

ABC for Pre-Retirees Workbook Overview

The **Actuarial Budget Calculator (ABC)** consists of two Excel workbooks, one for retirees and one for pre-retirees. The primary purpose of the ABC is to help you (or your financial advisor) develop a reasonable spending plan that is consistent with your long-term financial goals. The ABC is based on the actuarial principle that assets and liabilities should be in balance. For an individual or a household, this means that:

Abbreviations:

ABC: Actuarial Budget Calculator workbooks
PV: Present Value
PVC: Present Value Calculator spreadsheet
Discount rate: Assumed investment rate

- assets (current value of investments plus present value (PV) of sources of future income)

should be in balance with

- liabilities (PV of non-recurring expenses plus PV of annual recurring spending budgets).

This balance equation can be stated as follows:

| | | | | | | |
|------------------------------|---|------------------|---|---------------------------|---|---|
| Current value of investments | + | PV future income | = | PV non-recurring expenses | + | PV annual future recurring spending budgets |
|------------------------------|---|------------------|---|---------------------------|---|---|

The ABC uses:

- the data that you input
- the assumptions that you input, and
- the actuarial balance equation above

to develop a spending budget for the current year and an actuarial spending budget for your first year of expected retirement.

ABC Tabs

The ABC for pre-retirees consists of the following six tabs (worksheets), which are discussed below:

1. Inputs and Results
2. Workbook Overview
3. Present Value Calcs
4. Runout
5. Inflation-Adjusted Runout
6. 5-year Projection

Input & Results Tab

The first step in using the ABC is to go to the **Input and Results** tab and enter:

- Your data
- assumptions for your pre-retirement period such as your current pay, expected future increases in your pay, desired number of years until retirement, desired percentage of pay savings rate, and information for other sources of pre-retirement income or pre-retirement expenses
- amounts and timing of expected sources of future income in retirement
- Expected PV of non-recurring expenses,
- The desired rate of future increases in future recurring retirement spending budgets
- Assumptions relating to future expected investment return (which is also equal to the rate used to discount future liabilities)
- Future inflation
- Your expected lifetime planning period (a nice way of saying how many years before you expect to die).

We have provided recommendations for these assumptions that you may use. You don't have to use our recommended assumptions, but as discussed below, we suggest at a minimum that you do run the ABC with the recommended assumptions to provide another "data point" to help you with your spending decisions.

By entering your gross pay and your desired savings rate, you are establishing your current pre-retirement spending budget as the difference between your gross pay and the amount you desire to save. The ABC assumes that these items and your pre-retirement spending budget will increase each year by percentage inputted in cell B13 for the number of years inputted in cell B11 for desired years until retirement.

Present Value Calculator (PVC) Spreadsheet

You can also use the **Present Value Calculator** (PVC) spreadsheet (a separate spreadsheet on our website) to determine the PV of some of your future non-recurring expenses or income items (or the PV of recurring items not handled by the ABC spreadsheet) to enter separately as input to the ABC. If you use the PVC spreadsheet, the assumed investment return/discount rate should be the same as the one you entered in the ABC, and other assumptions you make should be consistent with the assumptions you enter into the ABC.

Multiple Persons

If you are trying to determine a spending budget for more than one person (a household), you may need to:

- combine data
- run the spreadsheet more than once and combine results or
- enter data in an input item that functions best. For example, if your spouse has a Social Security benefit that will commence later than yours, you can enter her Social Security benefit and start date in the “Indexed Annuity” fields.

Results

Based on the assumptions and data you enter in the **Input and Results** tab and the actuarial balance equation above, the ABC will develop an “actuarially determined” spending budget for your expected first year of retirement. This amount is shown in both nominal and real dollar terms, and the real dollar result is compared with your expected final working year’s spending budget expressed in real dollars.

PV Calcs Tab

The **PV Calcs** tab shows the calculation of the results in more detail.

Runout Tabs

The ABC includes two runout tabs that will show you expected future spending budgets and a year-by-year runout of your accumulated savings, assuming all the assumptions you entered will be exactly realized in the future and your actual spending each year exactly matches your spending budget. The **Runout** tab shows amounts in nominal dollars and the **Inflation-Adjusted Runout** tab shows results in real dollars based on the inflation assumption input in the **Input and Results** tab.

The ABC’s **runout** tabs are primarily provided to show you how the math works if all assumptions are exactly realized and your spending exactly follows the calculated spending budgets. If you enter PV amounts for one or more items in the **Input and Results** tab, there will be a difference between the accumulated savings amounts shown in Columns O and P. This difference can be explained as follows:

| | | | | |
|---|---|--|-----|--|
| End of Year Accumulated Savings (adjusted for net accumulated value of input PV items) (shown in Column O) | = | End of Year Balance (shown in Column P) | +/- | accumulated value of the PV of other income or other non-recurring expenses that you entered in the Input and Results tab |
|---|---|--|-----|--|

The difference between these two columns is assumed to be received or paid sometime prior to your death. The amount shown in Column P of the **Runout** tab (the nominal dollar tab) for the

final year of your retirement planning period input should equal the amount you entered in the **Input and Results** tab for **Desired amount remaining at end of lifetime planning period** (cell E 35). If it isn't, then the data you entered in the **Input and Results** tab may not be consistent.

You should always check the summarized input data in the box in Columns S and T of the **runout tabs** to see that the input items used in the calculations are consistent with what you believed you entered. You should also check to see that none of the numbers in **Beginning of Year Balance** (Beginning of Year Accumulated Savings in Column B) become negative during your lifetime planning period, as this could indicate future cash flow problems if expected future income has been deferred into the future (see below).

The **runout tabs** also show how much of your accumulated savings you will withdraw (or save if the number is negative) for the current year and future years (again assuming all assumptions are exactly realized and your spending exactly follows the calculated actuarial spending budget). Note that withdrawals after retirement are not based on a rule of thumb approach (like the 4% Rule), but, like during the pre-retirement period, are equal to the spending budget for the year reduced by expected income from other sources.

5-year Projection Tab

The ABC also provides a **5-year Projection** tab that lets you model the effect on your calculated first year of retirement spending budget of variations in investment experience or actual spending. To use this tab, you will need to enter “actual” rates of investment return and “actual” spending amounts for the next five years. The projection period for this tab is the lesser of 5 years and the desired number of years until retirement entered in cell B11 if the **Input and Results** tab

Recommended Assumptions

The shaded box in the **Input and Results** tab provides our most recent recommendations for future investment return/discount rate, inflation and lifetime planning period assumptions. Our website includes periodic blog posts which discuss the rationale for these recommendations. The most recent post that addressed these assumptions was on September 4, 2016. We also make recommendations for non-recurring expenses such as long-term care expenses and unexpected expenses. Our most recent blogpost on these assumptions was on December 21, 2015. We also provided, in our blogpost, of October 7, 2016, a suggested process for using the Social Security Quick Calculator at <https://www.ssa.gov/OACT/quickcalc/index.html> to estimate Social Security benefits that may be payable in the future to be input in the ABC. If you use this estimation process you will want to compare your actual earnings history with the earnings history that the program uses for you. If you are already receiving your benefit, you should enter your actual annual benefit and zero for the benefit start date.

While you don't have to use the recommended assumptions to produce your spending budget, we recommend that you run the ABC with the recommended assumptions to provide yourself with an additional "data point" to help you make your spending decisions. Using the ABC with recommended assumptions will provide you with a pre-retirement spending budget and an actuarially-determined first year retirement spending budget based on relatively low-risk investments (interest rates baked into insurance life annuity products) that you can use to compare with the estimate that you (or your financial advisor) may have developed using different assumptions or methods.

The one thing we do know for sure about planning for the future is that whatever assumptions you make about the future and enter in the ABC spreadsheet are not likely to be exactly realized. Therefore, a very important part of the Actuarial Approach discussed in this website is to periodically (we recommend annually) revisit the ABC and enter your revised data and assumptions about the future. This annual adjustment process will keep you on track to meet your financial objectives.

Limitations and Caveats

Sometimes the **Runout tabs** will show a negative withdrawal from accumulated savings for a current or future year. This can occur, for example, when income from other sources exceeds the expected actuarial spending budget for that year. If this occurs, it simply means that such excess income from other sources will be saved and will serve to increase accumulated savings. Such "negative" withdrawals should not be a cause for concern.

On the other hand, there may be some situations where the **runout tabs** project negative accumulated savings balances (or Beginning of Year Balance in Column B). These situations typically involve significant amounts of deferred income and may indicate future cash flow problems.

If your (or your client's) retirement portfolio includes significant amounts of deferred income (including situations where the present value of other income involves deferred payments or the retiree has significant inflation-indexed future payments and desires to have future spending budgets that do not keep up with inflation), you will probably want to look very closely at the expected future cash flows to make sure that accumulated savings can actually support retirement income objectives throughout the entire expected retirement period.

The ABC produces a current year spending budget and an actuarially determined first year of retirement spending budget that balances a retiree's current assets with his or her future spending liabilities. Your spending budget in retirement can and will increase or decrease from year to year based on many factors, including actual investment performance, actual spending, changes in assumptions used to estimate spending liabilities, etc. There is no requirement to spend the spending budget each year. A individual can always spend more or less than such budget, can

decide to smooth such budget or can decide to smooth actual spending from year to year. In fact, there can be many instances in which it makes good sense to spend less than the spending budget. For example, to avoid spending volatility after retirement, an individual may wish to set aside investment gains in a rainy day fund to be used in later years when experience may not be as favorable. Prior to retirement it may also make sense to save more than the pre-retirement spending budget. For example, it may be possible to lose your current job prior to your desired retirement date. The ABC provides several “data points” that may reasonably be used to make decisions about spending. See our blogpost of November 20, 2016 entitled, “Using Multiple ‘Data Points’ to Determine How Much You Should Spend” for more discussion of this issue.

Note that the spending budget developed by the ABC is “before taxes” and must cover your taxes as well as other expenses.

The general actuarial process described in our website and sample spending calculators are made available to you as self-help tools for your independent use and are not intended to provide investment or financial advice. As with all planning tools, the reasonableness of the results (in this case, your “current actuarial spending budget”) is a function of the accuracy of the data and assumptions that you input. Since you control these items as well as investment of your accumulated savings, we can make no claims or guarantees that you will not outlive your accumulated savings or experience significant decreases in amounts that may be spent in a future year if you follow the process described in this website. We assume no responsibility for those individuals who may outlive their accumulated savings or who may otherwise become dissatisfied in any way (or believe that they have suffered financially) by following the process described in this website as compared with some other strategy. This spending budget calculator is provided purely for your educational purposes. You are encouraged to seek professional advice from qualified investment/financial professionals before committing to any spending plan and should not simply rely on the results of this or any other spending budget calculator.