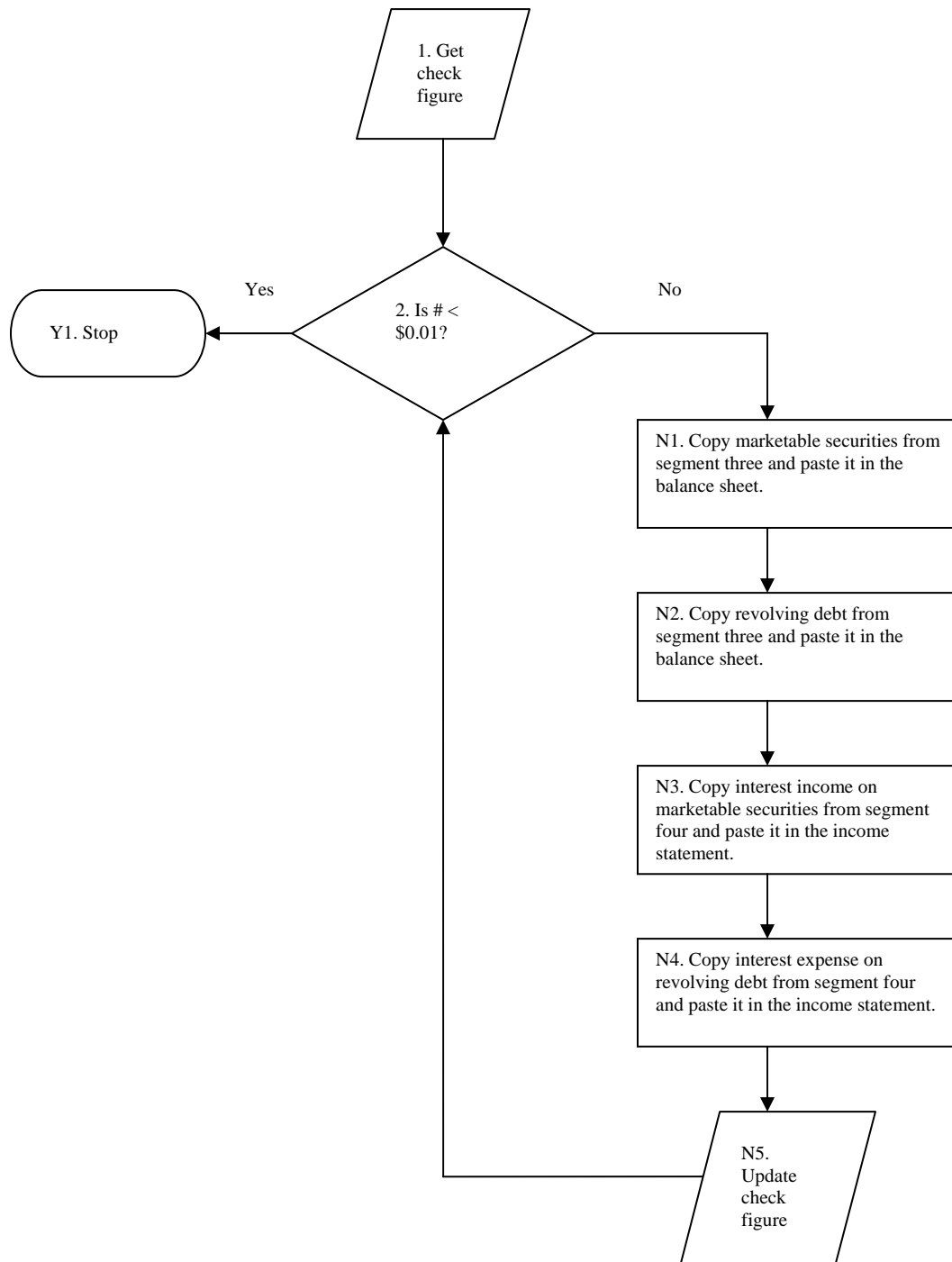
rates for marketable securities and revolving debt. Again in the example we placed our interest rate assumptions on the *Driver* page. The interest expense or income will depend on the interest rate and the previous balance. If the company for which you are projecting has a reported balance for these figures, you will want to include them in the calculation of the first quarter. Even if no original balance amount is disclosed, you will want to do so for all remaining quarters.

	2005	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
Absolute Difference	20,525,886	17,962,908	6,748,882	37,423,663	64,661,...
Check Figure	131,162,705				
All But Assets	\$70,148,561	\$83,502,338	\$113,626,720	\$93,755,881	\$72,274,...
All But Liab/Equity	\$90,674,447	\$101,465,246	\$120,375,602	\$131,179,544	\$136,935,...
Marketable Securities	\$20,525,886	\$17,962,908	\$6,748,882	\$37,423,663	\$64,661,...
Revolving Loan Estimate	\$0	\$0	\$0	\$0	
Marketable Securities Interest Income	\$205,258.86	\$192,443.97	\$123,558.95	\$220,862.73	\$510,426
Revolving Loan Interest Expense	\$0	\$0.00	\$0.00	\$0.00	\$0

Writing the Macro:

The problem with solving a complex system such as a balance sheet with Excel is it is bound to have “circular arguments” which Excel will not be able to resolve. To get around those problems we will simply copy intermediate solutions and paste the values into our balancing accounts of marketable securities and revolving debt. Once those amounts have changed, the interest income and expense will change, which should make the retained earnings change, and therefore the balance sheet will again be out of balance. But it’s not hopeless. Each time we repeat the cut and paste procedure, we are not as far out of balance, and eventually, we will be within a penny, and we won’t care about a fraction of a penny we are out of balance.

Since we don’t want to balance the balance sheet iteratively ourselves, we will write a macro to do the steps for us. The logic of the macro is presented in the table at the top of the next page. All of these procedures work with the check figure in segment 1, or the balances going all the way across in segments 3 and 4 as described in the last section. The balances in segment 3 are pasted as values into the appropriate lines of the balance sheet. The balances in segment 4 are pasted into their appropriate lines of the income statement.



The first step (step 1 in the flow chart) is to bring the check figure into the logic of the macro. We will do that by moving the cellpointer to the cell containing the check figure, and assigning an internal variable the value found in that cell. Remember that the check figure was the maximum absolute difference between the assets and liabilities in our projected balance sheet. In the example shown earlier, we would first go to B71 - **Range("B71").Select**. Then we would assign an internal variable the value contained in that cell - **Chkfigure = ActiveCell.Value**.

The second step is to make a decision whether or not that variable is less than a penny. If it is less than a penny, we will stop because the balance sheet is in balance. If it is greater than a penny, we will adjust the balance sheet as discussed earlier, because the balance sheet does not balance. We will simply tell the computer to only run the set of commands starting with N in the flowchart, when `chkfigure > 0.01`. To do that we will begin the set of things to do with a *Do While* statement and end the set of commands with a *Loop* statement. Do while must always be followed by a loop. These tell the computer what to repeat when the condition is true. In our example, we will start with **Do While Chkfigure > 0.01**.

Now we will list the commands that the computer will execute when the check figure is more than a penny. First, we will go to where we have marketable securities, highlight the entire twelve quarters of data, copy it, then move to where we need to put it, then paste it. If of those has its own command line. These commands would be the following in our example:

```
Range("B76").Select
Range(Selection, Selection.End(xlToRight)).Select
Selection.Copy
Range("B10").Select
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone,
    SkipBlanks _:=False, Transpose:=False
```

The first line of these commands is to place the cellpointer at the beginning of the row of data. The second actually finds the end of the data – which means that these commands will still work if you expand your projections to twenty quarters (it does an end-right arrow). Then it copies what it has highlighted. The cellpointer is then moved to where it will place it. Then only the values (not the formulas or formats) are pasted in the balance sheet.

The second, third and fourth commands in the set are simply a repeat of these commands with an extra set of lines to move between the two sheets (in our example **Sheets("Income Statement").Select** and **Sheets("Balance Sheet").Select**).

Finally, the fifth command in this set is the same as listed as the first step after the flow chart. In the example shown earlier, we would first go to B71 - **Range("B71").Select**. Then we would assign an internal variable the value contained in that cell - **Chkfigure = ActiveCell.Value**. This needs to be updated because we have changed the balances of many accounts. We need to see if the balance sheet currently balances. This command is now followed by a **Loop** command.

The entire macro code for our example would be as follows:

```
Sub Balancer()

Sheets("Balance Sheet").Select
Range("B71").Select
Chkfigure = ActiveCell.Value
Do While Chkfigure > 0.01
    Range("B76").Select
    Range(Selection, Selection.End(xlToRight)).Select
    Selection.Copy
    Range("B10").Select
    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone,
        SkipBlanks _:=False, Transpose:=False
    Range("B77").Select
    Range(Selection, Selection.End(xlToRight)).Select
```

```

Selection.Copy
Range("B46").Select
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone,
    SkipBlanks _:=False, Transpose:=False
Range("B79").Select
Range(Selection, Selection.End(xlToRight)).Select
Selection.Copy
Sheets("Income Statement").Select
Range("B16").Select
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone,
    SkipBlanks _:=False, Transpose:=False
Sheets("Balance Sheet").Select
Range("B80").Select
Range(Selection, Selection.End(xlToRight)).Select
Selection.Copy
Sheets("Income Statement").Select
Range("B15").Select
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone,
    SkipBlanks _:=False, Transpose:=False
Sheets("Balance Sheet").Select
Range("B71").Select
Chkfigure = ActiveCell.Value
Loop
End Sub

```

If you use this macro for your own balancer, you will have to adjust all cell addresses to agree with your projections, and adjust all sheet names to agree as well. The easiest way of finding all things to adjust is to copy and paste this code and then use an **Edit, Find** command (ctrl-f) to find all of the quotation marks. Make sure you check ALL of them.

When you run the macro, the computer will act possessed *for a few seconds*. That's normal. If it takes longer than that, you probably have a systematic problem and need to find out why it is not balancing. First, make sure all addresses are correct. Second, make sure all assets (especially the marketable securities) are included in the total. Third, make sure that all liabilities and equities (especially the revolving debt) are included in that total. Fourth, make sure you did all of the segments below the balance sheet correctly.

Finally, if you can't get this done now you will have major problems finishing the project, since many of the later homework assignments depend on this macro working and working correctly.

Critiquing the Balanced Balance Sheet:

Many are so proud that their balance sheet balanced that they don't analyze the results. Once you feel comfortable with the balance sheet results, you should see what your model suggests about the company. The way we have modeled their short-term financing, they will throw any excess cash into marketable securities. Therefore, if you are predicting growing cash flow, there will be a growing marketable securities balance. If they have not been used to generating cash, and you suddenly start projecting high cash flow, that will look a little odd. Plus, most companies will not leave it in marketable securities. You should tell me what they will do with it. Will they buy more fixed assets? Will they buy back stock? Will they pay off debt? Will they do a combination of all of the above? In giving me these suggestions, remember you will be expected to make those adjustments on the balance sheet projections and rerun the macro. Also remember if you suggest they buy back stock or pay

off debt, that will shift their capital structure. You should address that in your analysis and recommendations.

If the projections show an ever increasing revolving loan balance, that is also not sustainable. Revolving debt is usually short-term in nature, so this balance will have to be shifted to long-term debt. But that shift will adjust the capital structure. And it might not even be possible. An ever growing debt shows a potential cash flow problem. Firms with cash flow problems can't get debt. If the cash flow problem is caused by sales growth, you might be able to argue that the problem is temporary. In any case you will probably have to tell me how they can improve their cash flow, and rerun the macro after the adjustments are made.

Finally, you should talk about whether the modeled short-term financial planning looks like what the company actually does. If not, then you may want to adjust your assumptions (modeling parameters) and rerun the macro until it does.

Whatever adjustments you make to the original projections make sure you give yourself credit for them in the write-up.