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Selling Variable Deferred Annuities – A Game-Changing Epiphany for Financial Advisors

Background

There's been bad press over the years about Variable Deferred Annuities. You'll often see a comparison between a Mutual Fund with low fees versus a Variable Deferred Annuity (**VDA**) with high fees and charges, demonstrating how much more money an investor would have made with a low-fee Mutual Fund. However, this is not a fair comparison, because they are not "Apples and Apples" and hindsight is 20-20. Until now, there was nothing available to enable an FA to produce and present an accurate rebuttal.

We have been using DARMA™ (**Deferred Annuity Risk Management Assistant**), a stochastic tool, from our company, InjAnnuity Inc., to evaluate several Variable Deferred Annuity (**VDAs**) and the results were very encouraging.

In our stochastic contract evaluations, using DARMA™'s metrics, that are based on future estimated contract performance, many of the VDAs ranked higher than low-fee Mutual Funds, even though the VDA's expenses were much higher. However, this was only achieved because DARMA™ bases its VDA evaluations on each policyholder's unique personal parameters and risk-appetites. In addition, it allows the user to test and compare many variations in order to optimize the contract's returns.

In other words, DARMA™ itself, added value to the VDA contract!

A good analogy would be that if you had a painting and went to an art gallery to sell it and the buyer recognized that it was very valuable and you didn't, then you might very well end up losing money on your sale. Knowing the true value of something, adds value to it.

There's not enough room in this article to cover all the VDA contracts that we analyzed using DARMA™, however we have included a couple of them here, in order to highlight some of our important findings. Due to these findings, we believe DARMA™ will be instrumental in triggering a whole new approach to how these products are sold and also how existing ones can be monitored and evaluated properly.

DARMA™ Release Version 2.1, a VDA Toolbox for Financial Advisors

We are pleased to announce v2.1 of DARMA™, a web-based tool, designed to assist Financial Advisors (**FAs**) in the evaluation, contract monitoring and sales of VDAs.

Using DARMA™

The Principals of InjAnnuity Inc. have been developing and selling Life and Annuity Actuarial Reserve Valuation Software Systems to major Life Insurance companies, since 1990.

DARMA™ is a radical departure from these prior developments, in that, instead of focusing on an Insurance Company's point of view, it does so from the policyholder's point of view.

In doing so, it takes advantage of the policyholders' superior personal knowledge of their current health, expected longevity, goals, preferences, tax-bracket and risk-appetites; information that is generally unavailable to the Insurance Company. Combined with stochastically generated future economic conditions. DARMA™ takes all these parameters into consideration, to arrive at an accurate evaluation of a potential or existing VDA contract.

The importance of an investor's personal parameters has resulted in the creation of a new set of methods and paradigms, and, in addition, has required the use of stochastic methods to implement them correctly. The results are often quite unexpected and generally contain welcome evaluation outcomes, for both the FAs and their clients.

The app provides a user-friendly front-end where the FA can define a VDA policy and its features, and model other important information about the both the policy and the policyholder. Then, on demand, the app will perform millions of calculations and return key statistics and meaningful metrics to the user.

The icing-on-the-cake is the numerous reports and charts that DARMA™ V2.1 now provides, on demand, that demonstrate, from first principles, how the statistics and metrics were calculated. This provides a high level of confidence in the results for the FA and often reveals new sales opportunities for them.

We believe DARMA™ will be instrumental in triggering a whole new approach to how VDAs are sold and how existing ones can be monitored and evaluated properly.

DARMA™'s IMPORTANT OVERARCHING PRINCIPLE

Insurance Company's Point of View

An Insurance Company is required by law, to set up a liability, called a Reserve, to meet its obligations under each of its Variable Deferred Annuity contracts

CARVM (Commissioner's Annuity Reserve Valuation Method)

CARVM is a worst-case Reserving Method. It requires Insurance Companies to evaluate reserves on a policy by policy seriatim basis and to hold a reserve for each contract that covers those actions that a Policyholder would take, that would result in the maximum returns for the policyholder.

Many actuaries observed that this was not realistic because it was very unlikely that a policyholder would have enough knowledge to know what their best-case actions would be. In fact, the actual pricing of the product would assume that this was definitely not the case, as bad policyholder decisions were priced into their assumptions.

However, it does present an interesting question. ***Wouldn't the policyholder like to know what actions they could take to maximize their returns from the VDA contract?***

More recently, new Reserve requirements called PBR (Principle-Based Reserving), are requiring Insurance Companies to calculate reserves stochastically. This means that they must perform their reserve calculations in thousands of future possible Economic Scenarios. DARMA™ utilizes the new stochastic approach in its calculations, something that was never available to FA's in the past. However, before we get into this new and advanced technology, let us take a look at some simple reserve calculations, in order that you may better understand the important overarching principles of DARMA™.

Simple Reserve Calculation (for illustrative purposes only)

Assume a policyholder pays a \$100 premium to an Insurance company. The company's then agrees to pay the policyholder \$110, one year from now.

The company currently has net earnings of 10% per annum on its existing investments. So, in order to meet this obligation, one year from now, the company would need to invest \$100 today at 10% per annum, so that it would accrue to \$110, at the end of the year. Therefore, using the above assumptions they would set aside \$100 in reserves today, to meet this obligation.

Discounting: Another way to determine the reserve would be to go backwards from the end of the year, by discounting the \$110 by dividing by $(1 + 10\%)$ or $\$110/1.1$, to arrive at the \$100 reserve. This is called discounting future liabilities to determine today's reserve i.e. determining their Present Value (**PV**).

Policyholder's Point of View

So, what is this contract with the Insurance company worth to the policyholder, today?

To answer this question, a policyholder might ask the question: "What sum of money would I need to invest, based on my risk-appetite (i.e. how I would normally invest money), that would accrue to \$110, one year from now?

If they can earn 10%, just like the Insurance Company, it would be \$100. However, *the policyholder is not an Insurance company*, so that answer would depend on their Risk-Appetite for investing. Let's say they are very conservative and only invest in one-year treasury bills, that pay 1.88%. Then the amount they would need to invest would be $\$110/1.0188$ or \$107.97 i.e. $\$107.97 * 1.0188 = \110 . This is considerably more than the Insurance company's \$100 Reserve.

The concept of DARMA™'s 'In-The-Money' (ITM).

Based on the policyholder's Risk-Appetite (*very conservative here*), their Insurance contract is 7.97% 'In-The-Money'. In other words, the policyholder would need to invest \$7.97 more than they invested in the Insurance contract, to accrue to the same amount of money (\$110), i.e. the Insurance contract is a better investment than they could earn with their normal investment strategy.

The formula for ITM (7.97%) here, is to discount the future cash from the contract (\$110) by the policyholder's risk appetite interest earnings i.e. $\$110/1.0188$ and subtract 1.0, i.e. $1.0797 - 1.0 = 0.0797$ or + 7.97% ('+' is good, '-' not so good).

Let's also assume, for the purpose of illustration, that the \$110 payment from the Insurance company is tax free but the policyholder's regular investments have a 15% capital gains tax. Then what would they now need to invest in order to match the tax-free \$110 payment?

This means that the actual earnings would not be 1.88% but $1.88\% \times (1-15\%)$ or $1.88\% \times 0.85$ i.e. 1.598%. So now the policy holder would have to invest $\$110/(1+1.598\%)$ or \$108.27 for an ITM which has now increased to a +8.27%.

What is a VDA Contract worth?

There are two ways to look at this question.

- (1) How much would a knowledgeable company pay the policyholder for it?
- (2) How much would the policyholder accept for it?

A knowledgeable company would be armed with expert personnel and sophisticated software. They would underwrite it based on the policyholder's health, lifestyle and they would insist on receiving all benefits and making all future decisions about those benefits so that they would optimize their returns. Bottomline, they would arrive at a price where they would make more money on their investment than they could with other investments. They would do this by performing a Cost-Benefit Analysis.

The policyholder or their FA would not be on a level playing field with a knowledgeable company and would probably be limited to an evaluation somewhere between the Cash Surrender Value and the Account Value. Outside of these two numbers they would not know if the value was greater than the Account Value.

Why might a policyholder want this valuable information. They might want to know if it would be a good idea to replace it with another and better VDA or some other investment or what steps they would need to take to maximize their future cash payments.

DARMA™ will provide them with an expert answer and in doing so will provide additional value to the policy by virtue of informing the policyholder of the most likely steps to take to optimize its value.

What is the Value of a Policy in today's dollars?

Insurance contracts and the real world are much more complicated than the very simple example described earlier. However, it does highlight DARMA™'s overarching principle which is stated below:

IN ANY PROJECTED ECONOMIC SCENARIO, THE VALUE OF A VDA CONTRACT, IN TODAY'S DOLLARS, EQUALS THE PRESENT VALUE OF ALL ITS FUTURE NET CASH FLOWS, DISCOUNTED USING A STREAM OF EARNINGS RATES, NET OF TAXES, THAT ARE DERIVED FROM THE POLICYHOLDER'S PREFERRED NON-VDA INVESTMENT STRATEGY

Is based on the unique policyholder's attributes

IN ADDITION, THE VALUE IS GREATLY INFLUENCED BY THE POLICYHOLDER'S RETIREMENT GOALS, TAX BRACKET, TAX QUALIFIED STATUS, ESTIMATED LONGEVITY AND LEGACY PREFERENCES

Important Observation

This means that, even when investors are the same age and gender, the evaluation and rating of the very same VDA, may be significantly different for each, due to their unique personal attributes, goals, and other parameters.

So, how does DARMA™ calculate a VDA's value for each type of investor?

DARMA™ establishes ground rules for the VDAs.

The Client

DARMA™ asks for their:

1. Tax-Qualified Status
2. Retirement Goals
3. Legacy Goals
4. Non-VDA Preferred Investment Strategy (Risk-Appetite)
5. VDA Investment Strategy (e.g. which VDA sub-accounts to invest in)
6. Tax brackets
7. Estimated Longevity

Based on the above DARMA™ performs the following calculations:

Projects Each VDA sub-account

1. According to its rules and mechanics
2. Stochastically i.e. for up to 1,001 randomly generated, separate and independent economic scenarios

Metrics

1. Generates a calibrated set of 1,001 random Economic Scenarios
2. In each Scenario, records all unique non-trivial Income Paths for both the deferred track and the many possible Income tracks
3. For each Scenario, calculates the ratio of the Maximum Present Value of the VDA's possible future Income streams divided by the starting Account Value, then subtract 1.0. Next multiply it by 100 to get the percentage.
 - a. This percentage is the 'Account Value In-The -Moneyess'" (**AV-ITM**)
 - b. Base the Present Value discounting on the Client's Non-VDA Risk Appetite i.e. their preferred alternate investment choices (*more about this later*)
4. Ranks each of the 1,001 Scenarios by its AV-ITM and sort by Rank, from lowest to highest.
 - a. Divides them into 101 Percentile bins (0 thru 100), bins 0 thru 99 have 10 scenarios with bin 100 containing the highest ranked scenario only.
 - b. Uses the half-way Economic Scenario (i.e. the median, which is the one ranked 501) at the 50th Percentile (**AV-ITM-50PC**), for DARMA™'s standard Metric

5. Calculates an average \$ evaluation of the policy over all Scenarios
6. Uses an algorithm, based on the statistics (from 2 thru 4), from all Scenarios. The algorithm assigns a score equal to a number of stars, ranging from 0 to 10. This is an easily understandable metric DARMA™ will use for evaluations and comparison purposes.

To perform the above calculations, we used the DARMA™ app. If you wish to look at a more comprehensive set of analyses, you can find it with a free sign-up at <https://injannuity.com/>

Ten important operating principles

Before we look at the results, we will establish how DARMA™ calculates the Present Value numerator in the AV-ITM ratio and develop informative metrics.

Principle 1 – Policyholder POV

The value of any given contract is not an absolute and is a function of what choices the policyholder makes in the contract, based upon the contract provisions and their personal attributes.

DARMA™ is therefore, organized around the point-of-view of the policyholder. In general, the policyholder knows their current health and financial status, goals, tax bracket, risk-appetite etc. They must use this knowledge in order to take full advantage of the software in determining their optimum strategy.

Principle 2 – Cash Only

DARMA™ is only interested in the net effect on the policyholder's (future) pocketbook. Therefore, it looks solely at future positive and negative *net cash* events. If it's not a cash event, it's ignored in determining the numerator part of the AV-ITM ratio.

The future cash events DARMA™ projects, in each scenario, are:

1. Premium Deposits
2. Charge-Free Withdrawals (if elected in the AV-ITM strategy)
3. Required Minimum Distributions
4. All projected year-end Cash Surrender Values
5. All potential year-end Annuity elections and their Payment streams
6. All potential year-end Guaranteed Withdrawal streams
7. Death Benefits
8. Taxes
9. Tax Penalties
10. Tax Rebates

To be sure, there are plenty of other possible events. But they matter *only if* they affect the amount and/or timing of the above cash events.

Principle 3 – Parallel Risk Appetite Mutual-Fund Bank Account (PRAMBA™)

DARMA™ assumes the existence of a theoretical policyholder Alternate Shadow Investment Bank Account, the PRAMBA™ bank, to theoretically handle the Alternate Mutual Fund investments. All cash events generated by the VDA are recorded as either deposits into or withdrawals out of the theoretical PRAMBA™ bank account.

Principle 4 – Discounting

Interest discounts (PVs) for the VDA's are based on the **Non-VDA** Risk-Appetite of the policyholder, as reflected in their preferred Alternate sub-account investment choices in the PRAMBA™. The same interest discount rates (less any fees) are used to theoretically credit the Shadow PRAMBA™ bank account.

Principle 5 –The PRAMBA™ Starting Balance

In each Scenario, the starting balance in the PRAMBA™, is equal to the numerator (PV of all cash events) from the VDA. This is the starting balance required in the PRAMBA™ Bank in order to finance all future net cash events that are independently generated by the VDA, such that after applying the starting balance and subsequent cash events, the ending balance will be exactly zero.

Principle 6 – AV-ITM Formula

In each Scenario, the **AV-ITM** is equal to the Present Value of all future Net Cash divided by the current Account Value, minus 1.0. The AV-ITM percentage is equal to this number times 100.

Principle 7 – Maximum & Average AV-ITM

In each Scenario, the AV-ITM is calculated twice. Once for the Maximum ITM in the policyholder's Target Age range (**MAX AV-ITM**) and the other for the Average ITM of the targeted ages (**AVG AV-ITM**).

Principle 8 – Benefits Exclusions

Allow the policyholder to exclude certain Benefits they are not interested in. For example, if the policyholder is only interested in the cash they will receive while they are alive, then they would exclude Death Benefits in the VDA's cash projections.

Principle 9 – Gross Vs Net

Calculations can be Gross or Net of Tax.

Principle 10 – Contract Rating

Based on the key scenarios' frequency distribution statistics, rating stars are calculated for the **MAX AV-ITM**, **AVG AV-ITM**, and for a combined weighted rating from both the **MAX** and **AVG**, AV-ITMs.

Summary of All Operating Principles

In each scenario the VDA generates future cash events. By definition every unique VDA cash stream needs to be exactly financed by the starting balance (PV of this cash stream) in the PRAMBA™ Investment bank, such that the ending balance will be exactly zero. This is what the policyholder would have to invest in the Shadow PRAMBA™ in order to match the separate VDA's generated cash streams. This is the value of the VDA investment that is ***unique to the policyholder***, based on their lifestyle, longevity, goals and risk-appetite and is the major constituent of the DARMA™'s standard metric, used to value and/or compare it to other VDA's or the PRAMBA™.

Separate AV-ITM's are calculated for the Maximum and the Average in a Targeted Age Range. Amongst other things this would highlight where one year is a very obvious winner, e.g. due to a mistake like an inadvertent over-generous Joint-GLWB payout rate and this would stand out due to a large difference in the two AV-ITMs.

Calculations can be performed on both a Gross and Net of Tax basis. Gross may be used in situations when the projected Tax brackets are unclear, or the app does not support them (such as use in a non-US country). It can also be used for a simpler comparison with any other VDA contracts, providing that they are also evaluated and rated, using the DARMA™ app.

This all may seem quite complicated; however, the good news is the user just needs to input the basic policy and policyholder info and DARMA™ will do all the complicated stuff for them.

It All comes out in the DARMA™ Wash!

Next, let's look at how the app deals with evaluating a couple of policies for a prospective client.

☰

DARMA™: Policy Editor

▶ My Policies

▶ My Reports

For: **VDA Contract #1**

Define Policy

Basic Information

Policy Basics

Policy Features

Policy Tax Parameters

Current Balances and Values

Policyholder/Beneficiary Info

Scope

Accumulation Fund

Cash Benefits

Set ITM Parameters

Upgrade Policy Permissions

View Results

Inspect Results

← Prev. Topic

Save

Next Topic →

Policy Basics

Assign a unique name for this Policy: VDA Contract #1

To distinguish it from all other Policies you define here. Will appear in all of this Policy's Reports.
If you wish to remain anonymous, please avoid any personal information such as names or Policy Numbers.

Tax-Qualification Status: not Tax-Qualified

Policy was Issued on: 09/15/2019

All Current Balances you provide for this Policy, 09/15/2019
on any page, are as of the start of this day:

Your Notes and Comments:

Your notes here

← Prev. Topic

Save

Next Topic →

Two Sample Contracts

FA's Client is Male Age 55 (spouse: Female Age 53), with \$100,000 post-tax, to invest.

We will examine the binary choice of investing it all in the theoretical PRAMBA™ versus the sample Variable Deferred Annuity (**VDA**).

For the PRAMBA™, we look at one with low management fees of 1% of the Fund per annum. The VDA is a bigger challenge but the FA has found two that have similar attractive features and guarantees, but with different fees and charges. All credited interest is applied on a daily basis to the fund balances at start of day and all fees and charges are applied to the balances at end of day, after interest is credited. Each policy has a Guaranteed Withdrawal Fund (**GLWB**), that's based on the greater of a GLWB Shadow Fund Accumulation or the Account Value. Each has a Minimum Guaranteed Death Benefit (**MGDB**) which ratchets up every 5 years to the greater of the Account Value or the MGDB, up to age 70.

Based on running the app via DARMA™'s link to Northwestern Mutual Longevity app Lifespan Calculator™, the life expectancy of the male is Age 83 and the Female is 85 (from in Northwestern Mutual's Lifespan™ questionnaire).

Contract Descriptions

	VDA Contract #1:	VDA Contract #2:
GLWB Shadow Fund:	compounded 6% credited rate	compounded 5% credited rate
Bonus @ Issue:	\$5,000	None
Surrender Charges:	From 16% to 1% (10 years)	From 20% to 1% (10 Years)
Free Withdrawals:	10% per annum	10% per annum
Fees:	1.5% of all sub-accounts	2.0% of all sub-accounts
GLWB Charge:	1.0% of all sub-accounts	1.0% of all sub-accounts
MGDB:	No Charge	0.5% of all sub-accounts
Total Deductions:	2.5% of all sub-accounts	3.5% of all sub-accounts

Abbreviations Used

For the Cash Benefits:

CSV	Cash Surrender Value
DB	Death Benefit

For Cash Income:

ISW	Single Life GIB = Guaranteed Withdrawal Benefit
IJW	Joint Life GIB = Guaranteed Withdrawal Benefit
ISA	Single Life Basic Annuitization
IJA	Joint Life Basic Annuitization

For the Sub-Account Investments and PRAMBA™:

FixedAcc	Non-Variable Fixed Account
MONEY	Money Market/ Short-Term
ITGVT	U.S. Intermediate Term Government Bonds
FIXED	Diversified Fixed Income
LTCORP	U.S. Long Term Corporate Bonds
BALANCED	Diversified Balanced Income
US	Diversified Large Capitalized U.S. Equity
INTL	Diversified International Equity
SMALL	Intermediate Risk Equity
AGGR	Aggressive or Specialized/Exotic Equity

The Results for VDA Contracts #1 & #2

Initially we will look at running VDA #1 with all monies invested in the 'BALANCED' sub-account and then 'AGGRESSIVE', with the only difference being the Policyholder's assumed Risk Appetite. Then we will examine and analyze other assumptions and their effects on the VDA's evaluations and ratings.

Next, we will look at some results for VDA Contract # 2. In total we will look and 30 separate cases; 24 for VDA #1 (1 – 24) and 6 for VDA #2 (25 – 30).

As we shall see, an investor's risk-appetite can have a profound effect on the evaluation of the VDA and is the first of several game-changers that we will be unveiled, as a result of implementing DARMA™'s new paradigms and methods. When using stochastic Methods, it will ***"All come out in the wash"***.

In other words, let the app do all the hard work, and simply present its results to the client.

In the next few pages we will present the high-level summaries of the reports with more detailed output, both for entering the policy data and assumptions and producing the charts and reports. A more detailed analysis can be viewed by signing on to the InjAnnuity website:

<https://www.injannuity.com>

DARMA™ is a toolbox, and as such there are many combinations of possible choices for any given VDA contract. What follows is just a limited, but important combination of some of these choices, for just two sample contracts. Needless to say, we would recommend FAs to sign up for DARMA™ and explore as many of these combinations, in order to optimize a strategy that is best for their clients.

To demonstrate some important findings, we ran the VDA Contracts using **BOLD**, **MODERATE** and then **CONSERVATIVE** Risk Appetites under varying assumptions, that demonstrate material evaluation differences.

However, before we present details of the results, including informative charts and analyses, we will first list a summary analysis of all 30 cases divided into 4 groups A thru D and in each group we have ranked the results by the DARMA™ metric of number of stars out of ten.

As you will see, the ratings are greatly influenced primarily by the policyholder's real-world risk appetite and secondarily by the same in their risk appetite in their choice of the VDA sub-accounts that they invest in. this, in turn, is mainly the result of two factors; the Guaranteed Life Withdrawal Benefit (**GLWB**) which skews the distributions to the good side and the long term positive trends of the market.

The next level of influence is reflected in the personal attributes of the policyholder, especially their expected longevity.

Here are the results:

(Please note that all reports and charts, presented below, were produced by the DARMA™ software).

Summary of Group A for VDA Contract #1

Not Tax-Qualified with Longevity Male 83, Female 85

Case #	All Funds Invested in:	Risk Appetite	Cash Benefits	Stars (out of 5)
1	BALANCED	BOLD	All	0.50
2	BALANCED	MODERATE	All	2.89
3	BALANCED	CONSERVATIVE	All	4.10
4	AGGRESSIVE	BOLD	All	2.43
5	AGGRESSIVE	MODERATE	All	3.88
6	AGGRESSIVE	CONSERVATIVE	All	4.12
7	AGGRESSIVE	BOLD	Living Only	2.13
8	AGGRESSIVE	MODERATE	Living Only	3.73
9	AGGRESSIVE	CONSERVATIVE	Living Only	4.25
10	AGGRESSIVE	BOLD	Income Only	1.21
11	AGGRESSIVE	MODERATE	Income Only	3.34
12	AGGRESSIVE	CONSERVATIVE	Income Only	4.42

Group A Ranked by Number of Rating Stars

Rank	Case #	All Funds Invested in:	Risk Appetite	Cash Benefits	Stars (out of 5)
1	12	AGGRESSIVE	CONSERVATIVE	All	4.42
2	9	AGGRESSIVE	CONSERVATIVE	Living Only	4.25
3	6	AGGRESSIVE	CONSERVATIVE	Income Only	4.12
4	3	BALANCED	CONSERVATIVE	ALL	4.10
5	5	AGGRESSIVE	MODERATE	ALL	3.88
6	8	AGGRESSIVE	MODERATE	Living Only	3.73
7	11	AGGRESSIVE	MODERATE	Income Only	3.34
8	2	BALANCED	MODERATE	All	2.89
9	4	AGGRESSIVE	BOLD	All	2.43
10	7	AGGRESSIVE	BOLD	Living Only	2.13
11	10	AGGRESSIVE	BOLD	Income Only	1.21
12	1	BALANCED	BOLD	ALL	0.50

Summary of Group B for VDA Contract #1

Tax-Qualified with Longevity Male 83, Female 85

Case #	All Funds Invested in:	Risk Appetite	Cash Benefits	Stars (out of 10)
13	BALANCED	BOLD	All	0.49
14	BALANCED	MODERATE	All	2.52
15	BALANCED	CONSERVATIVE	All	4.10
16	AGGRESSIVE	BOLD	All	2.07
17	AGGRESSIVE	MODERATE	All	3.79
18	AGGRESSIVE	CONSERVATIVE	All	4.26

Group B Ranked by Number of Rating Stars

Rank	Case #	All Funds Invested in:	Risk Appetite	Cash Benefits	Stars (out of 5)
1	18	AGGRESSIVE	CONSERVATIVE	All	4.26
2	15	BALANCED	CONSERVATIVE	All	4.10
3	17	AGGRESSIVE	MODERATE	All	3.79
4	14	BALANCED	MODERATE	All	2.52
5	16	AGGRESSIVE	BOLD	All	2.07
6	13	BALANCED	BOLD	All	0.49

Summary of Group C for VDA Contract #1

Tax-Qualified with Longevity Male 73, Female 75

Case #	All Funds Invested in:	Risk Appetite	Cash Benefits	Stars (out of 5)
19	BALANCED	BOLD	All	0.28
20	BALANCED	MODERATE	All	1.67
21	BALANCED	CONSERVATIVE	All	3.61
22	AGGRESSIVE	BOLD	All	1.76
23	AGGRESSIVE	MODERATE	All	3.46
24	AGGRESSIVE	CONSERVATIVE	All	3.79

Group C Ranked by Number of Rating Stars

Rank	Case #	All Funds Invested in:	Risk Appetite	Cash Benefits	Stars (out of 5)
1	24	AGGRESSIVE	CONSERVATIVE	All	3.79
2	21	BALANCED	CONSERVATIVE	All	3.61
3	23	AGGRESSIVE	MODERATE	All	3.46
4	22	AGGRESSIVE	BOLD	All	1.76
5	20	BALANCED	MODERATE	All	1.67
6	19	BALANCED	BOLD	All	0.28

Summary of Group D for VDA Contract #2

Not Tax-Qualified with Longevity Male 83, Female 85

<i>Case #</i>	<i>All Funds Invested in:</i>	<i>Risk Appetite</i>	<i>Cash Benefits</i>	<i>Stars (out of 10)</i>
25	BALANCED	BOLD	All	0.89
26	BALANCED	MODERATE	All	2.75
27	BALANCED	CONSERVATIVE	All	4.23
28	AGGRESSIVE	BOLD	All	2.21
29	AGGRESSIVE	MODERATE	All	4.30
30	AGGRESSIVE	CONSERVATIVE	All	4.34

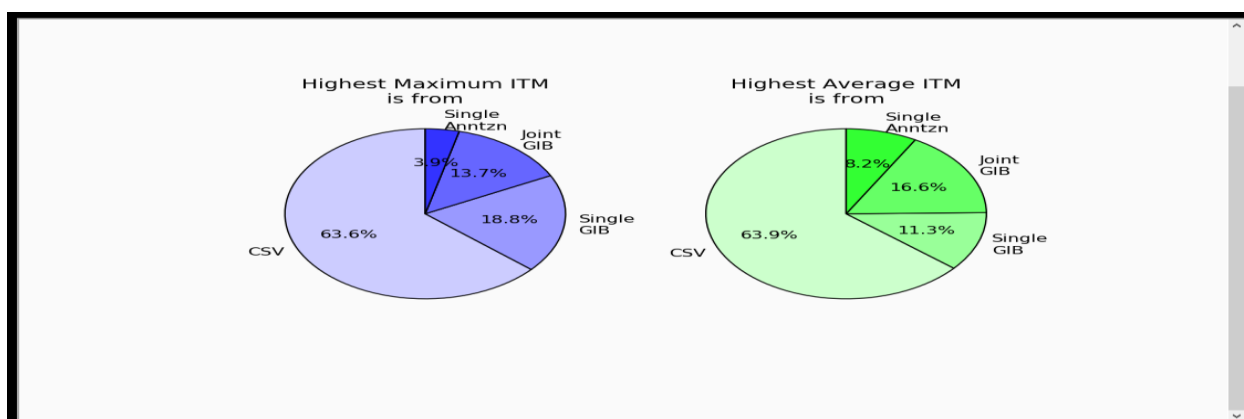
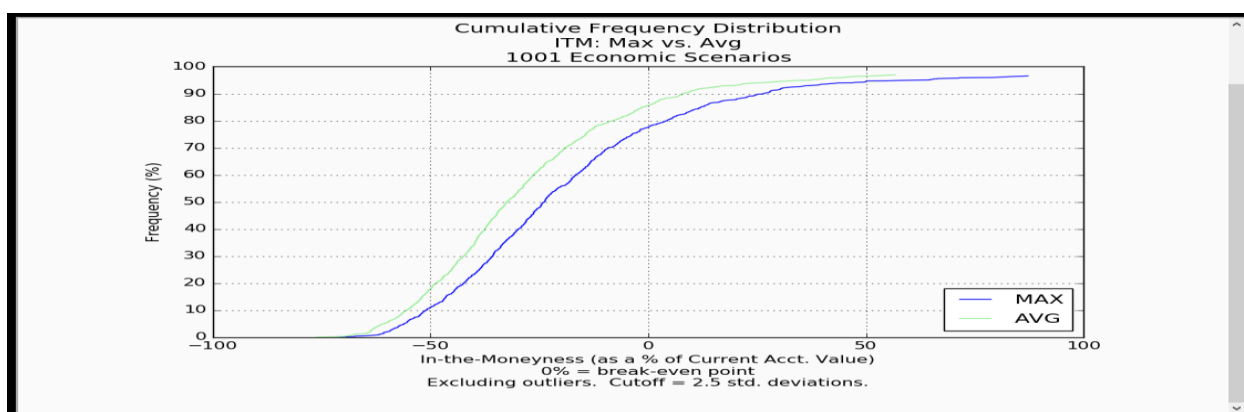
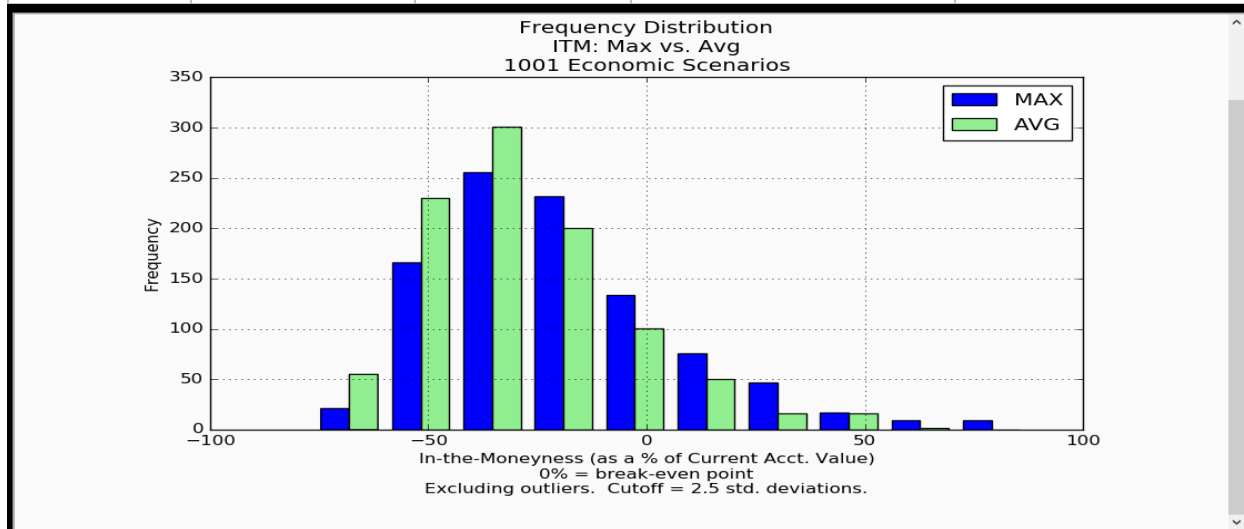
Group D Ranked by Number of Rating Stars

<i>Rank</i>	<i>Case #</i>	<i>All Funds Invested in:</i>	<i>Risk Appetite</i>	<i>Cash Benefits</i>	<i>Stars (out of 10)</i>
1	30	AGGRESSIVE	CONSERVATIVE	All	4.34
2	29	AGGRESSIVE	MODERATE	All	4.30
3	27	BALANCED	CONSERVATIVE	All	4.23
4	26	BALANCED	MODERATE	All	2.75
5	28	AGGRESSIVE	BOLD	All	2.21
6	25	BALANCED	BOLD	All	0.89

VDA Contract #1 (Non-Qualified) & Longevity is 83M/85F

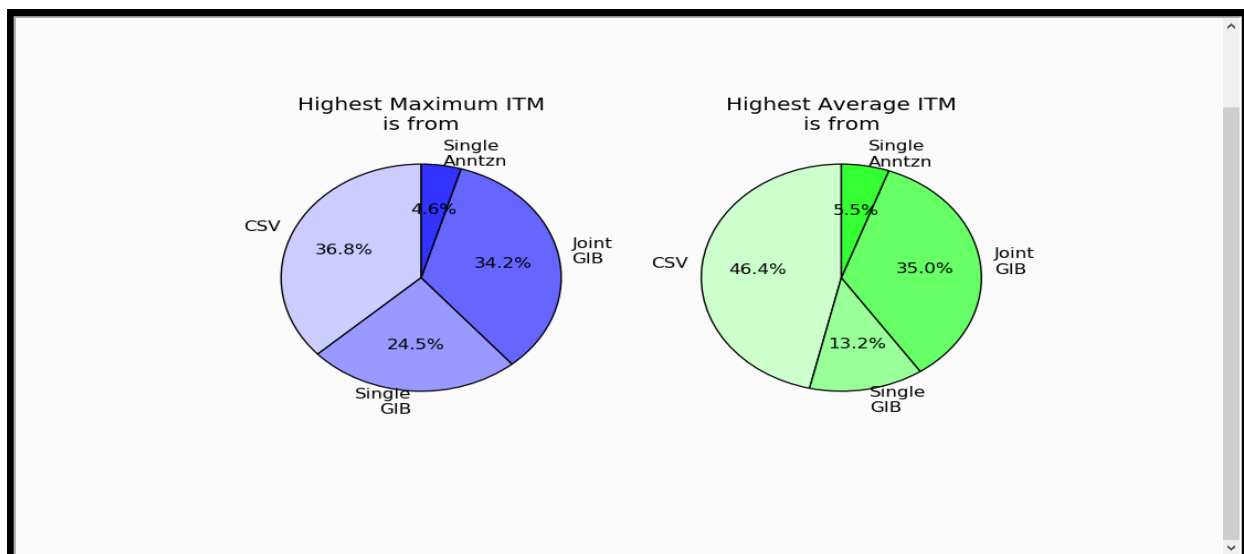
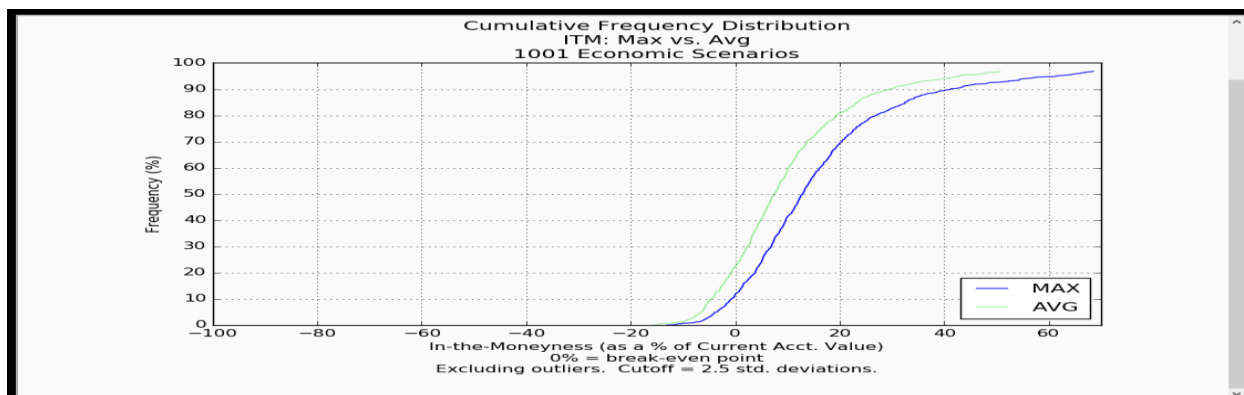
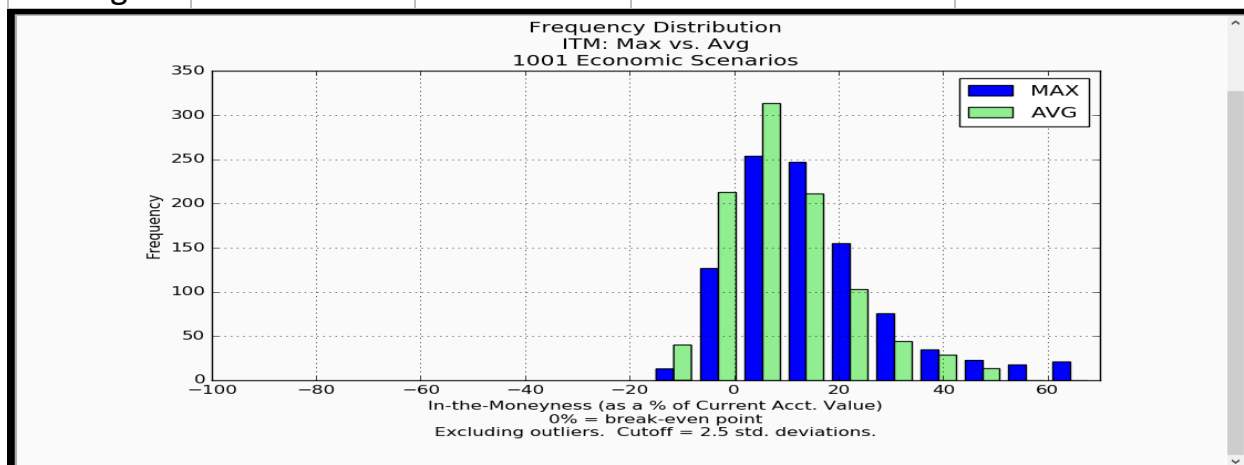
(1) BALANCED Fund. Risk-Appetite is BOLD, 0.50 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	BALANCED	CSV	- 23.86%	0.2139
Average	BALANCED	CSV	- 32.40%	0.2899



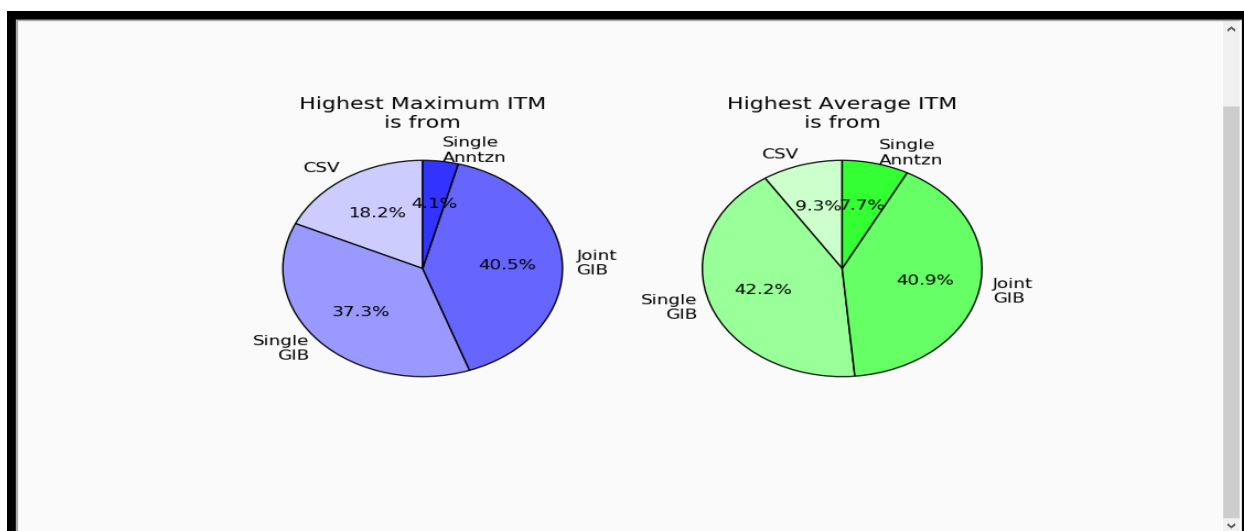
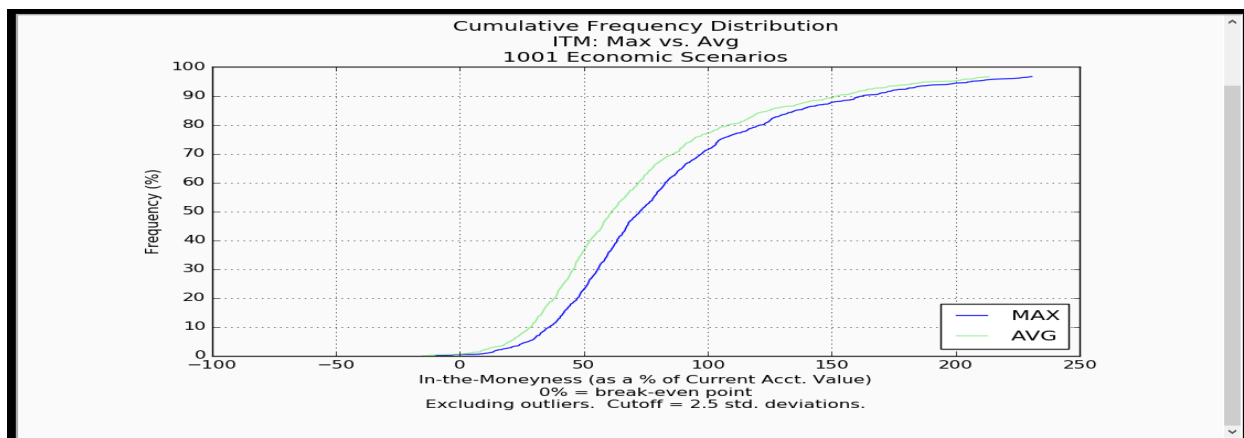
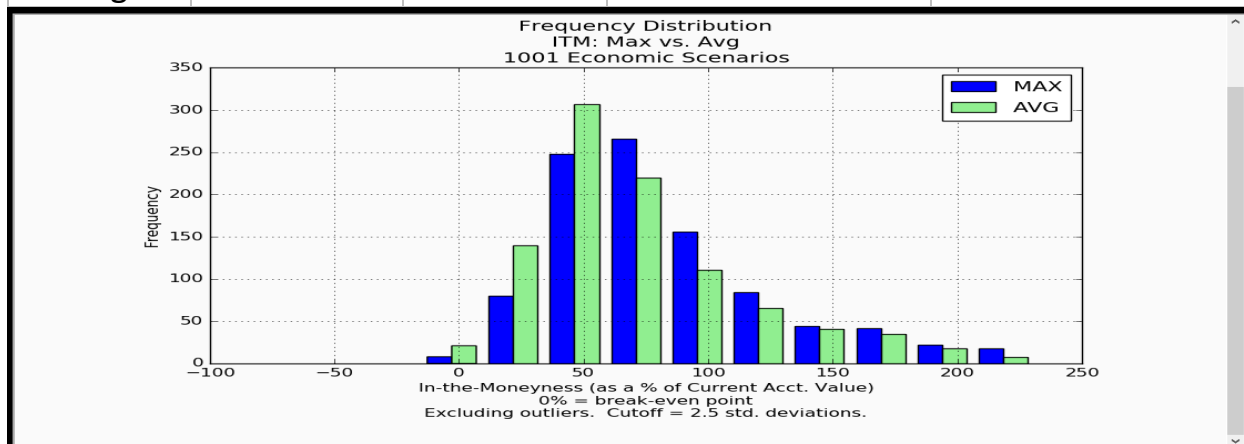
(2) BALANCED Fund. Risk-Appetite is MODERATE, 2.89 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	BALANCED	CSV	+ 12.92%	0.9914
Average	BALANCED	CSV	+ 7.47%	1.8973



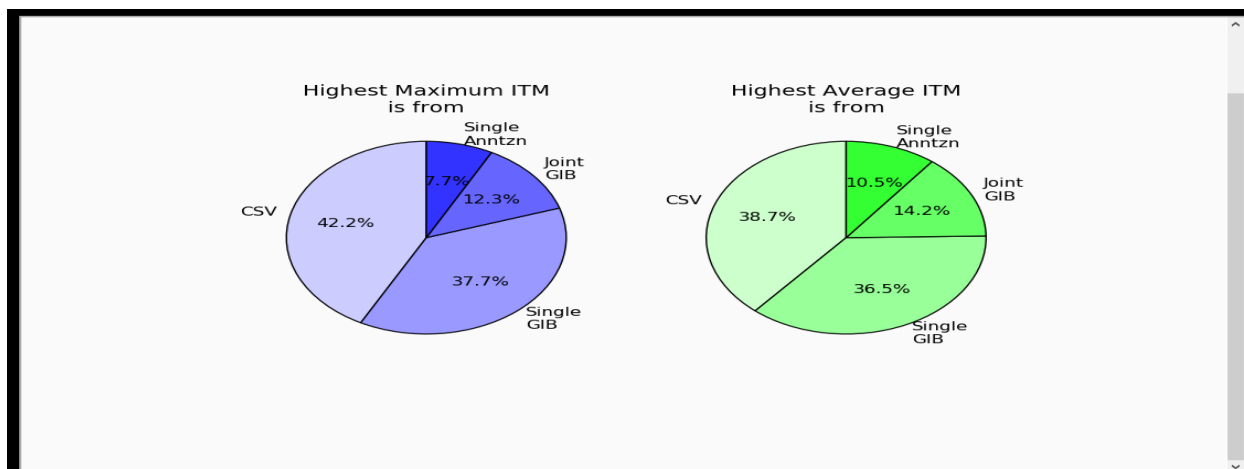
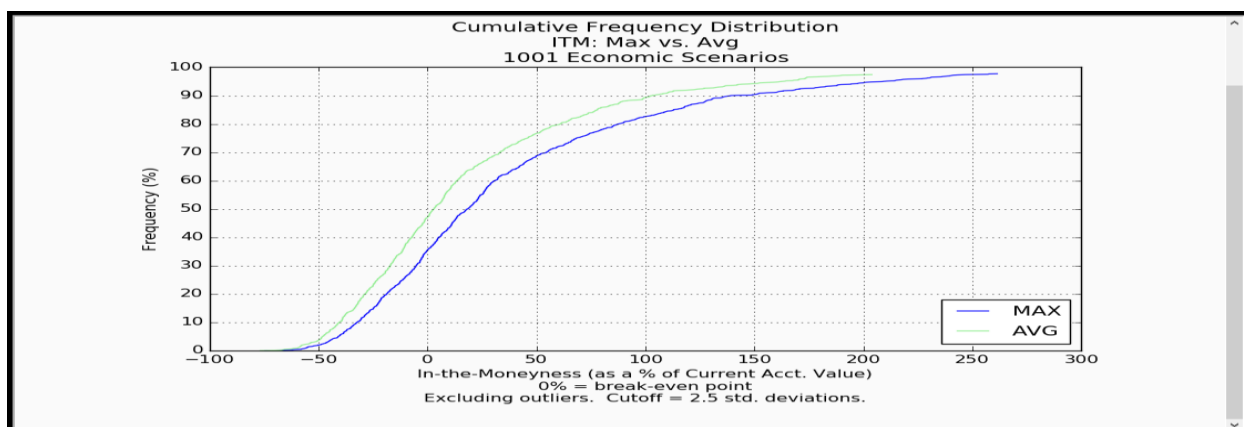
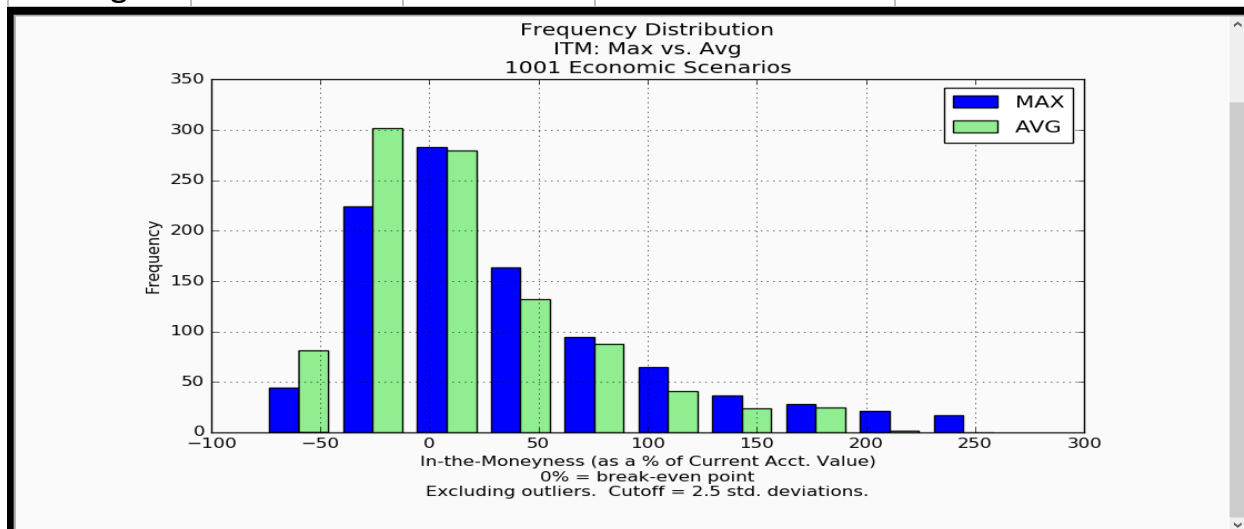
(3) BALANCED Fund. Risk-Appetite is CONSERVATIVE. 4.10 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 10)
Maximum	BALANCED	IJW	+ 72.60%	1.3800
Average	BALANCED	ISW	+ 61.36%	2.7231



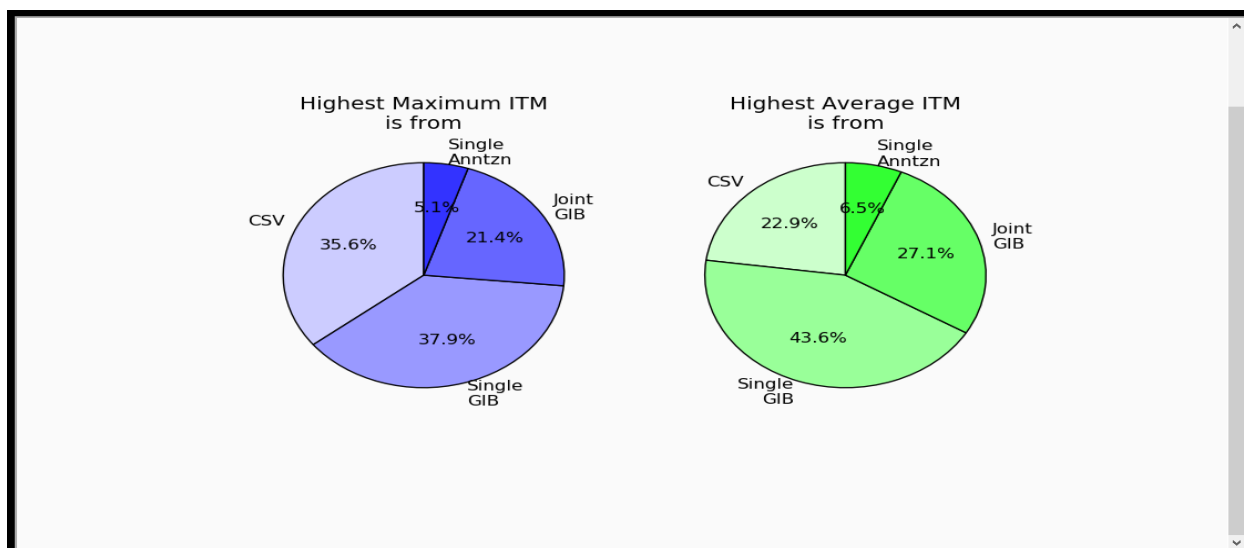
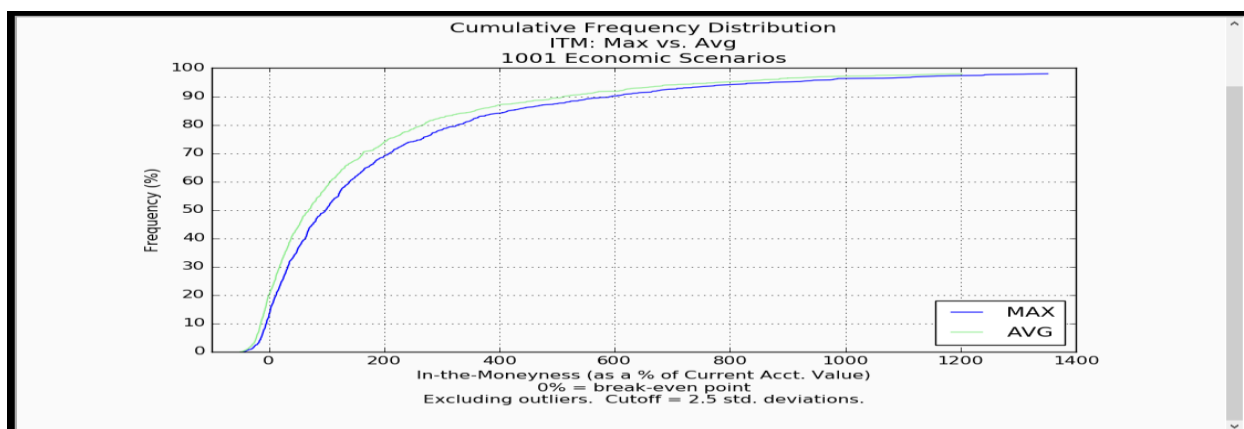
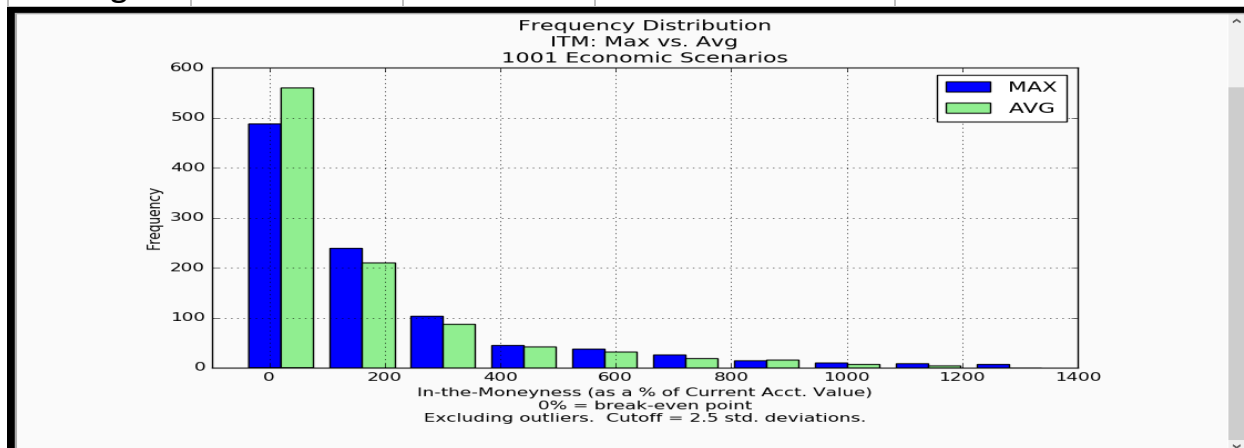
(4) AGGRESSIVE Fund. Risk-Appetite is BOLD, 2.43 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	CSV	+ 18.51%	0.9821
Average	AGGR	CSV	+ 3.07%	1.4492



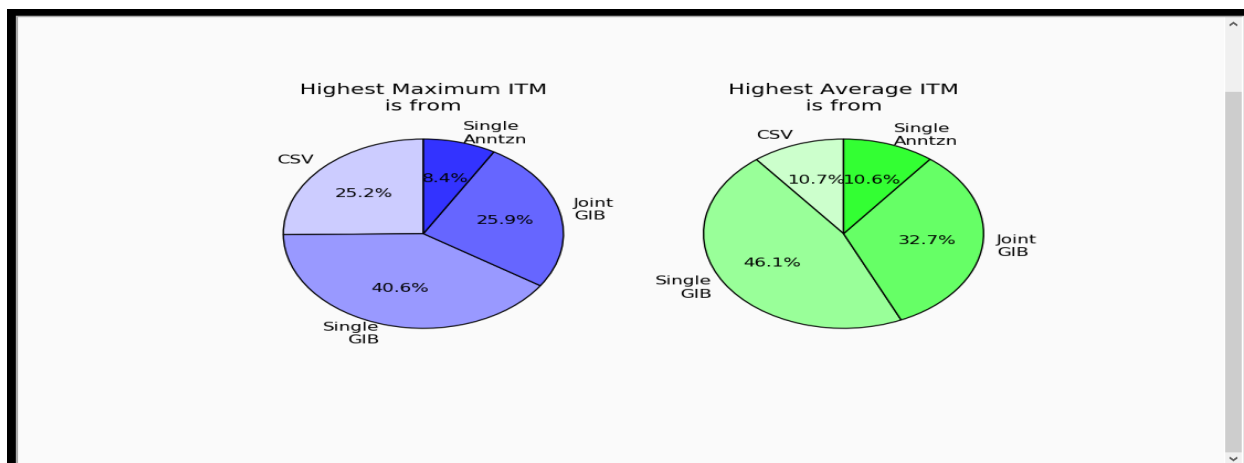
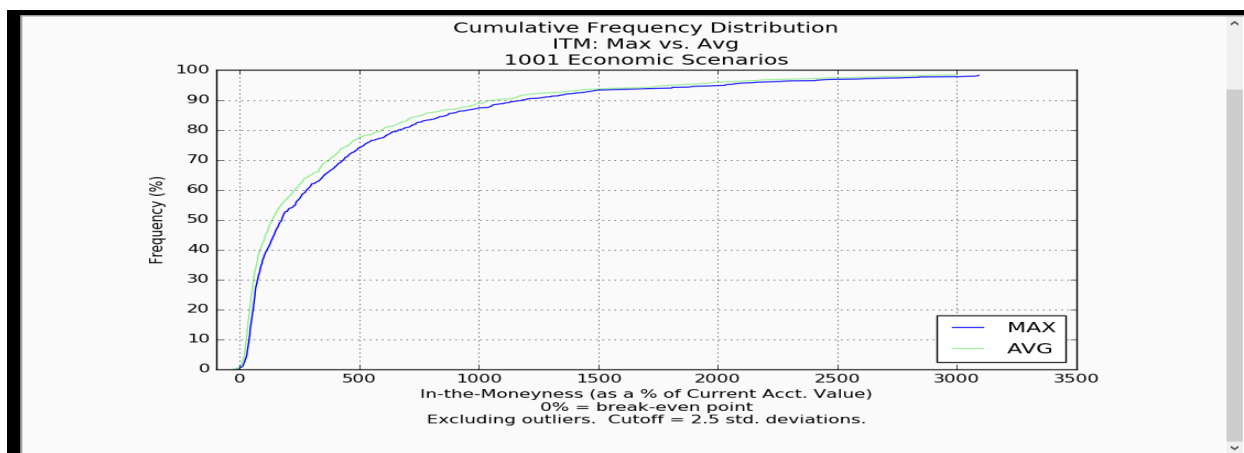
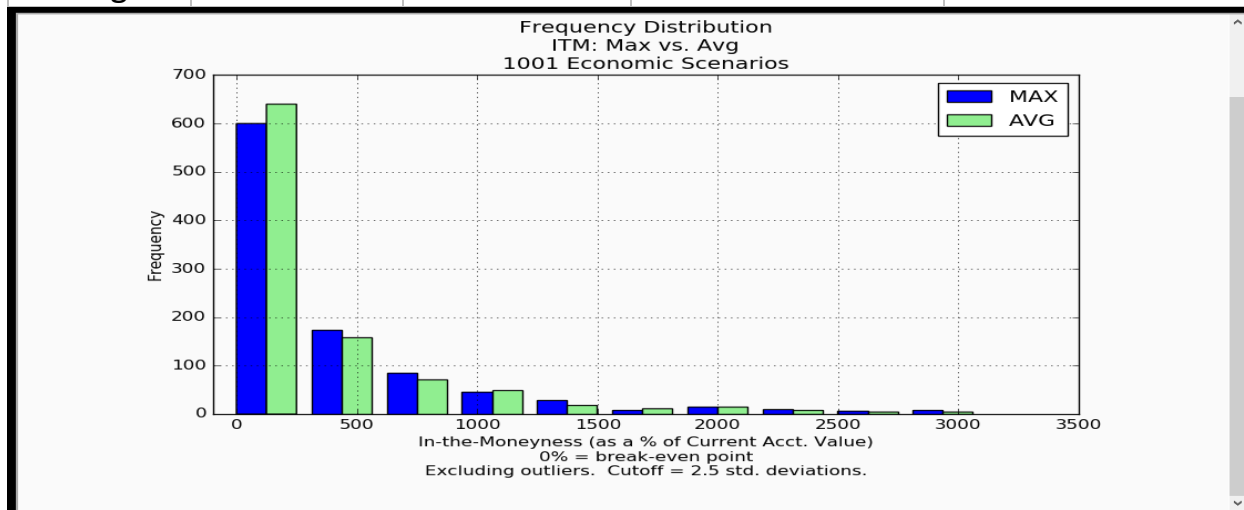
(5) AGGRESSIVE Fund. Risk-Appetite is MODERATE. 3.88 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	ISW	+ 99.29%	1.4677
Average	AGGR	ISW	+ 69.11%	2.4094



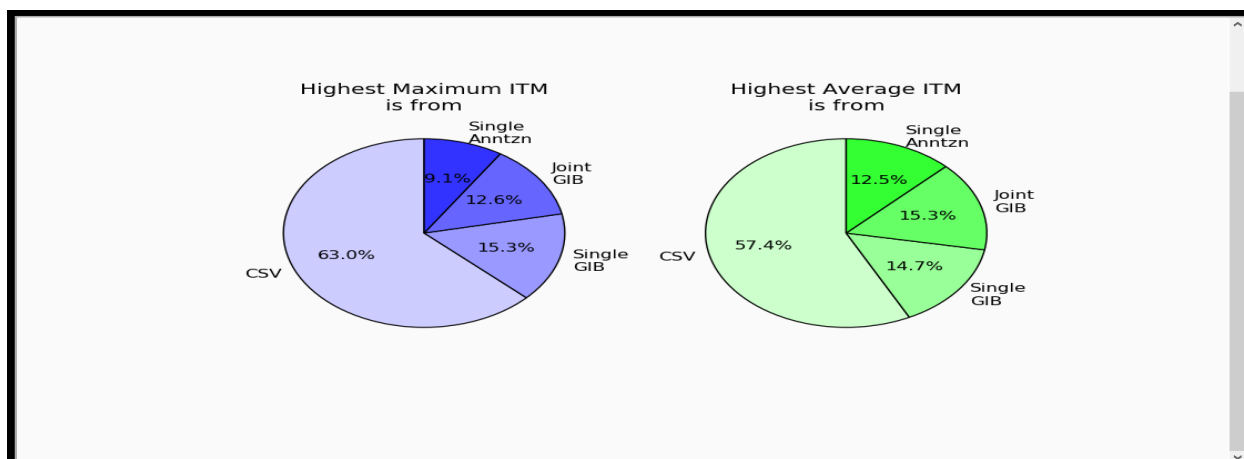
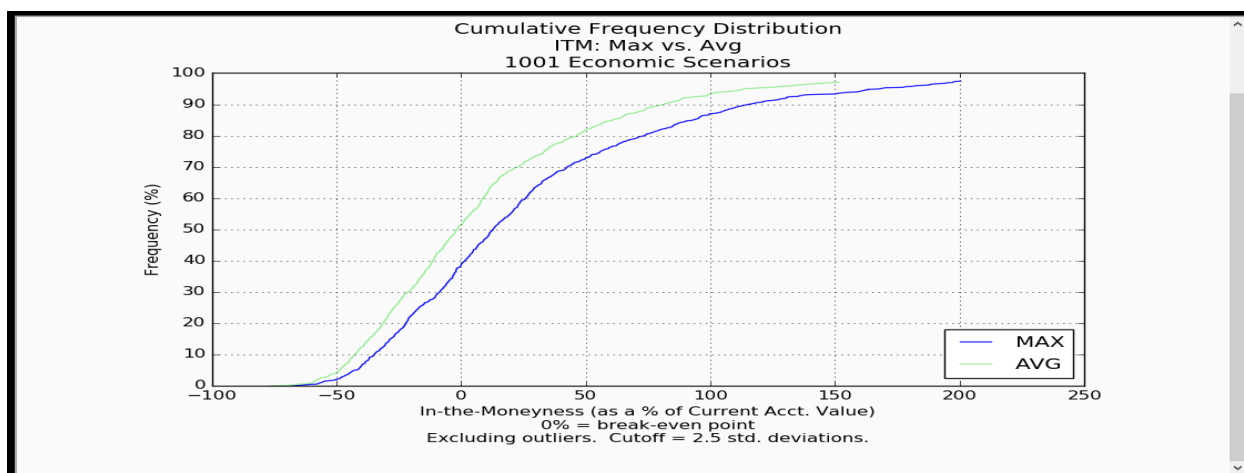
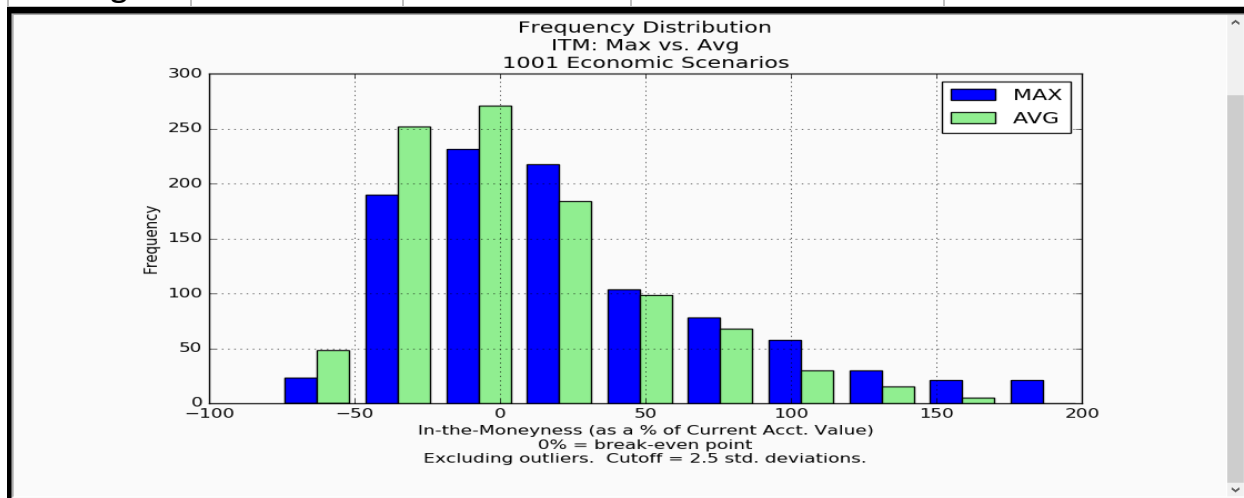
(6) AGGRESSIVE Fund. Risk-Appetite is CONSERVATIVE. 4.12 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	ISW	+ 175.89%	1.5263
Average	AGGR	ISW	+ 136.54%	2.5976



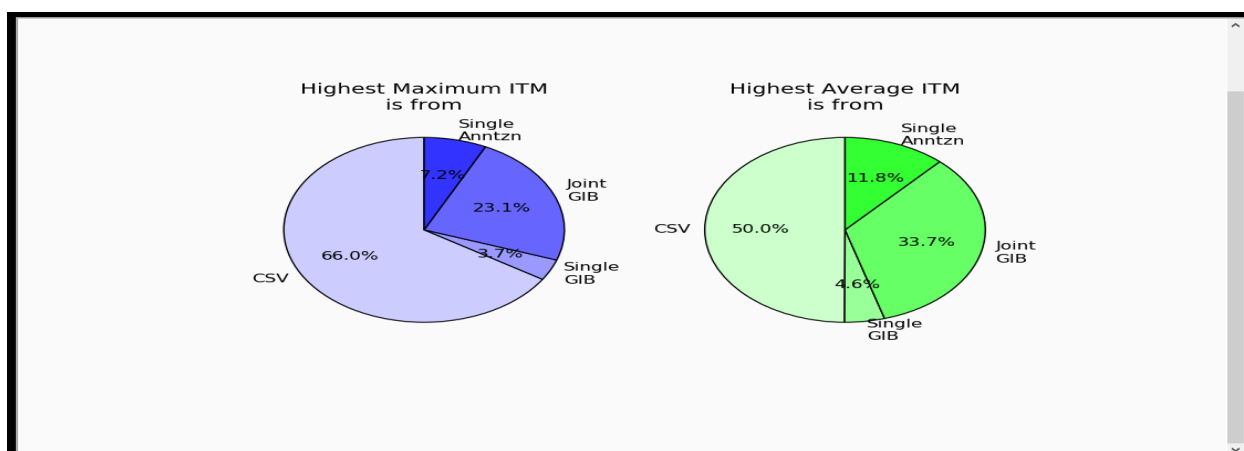
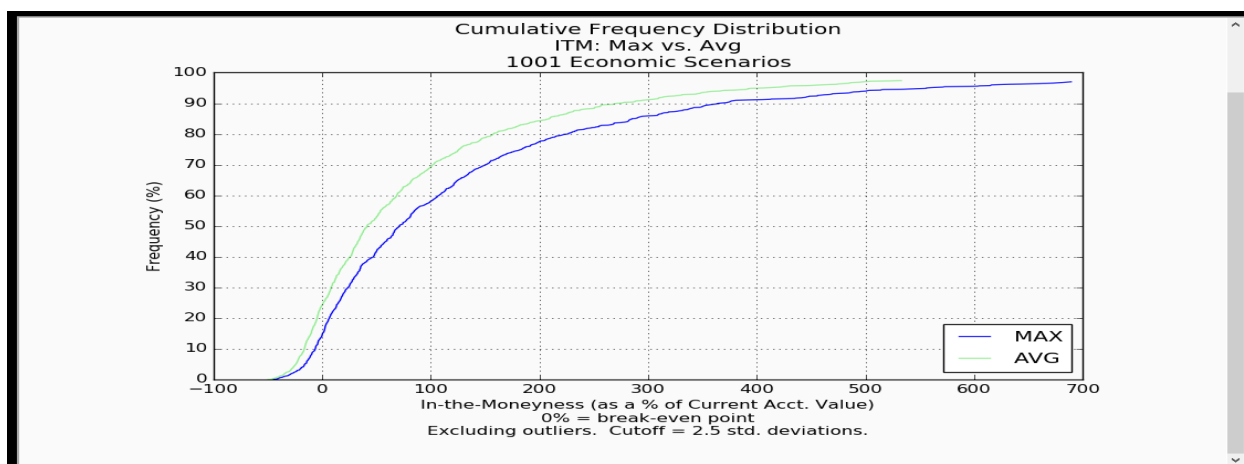
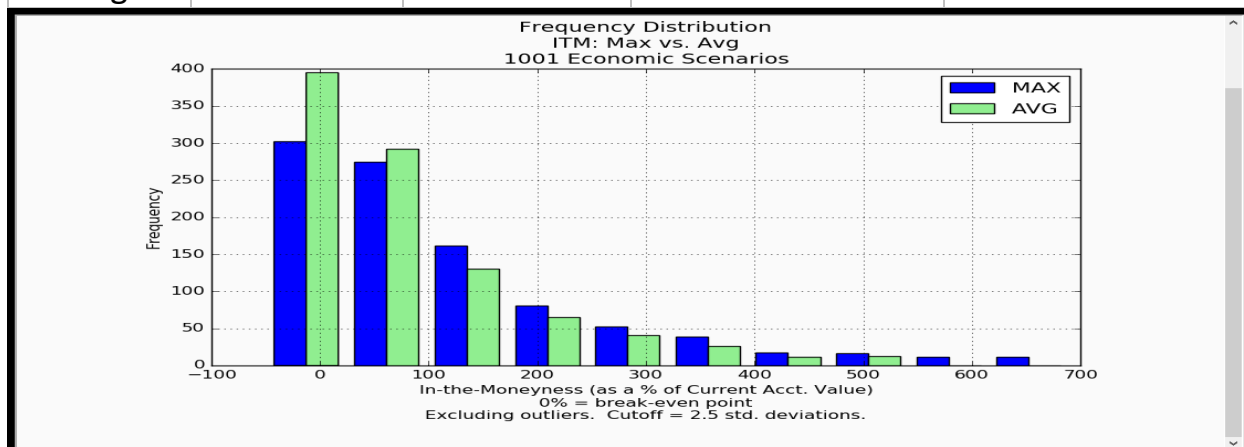
(7) AGGRESSIVE Fund. No Death Benefit. Risk-Appetite is BOLD, 2.13 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	CSV	+ 12.92%	0.9416
Average	AGGR	CSV	- 1.43%	1.1888



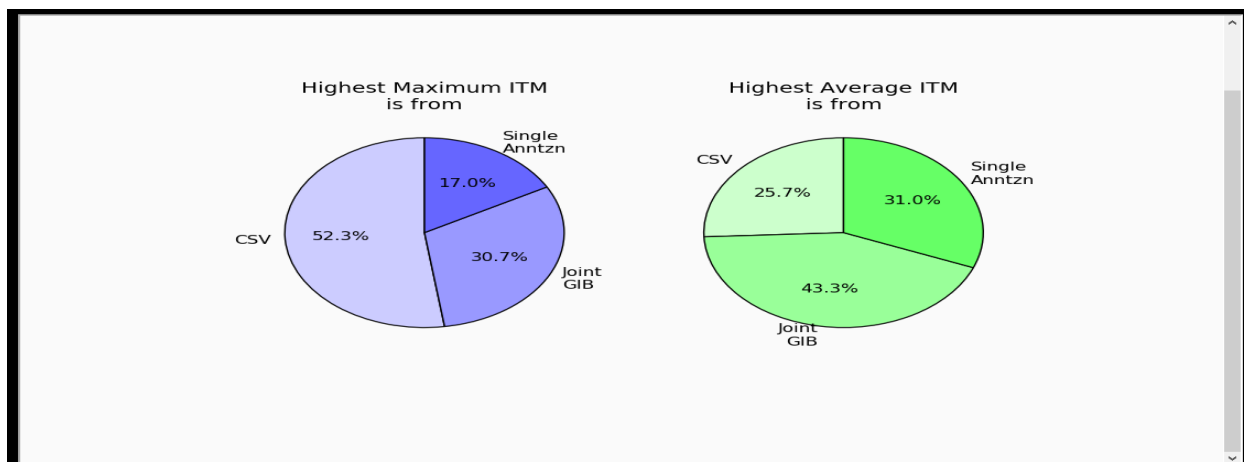
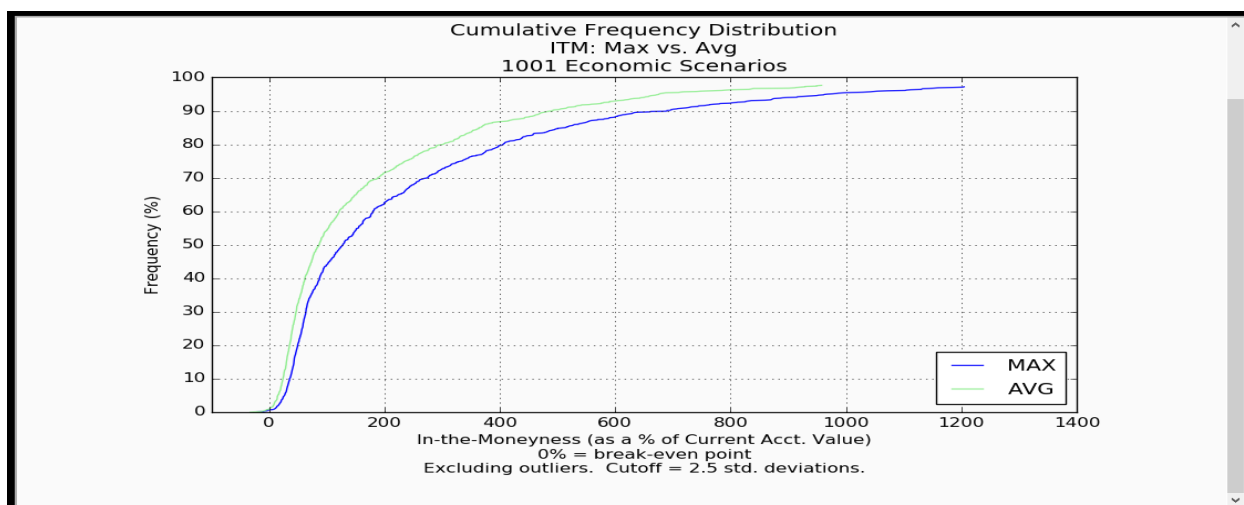
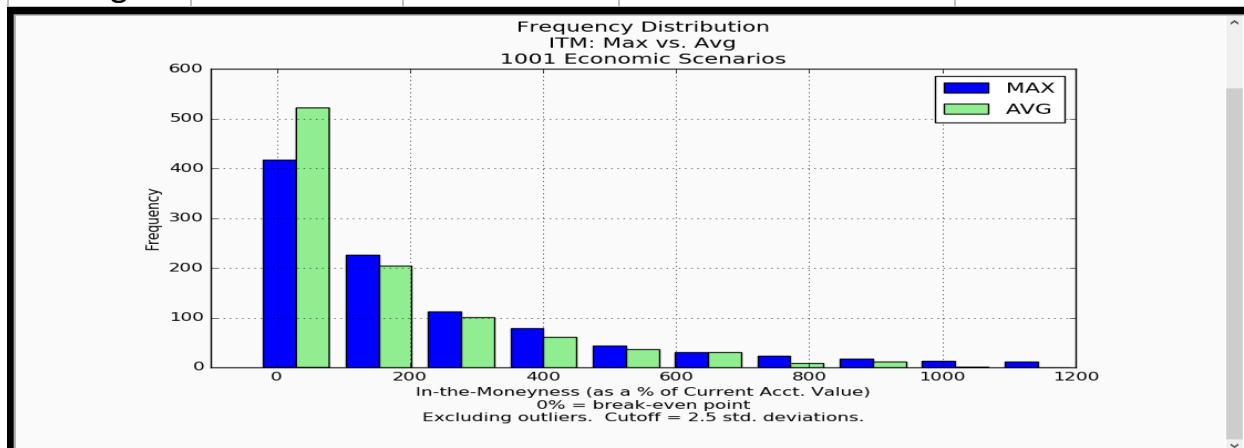
(8) AGGRESSIVE Fund. No Death Benefit. Risk-Appetite is MODERATE, 3.73 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	CSV	+ 71.47%	1.5921
Average	AGGR	CSV	+ 41.44%	2.1351



(9) AGGRESSIVE Fund. No Death Benefit. Risk-Appetite Is CONSERVATIVE. 4.25 stars

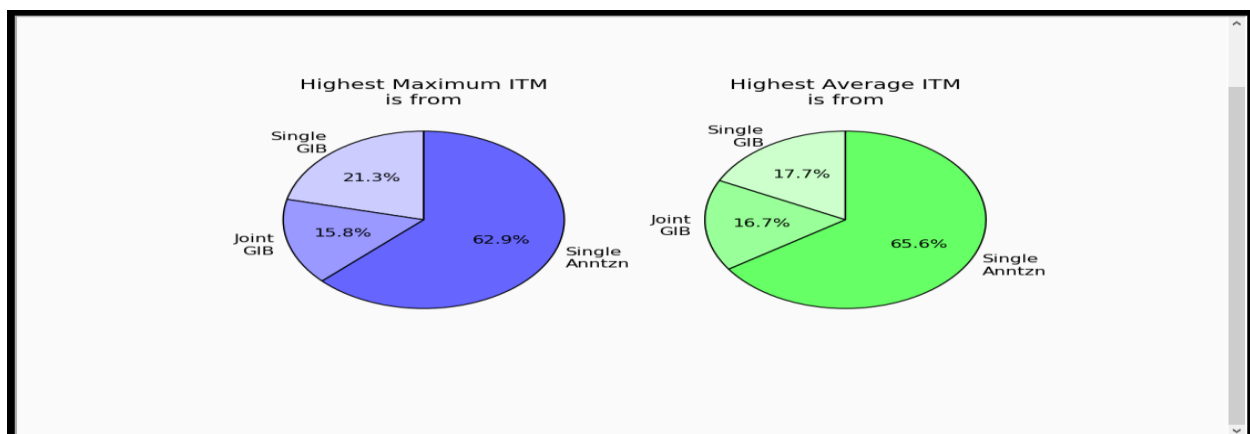
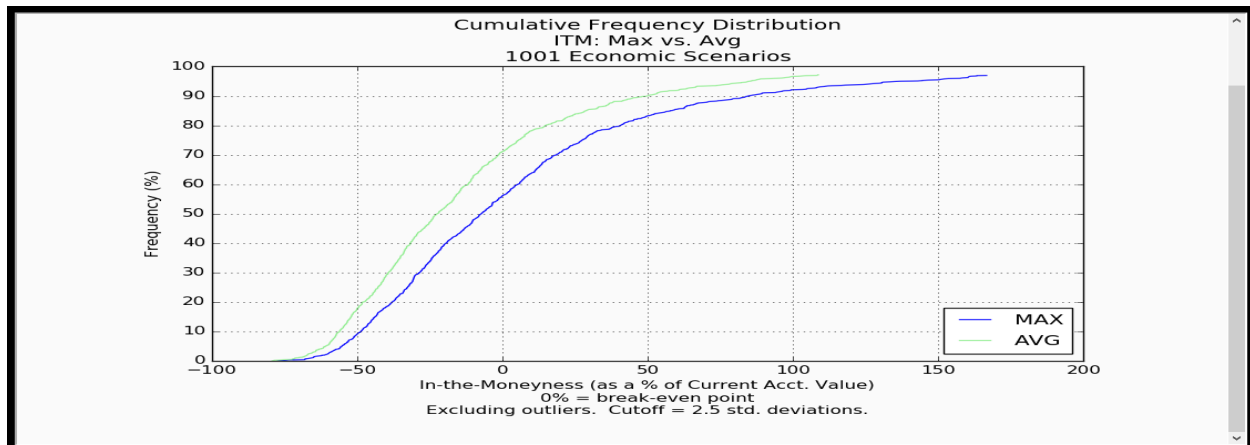
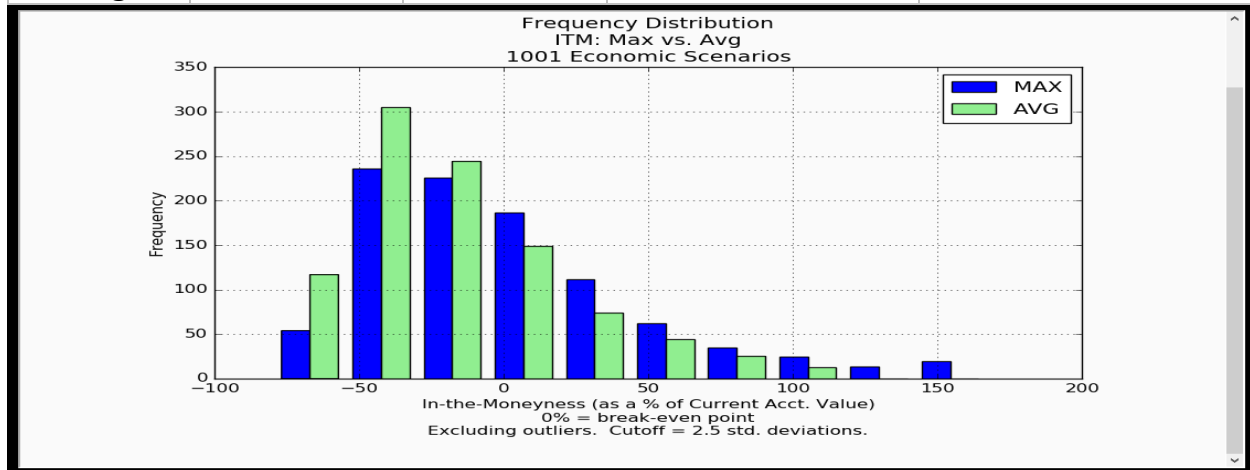
AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	CSV	+ 127.96%	1.8440
Average	AGGR	IJW	+ 86.43%	2.4082



(10) AGGRESSIVE Fund. Income Only. Risk-Appetite Is BOLD, 1.21 stars

No Death Benefits & No CSV (Income Tracks Only)

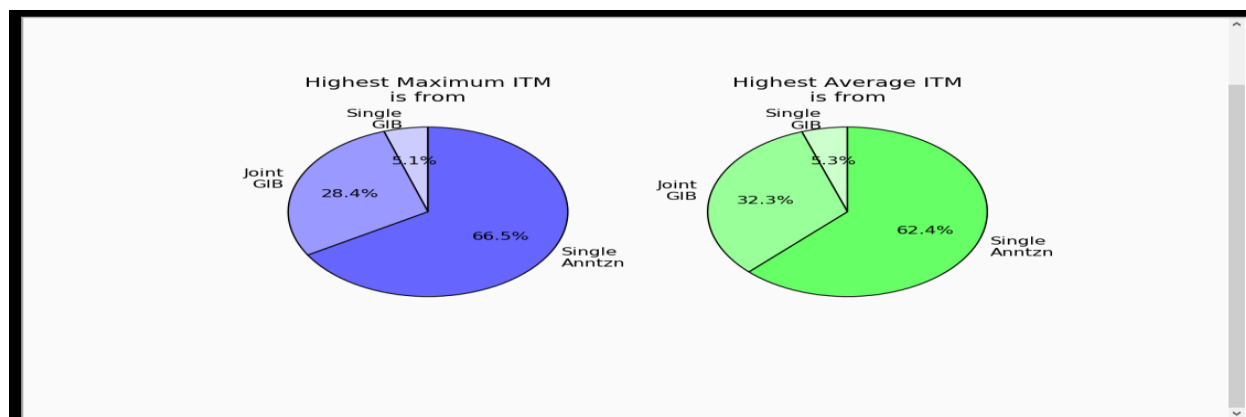
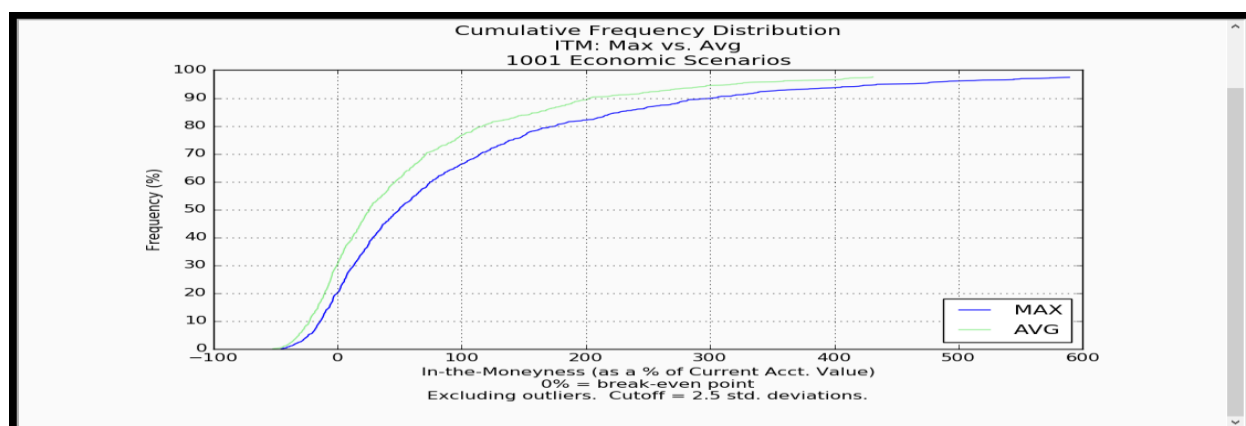
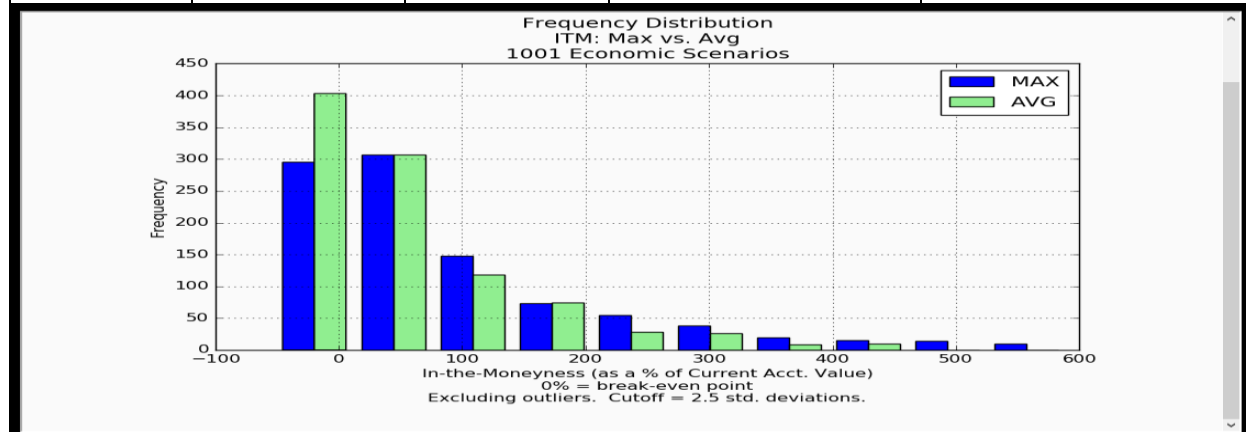
AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	ISA	- 7.22%	0.5644
Average	AGGR	ISA	- 22.99%	0.6442



(11) AGGRESSIVE Fund. Income Only. Risk-Appetite Is MODERATE. 3.34 stars

No Death Benefits & No CSV (Income Tracks Only)

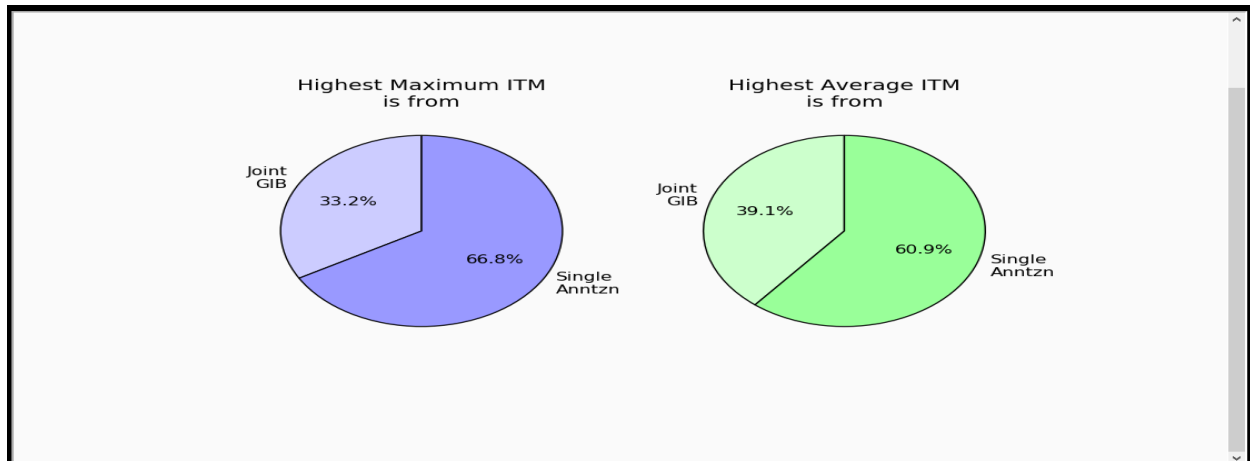
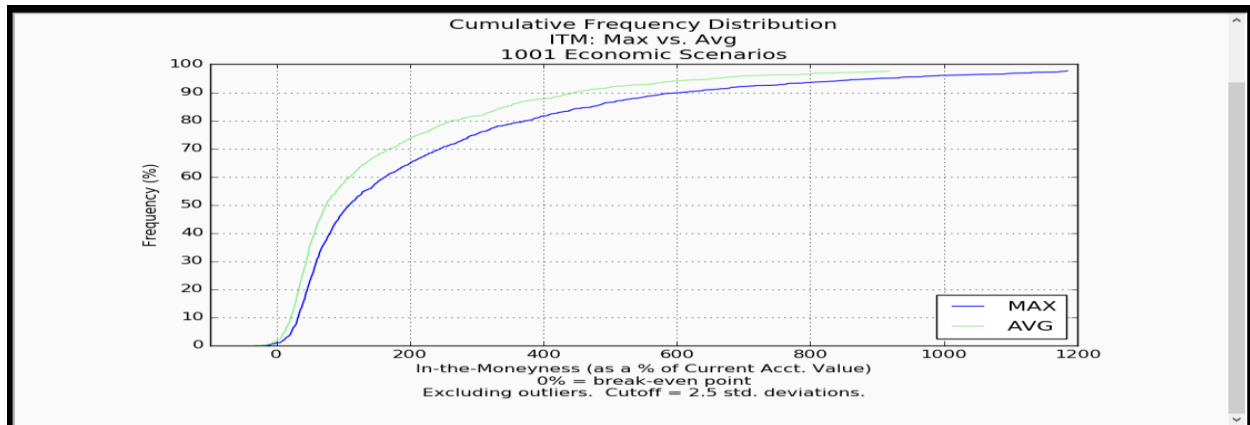
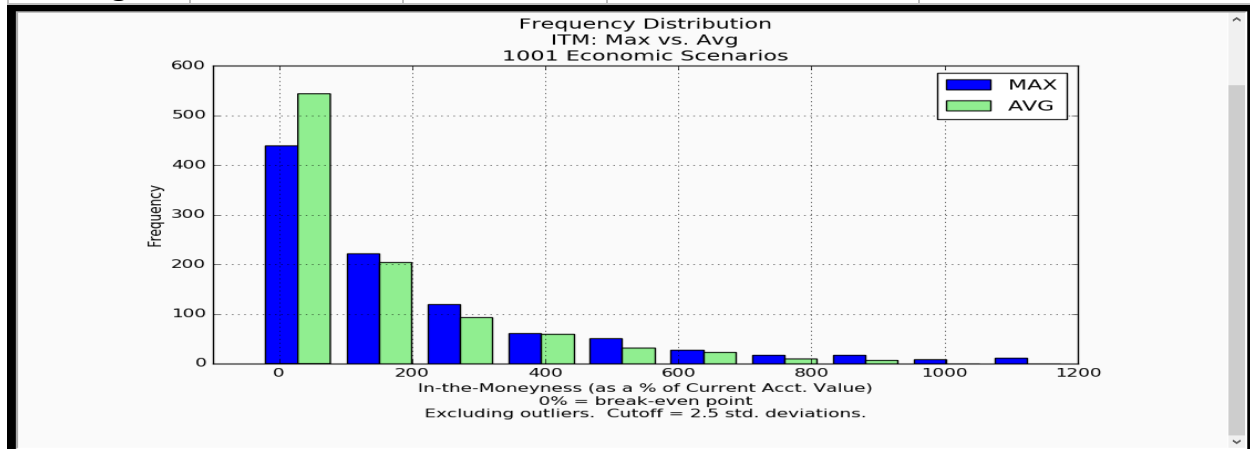
AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	ISA	+ 49.97%	1.4859
Average	AGGR	ISA	+ 25.95%	1.8545



(12) AGGRESSIVE Fund. Income Only. Risk-Appetite Is CONSERVATIVE. 4.24 stars

No Death Benefits & No CSV (Income Tracks Only)

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	ISA	+ 108.95%	1.8106
Average	AGGR	ISA	+ 74.86%	2.4279



VDA Contract # 1 (Non-Qualified)- Summary of Results for Group A, Cases 1 thru 12 & Longevity is 83M/85F

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars Contributed	Rating Stars (out of 5)
Maximum	BALANCED	CSV	- 23.89%	0.2139	0.50
Average	BALANCED	CSV	- 32.40%	0.2899	

(1) Risk-Appetite is BOLD

Maximum	BALANCED	CSV	+ 12.92%	0.9914	2.89
Average	BALANCED	CSV	+ 7.47%	1.8973	

(2) Risk-Appetite is MODERATE

Maximum	BALANCED	IJW	+ 72.60%	1.3800	4.10
Average	BALANCED	ISW	+ 61.36%	2.7231	

(3) Risk-Appetite is CONSERVATIVE

Maximum	BALANCED	IJW	+ 18.51%	0.9821	2.43
Average	BALANCED	ISW	+ 3.07%	1.4492	

(4) Risk-Appetite is BOLD

Maximum	AGGR	ISW	+ 99.29%	1.4677	3.88
Average	AGGR	ISW	+ 69.11%	2.4094	

(5) Risk-Appetite is MODERATE

Maximum	AGGR	ISW	+ 175.89%	1.5263	4.12
Average	AGGR	ISW	+ 136.54%	2.5976	

(6) Risk-Appetite is CONSERVATIVE

Maximum	AGGR	ISW	+ 12.92%	0.9416	2.13
Average	AGGR	ISW	- 1.43%	1.1888	

(7) Risk-Appetite is CONSERVATIVE

Maximum	AGGR	CSV	+ 71.47%	1.5921	3.73
Average	AGGR	CSV	+ 41.44%	2.1351	

(8) No Death Benefit – Risk-Appetite is MODERATE

Maximum	AGGR	CSV	+ 127.96%	1.8440	4.25
Average	AGGR	IJW	+ 86.43%	2.4082	

(9) No Death Benefit – Risk-Appetite is CONSERVATIVE

<i>AV-ITM Type</i>	<i>All Funds Invested in:</i>	<i>Benefit Driver</i>	<i>AV-ITM PC-50</i>	<i>Stars (out of 10)</i>	<i>Rating Stars (out of 10)</i>
Maximum	AGGR	ISW	- 7.22%	0.5644	1.21
Average	AGGR	ISW	- 22.99%	0.6442	

(10) Risk-Appetite is CONSERVATIVE

Maximum	AGGR	ISA	+ 49.97%	1.4859	3.34
Average	AGGR	ISA	+ 25.95%	1.8545	

(11) Income Only – Risk-Appetite Is MODERATE

Maximum	AGGR	ISA	+ 108.95%	1.8106	4.24
Average	AGGR	ISA	+ 74.86%	2.4279	

(12) Income Only – Risk-Appetite Is CONSERVATIVE

Important Conclusions from the results in cases 1 thru 12

Note that in cases 1 thru 12, that the Starting Balance of \$100,000 is the same in all cases and that the various changes in each case were in the following categories:

- (1) Risk Appetite
 - a. BOLD
 - b. MODERATE
 - c. CONSERVATIVE
- (2) Type of Fund
 - a. BALANCED
 - b. AGGRESSIVE
- (3) Exclusions
 - a. Death Benefits
 - b. Cash Surrender Values

Even though all cases started with the same investment, the ratings ranged from 0.50 stars to 4.25 stars and MAX AV-ITM from **-23.89%** to **+175.89%** and the AVG AV-ITM from **-32.40%** to **136.54%**

These results are quite astonishing with the biggest swings occurring when moving from any risk appetite to CONSERVATIVE and from BALANCED fund to AGGRESSIVE fund.

The policyholder who would gain the most from investing in this contract would be an investor who:

- (1) Has a CONSERVATIVE risk appetite
- (2) Is interested in their Beneficiary getting their Legacy Death Benefit
- (3) Is willing, based on these results, to make BOLD investments in their VDA contract

The policyholder who would gain the least from investing in this contract would be an investor who:

- (1) Has a BOLD Risk Appetite
- (2) Is not interested in any legacy Death Benefit (Life benefits only)
- (3) Insists, despite income guarantees, is unwilling to make BOLD investments in their VDA contract

VDA Contract # 1 (Qualified)- Summary of Results for Cases Group B, 13 thru 18 & Longevity is 83M/85F

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars Contributed	Rating Stars (Out of 5)
Maximum	BALANCED	CSV	- 28.04%	0.2198	0.49
Average	BALANCED	CSV	- 37.34%	0.2672	

(13) Risk-Appetite is BOLD

Maximum	BALANCED	CSV	+ 8.51%	0.8532	2.52
Average	BALANCED	CSV	+ 3.89%	1.6622	

(14) Risk-Appetite is MODERATE

Maximum	BALANCED	IJW	+ 75.66%	1.4025	4.10
Average	BALANCED	IJW	+ 64.28%	2.7014	

(15) Risk-Appetite is CONSERVATIVE

Maximum	AGGR	CSV	+ 11.67%	0.9336	2.07
Average	AGGR	CSV	- 2.92%	0.1357	

(16) Risk-Appetite is BOLD

Maximum	AGGR	CSV	+ 93.37%	1.4654	3.79
Average	AGGR	ISW	+ 63.94%	2.3219	

(17) Risk-Appetite is MODERATE

Maximum	AGGR	ISW	+179.60%	1.5525	4.26
Average	AGGR	ISW	+138.52%	2.7065	

(18) Risk-Appetite is CONSERVATIVE

VDA Contract # 1 (Qualified)- Summary of Results for Group C, Cases 19 thru 24 & Longevity is 73M/75F

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars Contributed	Rating Stars (Out of 5)
Maximum	BALANCED	CSV	- 30.93%	0.1303	0.28
Average	BALANCED	CSV	- 39.75%	0.1510	

(19) Risk-Appetite is BOLD

Maximum	BALANCED	CSV	+ 1.98%	0.6256	1.67
Average	BALANCED	CSV	- 1.90%	1.0417	

(20) Risk-Appetite is CONSERVATIVE

Maximum	BALANCED	CSV	+ 53.16%	1.2355	3.61
Average	BALANCED	CSV	+ 43.18%	2.3768	

(21) Risk-Appetite is CONSERVATIVE

Maximum	AGGR	CSV	+ 3.72%	0.7902	1.76
Average	AGGR	CSV	- 11.01%	0.9742	

(22) Risk-Appetite is BOLD

Maximum	AGGR	CSV	+ 76.15%	1.3331	3.46
Average	AGGR	ISW	+ 50.31%	2.1298	

(23) Risk-Appetite is CONSERVATIVE

Maximum	AGGR	ISW	+ 156.87%	1.3955	3.79
Average	AGGR	ISW	+122.22%	2.3967	

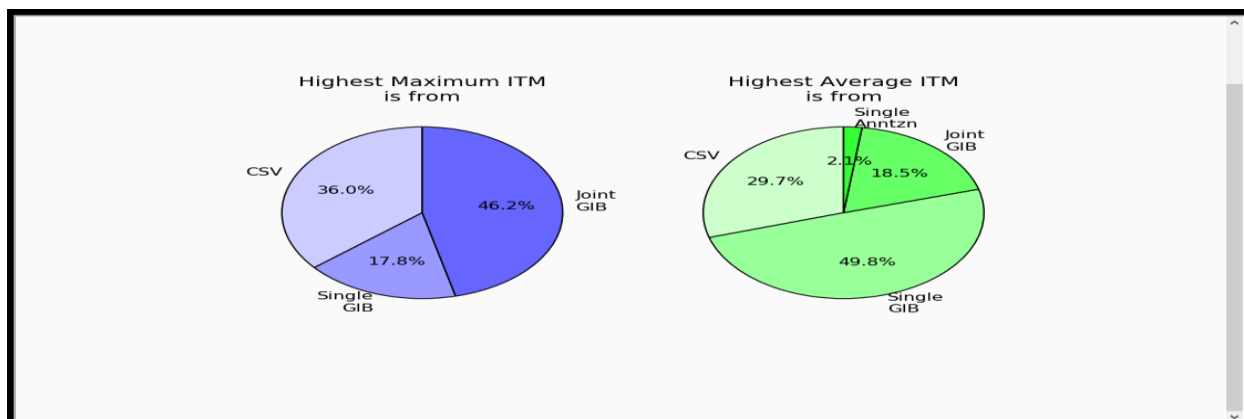
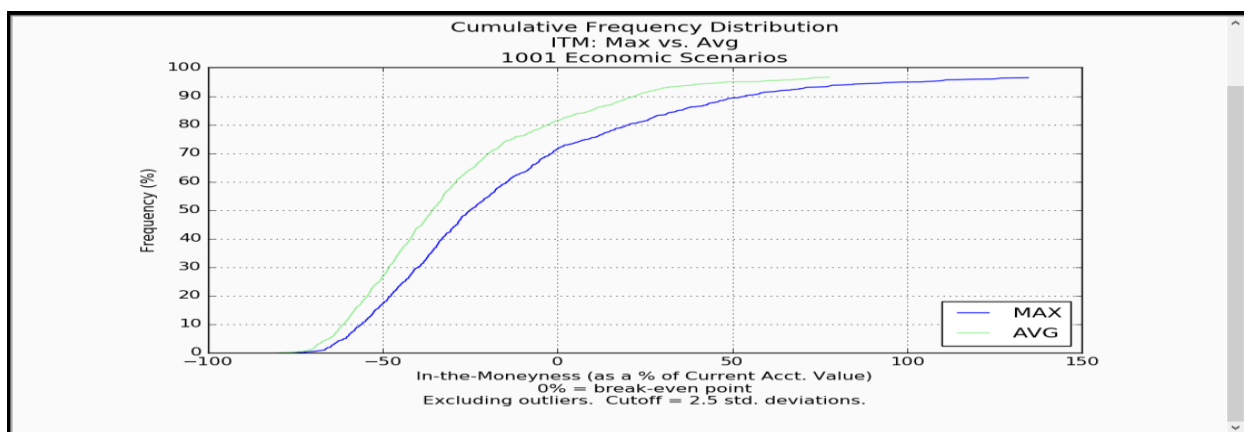
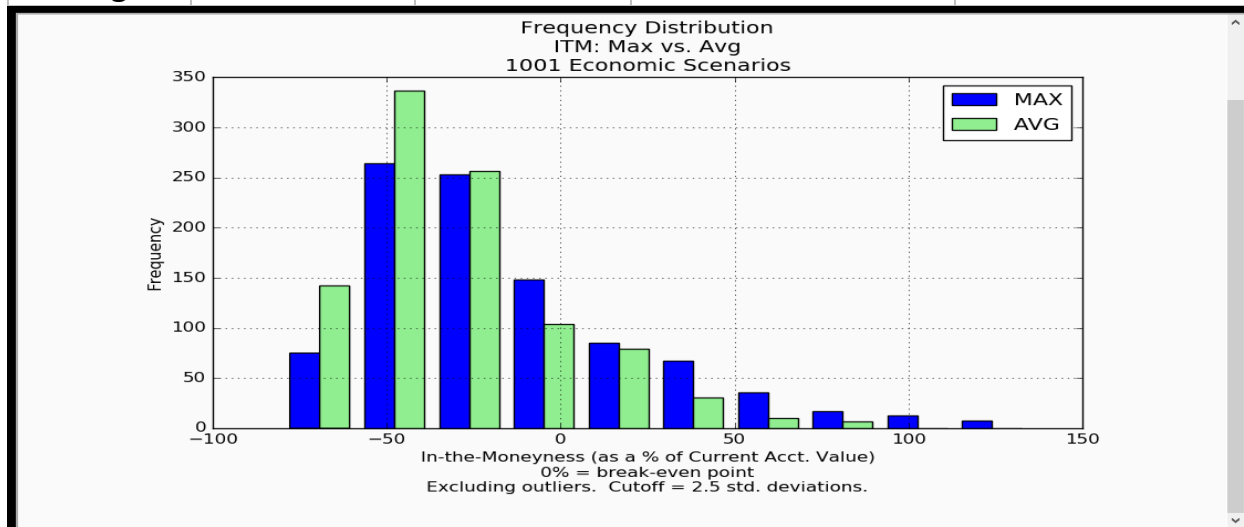
(24) Risk-Appetite is CONSERVATIVE

Conclusion - Qualified follows same patterns as Non-Qualified. However, when estimated longevity is decreased by 10 years, the evaluation is significantly lower

The Results for VDA Contract #2 (Non-Qualified) & Longevity is 83M/85F

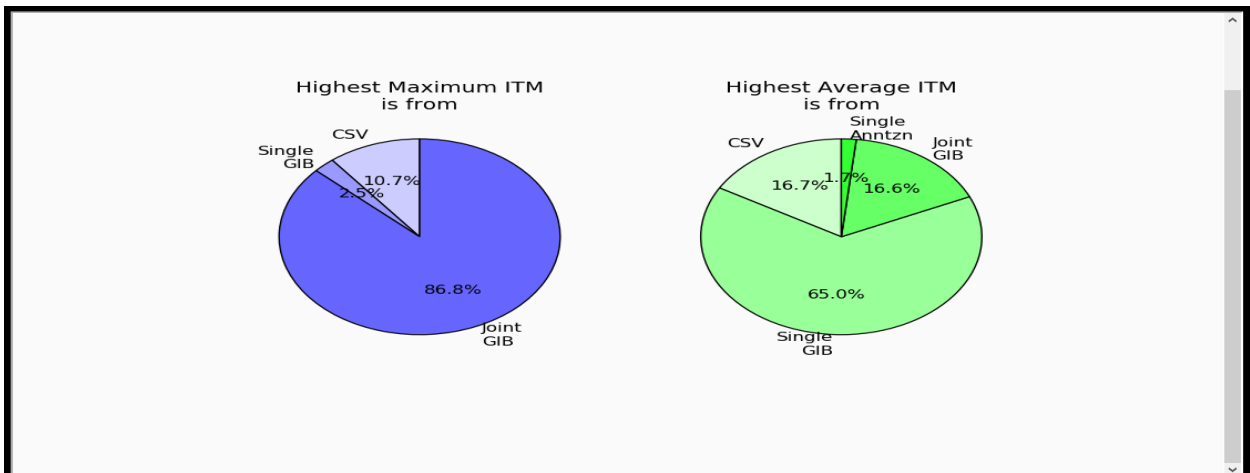
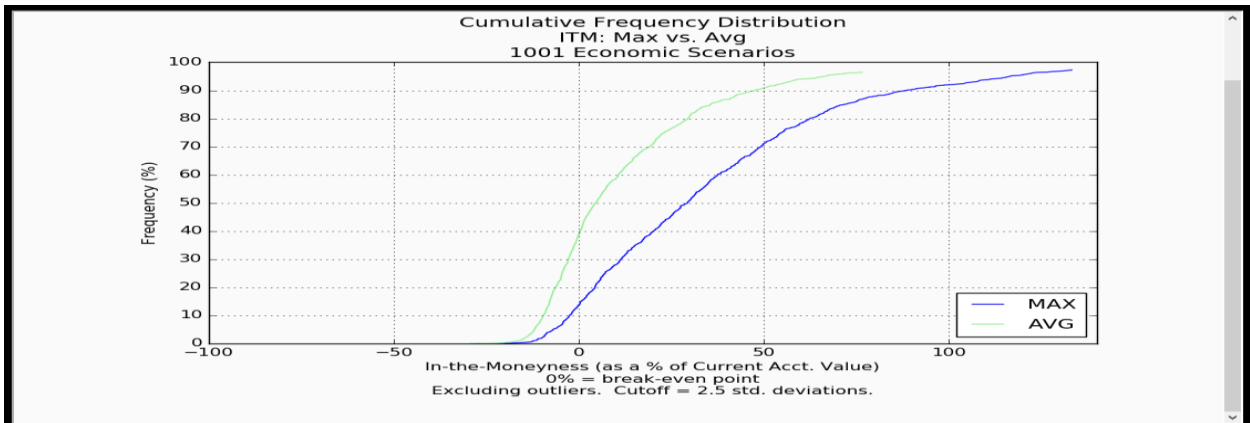
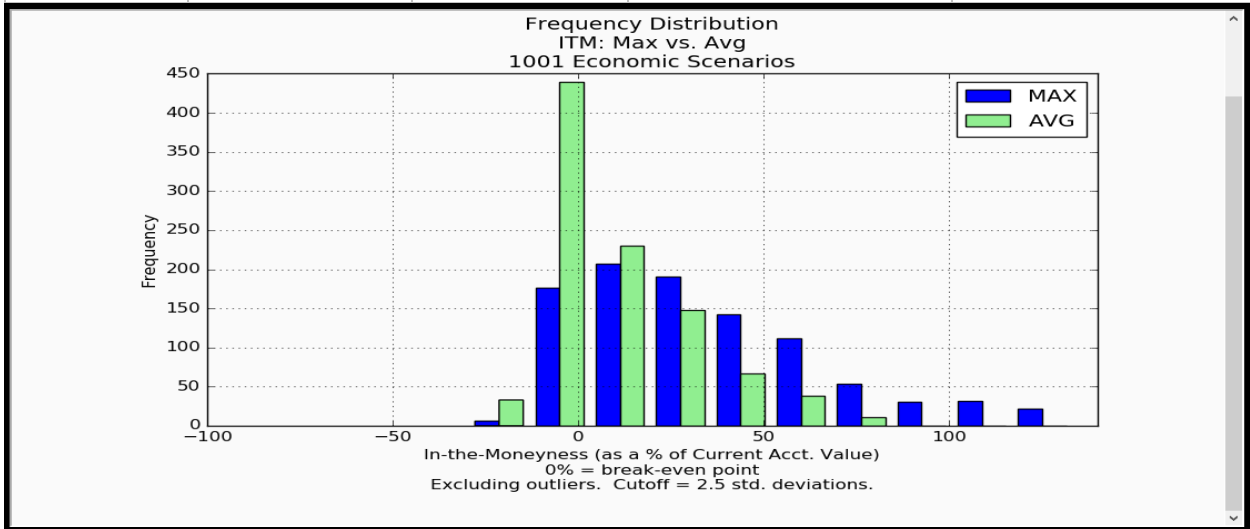
(25) BALANCED Fund. Risk-Appetite is BOLD. 0.89 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	BALANCED	IJW	- 24.28%	0.4364
Average	BALANCED	ISW	- 35.62%	0.4553



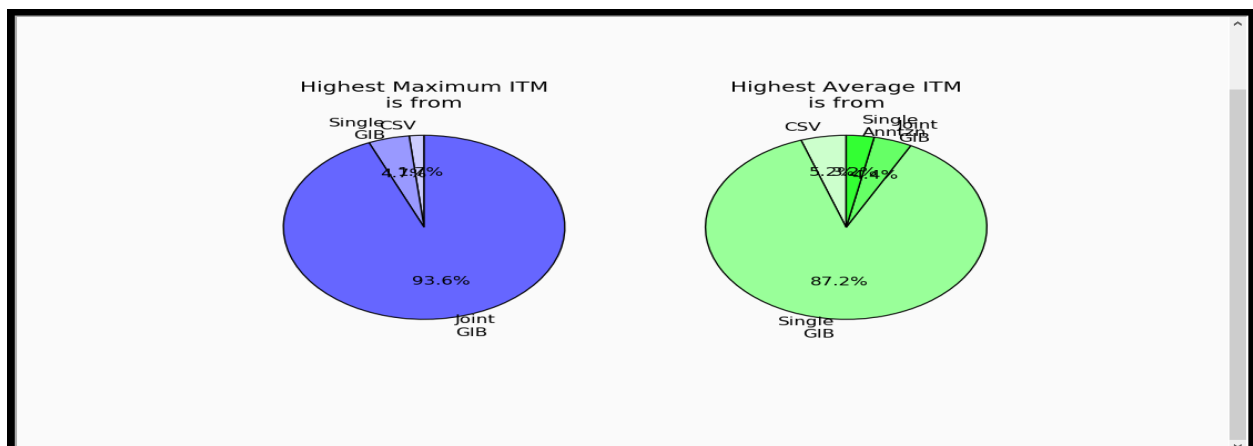
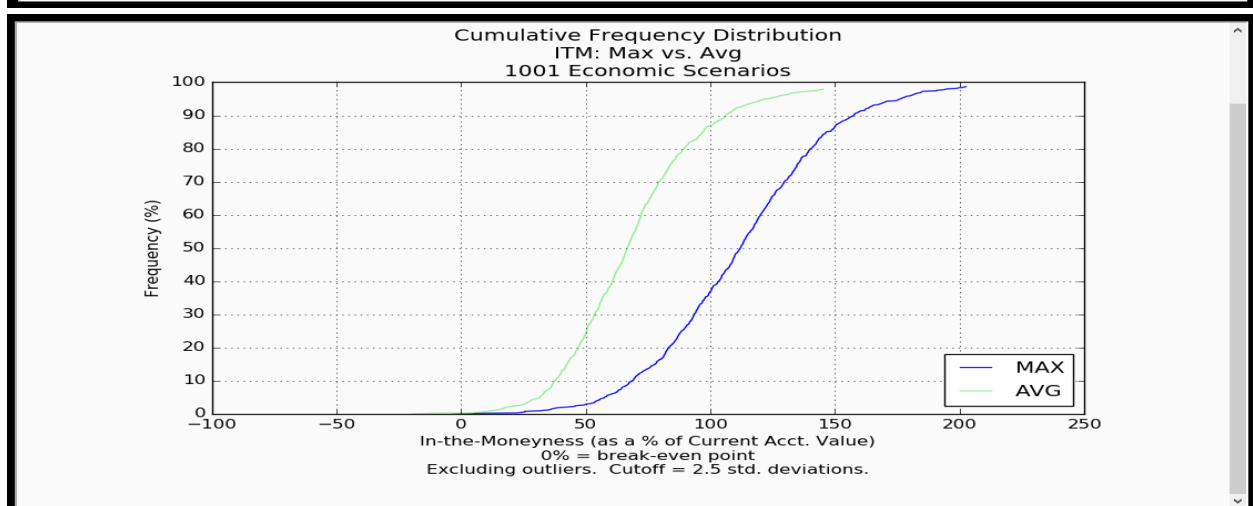
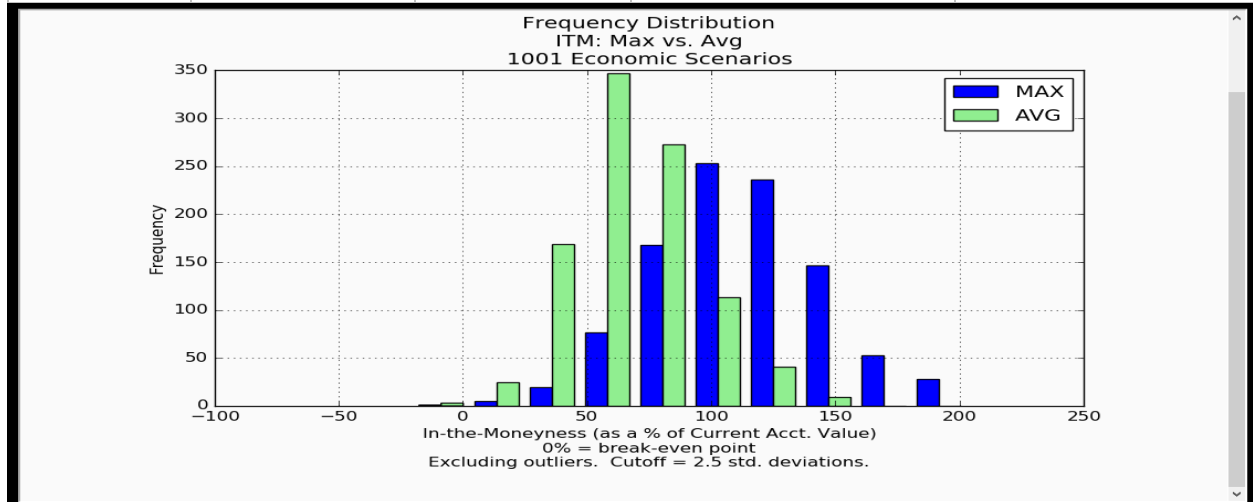
(26) BALANCED Fund. Risk-Appetite is MODERATE. 2.75 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	BALANCED	IJW	+ 29.40%	1.2343
Average	BALANCED	ISW	+ 4.53%	1.5157



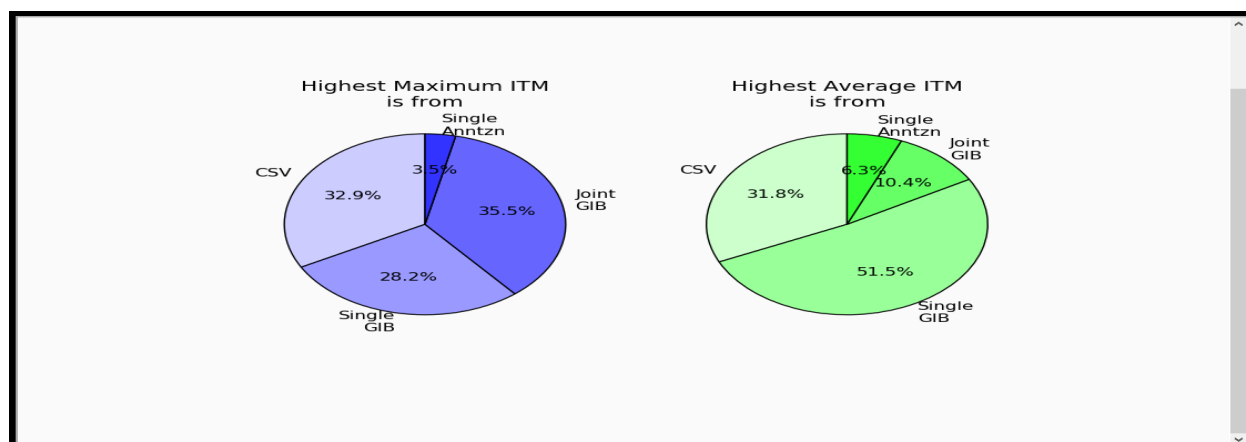
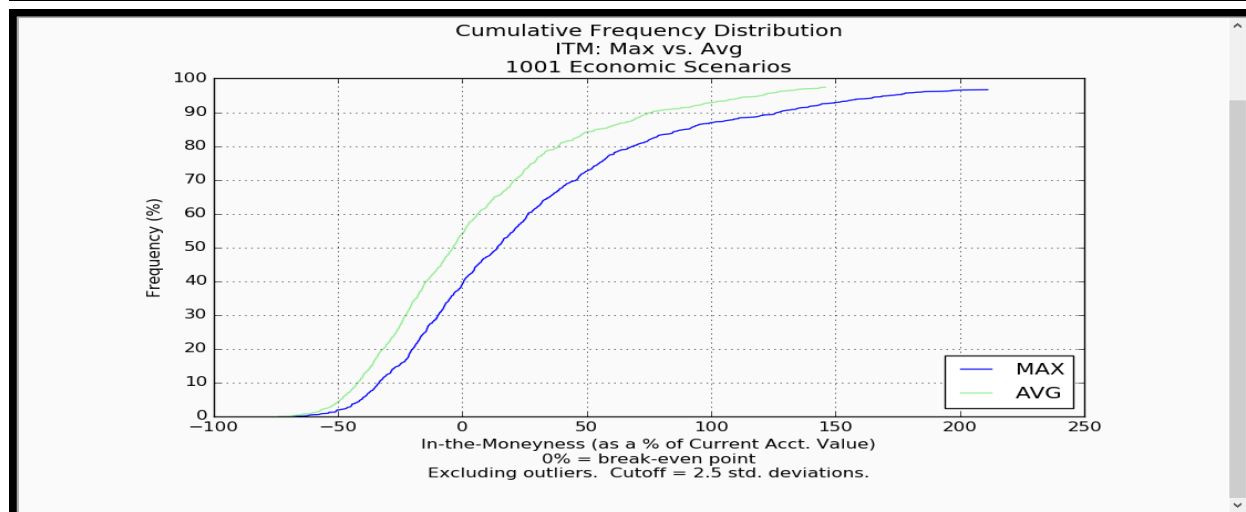
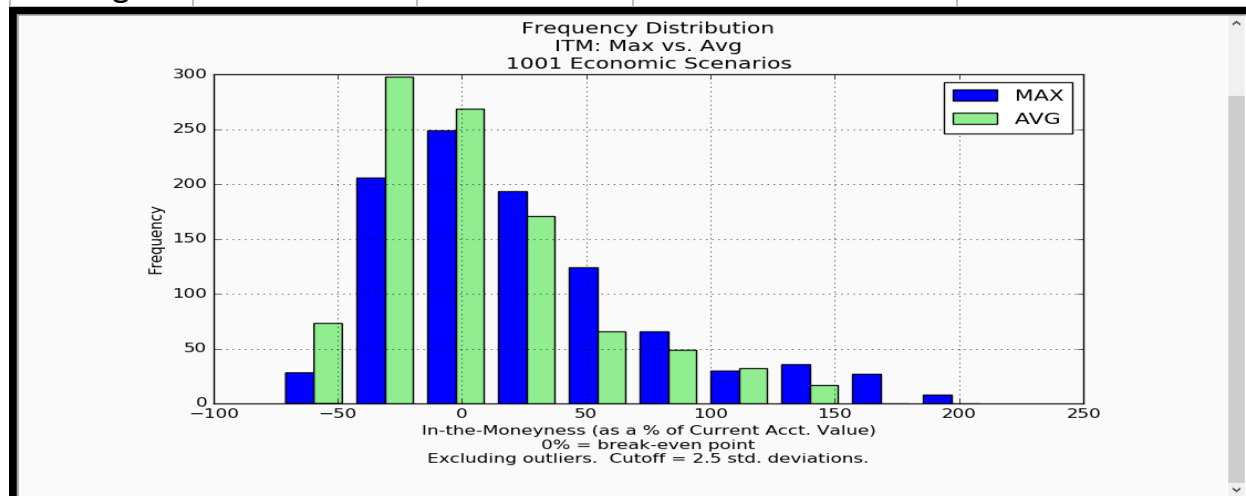
(27) BALANCED Fund. Risk-Appetite is CONSERVATIVE. 4.23 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	BALANCED	IJW	+ 111.99%	1.8598
Average	BALANCED	ISW	+ 66.72%	2.3679



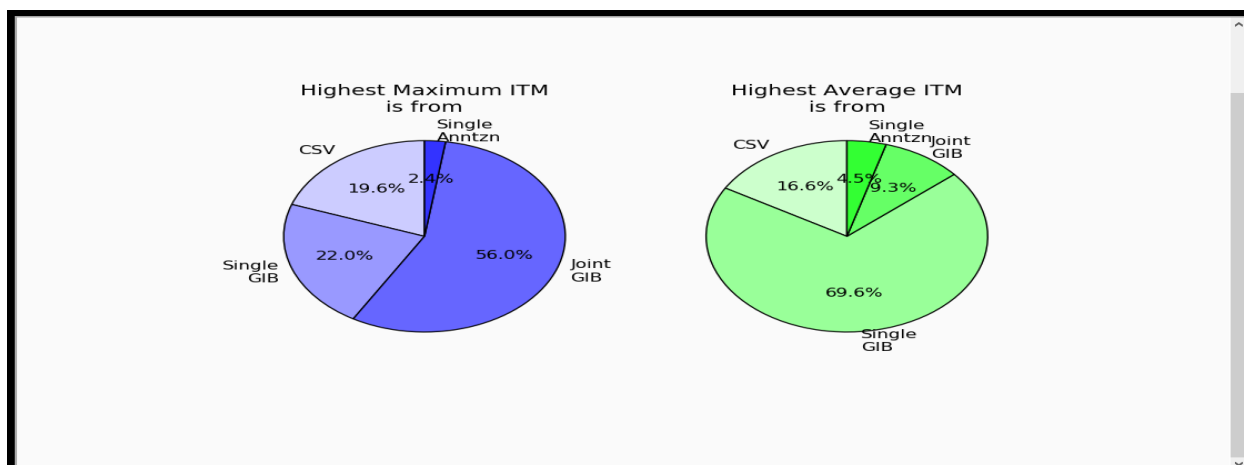
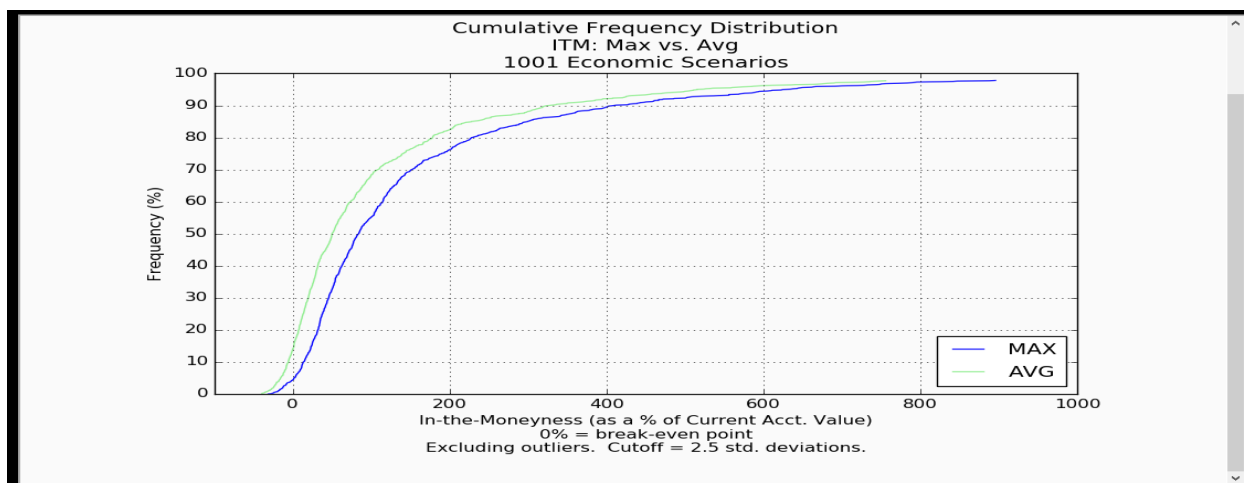
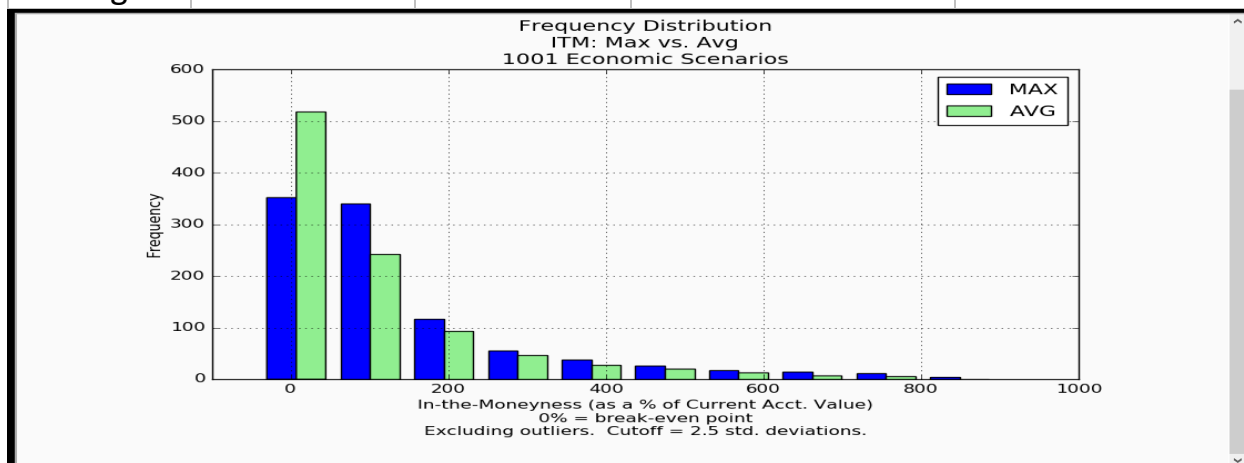
(28) AGGRESSIVE Fund. Risk-Appetite is BOLD, 2.21 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGRESSIVE	IJW	+ 14.16%	1.0342
Average	AGGRESSIVE	ISW	- 3.61%	1.1777



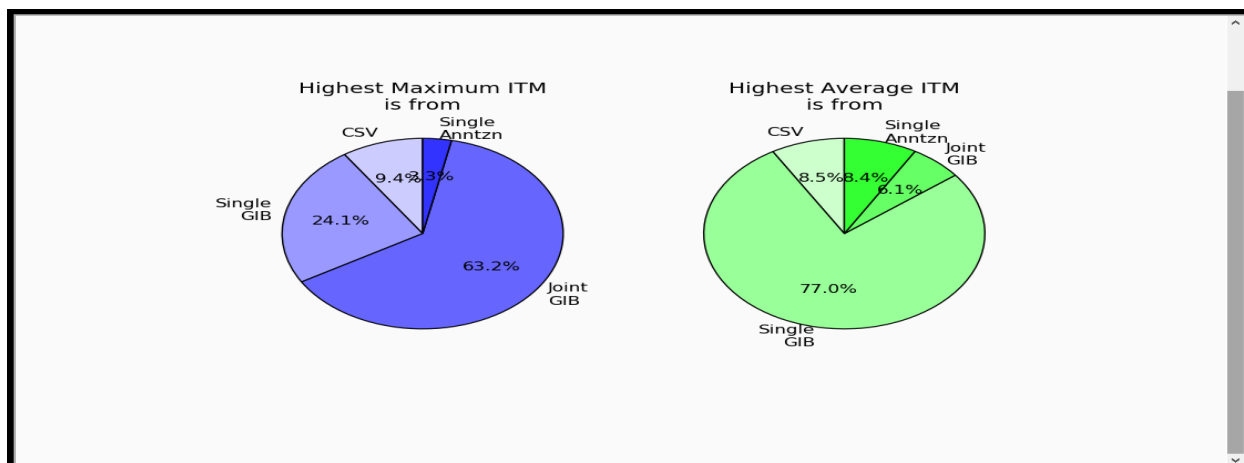
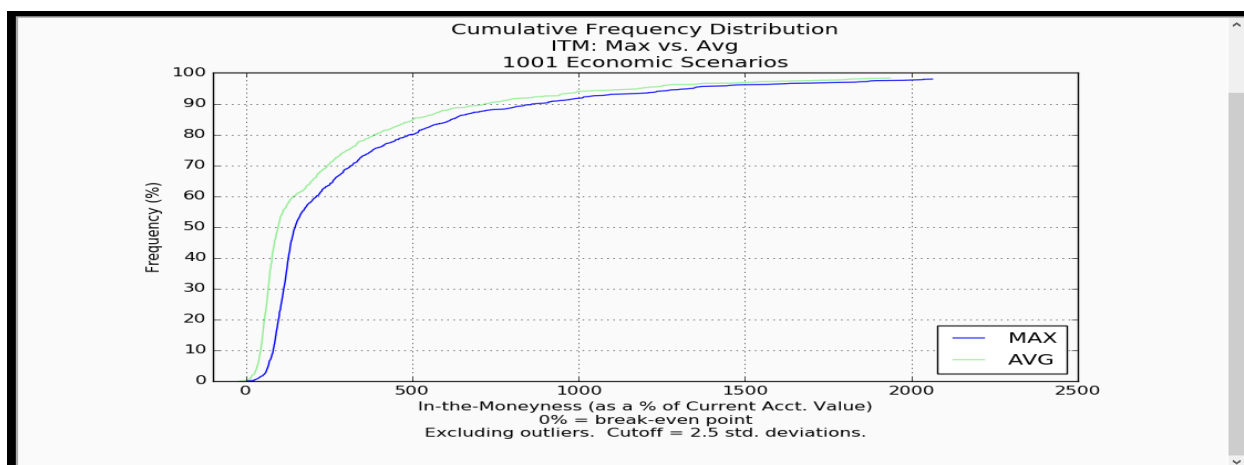
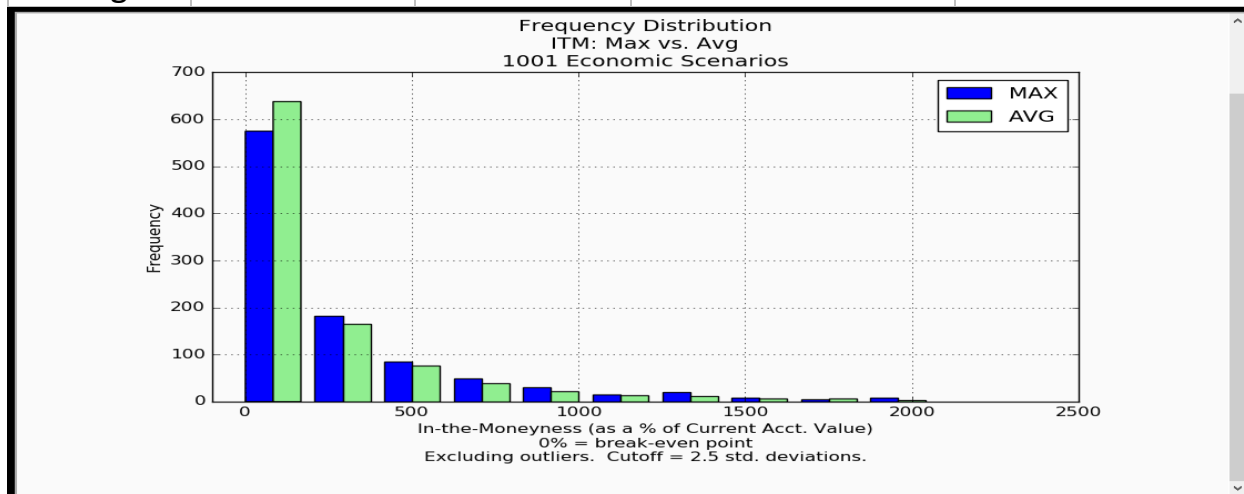
(29) AGGRESSIVE Fund. Risk-Appetite is MODERATE. 4.30 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	IJW	+ 84.34%	1.7637
Average	AGGR	ISW	+ 50.30%	2.5356



(30) AGGRESSIVE Fund. Risk-Appetite is CONSERVATIVE. 4.34 stars

AV-ITM Type	All Funds Invested in:	Benefit Driver	AV-ITM PC-50	Stars (out of 5)
Maximum	AGGR	IJW	+ 148.62%	1.7146
Average	AGGR	ISW	+ 97.62%	2.5945



VDA Contract # 2 - Summary of Results for Group D, Cases 25 thru 30 & Longevity is 83M/85F

<i>AV-ITM Type</i>	<i>All Funds Invested in:</i>	<i>Benefit Driver</i>	<i>AV-ITM PC-50</i>	<i>Stars (out of 10)</i>	<i>Rating Stars (out of 5)</i>
Maximum	BALANCED	IJW	- 24.28%	0.4364	0.89
Average	BALANCED	ISW	- 35.62%	0.4553	

(25) Risk-Appetite is BOLD

Maximum	BALANCED	IJW	+ 29.40%	1.2343	2.75
Average	BALANCED	IJW	+ 4.53%	1.5157	

(26) Risk-Appetite is MODERATE

Maximum	BALANCED	IJW	+ 111.99%	1.8598	4.23
Average	BALANCED	IJW	+ 68.72%	2.3679	

(27) Risk-Appetite is CONSERVATIVE

Maximum	AGGR	IJW	+ 14.16%	1.0342	2.21
Average	AGGR	ISW	- 3.61%	1.1777	

(28) Risk-Appetite is BOLD

Maximum	AGGR	IJW	+ 84.34%	1.7637	4.30
Average	AGGR	IJW	+ 50.30%	2.5356	

(29) Risk-Appetite is MODERATE

Maximum	AGGR	IJW	+ 148.62%	1.7146	4.34
Average	AGGR	IJW	+ 97.62%	2.5945	

(30) Risk-Appetite is CONSERVATIVE

Compare to the evaluations of VDA Contract #2 with those of VDA Contract #1

VDA Contract # 1 - Summary of Results for Cases 1 thru 6 & Longevity is 83M/85F

<i>AV-ITM Type</i>	<i>All Funds Invested in:</i>	<i>Benefit Driver</i>	<i>AV-ITM PC-50</i>	<i>Stars Contributed</i>	<i>Rating Stars (out of 5)</i>
Maximum	BALANCED	CSV	- 23.89%	0.2139	0.50
Average	BALANCED	CSV	- 32.40%	0.2899	

(1) Risk-Appetite is BOLD

Maximum	BALANCED	CSV	+ 12.92%	0.9914	2.89
Average	BALANCED	CSV	+ 7.47%	1.8973	

(2) Risk-Appetite is MODERATE

Maximum	BALANCED	IJW	+ 72.60%	1.3800	4.10
Average	BALANCED	ISW	+ 61.36%	2.7231	

(3) Risk-Appetite is CONSERVATIVE

Maximum	BALANCED	IJW	+ 18.51%	0.9821	2.43
Average	BALANCED	ISW	+ 3.07%	1.4492	

(4) Risk-Appetite is BOLD

Maximum	AGGR	ISW	+ 99.29%	1.4677	3.88
Average	AGGR	ISW	+ 69.11%	2.4094	

(5) Risk-Appetite is MODERATE

Maximum	AGGR	ISW	+ 175.89%	1.5263	4.12
Average	AGGR	ISW	+ 136.54%	2.5976	

(6) Risk-Appetite is CONSERVATIVE

Important Conclusions from the results in cases 25 thru 30 for VDA Contract #2

- (1) Same general conclusions that were observed in VDA Contract #1
- (2) VDA #1 ostensibly seemed like a much better bargain due to:
 - a. Lower Fees
 - b. Starting bonus credit of \$5,000
 - c. Lower Surrender Charges
 - d. Higher credited Rate for the GLWB Fund
- (3) VDA #2's evaluations for all cases are much higher than VDA #1, mainly due to a very generous Joint Payout Rate at age 69 for the GLWB, a benefit that is often overlooked in single-ownership contracts.

General Conclusions

- (1) Great care must be exercised in determining the evaluation of any VDA contract both as a stand-alone and when comparing it to other VDA Contracts.
- (2) A policyholder's general (non-VDA) risk appetite may be very different from the one chosen for the VDA. In the cases presented here, it's because the downside is covered by the GLWB rider. So, a normally conservative investor can be aggressive with the VDA investments, if permitted. This is clearly shown in the AV-ITM frequency distributions which are all skewed towards the positive AV-ITM side.
- (3) Many different combinations of strategies are possible, so its very important to check out as many as possible, to see which one produces the highest rating.
- (4) Look for windfalls that might be in the contract due to errors on the part of the Insurance company. It only takes one outlier in say, a singular Joint Payout rate for ages M67/F65 combo to cause the windfall. That's why it's important to run the projections. If it's there, it will stick out from the rest.
- (5) Every contract evaluation is unique, as it is based on the many different attributes of the policyholder.
- (6) An existing contract must be monitored over time because:
 - a. Economic conditions will change
 - b. Personal attributes will change
 - c. Goals can change
 - d. Risk Appetite can change
 - e. All of these potential changes will affect optimum policyholder strategies and therefore the evaluation of the VDA at every point in the future
 - f. A VDA contract is not static. It's a dynamic investment and must be monitored on an on-going basis, a very desirable feature that is support by DARMA™

Define Contracts, Get Reports & Charts in DARMA™ (a Brief Tutorial)

Main Menu

DARMA™ v2.1.0: Enter Policy info; and generate results

Main Menu

Destinations:

All My Policies
Policy Last Edited
All My Reports

Actions:

Log Out

My Policies

Actions:

New

For the selected Policy:

Open
Duplicate
Delete
Finished Reports

Policy Name	Last Save	Permissions Level	Level Good Thru (GMT) yyyy-mm-dd@hh:mm
<input checked="" type="radio"/> VDA Contract #1	2019-11-04@21:22	Gold	2020-04-30@20:59
<input type="radio"/> VDA Contract #2	2019-11-04@21:22	Gold	2020-04-30@20:59

Some of the Key Entries for a VDA Contract

(For more comprehensive docs see Tutorial <https://www.injannuity.com/tutorial.html>)

Policy Basics

DARMA™: Policy Editor

My Policies
My Reports

For: **VDA Contract #1**

Define Policy
Basic Information

Policy Basics
Policy Features
Policy Tax Parameters
Current Balances and Values
Policyholder/Beneficiary Info
Scope
+ Accumulation Fund
+ Cash Benefits
+ Set ITM Parameters
Upgrade Policy Permissions
View Results
Inspect Results

Prev. Topic
Save
Next Topic

Policy Basics

Assign a unique name for this Policy: VDA Contract #1

To distinguish it from all other Policies you define here. Will appear in all of this Policy's Reports.
If you wish to remain anonymous, please avoid any personal information such as names or Policy Numbers.

Tax-Qualification Status: not Tax-Qualified

Policy was Issued on: 09/15/2019

All Current Balances you provide for this Policy, 09/15/2019
on any page, are as of the start of this day:

Your Notes and Comments:

Your notes here

Prev. Topic
Save
Next Topic

Policy Features

☰

DARMA™: Policy Editor

▶ My Policies

▶ My Reports

For: **VDA Contract #1**

Define Policy

Basic Information

Policy Basics

Policy Features

Policy Tax Parameters

Current Balances and Values

Policyholder/Beneficiary Info

Scope

Accumulation Fund

Cash Benefits

Set ITM Parameters

Upgrade Policy Permissions

View Results

Inspect Results

← Prev. Topic

Save

Next Topic →

Policy Features

Is this a Single-Premium Policy? Yes ⓘ What this means

Does this Policy have a Guaranteed Income Benefit (GIB)? Yes ⓘ What this means

Policy Ownership is: Single ⓘ What this means

However, a Joint Income Option ⓘ What this means

is available for: ☒ Basic Annuitization ☒ GIB

Does this Policy have a distinct GIB Fund? Yes ⓘ What this means

← Prev. Topic

Save

Next Topic →

Sub-Account Balances

DARMA™: Policy Editor

For: **VDA Contract #1**

- Define Policy
 - Basic Information
 - Policy Basics
 - Policy Features
 - Policy Tax Parameters
 - Current Balances and Values
 - Policyholder/Beneficiary Info
 - Scope
 - Accumulation Fund
 - Sub-account Balances**

Subaccount Type	Current Balance (\$)
Fixed Account (Non-Variable)	0
Money Market/ Short-Term	0
U.S. Intermediate Term Gov't Bonds	0
Diversified Fixed Income	0
U.S. Long Term Corporate Bonds	0
Diversified Balanced Income	100000
Diversified Large Cap. U.S. Equity	0
Diversified International Equity	0
Intermediate Risk Equity	0
Aggressive or Specialized/Exotic Equity	0
 - Bonuses
 - + Account Value Deductions
 - + Cash Benefits
 - + Set ITM Parameters
 - Upgrade Policy Permissions

Totaling: 100000 ...as of the *start* of this day (entered earlier): 09/15/2019

Cash Benefits/Income/Guaranteed Income/Payout

☰
DARMA™: Policy Editor
▶ My Policies ▶ My Reports

Policyholder/Beneficiary Info

Scope

- Accumulation Fund
 - Sub-account Balances
 - Bonuses
- + Account Value Deductions
- Cash Benefits
 - Cash Surrender Values
 - Death Benefits
- Income
 - Charge-Free Withdrawals
 - Basic Annuitization
- Guaranteed Income Benefits
 - Locked-In Minimums
 - Basis
 - Payout
- + GIB Fund

← Prev. Topic
Save
Next Topic →

Guaranteed Withdrawal Income Benefits

Duration of Payout: Life ▼

Single-Life Payouts: See/Change Details

For Joint Payouts:

Joint-Life Payouts: See/Change Details

Primary Insured Survivor Payout Percentage: 100% ▴▾

Secondary Insured Survivor Payout Percentage: 100% ▴▾

← Prev. Topic
Save
Next Topic →

Payout Rates

Age at Retirement	Policy Year	Period Certain (years)	Payout Rate (% of Fund)
65	21	0	5.1
66	22	0	5.29
67	23	0	5.5
68	24	0	5.73
69	25	0	5.97
70	26	0	6.23

«
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»

Save
Cancel

Risk-Appetite

DARMA™: Policy Editor ► My Policies ► My Reports

For: **VDA Contract #1**

← Prev. Topic Save Next Topic →

Policyholder-Related ITM Parameters

Important Age-Related Questions [For "Live-to-Age" rationale and instructions, click here.](#)

Primary Insured: Live to age: [Estimate this "Live to age" †](#)

Second Insured/Recipient: Live to age: [Estimate this "Live to age" †](#)

Retirement Ages to include in Calculations: From: Thru:

Discount-Rate-Related Questions [For rationale and instructions, click here.](#)

Risk Appetite: Based on Contract Portfolio Capital Gains Tax Rate (%):

☒ Use this contract's fees for Present-Value (PV) discounting

† Opens Northwestern Mutual's Lifespan Calculator.
Does not imply any relationship between InjAnnuity and Northwestern Mutual, nor any endorsement from them.

After Defining the Policy, Get the Results (Summaries)

DARMA™: Policy Editor ► My Policies ► My Reports

← Prev. Topic Save Next Topic →

View Results

To produce a Report, click the corresponding button below.
Buttons are color-coded by minimum Policy Permission Level (see list at right).
To increase this Policy's Permission Level, please visit Page "Upgrade Policy Permissions" in the outline at left.

# of Scenarios	Summary	Detailed
1	View Report	View Report
101	View Report	View Report
1001	View Report	View Report

← Prev. Topic Save Next Topic →

Permission Levels:
Bronze
Silver
Gold

After Defining the Policy, Get the Results (Granular Inspection/Audits)

DARMA™: Policy Editor ► My Policies ► My Reports

For: **VDA Contract #1**

Define Policy

- Basic Information
- Accumulation Fund
- Cash Benefits
 - Cash Surrender Values
 - Death Benefits
- Income
- Set ITM Parameters
- Upgrade Policy Permissions
- View Results
- Inspect Results**

[← Prev. Topic](#) [Save](#)

Inspect a Scenario ☒ All ☐ All Run Now: **101** **1,001**

Which Scenario: Percentile Rank : 50 in Maximum ITM

Also Include: ☒ Tax Reports ☒ High-Level Summary ☒ w/Percentile's Scenario#s

Deferred-Track Projections: ☒ CSVs ☒ Net Prems ☒ GIB Fund

Deferred-Track AVs: ☒ Total ☒ by Plan Type ☒ by SubAcct ☒ Daily

Income-Track GWB AVs (Single): ☒ Total ☒ by Plan Type ☒ by SubAcct ☒ Daily

Income-Track GWB AVs (Joint): ☒ Total ☒ by Plan Type ☒ by SubAcct ☒ Daily

Income Payments (Single): ☒ GIB ☒ Basic Az

Income Payments (Joint): ☒ GIB ☒ Basic Az

ITM Reports for: ☒ ITM Yr ☒ Summary of All Years

For Benefits starting in: ☒ Max ITM Year

Results (Overall Stars 2.21)

AV-ITM	Funds Invested in:	ITM % PC-50	Stars Contributed	Benefit Driver	Risk Appetite
Maximum	BALANCED	0.47%	0.4364	ISW	Contract
Average	BALANCED	-2.91	0.4553	CSV	Contract

Some Reports & Charts (Produced by DARMA™)

V-ITM Frequency Distributions by Benefit Types

Report 2 Page 1 Prepared for (VDA Contract #1 -- Male, aged 50, Issue Age 50) PAGE 2
Run on 11/04/2019 at 05:18 pm (US Eastern Time) for Projection Starting 09/15/2019, Issued 09/15/2019 - BASIS IS NET
ALL TRACKS - Maximum ITM Totals by Type and Target Ages

Pol	EOY	Age	CSV	GIB ISW	GIB IJW	Annuity ISA	Annuity IJA	Totals
A	B	C	D	E	F	G	H	
15	65		126	84	42	10	0	262
16	66		46	86	32	3	0	167
17	67		37	62	55	5	0	159
18	68		37	54	63	0	0	154
19	69		91	67	98	1	2	259
Max Totals			337	353	290	19	2	1,001
Pct.			33.67%	35.26%	28.97%	1.90%	0.20%	100.00%
AVG Totals			634	46	288	29	4	1,001
Pct.			63.34%	4.60%	28.77%	2.90%	0.40%	100.00%

AV-ITM Percentile (0-100) Report for MAX AV-ITM

Report 3 Page 1										Prepared for (VDA Contract #1 -- Male, aged 50, Issue Age 50)										PAGE 3									
Run on 11/04/2019 at 05:18 pm (US Eastern Time) for Projection Starting 09/15/2019, Issued 09/15/2019 - BASIS IS NET										ALL TRACKS - Economic Scenarios - Percentile Distribution for MAX AV-ITMs																			
1001 SCENARIOS - MAX.PV AV-ITM (Ages 65 - 69), Portfolio-Based Risk Appetite																													
Pct Econ.	PV Max.Ben	MaxEOY	Net	Gross						Pct Econ.	PV Max.Ben	MaxEOY	Net	Gross							Pct Econ.	PV Max.Ben	MaxEOY	Net	Gross				
Lvl Scen.	Less Prms.	& Age	AV-ITM	AV-ITM	IRR	Max				Lvl Scen.	Less Prms.	& Age	AV-ITM	AV-ITM	IRR	Max					Lvl Scen.	Less Prms.	& Age	AV-ITM	AV-ITM	IRR	Max		
A_ B_	C_	D_	E_	F_	G_	H_				I_ J_	K_	L_	M_	N_	O_	P_					I_ J_	K_	L_	M_	N_	O_	P_		
0	259	91,195.42	15/65	-8.80%		1.46%	CSV			51	351	100,640.45	18/68	0.64%		8.58%	CSV												
1	735	92,371.51	19/69	-7.63%		4.65%	CSV			52	624	100,779.78	18/68	0.78%		6.30%	ISW												
2	440	92,751.44	15/65	-7.25%		2.57%	CSV			53	253	100,056.25	18/68	0.06%		8.94%	CSV												
41	30	33,061.04	10/60	-0.10%		4.04%	ISW			90	600	131,004.30	13/69	31.00%		3.00%	ISW												
48	219	100,053.72	16/66	0.05%		4.70%	ISW			99	664	224,432.52	17/67	124.43%		3.48%	IJW												
49	578	100,249.54	15/65	0.25%		8.84%	CSV			100	945	327,863.38	19/69	227.86%		3.59%	IJW												
50	840*	100,472.00	19/69	0.47%		8.43%	CSV																						

AV-ITM Percentile (0-100) Report for AVG AV-ITM

Report 5 Page 1										Prepared for (VDA Contract #1 -- Male, aged 50, Issue Age 50)										PAGE 5									
Run on 11/04/2019 at 05:18 pm (US Eastern Time) for Projection Starting 09/15/2019, Issued 09/15/2019 - BASIS IS NET										ALL TRACKS - Economic Scenarios - Percentile Distribution for AVG.PV IQs																			
1001 SCENARIOS - AVG.PV AV-ITM (Ages 65 - 69), Portfolio-Based Risk Appetite																													
Pct Econ.	Avg.PV. Max	MaxEOY	Net	Gross						Pct Econ.	Avg.PV. Max	MaxEOY	Net	Gross							Pct Econ.	Avg.PV. Max	MaxEOY	Net	Gross				
Lvl Scen.	Bens - Prms	& Age	AV-ITM	AV-ITM	IRR	Avg				Lvl Scen.	Bens - Prms	& Age	AV-ITM	AV-ITM	IRR	Avg					Lvl Scen.	Bens - Prms	& Age	AV-ITM	AV-ITM	IRR	Avg		
A_ B_	C_	D_	E_	F_	G_	H_				I_ J_	K_	L_	M_	N_	O_	P_					I_ J_	K_	L_	M_	N_	O_	P_		
0	803	90,337.22	15/65	-9.66%		3.25%	IJW			51	984	97,160.40	16/66	-2.84%		6.43%	CSV												
1	139	91,478.23	19/69	-8.52%		4.59%	CSV			52	533	97,296.15	19/69	-2.70%		6.70%	CSV												
2	50	91,012.08	10/60	-0.00%		0.00%	CSV			53	410	97,440.00	16/66	0.00%		7.66%	CSV												
41	634	30,103.13	11/61	-3.64%		4.11%	CSV			90	600	110,010.10	10/60	10.00%		3.30%	IJW												
48	696	96,854.06	17/67	-3.15%		5.28%	CSV			99	14	193,388.45	19/69	93.39%		3.59%	IJW												
49	79	96,978.87	19/69	-3.02%		7.36%	CSV			100	357	246,121.29	18/68	146.12%		3.54%	IJW												
50	245	97,092.00	15/65	-2.91%		5.48%	CSV																						

Projected Account Value Report

Run on 11/15/2019 at 10:57 am (US Eastern Time) for Projection Starting 09/15/2019, Issued 09/15/2019 - BASIS IS NET										DEFERRED TRACK - Fund is Accum. Fund - By Fund #																			
Percentile 50 is Economic Scenario #590 for the Max Ranking for AV-ITM for Target Ages 65 thru 69																													
SOY	SOY Fund +	Annual	Interest	Fees &	EOY - After	RMD or Free	Fund			EOY Age(s)	Fund(s)																		
A_ B_	C_	D_	E_	F_	G_	H_	I_	J_																					
19	147,549.26	4.909288	7,243.62	-5,291.81	149,501.07	0.00	149,501.07	69	V5-BALANCED																				
19	147,549.26	4.909288	7,243.62	-5,291.81	149,501.07	0.00	149,501.07	69	TOTAL																				
20	149,501.07	12.888418	19,268.32	-5,567.73	163,201.66	0.00	163,201.66	70	V5-BALANCED																				
20	149,501.07	12.888418	19,268.32	-5,567.73	163,201.66	0.00	163,201.66	70	TOTAL																				
21	163,201.66	4.704151	7,677.25	-5,847.33	165,031.59	0.00	165,031.59	71	V5-BALANCED																				
21	163,201.66	4.704151	7,677.25	-5,847.33	165,031.59	0.00	165,031.59	71	TOTAL																				
22	165,031.59	-2.619182	-4,322.48	-5,699.02	155,010.10	0.00	155,010.10	72	V5-BALANCED																				
22	165,031.59	-2.619182	-4,322.48	-5,699.02	155,010.10	0.00	155,010.10	72	TOTAL																				
23	155,010.10	-1.841485	-2,854.49	-5,374.51	146,781.10	0.00	146,781.10	73	V5-BALANCED																				
23	155,010.10	-1.841485	-2,854.49	-5,374.51	146,781.10	0.00	146,781.10	73	TOTAL																				
24	146,781.10	19.937571	29,264.59	-5,641.18	170,404.50	0.00	170,404.50	74	V5-BALANCED																				
24	146,781.10	19.937571	29,264.59	-5,641.18	170,404.50	0.00	170,404.50	74	TOTAL																				
25	170,404.50	18.906216	32,217.04	-6,519.65	196,101.90	0.00	196,101.90	75	V5-BALANCED																				
25	170,404.50	18.906216	32,217.04	-6,519.65	196,101.90	0.00	196,101.90	75	TOTAL																				

AV-ITM Analysis by Year

Run on 11/15/2019 at 10:57 am (US Eastern Time) for Projection Starting 09/15/2019, Issued 09/15/2019 - BASIS IS NET
 ALL TRACKS - AV-ITM ANALYSIS - All Years
 Percentile 50 is Economic Scenario #590 for the Max Ranking for AV-ITM for Target Ages 65 thru 69

AV is 100000.00, AvDenom = AV, PvGIB_ITM M = 100*((G+H-J)/AvDenom - 1), PvCSV_ITM M = 100*((L+I-J)/AvDenom - 1)

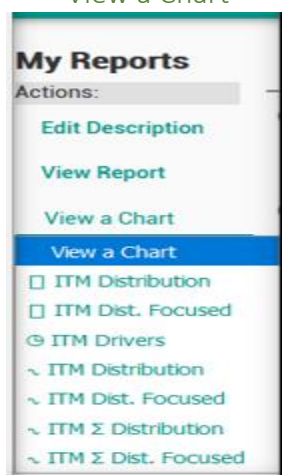
EOY	Age	Disc. Intra. %	Income Base Amt. %	Rate	Ann. Pmt D x E	After Tax PV.Pmts	PV of GIB CFWs	PV of CSV CFWs	PV of Premiums	After Tax CSV	After Tax PV CSV	PvGIB ITM %	PvCSV ITM %	Max is	\$ Rank
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	51	7.35	0	0.000	0	0	0	0	0	88,920	82,831	0.00	-17.17	CSV	9
2	52	-1.49	0	0.000	0	0	0	0	0	86,246	81,551	0.00	-18.45	CSV	12
3	53	7.37	0	0.000	0	0	0	0	0	94,077	82,847	0.00	-17.15	CSV	8
4	54	8.94	0	0.000	0	0	0	0	0	102,195	82,610	0.00	-17.39	CSV	10
5	55	5.23	0	0.000	0	0	0	0	0	108,783	83,565	0.00	-16.43	CSV	6
6	56	0.62	0	0.000	0	0	0	0	0	109,133	83,320	0.00	-16.68	CSV	7
7	57	-8.19	0	0.000	0	0	0	0	0	98,144	81,611	0.00	-18.39	CSV	11
8	58	-8.17	0	0.000	0	0	0	0	0	84,215	76,256	0.00	-23.74	CSV	17
9	59	3.61	0	0.000	0	0	0	0	0	90,171	78,801	0.00	-21.20	CSV	13
10	60	-2.01	0	0.000	0	0	0	0	0	87,043	77,624	0.00	-22.38	CSV	15
11	61	6.76	0	0.000	0	0	0	0	0	93,428	78,042	0.00	-21.96	CSV	14
12	62	15.92	0	0.000	0	0	0	0	0	107,169	77,228	0.00	-22.77	CSV	16
13	63	2.68	0	0.000	0	0	0	0	0	108,062	75,837	0.00	-24.16	CSV	18
14	64	2.61	0	0.000	0	0	0	0	0	108,957	74,523	0.00	-25.48	CSV	19
15	65	6.31	207,893	7.710	16,029	138,524	0	0	0	119,288	76,746	38.52	-23.25	IJW	4
16	66	4.38	218,287	7.860	17,157	140,625	0	0	0	124,334	76,638	40.63	-23.36	IJW	3
17	67	11.17	229,202	8.020	18,382	131,568	0	0	0	143,357	79,487	31.57	-20.51	IJW	5
18	68	1.25	240,662	8.190	19,710	143,796	0	0	0	140,643	77,019	43.80	-22.98	IJW	2
19	69	5.04	252,695	9.390	23,728	154,947	0	0	0	142,361	74,216	54.95	-25.78	IJW	1
20	70	8.83	0	0.000	0	0	0	0	0	154,417	73,969	0.00	-26.03	CSV	21

Cash Surrender Values by Year

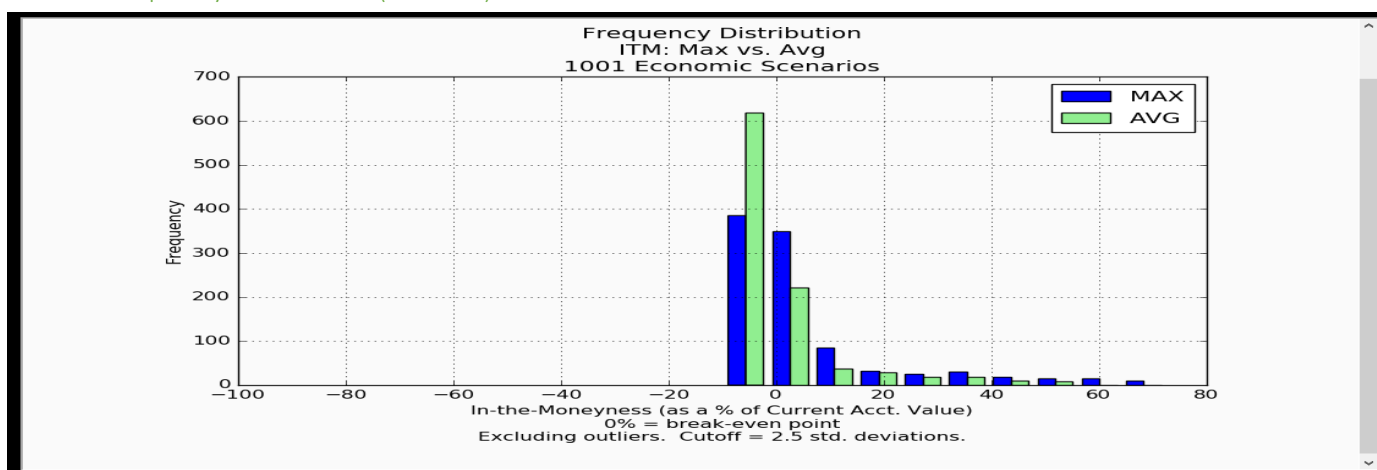
Report 33 Page 1 Prepared for (VDA Contract #2 -- Male, aged 50, Issue Age 50) PAGE 57
 Run on 11/15/2019 at 10:57 am (US Eastern Time) for Projection Starting 09/15/2019, Issued 09/15/2019 - BASIS IS NET
 DEFERRED TRACK - Demonstration of Year-End Cash Surrender Values
 Percentile 50 is Economic Scenario #590 for the Max Ranking for AV-ITM for Target Ages 65 thru 69

EOY	Year-End AV Before FW	CFW Allowed or RMD	Bonus Recaptured	Charge Base is B-C-D	SurrChrg. Percent	SurrChrg is F x E	Look Back Charge	CSV = B-D-G-H	NFV Floored Final CSV
A	B	C	D	E	F	G	H	I	J
1	100,438.69	10,843.87	0.00	97,594.82	20.00000	19,518.96	0.00	88,919.73	88,919.73
2	102,918.40	10,291.84	0.00	92,626.56	18.00000	16,672.78	0.00	86,245.62	86,245.62
3	111,246.18	11,124.62	0.00	100,121.56	16.00000	16,019.45	0.00	95,226.73	95,226.73
4	120,863.10	12,086.31	0.00	108,776.79	14.00000	15,228.75	0.00	105,634.35	105,634.35
5	127,893.35	12,789.34	0.00	115,104.02	12.00000	13,812.48	0.00	114,080.87	114,080.87
6	125,856.88	12,585.69	0.00	113,271.20	10.00000	11,327.12	0.00	114,529.76	114,529.76
7	108,233.73	10,823.37	0.00	97,410.36	8.00000	7,792.83	0.00	100,440.90	100,440.90
8	89,022.48	8,902.25	0.00	80,120.23	6.00000	4,807.21	0.00	84,215.26	84,215.26
9	93,588.52	9,358.85	0.00	84,229.67	4.00000	3,369.19	0.00	90,219.33	90,219.33
10	88,638.89	8,863.89	0.00	79,775.00	2.00000	1,595.50	0.00	87,043.39	87,043.39
11	94,395.00	9,439.50	0.00	84,955.50	0.00000	0.00	0.00	94,395.00	94,395.00
12	112,011.58	11,201.16	0.00	100,810.42	0.00000	0.00	0.00	112,011.58	112,011.58
13	113,155.98	11,315.60	0.00	101,840.39	0.00000	0.00	0.00	113,155.98	113,155.98
14	114,303.52	11,430.35	0.00	102,873.17	0.00000	0.00	0.00	114,303.52	114,303.52
15	124,401.18	12,440.12	0.00	111,961.06	1.00000	1,119.61	0.00	123,281.57	123,281.57
16	129,016.28	12,901.63	0.00	116,114.65	0.00000	0.00	0.00	129,016.28	129,016.28
17	150,632.71	15,063.27	0.00	135,569.44	0.00000	0.00	0.00	150,632.71	150,632.71
18	147,549.26	14,754.93	0.00	132,794.34	0.00000	0.00	0.00	147,549.26	147,549.26
19	149,501.07	14,950.11	0.00	134,550.97	0.00000	0.00	0.00	149,501.07	149,501.07
20	150,000.00	15,000.00	0.00	135,000.00	0.00000	0.00	0.00	150,000.00	150,000.00

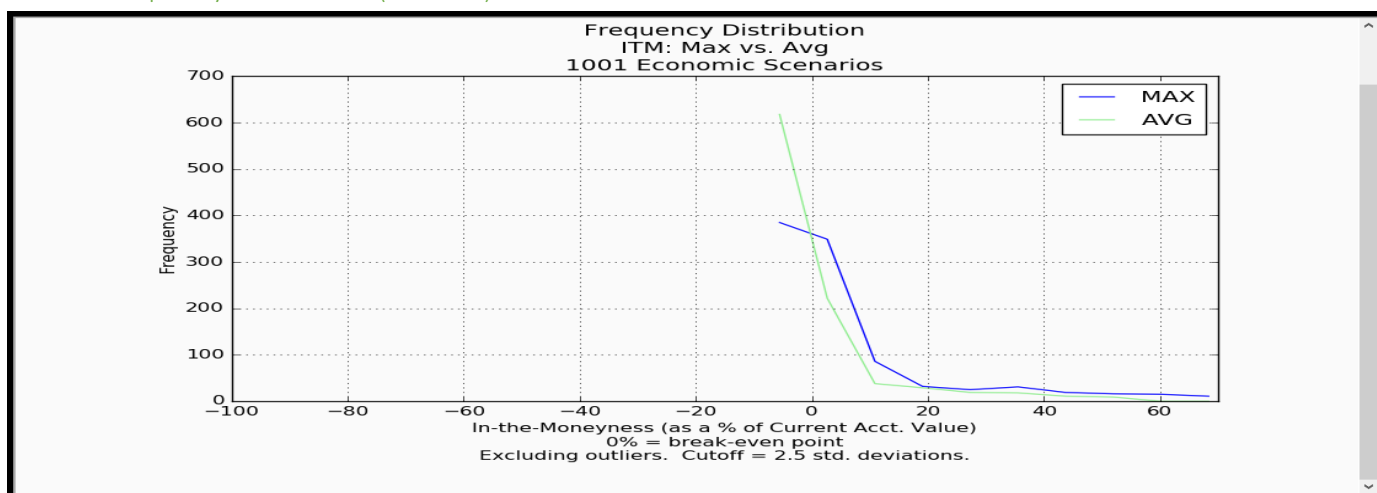
View a Chart



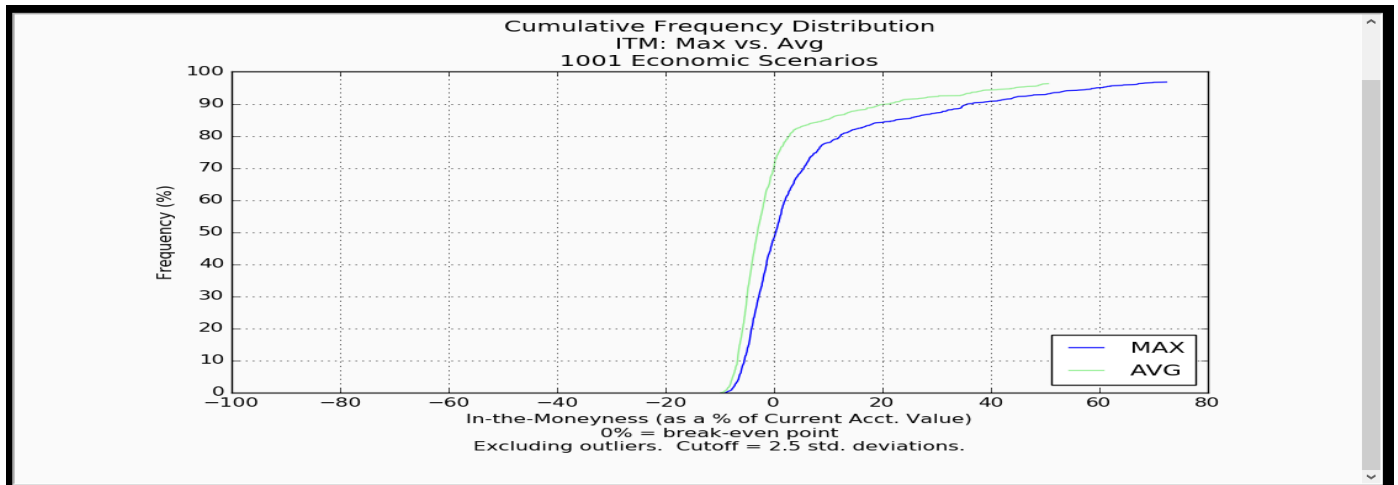
AV-ITM Frequency Distribution (Focused) – Bar Chart



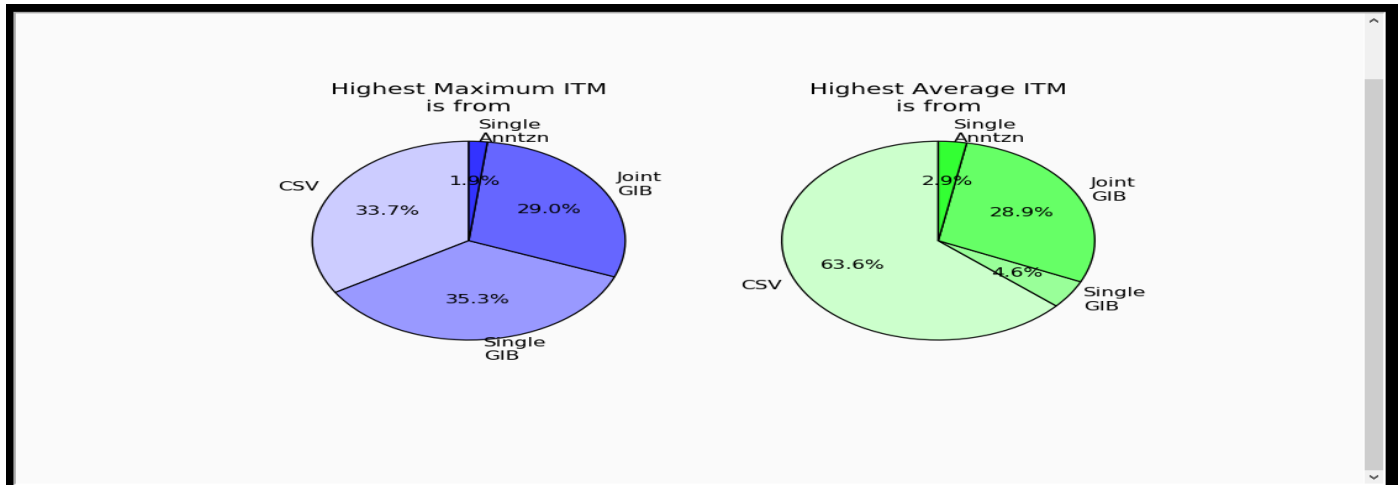
AV-ITM Frequency Distribution (Focused) – Line Chart



AV-ITM Cumulative Frequency Distribution (Focused) – Line Chart



AV-ITM Frequencies by Cash Type) – Pie Charts



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- b. AV-ITM Frequency Distribution (Focused)

Line Charts

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Pie Charts

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