A Retirement Planner Model User’s Guide

Introduction:

In this document we will describe the objectives for using ARetirementPlanner, some simple cases and how tos. For this there is a section on the models input specification as well as a section on the models output.

ARetirementPlanner is aimed at helping retirees to get the most out of what they have. This does not, for the most part, include how to optimize your action in getting to the point of retirement. That said, there are at least two legitimate uses that occur prior to your actual retirement:

1. Using the tool to access whether you can retire and planning near term retirement
2. Using the tool for a married couple where they do not retire the same year

In these cases there is a period of time where not everyone (or no one) is retired.

One issue that is not currently handled by the model is company base retirement plans for non-retirees. Take for example retiree with a spouse that is working and has a 401(k) plan with their employer. Both the employee and the employer may be adding to this account and as with IRA and Roth IRA accounts there a maximum contribution levels. For the most part, at least in the current version of this program, we do not model these. Rather it is up to the user to convert this information into that which the model will use. This can most easily be done by simply using the current balance. The more sophisticated user may choose to add their expected contributions up to the retirement date to the balance which may improve the results.

Accounts are modeled as having a yearly balance, deposits and withdrawals. Each retiree can have an account of Tax deferred Retirement Account (TDRA), or Roth Retirement Account (RothRA) type. Additionally one After Tax Investment / Savings Account (ATRSI) type can be included. So a single retiree could have up to three accounts being modeled (one of each type) while a married filing jointly could have up to five accounts (one per retiree for the retirement accounts and one non-RA).

To model your accounts you would some your balances for all your accounts that act as a traditional IRA into the TDRA account starting balance. Then do the same for all your Roth account types. An finally, sum all the accounts with no special tax treatment for retirement for the after tax account.

For the most part 401(k) should be included in the TDRA account but sometimes they include portions that were contributed with after tax money. In this case the after tax contributions should be included in the RothRA account. IRA account balances go to the TDRA account and Roth IRA balances go to the RothRA account.

Get your feet wet: In this section we will describe a very basic application of ARetirementPlanner. The first thing that you will need to do is to choose an example input file and modify it to include your specific data. Married and want to do a joint plan, choose ARetirementPlannerJointStartHere.toml to start. Single then choose ARetirementPlannerSingleStartHere.toml to begin. Copy your choice to whatever you want to call you plan input file, say try.toml. This won’t give a very interesting result when run because almost everything is commented out. Give it a try with:

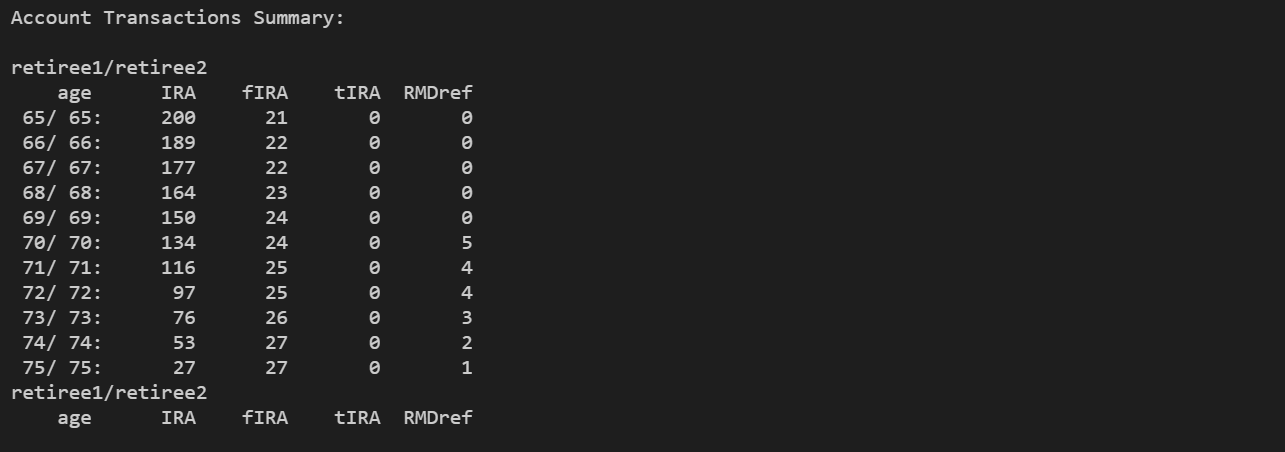
PS C:\plan> ARetirementPlanner.exe try.toml -va -vt -vtb -csv –V

The following table is always printed on success of the optimization. It gives an overall summary of the proposed, optimized, plan. Here we can see our retirees, their age and how much should be withdrawn from the TDRA account each year. In this particular case the amount withdrawn by itself is not enough to incur federal taxes. This means, as can be seen that the spendable amount for the year matches the withdrawal amount. Starting at age 70 the Require Minimum Distribution (RMD) kicks in but is less than the amount to be withdrawn so it has no effect on the outcome. TDRA is the only account with activity, no other income, social security, expense or taxes so these all remain zero.

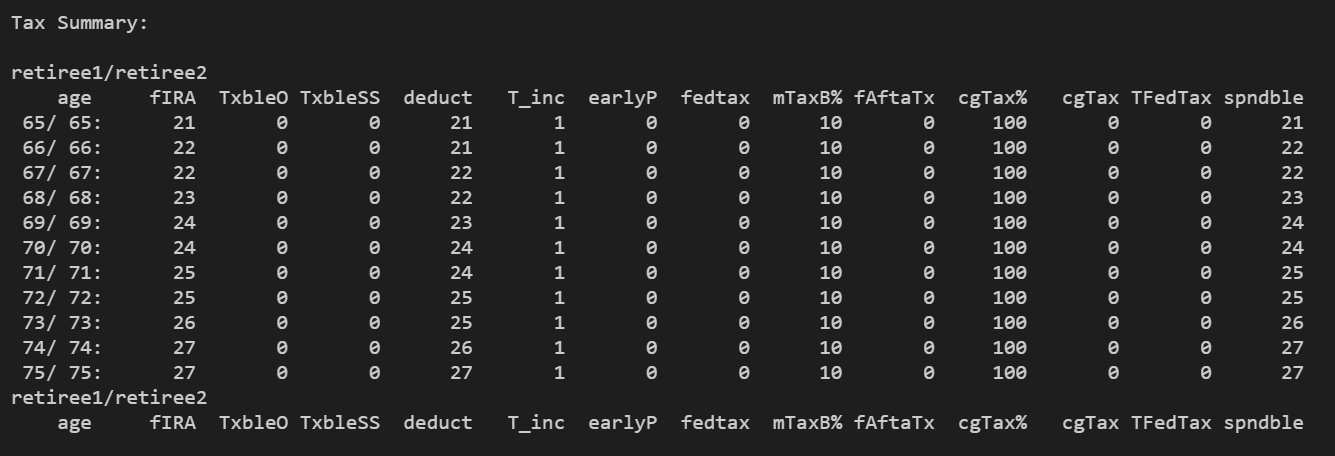
All the numbers are thousands (000) unless the -1k switch is given on the command line.



The –va swich given on the command line causes the account transaction summary to be printed as here below. Only one account is documented because only one account is specified in try.toml. In addition to the withdrawal (fIRA), deposit (tIRA) and RMD reference (RDMref) this summary includes the balance for the account (IRA). All modeled accounts (those defined in the input file) will be summarized here.

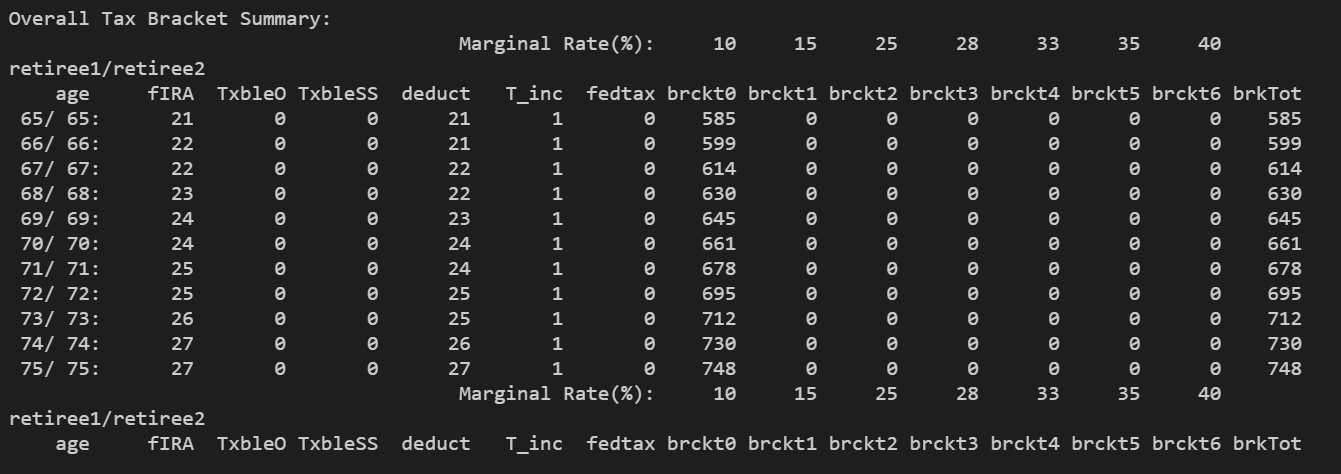


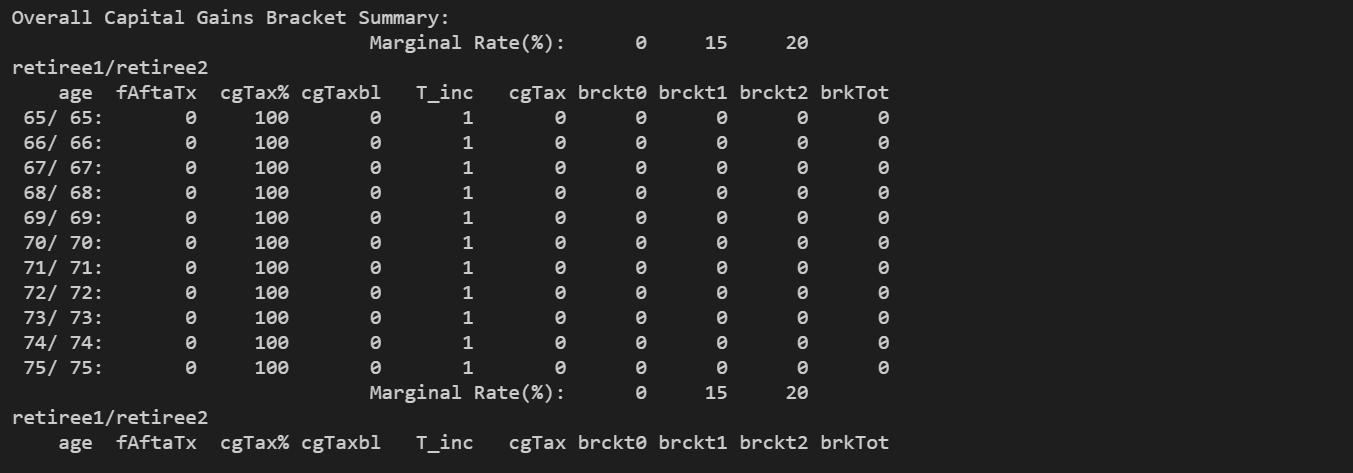
The tax summary is displayed if the –vt switch is given on the command line. Here we see the withdrawals from the TDRA account as they are taxed as ordinary income. Also the taxable portions of other income (TxbleO) and 85% of social security (TxbleSS). This is followed by the allowed deduction and exemptions (deduct) and the Total taxable income (T\_inc). Early withdrawal penalties (earlyP) comes next followed by the federal tax amount (fedtax) and the marginal tax rate (mTaxB%). Next comes the withdrawals from ATRSI (fAftaTx) the fraction of these withdrawal that are not from basis (cgTax%) and the capital gains tax itself (cgTax). Finally the total federal tax, fedtax plus cgTax, is given (TFedTax) and the amount of spendable funds for the year (spndble).



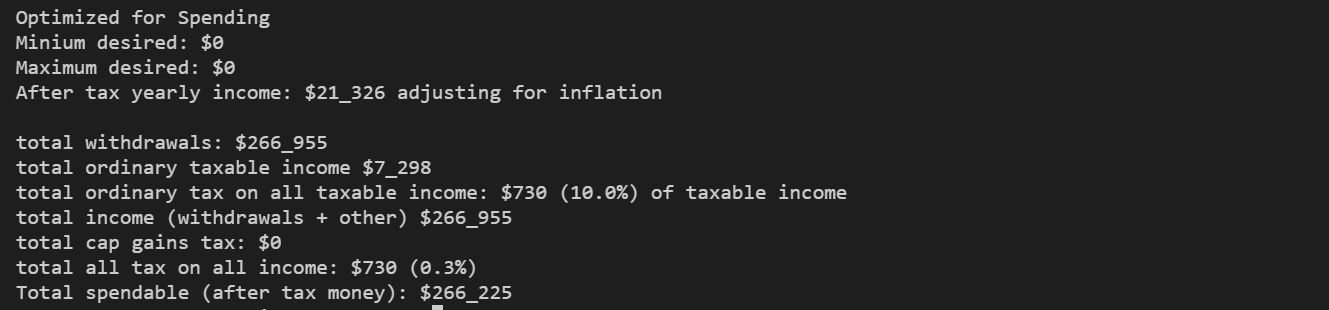
The next two tables are more technical. They are displayed whenever –tb is given on the command line. This represents the tax bracket details for ordinary income (first table) and capital gain (second table). In these tables the new columns are the brackets. Above and below each of these marginal rate columns in the marginal rate itself, the heading (brcktN) where N is a tax bracket from 0 on up to 6 for ordinary taxes and 2 for capital gains brackets. The final column is to total of all the funds in the previous column’s brackets for the year.

An exception to the rule for all numbers to be in thousands is that the bracket data is for every dollar, that is, not in the thousands.





The final output is always displayed with the following data.



Review the toml file to get a feeling for what is in it. Most options are commented out to simplify your modifications. This way you can change and uncomment only those fields you choose and ignore all the other lines.

ARetirementPlannerJointExample.toml to start. If you are single then choose ARetirementPlannerSingleExample.toml to begin. Copy your choice to whatever you want to call you plan input file, say try.toml.

Run the Example file versions to see

Invoking the model:

Model input specification:

The basis for the model input specification is the toml specification[[1]](#footnote-1) with its library. The basic format is sections of information ‘[‘ section name ‘]’ where section name can be a category followed by a ‘.’ and a dispriptive name. ‘#’ to the end of the line represents a comment. The global section has no section name header. The input information is represented by an assignment.

General model information (global section):

retirement\_type = 'joint' # defaults to joint, could be single, joint (married), ??? TODO

returns = 6 # defaults to 6.0, return rate of investments as a percent

inflation = 2.5 # defaults to 0, yearly inflation rate as a percent

#maximize = ‘PlusEstate’ # defaults to ‘Spending’, ‘PlusEstate’ maximizes the final estate.

# individual retiree info (one section per retiree, at least one will need an id)

[iam] or [iam.id] where id is some string that represents the retiree

age = 60 # retiree’s age

retire = 65 # age retiree will retire

through = 95 # age through which to plan

primary = true # if there are more than one retiree one should be designated as primary

# Social Security section must specify amount, FRA and an age range

[SocialSecurity] or [SocialSecurity.id] # if more than one retiree at least one needs an id (id should match retiree id)

amount = 31000 # $31,000 at Full Retirement Age (FRA); Assumes inflation, 85% taxed

FRA = 67

age = "68-"

# Income must specify amount (yearly), age range, whether to adjust for inflation, and if it is taxed

[income.mytaxfree] # income after retirement that does not involve retirement accounts

amount = 3000

age = "67-" # starts at age 67 and continue

inflation = false # Adjust for inflation

tax = false # count this as ordinary taxable income (true/false)

[income.rental\_1] # another income source

amount = 36000

age = "67-"

inflation = true

tax = true # count this as income tax

[income.rental\_2] # a third income source

amount = 2400

age = "67-"

inflation = true

tax = true # count this as income tax

# desire income section must define amount, age range, inflation adjustment and whether it is taxed

# desired income should be use in conjunction with ‘PlusEstate’

#[desired.income]

#amount = 45000 # per year

#age = "68-"

#inflation = true

#tax = true # count this as income tax

# max income section must define amount, age range, inflation adjusted

#[max.income]

#amount = 150000

#age = "68-"

#inflation = true

## sections for each account type, IRA and Roth types should have on per retiree as needed

## only one pre-tax account

## Each accounts must define the initial balance. Optionally, an investment return rate can be given

[IRA] or [IRA.id] # where id must match the retiree’s id who is the owner of the account

bal = 2000000

#rate = 7.25

maxcontrib = 00

# roth type accounts

[roth.spouse]

bal = 100000

maxcontrib = 000

# after tax savings/investment type accounts

[aftertax] # assumes joint ownership if multiple retirees

bal = 700000

basis = 400000 # for capital gains tax

Model output specification:

1. The toml specification is archived at: <https://github.com/toml-lang/toml> [↑](#footnote-ref-1)