WINFIN
Financial Analysis For Windows

Russell C. Anderson
Gjetaas, Inc
7251 Mt Baker Hwy
Deming WA 98244
(360) 599-2418

DATA ENTRY NOTES

You will note that all the modules have many similarities. The screen was designed to operate with a mouse. Thus you will achieve better results by selecting fields, buttons and command with your mouse rather than "tabbing". First you select the value to solve for, usually a button. Then select the first field for data entry. Enter the data and press the enter key. By pressing the enter key, you will be taken to the next logical field for data entry. If instead you want to go to another field, select it with your mouse. Then you click on "Calculate" and the unknown is solved and displayed along with other information about the investment.

If you are in a field and started entering a value but change your mind, press the ESCAPE key and the original value is restored.

Only Positive Values should be entered. Thus the amount of loan, payment, points, interest, etc. are always positive. The only exceptions are for the cash flows for IRR, MIRR and NPV. In some cases, an option exists to select whether the value is Paid or Received.

FINANCIAL ANALYSIS FOR WINDOWS

Entering Numbers & Dates International number and date formats are supported. This program will use the date format that you selected when you installed Windows are changed the format under Windows Control Panel International Settings. Be sure to use a period (".") as the decimal separator for number format. **Of important note: When you are on a date entry field, you can "double-click" the left mouse key on the date field. This will be bring up a calendar for you to select a date. After choosing the desired month and year, double-click on the calendar date or select "Accept" and the date is entered for you. Similary, when in a numeric field, you can double click to bring up the calculator.** Dates entered from the keyboard are entered as digits with the date separator automatically entered. Thus for 4/5/2008, you would enter, from the keyboard, 040508 and press enter. Be sure to enter two digits for the month and two digits for the day. This only applies for American date formats.

Entering Values for Interest Don't enter a decimal, enter the percentage. Thus 9.432% is entered 9.432 not 0.09432.

Entering Points Points are a percentage multiplied by 100. Thus a bond that is selling at 95.23% of its face value is 95.23 points and you would enter 95.23. The maturity value of a bond is usually 100 which means that it will be redeemed for 100% of its face value. In the bond and bond ladder modules, there is a provision to automatically convert points data entry from 32nds to decimal. Thus to enter a value of 102 8/32 you can enter 102.25 (note the decimal) or 102:8 (note the colon).

Pressing Enter vs. Clicking After you enter a value in a field, if you press the enter key, you will be taken to the next logical field for the entry of a value. When you arrive at a new data entry field, the value, if any, in that field is selected (highlighted). If you do not want to clear the next field, just press the Enter key, to move to the next field or select the desired field with your mouse.

Iteration Some solutions require looping until a solution is found. Examples are calculating a mortgage rate and the IRR. If the program cannot find a solution after looping 500 times, it quits trying and displays a message. This most likely will occur when you have entered inappropriate values for a solution.

PROGRAM MODULES

FINANCIAL ANALYSIS FOR WINDOWS

MORTGAGE

You select any one of 5 variables to solve for by clicking on the button to the left of the desired variable and enter values for the other 4 variables. Points and fees cannot be solved for.

Payments Made - Select the frequency of payments from the drop down menu.
Points - These are percentage points paid for the loan. Can be zero.
Service Charge - Dollar amount of fees the bank charges Can be zero.

The APR Rate is computed and shown. This is key to evaluating different loan terms. Thus a 8% loan with 4 points may not be as good a deal as a 9% loan with 0% points.

The Total Finance Charge is shown and includes all the interest paid in your payments, the amount paid in points and the service charge. Use this value along with the APR in evaluating different loan terms.

Rounding - See Installment Loan below.

Amortization command opens up an Amortization Screen.
Date of Loan is the date you receive the loan funds and when interest begins to accrue.
Date 1st Payment is the date the first loan payment is made.
Month FY Begins is the first month in your fiscal year. This would normally be January for personal use.
Schedule Year is the year you wish to show in the amortization schedule. You can also select "All". In the case where the fiscal year spans two calendar year, this is the first year of the fiscal year.
Send To allows the schedule to be sent to screen, printer or a ASCII, comma delimited file for import into a spreadsheet.

If the date of 1st pymt is not exactly one payment period from the date of the loan, you will have either a short or long (also called "Odd") first payment period. In this case, although your periodic payment are always the same, the amount will be slightly different from the payment entered or computed from the previous mortgage screen. In the case of a short first period, the payment to interest for the first period is less than normal and thus the payment to principal is greater than normal. For a long first period, the interest is more than normal. In the case where the 1st pymt is several payment periods beyond the date of the loan, there is substantial accrued interest to be paid off before any payment can be applied to the principal. US Law does not allow interest to accrue on interest.

FINANCIAL ANALYSIS FOR WINDOWS

In the loan that you set up, you selected the term of the loan. Thus a 30 year loan with monthly payments would normally have 360 payments. If the loan was obtained on June 5, 1993, the first payment would be made on July 5, 1993 and the last payment would be on June 5, 2023. However, in the case of a long first payment period where the first payment was made on Aug. 5, 1993, there would only be 359 payments if the last payment was made on June 5, 2023. If you can choose to keep the number of payments constant at 360, then the term of the loan is 361 months and the last payment is made July 5, 2023. If you choose no, then the term of the loan is 360 months with 359 payments being made.

Compare command allows you to compare loan terms. The first column is a range of loan rates. The first row can be selected as a range of term of the loan, points paid or amount of loan. The values to be computed and displayed for the range of values in the first column and row can be selected as payment, total finance charge or % APR. Thus you can quickly evaluate which are the best combination of bank rate and points.

Example - Comparing Bank Terms

You are buying a home and you need a $100,000.00 loan. You go to your local bank and the loan officer offers you a loan at 10.00%, with 3 points and service charges of $500.00 with monthly payments payable over 30 years. You go to another bank and they offer you a loan at 10.5%, no points and service charges of $250.00. Which is the best deal? Use the mortgage module and enter 100000 for the amount of loan, 10 for % Annual Rate. Select Yrs and enter 30 for the Term of Loan. Enter 3 for the Points and 500 for the Service Charges. Click on Calculate and the Loan Summary Window shows the results. The Net Loan is only 96,500. The amount for points (100,000 x .03) and fees (500) is deducted from the proceeds. Or to phrase it another way, you have to come up with $3,500.00 to pay the points and fees to the bank. Also note the Total Finance Charge (the sum of points, fees and total amount of interest paid) along with the %APR. Make a note of these last two figures or just click on Print to print out a copy of the enter window. To compare the second offer, enter 10.5 for % Annual Rate, 0 for Points and 250 for loan fees and click on calculate. You will note that the first deal offers a lower Total Finance Charge and APR and would be the most attractive. However, you do have to pay a an up front fee of $3,500.

Example - Amortization

Lets assume you go with the first offer of $100,000 at 10% over 30 yrs with 3 points and 500 in fees and monthly payments. Its time to figure your income tax and you want to know how much interest to deduct for the mortgage. You closed the deal and the money was paid out by the bank on 10/21/93. Enter this date as the Date of Loan. (Just double-click your left mouse button while the mouse cursor is in the date field. A calendar pops up. Select the month and year. Double click the left button on the desired calendar date and it is automatically entered for you). Note that this is the date that the bank begins charging interest and may be different than when you signed the loan papers. To keep things simple, the bank likes to use the first of each month as the date when the payments are due. They tell you that the first payment is due on 12/1/93. This creates the situation of a long first payment period as described above. Enter this date as Date 1st Payment. . Normally, for personal tax returns, your fiscal year begins on January 1. For demo purposes, lets say the loan was made to your company and its fiscal year begins in March. Select March in the Fiscal Yr Begin window. When the window appears for "Keep # Pymts=360", select yes. Assuming you are preparing the FY 97-98 fiscal year tax return, select 1997 in the Schedule-Yr window. Click on Begin to begin the amortization calculations.

INSTALLMENT LOAN - Rule of 78

This is similar to Mortgage above. This difference is that when the rate is entered, you can select APR or Add On. The program will compute both the APR and Add On rates. Many installment loans quote the Add On Rate which is considerably smaller then the true rate paid in terms of the APR. The amortization shows the remaining balance of the loan and the rebate received if paid off. The net to payoff the note is the balance less the rebate. Note that the balloon payment on the installment loan is zero.

Rounding

You may find that the payment calculated for a Mortgage or Installment Loan differs from other programs by a penny. The reason is that the payment is almost always contains a fraction of a penny. I have followed the rules given in the references on the last page. For mortgages, the payment is always rounded up and for installment loans, the payment is always rounded down. Thus a payment of 877.573 is 877.58 for a mortgage and 877.57 for an installment load. In the case of a mortgage, the final payment is therefore usually less than the other monthly payments. This is reflected in the Balloon Payment as a negative value.

During the creation of the amortization schedule, the interest payment is rounded, subtracted from the payment, and the remainder is the principal payment.

FINANCIAL ANALYSIS FOR WINDOWS

RETIREMENT PAYOUT

The program answers the question, "How much can I expect to receive, at retirement, in inflation adjusted dollars during my years of retirement. Your assets can be in a pension plan or they can be held as a personal portfolio. The latter case is described below. Lets say you are currently 60 years old and you have $600,000 in investments and/or a pension plan. If you retired today, how much could you expect to receive for the rest of your life in TODAY dollars. That is, each year you increase the amount of payout for living expenses from your assets by the rate of inflation. A standard annuity pays out a fixed amount each year and that's fine for the first few years of retirement, but 15 years latter those dollars buy a lot less. This program allows for a variable payout so your buying power stays current with inflation. It also allows on to see the effect of having a lump-sum distribution from a pension plan.

Lump Sum means that value of your pension plan is paid out to you as a distribution. You then can treat these assets as your own. The disadvantage is that the earnings are no longer tax deferred and the IRS charges a rather stiff tax on the distribution.

There are 5 areas for input of data and a section called "Analysis".

Begin Retirement

This section asks for 2 inputs:
Assets Enter the current value of the assets, portfolio or pension plan that will generate income and can be used to draw from for living expenses (called payout).
Age This is the age you would like to retire.

Fixed Payout

Amount This is the amount of payout from your assets that will not be adjusted for inflation. Examples might be a home mortgage or life insurance premiums.
Age Begin The age the fixed payouts begin
Age End The age the fixed payouts end

Variable Payout

Age Begin The age that your variable payouts (adjusted for inflation) begin
Age End The age that your variable payouts end. This would normally be your life expectancy. Use 75 or higher to be conservative.

Additional Payout
This is similar to the Fixed Payout described above. Howver, this payout are the total of funds received from sources other than the portfolio you are using for the fixed and variable payout. Examples of additional payout would be Social Security payments. These funds are assumed to be tax-free in the analysis described below.

Residual
This is the amount of money you want to leave in your portfolio at the end of your Fixed or Variable payouts, whichever has the largest value for “End Age”. If you want to use your entire portfolio to provide payments during your retirement, you can enter zero.

Inflation-Return
% Inflation This is the amount of inflation you assume during your retirement. Who knows what that will be. Well it turns out that this is not to important and you can prove it buy running the program with different rates. A conservative entry would be a high value such as 10. What is crucial to the results is the the item below.
% Return Over % Inflation This is before-tax return on your investments in excess of the rate of inflation. Don't be unrealistic here. Enter a lower value to be conservative. If you put all your investments into T-Bills, you could be reasonably assured they would just about equal the rate of inflation. Thus you would enter 0 the this entry.

% Tax
This area is only important if you are considering a lump sum payout of your pension plan or your assets are not in a tax deferred pension plan.
On Income Enter a value for the % tax you expect to pay on your income. This is not the same as the IRS tax rate since the actual % tax you pay on your total taxable income and wages is reduced by deductions, etc.
On Lump Enter the IRS tax rate on lump sum distributions including any special tax penalties.

After all the above data is entered, press the "Calculate" button.

Analysis
The value displayed in the Result frame, is the annual payout in dollars at age of retirement. This value is increased each year thereafter by the rate of inflation which produces a constant purchasing power. This amount is in addition to the Fixed Payout and is an amount before taxes and for no lump sum payout.

The amortization command produces a schedule for each year from beginning of retirement up to the maximum of the ending age of fixed or variable payout. You can select either no lump sum or a lump sum payout to compare the two. The amounts shown are fixed, variable, total, total after-tax payouts. Also, the income generated each year off the assets and the end-of-year value of the assets is shown.

These values are computed as follows. The initial variable payout is compounded for the number of years since retirement at the rate of inflation and added to the fixed payout to obtain the total payout. This sum is then subtracted from the value of the assets at the beginning of the year. This remainder is then multiplied by the rate of return to produce the income for the year. The total payout is subtracted from and the income is added to the value of the assets at the beginning of the year to obtain the end of the year value for the assets. This value is then used for the beginning of the year assets for the next year and so on. If you want to see for yourself the effect of values assumed for inflation and return, try entering different values for inflation but keep the value of the return over inflation the same. You will see for yourself that there is not a substantial difference unless you have a large fixed payout relative to the variable payout.

Important Note
Most people have a combination of personal and pension assets. Run the program for each and add the results. This program was designed for a qualified pension plan where the income is tax-deferred. An IRA probably falls into the same category. **To use the program for a personal (non tax-deferred) portfolio** a couple of "tricks" are necessary. Use current value of your portfolio as "Assets" in the Begin Retirement input. In the % Tax input, enter 0 (zero) for the value of "On Lump". Enter the other values as describe above. In the analysis section, use the "YES" column for your answers. What we are doing is treating your current personal portfolio as a being in a pension plan, then taking a lump sum distribution but with no lump sum distribution tax. This then places the assets into a non tax-deferred category.

FINANCIAL ANALYSIS FOR WINDOWS

Assumptions

The program always takes the conservative side of choices. For each year, the income from the assets is assumed to be earned at the end of the year and the payout to occur at the beginning of the year. This has the effect less earnings than actually occur. The rates of inflation and earnings are assumed constant. This is not as bad as it seems. What is important is the difference of the two and this can be assumed reasonably constant with conservative investments. Prove it to yourself by trying different rates of inflation and keeping the "% Return Over % Inflation" constant. The program also assumes you have the option in a pension plan to receive a variable distribution each year. If this is not true, then use zero as the amount in the Variable Payout Amount entry and use different amounts in the Fixed Payout Amount entry until your Asset Value in the Analysis section becomes zero.

Example:

You are 55 years old and have $1,000,000 in assets that can be invested to produce income. You still have a mortgage on your home and a child in college. Enter 1000000 for "Begin Retirement Assets - Assets and 55 for Age" These "fixed" payouts amount to $40,000 per year and will continue through your age 59 or until you reach 60. Thuse enter 40000 for "Fixed Payout Per Year - Amount, 55 for Age Begins and 59 for Age Ends" Your wife will continue to work and therefore you don't need to start your variable payouts until your age of 57. You want these variable payouts to continue for your life expectancy and you select 80 as a go ripe old age. Thus enter 57 for "Variable Payout - Begins and 80 for Ends". You assume an inflation of 5% and a rate of return on your investments of 2% over the inflation rate. Thus enter 5 for the "Inflation-Return Per Year - Inflation and 2 for Rtn Over Infl". The values for Tax Rates Per Year need be entered only if you are considering a Lump Sum Distribution or if you want to see your after tax income in the amortization table. You could use 25 for "Tax Rates Per Year - On Income and 35 for On Lump". Click on Calculate and the result is 43,945.35 as the amount in age 55 dollars that will be paid out annually beginning at age 57 through age 80 and increased each year by the rate of inflation.

AUTO LEASE

This module approaches a lease from the dealers position however, the numbers produced are of valuable to the customers positon. There are 4 main variables, in addition to the term of the lease that are involved in a lease. Any of these 4 can be selected as the unknown and solved for.

FINANCIAL ANALYSIS FOR WINDOWS

Cap Cost - This is the dealers captilization cost and represents his upfront money or investment. It includes money that he must lay out to provide you the auto and is reduced by money that you pay up front.
Selling Price - is the price that he would otherwise sell the car for if not leased.
Trade/Down - is the trade-in and downpayment that you provide and this serves to reduce the dealers cap cost. Enter a positve valule, the program substracts the value for you.
Taxes - These are up-front Federal Luxury and State Taxes that are paid and not otherwise included in your initial payment.
Other- This can be a postive (increases Cap Cost) or negative (decreases the Cap Cost) entered value. Examples would be the dealers aquisition fee and mechanical breakdown protection.

Residual - This is simply the estimated market value of the auto at the end of the lease. It is normally computed by applying a percentage to the Manufactures Suggested Retail Price. If you don't know the MSRP, then simply enter the amount for residual as the MSRP and use 100%

Rate - The dealer usually uses the "Money Factor" or "Rate Factor" but often advertises the lease as %APR. A simple conversion is Rate Factor=%APR/24. Select the option for either and enter the value.

Monthly Payment - This is your monthly payment for the lease and does not include any State sales tax on the payment. Your initial payment could be higher because of a security deposit, last month in advance license and registration fees, etc.

Comparing lease terms with those of a bank loan is more complicated than just comparing the APR. Some dealers advertise 0% APR. How can they lease you a car without any interest charge? That is where the calculated field "Cap Cost", and indirectly "Selling Price", is handy. You may find that you pay no interest but the monthly payments are high because your paying a high selling price.

SAVE FOR FUTURE

This module allows you to plan a savings program in order to have an amount of money in the future. The future (Goal) value is adjusted for taxes on the interest earned and also for inflation. Thus after each period the interest earned is computed based on the amount at the beginning of the period, the amount of tax owed on that interest is subtracted to find the net interest earned. The amount at the beginning of the period is reduced by the rate of inflation and the sum of this amount and the net interest is added to find the amount at the end of the period which is the amount at the beginning of the next period and so on. For example,

how much do I need to start saving each month in order to have $30,000, in today dollars, 10 years from now for my childs college? As with the other modules, you select the unknown to solve for and enter values for the others. The *Present Value* is the initial amount. Since the income from savings is probably taxable, the actual income reinvested each period is reduced by the amount of *income tax*.

FINANCIAL ANALYSIS FOR WINDOWS

BONDS

This module allows you to enter either the price of the bond or the % Yield To Maturity as the known value and then calculates the other. There are many parameters computed including current yield, duration, accrued interest and total cost, the next coupon date and number of coupons.

You can select from a US Treasury, Corporate or Municipal Bond, the main difference being in the number of days per month and year. Muni's are evaluated using Rule G-33. The "Custom" option allows you to select the number of coupon payments per year and either a 360 or 365 day year. This can be used for EuroBonds and other non standard US bonds.

Callable If the bond can be called before maturity, you can enter the call date and price. In additon to the 1st call, there is an option to add a "Par Call". The "Yield To Call" will be computed will be computed for each with the lesser of the two displayed.

Known Value - You must enter a value for either the Price (in points) or the Yield (in % not decimal) of the bond.

Total Fees - This would be commission or other fees paid on the transaction..not per bond. These will be added to the Principal and Accrued Interest to compute the total cost. In addiition, the various yields will be computed and displayed for both without and with the fee included in the price of the bond.

Concession This is for use by dealers who buy a bond at discount of the known price or yield. Thus if you enter 98.375 for the price and 1.5 for the concession (points), the price used in the computations is 96.875.

Odd First Period This refers to bonds that are issued with the first coupon payment unequal to an even 6 months. If you are analyziing a bond for a settlement date after the first coupon payment, you can ignore this area (i.e., do not check the box)

Par Value This is the total face amount of the bonds your are buying. Usually, the face amount per bond is 1,000 units of the issuing country's currency. Thus if you purchased 10 US Treasury bonds, you would enter 10000 for this input.

Price To: For a callable bond, you can elect to price the bond to *Maturity*, *Maturity & Call* or *Call*. You would use the Price To Call in the case of a Pre-Refunded Bond (a bond that is known to be called).

Federal & State Tax These are used to compute the Taxable Equivalent Yield and the True After-Tax Yield. The state income tax is assumed to be a deduction on the federal tax return. The After-Tax Yield is the new computed YTM or YTC (whichever is less) using the after tax coupons received and reducing the profit on the bond redeemption from the price paid by the federal tax (for bonds purchased at discount.

BOND PORTFOLIO

This module allows you to construct a portfolio or collection of bonds. This collection is displayed in a spreadsheet with a row for each bond. Once constructed, several useful choices exist. You can display a summary of several parameters such as avg yield, avg maturity, etc. The averages are weighted by the par value of the bond. In addition, there is a bar chart of the income from coupons over the year and a a bar chart of maturity and annual income over the life of the portfolio.

There are several menus:

Main Menu

Data - Brings up the Add Menu described below. This is the default choice when the modulue is first opened.
Summary - Displays a summary of the portfolio.
Income - A bar chart of income flow vs month over the current year
Maturity - A bar chart of income and maturity par vs year over the portfolio life
Print - Prints the active screen or graph.
Quit - Quits the module and returns to the WINFIN main menu.

Data Sub Menu

Add & Edit - Displays the bond entry screen which is similar to that of the bond module. This is where you add or edit individual bonds for the portfolio.
Delete - Deletes the selected bond in the spreadsheet displaying the portfolio.
Display - Displays the parameters of the selected bond in the bond entry screen but does not allow edititing.
Reset - Deletes all bond entries in the portfolio.
Save - Saves the portfolio to a disc file of your choice. This file is a comma delimited text file suitable for import into a spreadsheet such as Excel.
Open - Opens a portfolio of bonds previously saved. You have the option to add these bonds to the current portfolio of bonds or replace the current portfolio with that in the file. In this way, you can build a new portfolio from a collection of previously saved portfolios.

Bond Entry Sub Menu

Calculate - As in the bond module, this will display several parameters for the bond you have entered.
Ok - This will save an "Add" or "Edit" and return you to the Data Menu.
Cancel - This will cancel any entrys and return you to the Data Menu.

The spreadsheet, summary, graphs and bond entry windows can all be printed.

One example of the use of this module would be construction of a bond ladder. If you are retired and have $100,000 that you want to conservatively invest with full protection of your principal, have a steady, guaranteed income and want to minimize the price changes in your portfolio, consider a US Treasury Bond Ladder Portfolio. This is a collection of US Treasury Bonds and Notes with a staggered maturity dates. The staggered maturity offeres some protection against changes in long and short term interest rates. If chosen properly, it also provides a more even payment of coupons from the bonds.

T-BILLS

This module is similar to Bonds. The difference is that rather than entering the % YTM, you enter the % Discount. Price is entered the same way, as points. You can select to enter the life of the T-Bill as number of days or enter the actual dates of purchase and maturity. Be sure to see "Data Entry Notes" below regarding entering these dates.

The Price and Discount Rate are computed along with the Equivalent Bond Yield. Simple and compound rates and amount of interest paid are shown. These values take into account the fees paid.

CERTIFICATE OF DEPOSIT

This is similar to T-Bills above. The difference is that the quoted interest rate is simple rather than discount. Also, you can select whether 360 or 365 days per year are used in computing the quoted price or rate.

BANKERS ACCEPTANCE

This is essentially the same as T-Bills. Both use discount rate. However, some BA's use a 365 day year and you can select either a 360 or 365 day year.

FINANCIAL ANALYSIS FOR WINDOWS

PORTFOLIO HEDGE

This module evaluates using an Index Put Option (like the S&P 100 Index) to hedge a portfolio of stocks against a drop in the stock market. It can be used for any type of investment where an Index Put Option is available such as currency, precious metals, etc.

You enter the current value of you stock portfolio and the beta. The beta is a measure of the stock volatility relative to the index. If you expect your stocks to move by the same % as the index, the beta is 1. If you don't understand this, use 1 for the beta. The number of options/contract is 100 for the S&P100, S&P500. For currency and precious metals, the value appropriate for the index will be needed. Enter the current value for the index, the strike price and the price of the put option and then 'Calculate'. The number of contracts and the total cost are listed for a "neutral" hedge. That is, the number of contracts such that if the index falls below the strike price, the increase in value of you put option, will essentially offset the decrease in value of your stocks. The break-even price is the price the index must increase to for your portfolio to increase in value enough to offset the cost of the option. The % Move is the percent of the increase compared to the entered value of the index. The maximum loss is the most you can lose on the combination of the portfolio and the option.

By clicking on "Plot", you can see a graphical display of the profit vs. index price for the portfolio, option and the combination of the two. Note that only the intrinsic values are used in the calculations.. the time value is assumed to be zero.

BLACK-SCHOLES

This is a mathematical model for the "fair value" of an option.
There are two values that must be entered that greatly affect the result. These are the Safe Rate and Volatility.

The Safe Rate is the current rate of interest paid on money where little or no risk exists of not getting your principal back. The APR Rate on T-Bills or banks can be used. This is the APR, not the Discount or a bank rate that uses a 360 day.

The Volatility is difficult to find or compute. This program can compute the implied volatility. That is, after you have entered the other variables, you can select "Calculate" in the Volatility box and other windows open up. Here you enter the actual market price for the call option and enter an estimate for the volatility. Then click on the main "Calculate" command button and the volatility is computed using the actual market price. Using this value, you can evaluate other options for the same stock or index with different strike prices and duration. In checking the values with the Wall Street Journal, I find that the call prices are quite accurate but

the put prices vary considerably. This is inherent in the mathematical model.

If the stock pays dividends, then you have to enter a value for annual dividend, the number of dividends per year and the date of the next dividend.

Delta - Change in option price for $1 change in price of stock.
Gamma - Change in delta for $1 change in price of stock.
Theta - Change in option price for 1 day change in expiration date of option.
Vega - Change in option price for 1% change in volatility.
Iota - Change in option price for 1% change in safe rate.
Epsilon - Change in option price for $1 change in strike price

CASH FLOW ANALYSIS

This module addresses the problem of determining the profitablility of an investment that involves unequal cash flow. For example, you can buy a farm that for the first few years requires you to spend more money than you receive but later you will receive more money than you spend. Over a given time frame, what will be the profit and return on money? The input values are:

Payment Occurs at End or Beginning of Period
Number of Periods - The total number of periods of the investment, not including the initial investment. Some periods may have no cash flow. There can be upto 1900 periods.
Frequency of Periods - Select how often the periods occur in a year.
1st Period Ends - This value allows the program to generate a date for each period.
Estimated IRR - This is the estimated annual return on the investment and is used as a beginning for the iterative solution of IRR and for computing the NPV.
Reinvest Rate - This is the value at which positive cash flows (money you receive) is reinvested.
Finance Rate - This is the cost of money. Normally this is the bank loan rate.
Cash Flows - These are entered into the grid in the right side of the screen. The initial cash flow is normally the amount of the original investment, i.e., the "up front money". Then you enter the net cash flow for each period. It is very important that you observe the convention of postive values are money your receive and negative values are money that you payout. Thus, your initial cash flow (period 0) would normally be a negative value (enter the negative sign with the amount).

FINANCIAL ANALYSIS FOR WINDOWS

Entering Consecutive Occurances of a Cash Flow - After you have entered a cash flow, you can fill any number of following periods with the same cash flow. For example. you have entered 1234.56 for cash flow number 4 and you wish to repeat this value for cash flow numbers 5 through 8. With your mouse, select cash flow number 5 and while holding down the left button, drag the cursor down to cash flow number 8. These cash flows will be highlited. Release your mouse key and press the Ctrl-N keys. That is press and hold the Ctrl key and then press the "N" (or "n") key. The cash flow of number 4 is repeated into numbers 5,6,7 and 8.

The computed values are:
IRR - This is the return on your investment. It is the rate whereby the sum of all the present values of the Cfs is zero. This solution is iterative (trial and error) and there can be more than one value. If it won't compute, try another Estimated IRR.
MIRR - This tries to get around the problem of the IRR having more than one solution. All positve Cfs are used to compute a future value, using the Reinvestment Rate and all negative Cfs are use to compute a present value, using the Finance Rate. The MIRR is then the rate whereby the present value of the sum of all the future values equals the sum of all the present values. There must be at least one postive and one negative cash flow.

Both the IRR and the MIRR are computed for the period used in the investment. The Simple value is that value multiplied by the number of periods per year. The Effective value is the computed IRR and MIRR per period compounded per period for one year.

NPV - This is the sum of all the present values of the Cfs where the rate is the 'Estimated IRR'. If you get a postive NPV, it means that the rate of return on your investment is greater than the Est. IRR Rate (good investment), if less than zero, it means the return on your investment is less than the Est. IRR Rate (bad investment). Note you can think of the value entered for the Estimated IRR as target rate or something you want to use as a bench mark to compare the investment to.
Profitablility Index - This is the ratio of the sum of all the present values of the money received divided by the sum of all the present values of the money paid out. The rate of interest used is the Finance Rate (cost of money).
Payback Period - Number of years for the sum of the money received to equal the money invested.

Reset - This will reset all the Cash Flows to zero.
Save/Read - This command will save or retrieve cash flows to or from a disc file. Once retrieved, the cash flows can be modified and re-saved. Note that only file names with the extension ".txt" are valid file names. This is done to protect overwritting exe, com or other important files.

COMPOUND INTEREST

This module allows for the compounding of interest. Thus, after each period, the interest is added to the balance at the beginning of the period and this new amount is used to compute the amount of interest for the next period.
This is the effective rate, compound or "interest on interest". Simple rate is where the amount of interest per period is not added to the balance and is simply added to the present value to determine the future value.

ANNUITY

This is a plain vanilla annuity mathematical model. You can select Ordinary Annuity (payments at end of period) or an Annuity Due (payments at beginning of period). Known and unknown values are similar to the Mortgage module above. The difference is that no rounding of values occurs as is done by banks for mortgages.

DAYS BETWEEN DATES

This module will compute a multitude of values for entered dates and many values for the difference between the two dates. You can enter actual dates for both the first and last date, or an actual date for one and the number of days from the entered date for the other.

CALENDAR

This displays a calendar where you can select the month and year to be displayed. Just double click on a date or select any of the 3 menu items to exit.

RANDOM NUMBERS

You enter the number of random numbers to generate and the upper and lower limits of the to generate. The program then generates a series of random numbers.

FINANCIAL ANALYSIS FOR WINDOWS

DEMO VERSION

Note that the demo, trial version is to be used for no more than 30 days. It is meant to allow you to evaluate the program and determine whether you want to purchase a registered version of the program. It is completely functional but is not a "freebie" substitute for the registered version. It will cease to function 30 days after installation. Feel free (I encourage you) to pass this program along to your friends or BBS's for their evalulaltion.

REGISTRATION

You can register the program by clicking on the "Order" button on the "About" screen and filling out and printing the form. There is also a file, ORDER.TXT, which is a standard ASCII file that you can print. If you wish to pay with Master Card or Visa, you can fill out this section of the form and FAX it to the number listed below. This will expedite your registration

WinFin is constantly being improved, modules added and of course, bugs fixed. With your registration, you will receive a disc with the latest version of WINFIN.EXE, branded with your name, and all the other necessary files. There is also included an installation program to automate the installation. Free lifetime (mine, not yours) telephone support is included with registration.

SUPPORT

If you have any questions, please call me at the number below. To keep the cost of the program low, long distance calls cannot be returned. Thank you for giving this program a try.

Russell C. Anderson
Gjetaas, Inc.
7251 Mt. Baker Hwy.
Deming, WA 98244
(360) 599-2418 (Voice)
(360) 599-1089 (FAX)
rca@pacificrim.net (EMAIL)
www.pacificrim.net~rca/winfin.html (Web Home Page)

You can always download the most current version of WinFin at our Internet Home Page listed above. If you are already a registered user, be sure not to overwrite your registered version when installing the demo version. If you feel there are sufficient improvements, you can order a registered personalized updated version for US$10.00 (incl s/h).

LIMITED WARRANTY AND LIMITED LIABILITY

Gjetaas, Inc. and the programmer, Russell C. Anderson, do not warrant that the

licensed software will meet your requirements or the operation of the software will not be interrupted or error free. It is SOLD AS IS. In no case will the liability of Gjetaas, Inc. or the programmer, Russell C. Anderson, exceed the license fees paid for the right to use the licensed software, or a sum no greater than one Dollar ($1.00), whichever is less.

If for any reason you are unsatisfied with the program within 30 days of receiving a registered version, simply return the disc with your reason and your registration fee will be refunded.

WinFin is produced by a member of the Association of Shareware Professionals (ASP). ASP wants to make sure that the shareware principle works for you. If you are unable to resolve a shareware-related problem with an ASP member by contacting the member directly, ASP may be able to help. The ASP Ombudsman can help you resolve a dispute or problem with an ASP member, but does not provide technical support for members' products. Please write to the ASP Ombudsman at 545 Grover Road, Muskegon, MI 49442-9427 USA, FAX 616-788-2765 or send a CompuServe message via CompuServe Mail to ASP Ombudsman 70007,3536.

REFERENCES

Stigum, Marcia, "Money Market Calculations: Yields, Break-Evens, and Arbitrage", Dow Jones Irwin

Thorndike, David, "The Thorndike Encyclopedia of Banking and Financial Tables", Warren, Gorham & Lamont

Clayton, Gary and Spivey, Christopher, "The Time Value of Money", W. B. Saunders

Securities Industry Association, "Standard Securities Calculation Methods"

Kaye, Richard L., "Lease Your Car For Less", TeleTravel Network Inc.

Kent, Frederick and Kent, Maude, "Compound Interest and Annuity Tables", McGraw-Hill Book Co.

"Expanded Payment Table for Monthly Mortgage Loans", Financial Publishing Co.

Douglas, Livingston G., “Bond Risk Analysis - A Guide to Duration and Convexity”, New York Institue of Finance.

Fabozzi, Frank J. and Fabozzi, T. Dessa, "The Handbook of Fixed Income Securities Fourth Edition", Irwin Professional Publishing

Fabozzi, Frank J., "Valuation of Fixed Income Securities", Frank J. Fabozzie and Associates.