

FIL 242 – MARKET WATCH PROJECT

Accounting spreadsheet details

INTRODUCTION

In the Market Watch project, you are reporting back to your client to account for the money they have entrusted to you. This document describes the reports that you will provide to your client. A complete client report consists of three related sheets in the Market Watch Accounting workbook (which is available under “Assignments” on the course web site). This workbook is used to create the reports that will be given to your client and reflects activity on your account “as of” the date on the report. The three sheets in the workbook are:

1. *Balance Sheet (Statement of Positions)*. The items shown on the Balance sheet include:
 - a. The book value (or purchase price) of assets which are currently owned on the reporting date.
 - b. The market value of those assets as of the reporting date.
 - c. Unrealized gains and losses (calculated from the difference between a. and b.).
 - d. As a check, the balance sheet works backwards to reconcile today’s portfolio value and the original \$100,000 that your client invested.
 - e. Finally, the balance sheet shows a bottom line rate of return for your client.
2. *Transaction Record*
 - a. Lists each and every transaction made on the client's behalf (all purchases and sales)
 - b. For those trades that partially or completely offset previous positions, the transaction report shows the realized capital gains and losses earned.
 - c. Determines the cash balance remaining in the portfolio
3. *Income Statement* – lists all income generated by the portfolio, primarily dividends and interest, both received and accrued.

CREATING CLIENT REPORTS

Note that the spreadsheet has been color coded. You should only need to enter information on the areas that are shaded yellow. In addition to the step by step instructions shown below, the actual workbook itself contains comments which try to guide you in completing the reports. I would suggest to work through the transactions report first, then income statement, and finally the balance sheet.

WORKBOOK SET-UP PROCEDURES

Before entering trades in the reports, you need to put in some background information about your client and your investment company. Go to the “**Title**” sheet in the workbook and update the following:

- **Company Name:** This is the investment management company name as defined in the Virtual Stock Exchange (VSE). This is the name that you sent to me through e-mail. The Company Name is carried forward from the Title page to the rest of the report.
- **Date:** This is the date for which the Accounting Reports are issued. If the report is issued January 1, 2006 then all positions and prices reflect the status of the account as at the close of business on January 1, 2006. This date is carried forward to the rest of the report.
- **Investment Manager:** To make sure everyone gets credit, include the names of all the partners in your group. The Investment Managers should be part of the “footer.” To get to the footer, go under the “Insert” menu and click on the “Header & footer” command in the “Text” group. Note that you’ll have to change every sheet to reflect your partners’ names. To change the footer for all four sheets at the same time, hold down the control button as you select the tabs with the sheet names and then change the footer as indicated above.
- **Client Name:** Make up a client. It is also part of the footer.

TRANSACTION RECORD

In order to illustrate how to use the market watch accounting spreadsheet, let’s walk through the reports using examples of trades. It is essential that after each transaction you balance your book value of assets (shown in the balance sheet). This ensures that you can produce accurate and timely client reports. If you were a client, you would want to be sure that any reports that you received balanced! **UNDER NO CIRCUMSTANCES SHOULD YOU EVER SUBMIT AN UNBALANCED REPORT TO A CLIENT.** I recommend that you go through each of the procedures outlined below so that you can see how each type of transaction is handled.

- **Deposit:** This is the initial deposit (\$100,000). This initial deposit carries forward to the balance sheet as the current cash balance, the book value, and the market value of the cash portfolio. Once the deposit is made we can begin to buy and sell stocks.

Buying stocks - the long position

Suppose on January 11, 2006 we issue a buy order for 100 shares of Microsoft (MSFT). The trade is executed at \$35. Enter the following information into the Transactions Record (notice that these columns are shaded yellow, indicating that input is required):

- **Issue:** Specify the issue (the name of the investment). The shortened names that are often used in the newspapers are not always clear. Type in “Microsoft” or something similar.
- **Ticker:** This is the character code used to identify the issue in the market. This is helpful to the client if they want to track stocks between reporting dates. “MSFT” You should be able to find this in Baseline.
- **Date:** Enter the date that the transaction was executed. This should be the same date as specified in the VSE “Transaction history”. “1/11/06”
- **Shares:** Number of shares that were part of this specific purchase. “100”
- **Price:** The execution price per share of the trade (as confirmed by VSE).

With the above information entered, note that the spreadsheet should then automatically calculate several items:

- **Value:** Given the number of shares traded and the price per share from above, the spreadsheet will calculate the total value of the trade. (3,500)
- **Brokerage Commission:** You are charged a commission per trade (buy or sell). See “Transaction History” on VSE for the amount charged.
- **Position:** This is the total number of MSFT shares held by the portfolio. As soon as you have more than one transaction in the same stock, this calculation will show you the remaining position in the stock and allow you to balance the portfolio and calculate capital gains (losses). More on this later.
- **BVS (Book Value per Share):** This is the average purchase price of the shares held by the portfolio. (35.00)
- **Book Value:** This is the total book value (purchase price) of the position and is calculated by multiplying the “Position” and the “BVS.” (3,500)
- **Current Cash Balance:** After each trade, cash available changes. This calculation derives the current cash balance from the \$100,000 that you started with. The client should never be at a loss to know where the numbers on his report come from; each total you add or subtract from cash should be clearly derived from the activity in the account. ($100,000 - 3,500 - \text{commission} = \text{cash balance}$)

Adding to a long position

Any time you have multiple transactions in the same stock, you need to put these transactions next to each other on the transaction report so that the spreadsheet can calculate your total position in the stock. To accommodate this, you may need to insert rows in the spreadsheet if there isn’t enough room left on the Transaction record (under the “Cells” group of the “Home” menu, select the arrow under “Insert” and click on “Insert row”). Suppose we buy another 100 shares of Microsoft at \$36 per share on January 12. Enter the following information into the spreadsheet (for a description of each column, see “Buying stocks – the long position” above):

- **Issue:** Match what you entered with the first purchase of Sun. (Microsoft)
- **Ticker:** “MSFT”
- **Date:** “1/12/06”
- **Shares:** “100”
- **Price:** 36

With the above information entered, the spreadsheet updates:

- **Value:** $100 * 36 = 3,600$
- **Brokerage Commission:** \$25
- **Position:** This is the total number of shares now held by the portfolio. Since you already have 100 shares, after the second purchase, the total position is 200 shares
- **BVS (Book Value per Share):** Recall that this column shows the average purchase price of the shares held by the portfolio. 100 shares @ 35, 100 @ 36, so the average purchase price of the stock is calculated to be 35.50

- **Book Value:** This is the running total of the book value (purchase price) of the remaining position in MSFT. Two things should occur:
 - The spreadsheet should zero out all book value numbers for previous transactions. When you have multiple transactions in the same stock, only one number will appear in this cumulative Book Value column.
 - Multiplying the “Position” and the “BVS” in this last row for Microsoft gives 7,100. Note that (in this example), this is the sum of the individual trades under the “Value” column for Microsoft.
- **Current Cash Balance:** We used cash to buy stock and to pay commissions (100,000-3,500-3,600-2 commissions=cash balance)

Closing a position - Capital Gains

When we close an open position (either partially or completely), it is called a reverse trade and we need to calculate our profit or loss (realized capital gains/losses) from the round trip transaction. Suppose we partially close our position in Microsoft (MSFT) on February 10, 2006, by selling 50 shares at \$37. Since we already have trades in MSFT, we must insert a row after our last trade, then enter the following information into the Transactions Record.

- **Issue:** Microsoft
- **Ticker:** MSFT
- **Date:** 2/10/06
- **Shares:** Note that this is a sale so the number of shares is negative (-50).
- **Price:** 37

The spreadsheet should then calculate many of the remaining information:

- **Value:** Remember this first column shows the value of the single trade (50 shares sold at 37) -\$1,850
- **Commission:** as appropriate
- **Position:** This now will determine what your total *remaining* position in Microsoft. You started with 100, bought 100 more, and just sold 50. So the spreadsheet should calculate that you have 150 shares remaining.
- **BVS:** This is the average book value per share of the remaining 150 shares in the portfolio. What is left on the books is your average original purchase, so BVS remains at 35.50
- **Book Value:** Remaining purchase price of stock. We still have 150 shares each with an average price of @ 35.50 or 5,325. Note again that when you enter multiple transactions in a stock, only one Book Value calculation shows up on the transaction report. Previous rows should zero out this calculation.
- **Capital Gains:** We want to figure out any profit or loss we had on the 50 shares that we held for a month. On the transaction report, you show only capital gains that are REALIZED. Unrealized capital gains show up on the balance sheet (see below). The excel formula for capital gains that covers all possible combinations of buys and sells would, if I could figure it out, be extremely complex. Therefore, you must put in the capital gains calculation on a case by case basis. In the example, we bought 200 shares of MSFT at an average price (BVS) of 35.50 and sold 50 shares for 37. We thus made an average profit of \$1.50 per share for a total of \$75 (=50*(37-35.50)).

- **Cash Balance:** The cash balance calculation should update.

Short selling stocks

There really is not much of a difference between taking a long position and a short position when accounting for the trades. Just be sure that if you sell stocks, the number of shares is negative. Thus, when you short sell, it will look as if you have a negative position in a stock. Other than that, long and short positions are accounted for in exactly the same way.

Stock Splits

Although rare, a stock may split during the Market Watch project. To account for this, just put in the additional shares as a costless purchase (if you are long the stock) in the transaction report.

For example, suppose our existing position is 1,000 shares of Google at \$600 per share and the stock splits 3-for-1. We enter the split as a buy of 2,000 shares but with a price of \$0 per share. Zero out the commission since we didn't actually get charged to make a trade – the company just gave us more shares. When you are done, make sure the average BVS value is adjusted to reflect the new average purchase price of the stock. Note that the total book value of the stock shouldn't be affected since you now own three times as many shares at 1/3 the price.

INCOME STATEMENT

The easiest report to complete is the income statement where there are two basic entries – interest earned on uninvested bank balances and dividends.

Dividends

For each of your stocks, look at Baseline to determine if your stocks pay a dividend. Suppose Microsoft declares a dividend of 8¢ per share with an ex-dividend date of February 25, 2006. Remember the distinction between dividend dates – announcement, ex-dividend, and payable date.

- **Shares:** When trading opened on the ex-date (February 25) we owned 150 shares of Microsoft; we are entitled to a dividend on these 150 shares.
- **Ex-date:** The ex-dividend date is the date at which the shares trade without the dividend. Remember that you are entitled to the dividend only on the shares you owned when trading opened on the ex-date. Once the ex-dividend date arrives, the dividend has been earned. Even though the client doesn't have the money, it will be coming to them, so it will show up in the accrued column (and an asset on the balance sheet).
- **Pay date:** The pay date is the date on which the dividend is paid into the account. After this date, the dividend should move from the accrued to the paid column.

Neither the cash balance nor the book value of the portfolio is affected until the dividend is actually paid (until it shows up in cash). The market value of the portfolio (on the balance sheet) is affected as soon as the dividend is earned (accrued dividends).

Interest

If you did not invest your entire \$100,000 in the market, any uninvested funds are sitting in the bank earning interest. Check VSE to determine the amount of interest that was paid and enter that into the Income Statement. (UPDATE: VSE does not appear to credit interest even though the rules say that it should.)

Short positions and dividends

When you short sell a stock, you must borrow the shares from someone else and sell them in the market. If you take a short position in a stock that goes ex-dividend, you owe the dividend to the person you borrowed the shares from. Therefore, this dividend income shows up as a negative number in the income statement.

BALANCE SHEET

The balance sheet (statement of positions) reflects the portfolio's position as at the close of business on the "date" mentioned on the "Title" sheet. If you no longer own a stock (you closed out your position), there is no need to show that stock in the balance sheet.

Book Value Section

Enter the following information into the spreadsheet:

- **Ticker:** This character code identifies the stock.
- **Issue:** This is consistent with the ticker symbol - the name of the issue (company name). This should be the same as you entered on the transaction report.

After putting in the ticker symbol, the spreadsheet should use information from the transaction report to automatically update the following:

- **Position:** This is the total number of shares that are still held by the portfolio as of the reporting date. If you have multiple transactions in the stock, this value should match the last line of each stock in the transaction report.
- **Book Value:** The Book Value is the cost of the shares remaining in the portfolio. Remember the structure of the transaction report – if you have several transactions in a stock, the value showing on the balance sheet should match the last line in the transaction report.
- **Asset Distribution:** The asset distribution shows the percentage of the portfolio's book value in each asset.
- **Cash Balance:** This is referenced from the cash balance in the Transactions Record.
- **Book Value Reconciliation:** We calculate the book value of the portfolio using two methods. Both methods must yield the same answer.
 1. We sum the book value of all the assets still held in the portfolio (including cash).
 2. We calculate the Book Value from the opening balance. Buying shares merely exchanges cash for stock – but it does not affect the total Book Value of the portfolio. However, paying brokerage commission constitutes

a cash outlay in return for a service, so the Book Value is reduced by the commission.

If these two approaches don't match, the spreadsheet will show an error. We NEVER submit a report to a client which is out of balance - it shows the client that we are not competent to manage his or her money.

Market Value Section

Once the portfolio is balanced to book values we can complete the report by entering the market value information.

- **Price:** This is the most recent closing price as of the date shown on the title page (the report issue date). Prices can be taken from the Wall Street Journal, Yahoo Finance, or Baseline (NOTE: the WSJ for January 12 indicates the closing prices for January 11).

After the market values are entered, the spreadsheet should automatically calculate:

- **Market Value:** The market value is the total current value of the shares owned on the report issue date. Note that the number of shares owned already shows up on the Balance sheet.
- **Unrealized Gain:** The unrealized gain is the capital gain or loss that you would have earned had you closed your position on the report date. Recall that the transaction report shows realized capital gains.
- **Appreciation/Depreciation:** Appreciation is calculated based on the increase/decrease in market value from the book value.
- **Total Market Value:** The market value is calculated as the sum of the market values of all of the assets held in the portfolio including cash. Theoretically, the market value of the portfolio reflects how much cash you would have generated had you sold everything at the close of business on the date of the stewardship report (not including brokerage fees).

Rate of Return Section

This is the bottom line the client cares most about – it is the one number that answers the question “how did my money manager do?” In this section, show the performance by each reporting period so that your client can see how you have progressed. On the first report, there will be only one return number. On subsequent reports, show the previous numbers so that the client can quickly recall what you did. Then update the return since the previous report and since inception.

OUT OF BALANCE CHECKS

The easiest way to balance the stewardship report is to build it one transaction at a time and, after each transaction, balance to cash and to book value. But when you have 47 transactions in the spreadsheet and you're out of balance you need a shortcut. There are some basic steps to follow.

Common Fixes

- **Inserting rows in the transaction report:** When you have multiple transactions in the same stock, you will have to insert rows which often can jazz up the formulae in Excel. There are two possible errors that can occur.
 1. Check the totals line at the bottom of a column. Make sure the SUM formula is adding across all the rows you want. Sometimes your SUM formula might miss the first or last few rows.
 2. Many of the formulas (especially columns K, L, and M in the transaction report) check consecutive rows' ticker symbols to see if you have multiple transactions in the same stock. After inserting rows, it may no longer be checking consecutive rows' symbols. If this occurs, go back to the original spreadsheet posted on the course site. Copy the formulae from the original spreadsheet (cells K8:M8) and paste them down the same three columns under "Cumulative Position" on the transaction report.
- **Realized Capital gains on the transaction report:** When you have reverse trades, check your formulae for calculating realized capital gains.

You also have time to come see me if you are having out of balance issues.