

**WINFIN**  
**A Collection of Financial Programs For Windows**

**DESCRIPTION**

This program is a collection of 15 financial analysis programs:

**Mortgage**

You select any one of 5 variables to solve and enter values for the other 4. The 5 variables are:

1. Amount of Loan
2. Interest Rate on Loan
3. Payment
4. Number of Payments
5. Ballon Payment

You simply click on the variable to solve and enter values for the other 4 variables. Using conventional banking practice, values are rounded to the nearest penny. The payment is rounded up. Thus if the payment is to be solved for, and it is computed as 598.431, the program produces 598.44 for the payment. In an actual amortization of the loan, the last payment is almost never equal to the rest of the payments. In addition to the regular payments, there can be a ballon payment at the end of the mortgage.

Other values must be entered, they cannot be solved for. These are:

Number of Payments Per Year - 12 for monthly payments, 4 for quarterly payments.

Points - These are percentage points paid for the loan.

Service Charge - Dollar amount of fees the bank charges

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.

Amortization of the loan can be made to the screen, printer or a comma delimited file for TEXT import to a spreadsheet.

**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.

**Bonds**

This module allows you to enter either the price of the bond or the % Yield To Maturity and then calculates the other. The Simple and Effective (Compound) rates are also computed. Thus comparisons with other types of investments can be made. The total cost of the bond is also shown and includes accrued interest and fees paid to the broker. These fees are included in computing the Simple and Effective Rates for the investment. The next coupon date and number of coupons is also shown.

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Be sure to enter the maturity value and price in points. Thus a bond with a face value of \$1,000 and selling for \$980.00 has a maturity value of 100 and a price of 98.00.

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#### **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.

#### **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 durations. 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.

#### **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.

#### **Compound**

This is the same as the Annuity module above except that there are no payments.

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**Internal Rate of Return**

This computes the IRR of a series of cash flows. Be sure to enter cash flow to you (money you get) as positive values, and cash flow from you (money you paid) as negative values. You must have at least one positive value and one negative value. You then enter the number of payments per year and the program will calculate the Annual Percentage and Net Present Values.

**Modified Internal Rate of Return**

The IRR analysis can give as many solutions as there are changes of signs in the cash flows. The MIRR was designed to offset this limitation. This is done by discounting all negative cash flows to compute a present value using a "Safe Rate", i.e. T-Bill Rate. All positive values are assumed reinvested at some assumed investment rate to compute a future value. Using these assumptions and the computed present and future values, a simple compound interest problem is solved to return the rate of interest on the cash flows.

**Net Present Value**

Enter the cash flows as described for IRR and MIRR above, however only one or more is required. Then using the annual rate of interest that you enter, the Net Present Value is computed.

**Retirement Payout**

This module is the crown jewel! 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 thats 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 and 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.

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Age Begin The age the fixed payouts begin

Age End The age the fixed payouts end

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**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.

**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 by 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.

The last entry is for the Age in the "Analysis Section". Enter an age to see the results for any year during your retirement. Then press the "Calculate" button.

**Analysis**

The box is divided into two columns. One for no lump sum distribution and the other where a lump sum distribution of the pension assets is taken. The two top boxes show the variable payout in retirement age dollars for each case. The other values are for the age you entered. Leave the data as is in the input boxes and enter different ages (push the "Calculate" button for each age). You will see the values for the fixed and variable payouts, with their totals for that age. The after-tax net payout is calculated. The bottom area shows the status of your nest egg. It displays the after-tax income on your assets and the value of the assets at the end of the year for the age you entered. At the age of your life expectancy, the value of the assets will be zero.

**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.

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#### **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.

#### **Auto Lease**

This module will compute the cost of leasing a car. You input the known values that the dealer gives you and the program computes the values that the dealer usually will not provide such as the %APR and actual purchase price of the auto. This is useful to answer, should I buy or lease a car. It can also be used to compare different terms from dealers. When you enter the value for "Residual Value", you may enter the number as a percentage (not decimal) or the actual dollar amount. The program assumes that any value less than or equal to 100 is a percentage, otherwise a dollar amount. The value for "# Pymts in Advance" is the number of payments required by the dealer at the time of the lease but not including the first month payment. For example if the dealer requires the last month's payment in advance, you would enter a value of 1. The "Security Deposit" is assumed to be refundable at the end of the lease.

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 "Purchase Price" is handy. You may find that you pay no interest but the monthly payments are high because the purchase price is close to, or even greater than the Sticker Price...and nobody pays sticker.

#### **Days Between Dates**

This module will compute a multitude of values for entered dates and many values for the difference between the two dates.

#### **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 your 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 your 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

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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.

**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.

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

Entering Dates Always enter a date as 2 digits for the day, 2 digits for the month and either 2 or 4 digits for the year. For example June 4, 1992 is entered as 060492 or 06041992. The program will automatically enter the "/" for you. It counts your keystrokes, and after 2 it places a / for you. If only 2 digits are entered for the year, the program assumes it is the current year. You can clear the date field with a backspace.

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



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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.

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 next entry of a value. When you arrive at a new data entry field, the value, if any, in that field is cleared. If you do not want to clear the next field, don't press the Enter key, just use the mouse to click on the next field you wish to enter a value.

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.

### **INSTALLATION**

1. Copy the program file WINFIN.EXE to any directory such as your Windows directory.
2. Copy the file VBRUN200.DLL into your Windows/System32 directory.

VBRUN200.DLL is needed to run any program written using MicroSoft Visual Basic 2.0. Most BBS's do not allow this file to be uploaded with a program. The reason is that it would be duplicated in 1000's of uploads. Instead, the BBS will have VBRUN200.DLL as a separate file for downloading and once downloaded, should be placed in your Windows\System directory. It then can be used by all other programs written in Visual Basic 2.0. MicroSoft allows the DLL to be made available at no cost for usage.

### **REGISTRATION**

This program is copyrighted and is not free. It is offered for trial and if you want to use it beyond 10 days, a fee of \$20.00 is required. This evaluation copy is fully functional except for printing amortization schedules and a nag screen. By registering, these limitations will be eliminated. You can register by clicking on the "Order" button on the nag screen, filling out and printing the form. All that is required is your name and address along with check for \$20.00 made out and mailed to my company:

Gjetaas, Inc  
7251 Mt. Baker Hwy  
Deming, WA 98244  
(206) 599-2418 (Voice & Fax)

A keycode will be sent to you for use in the registration procedure in the program accessed by pressing the "Register" button on the nag screen.

If you wish me to send you a copy of all the necessary files including the latest version of WinFin.Exe and VBRUN200.DLL, make your check out for \$25.00. The additional \$5.00 is for the disk, mailer and handling. Be sure to specify if you wish a 3 1/2" or 5 1/4" disk.

Your key code can be used on future versions of this program that you may obtain so there is no charge to upgrade other than the cost of downloading or my shipping and handling charges.

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Feel free (I encourage you) to pass this program along to your friends or other BBS's but please keep your registration code confidential.

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**SUPPORT**

If you have any questions, please call me at the number below. Thank you for giving this program a try.  
Russell C. Anderson  
(206) 599-2418

**LIMITED WARRANTY AND LIMITED LIABILITY**

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