November 17, 2020

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Office of Regulations and Interpretations
Employee Benefits Security Administration
Room N-5655
U.S. Department of Labor
200 Constitution Avenue, NW
Washington, D.C. 20210

Attention: Pension Benefits Statement—Lifetime Income Illustrations, RIN 1210-AB20

RE: Comments on Interim Final Rule – Pension Benefit Statements—Lifetime Income Illustrations, 29 CFR Part 2520, RIN 1210-AB20

Ladies and Gentlemen:

CANNEX USA Inc. (and CANNEX Financial Exchanges Ltd) respectfully submit the following comments in response to the Department of Labor's interim final rule, entitled *Pension Benefit Statements — Lifetime Income Illustrations*. CANNEX is an independent business that manages income annuity illustration software for most of the major insurance companies in the U.S. market and distributes income quotes and illustrations on their behalf to retail advisory firms and service providers. The quote volume we support accounts for over 85% of sales in the U.S. This gives us insight into income preferences and overall contract design.

CANNEX is able to answer some of the questions the Department posed under section 2, Assumptions for Lifetime Income Stream Illustrations. The statistics cited below come from aggregated data on quote and illustration requests in our service during 2019. We have been collecting quote statistics since 2010 and over time our data has been validated to be an accurate leading indicator of income annuity sales in the commercial market.

Executive Summary:

1. **The assumptions for the survivor's benefit and inflation adjustment reflect purchase behavior for commercially available SPIAs (single premium immediate annuities).**
2. **The model disclosure for the life annuity should be modified to include information about the effect of alternative forms of death benefit available with the contract such as a term certain or cash refund benefit because these are by far more commonly purchased than life only (i.e., no death benefit).** While it would be easy to reflect this in the rates, doing so would go against other goals the Department has in showing the two mandated rates. However, adding the disclosure is necessary because of the strong consumer preference for some death benefit protection after initiating income.
3. **There is no marked benefit to the participant to providing generic withdrawal benefit rates on the statement**.
4. **The 10-year Treasury rate is a poor representation of interest rates reflected in actual commercial annuity pricing, as demonstrated in work done by a large industry committee. Given the Department's preference to use a common benchmark, it is far more accurate to use an interest rate adjustment (i.e., a variable spread) along with the 10-year Treasury CMT.**

The industry committee helped design and implement, through an independent third party, an Income Annuity Yield Curve that accurately represents the interest rates used for commercial pricing. This yield curve is communicated as either a standalone metric or as a spread to the U.S. Treasury. This solution can easily be applied to the two illustrated contracts that are part of this rule. This obviates concerns about how the different assumptions (interest rates, mortality tables, and insurance load) interact in the process of creating real rates.

Detailed comments and data related to specific provisions of the rule follow:

- 2(b) Marital Status and Amount of Survivor's Benefit
    - In this section, the Department expresses concern about illustration of a survivor benefit that is not common in the commercial market and suggests using 100% continuation instead of a lower percentage, which is more common within pension plans. The 100% continuation design accurately reflects purchase preferences in the retail market. **In 2019, 94% of joint life immediate annuity quotes were for 100% continuation.** Only 1.5% of contingent quotes were for 50% continuation (survivor benefit) and <1.0% were for 75% continuation. The small remainder of quotes were for other continuation levels that also included a specific designation of reducing on either the death of the primary or secondary annuitant.

- 2(f) Inflation Adjustment
    - In this section, the Department asks for information on the state of inflation-adjusted annuities in the United States. **In 2019, 97% of quotes did not specify any form of payment adjustment (i.e., inflation adjustment).** Only 1.2% of quotes specified a 2.0% Cost of Living Adjustment (COLA) and 1.0% specified a 3.0% COLA. The rest of the quotes are divided among other percentages. Insurers have discontinued offering CPI-u as a payment adjustment feature, which was rarely quoted when it was available (<1.0% in previous years).

- 2(g) Term Certain or Other Features
    - **Term certain (death benefit) options:** In 2019, a lifetime-only guarantee (i.e., no death benefit) represented only 16% of the quote volume for income annuities (this excludes quotes for certain-only annuities which accounted for an additional 13% of volume, which has no lifetime income guarantee as well). **By far the most popular option for any kind of death benefit is cash refund**, which was specified 63% of the time for joint life and 52% for single life queries.

      The term certain feature reduces the amount of the lifetime payment. The extent of the reduction depends on the length of the certain period and whether the contract is for single or joint life. Generally speaking, there is less difference with the lifetime income amount using a period certain with a survivor benefit rather than single life because the

probability of at least one of the two individuals in the contract living past the certain date is much higher.

In the discussion for section 2(b), the Department states that using the 100% continuation option for joint life, "a participant's benefit statement will illustrate the largest difference between the monthly payment that would result from a single life annuity and that would result from a QJSA. The Department believes there is a benefit to showing the participant these extremes because all other annuity options fall somewhere in between." To this point, the use of the lifetime-only option for single life provides the highest possible payout, even though it is not the most popular option in the commercial market. Similarly, **using a certain period for joint life does not significantly reduce the payout compared to the cash refund death benefit**. We examined the payout reduction for a cash refund death benefit for single and joint life at age 65, using the average of the top 5 quotes[1]. For joint life, the addition of a cash refund death benefit reduces the payout by 3%. For single life, the addition of a cash refund death benefit reduces the payout by 9%.

Therefore, using a certain period exclusively would work against a goal of providing the broadest extreme between the single and joint life illustrations.

Given the prevalence of death benefits such as a certain period or cash refund, it would benefit participants to add disclosure language describing the effect of this type of election under the model language specified under (d)(2)(ii). For example, after the proposed model language, the Department could add disclosure such as:

"You may opt to guarantee payments to your beneficiaries if you die before a certain amount of time has passed or before the payments equal your original purchase amount. Choosing one of these options will reduce your monthly payments."

- **Other Features that provide a lifetime income stream:** There are various income benefit riders that are available with savings annuities (deferred fixed, indexed, and variable) that provide guaranteed lifetime income along with the benefit of investment returns and liquidity. Although these products and their features can be quite complex, CANNEX also illustrates their performance for the retail market and in some scenarios they can generate a higher guaranteed income amount than an income annuity. Nevertheless, there are important features and benefits in product design and characteristics beyond the guaranteed income component. Presenting an income rider payment alongside an income annuity estimate would not be sufficient to explain its value proposition and additional optional features, as opposed to a simple life annuity. Furthermore, the additional disclosure needed to bridge that gap would potentially distract from the other very important disclosures needed to describe the life annuity illustration.

[1] The quotes were run on 9/22/2020. The joint life contract was in Alabama and the single life contract was in Montana, which has unisex pricing, which aligns with the criteria for the lifetime income illustration.

- 2(c) Interest Rate; 2(d) Mortality; 2(e) Insurance Loads.
    - We address the commentary on these three questions on the basis that they realistically are not separated in the actual management of SPIAs. In our experience and based on our understanding of pricing dynamics, real pricing is not uniformly formulaic and can reflect insurer business preferences to be more or less competitive within certain segments of the market. A single insurance company may take a variety of approaches within one of those categories. For example, a company may use different interest rates based on demographic segments or product configuration. Furthermore, it is possible that practices regarding any of these factors will change in the future in a way that would affect the results from this model.

      We believe that the factors of interest rate, mortality, and insurance loads should not be addressed as individual questions. However, we have comments on the interest rate used based on work that we were involved in as part of a 2012 industry committee that sought to better understand the relationship of interest rate to commercial annuity rates, among other things, to accurately compute the market value of an annuitized asset. The position paper is attached to this comment letter. A key part of the analysis elucidated the accuracy of calculated annuity rates based on different iterations/combinations of the U.S. Treasury CMT and spreads. The results of this analysis show that **the U.S. Treasury CMT is significantly less accurate than other options.**[2]

      The method that *best represents current commercial conditions* (including unexpected or unprecedented events) is an independent benchmark created from the average of current annuity income across the industry. This benchmark can either be communicated on a standalone basis or as a variable spread rate along with the U.S. Treasury CMT.[3]

      Based on the work of the committee, in 2014, CANNEX created a consistent and transparent industry index that is used to benchmark retirement income products and strategies. The Payout Annuity Yield Index (PAY Index) uses real rates from the commercial market that could also be used as a basis for lifetime income illustrations. We currently calculate one version of the index based on three (3) retail contract variations and provide results to the public for free. The methodology for the PAY Index is available online here: https://www.cannex.com/wp-content/uploads/2016/09/cannex_payindex_methodology_usa.pdf. Configuration of the index to match the criteria of a lifetime income illustration would be straightforward.

[2] The position paper is also available online at http://www.cannex.com/wp-content/uploads/2019/12/Position-Paper-Market-Valuation-of-Annuitized-Assets-122019-FINAL.pdf and the analysis of the methodology options begins on page 18.

[3] Option 2b, page 20 of the position paper and Option 2, page 21 of the position paper.

Using a common index like a PAY Index would obviate questions about the most suitable criteria for a single methodology to estimate annuity rates when real world rates do not conform to any methodology. Instead, focusing on current rates gets to the heart of the matter, which is to invest and focus on enhancing participant education about a solution that they may want to purchase but are unable to within the retirement plan. The Department has clearly sought to create a framework to deliver realistic rates to make this education relevant.

We hope that this information is helpful and would be glad to elaborate on our comments or address any other questions. If the Department is interested in learning more about the illustration activity and design of income annuities across the U.S. commercial market as well as the methodology and components in establishing a common industry benchmark we are happy to discuss this further. To this end, CANNEX is committed to supporting the retirement industry and the public in helping provide information access and transparency to annuity products in support of guaranteed lifetime income.

Sincerely,

Gary Baker
President, CANNEX USA Inc.

Attachments:

2019 CANNEX Survey Experience: Distributor Activity in the U.S. Market for Single Premium Immediate and Deferred Income Annuities

The Market Valuation of Annuitized Assets (INCOME VALUE) Position Paper

CANNEX Survey Experience

Distributor Activity in the U.S. Market for Single Premium Immediate Annuities & Deferred Income Annuities

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1. Primary Annuitant (Age[1] / Gender) Results

Primary Annuitant Age Range	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Age 45 or Less	1.91%	17,466	10,966	1,765	4,735
> Age 45, up to Age 50	1.81%	16,497	10,879	2,946	2,672
> Age 50, up to Age 55	5.52%	50,484	32,132	12,201	6,151
> Age 55, up to Age 60	14.64%	133,758	73,301	42,401	18,056
> Age 60, up to Age 65	27.55%	251,738	135,494	79,824	36,420
> Age 65, up to Age 70	20.50%	187,304	108,446	59,613	19,245
> Age 70, up to Age 75	12.49%	114,166	68,416	33,286	12,464
> Age 75, up to Age 80	7.87%	71,881	44,972	17,939	8,970
> Age 80, up to Age 85	4.43%	40,488	26,425	8,178	5,885
> Age 85	3.29%	30,088	18,949	3,747	7,392
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

Primary Annuitant - Survey Volume by Gender	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Female Primary Annuitant	40.47%	369,807	270,215	52,343	47,249
Male Primary Annuitant	59.53%	544,063	259,765	209,557	74,741

Primary Annuitant - Average Age	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Average Female Age	-	67.2	67.7	64.8	67.1
Average Male Age	-	65.7	65.4	66.2	65.2
Combined Average Age	-	66.3	66.5	65.9	66.0

1. Annuitant Age is Age Last Birthday as of the Annuity Purchase (Premium Payment) Date.

2. Joint Annuitant (Age[1] / Gender) Results

Joint Annuitant Age Range	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Age 45 or Less	1.43%	3,742	-	3,742	-
> Age 45, up to Age 50	2.15%	5,625	-	5,625	-
> Age 50, up to Age 55	7.34%	19,224	-	19,224	-
> Age 55, up to Age 60	19.62%	51,388	-	51,388	-
> Age 60, up to Age 65	27.88%	73,008	-	73,008	-
> Age 65, up to Age 70	20.66%	54,098	-	54,098	-
> Age 70, up to Age 75	12.18%	31,893	-	31,893	-
> Age 75, up to Age 80	5.62%	14,727	-	14,727	-
> Age 80, up to Age 85	2.24%	5,866	-	5,866	-
> Age 85	0.89%	2,329	-	2,329	-
Total	**100.00%**	**261,900**	**-**	**261,900**	**-**
			-	100.00%	-

Joint Annuitant - Survey Volume by Gender	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Female Joint Annuitant	80.30%	210,309	-	210,309	-
Male Joint Annuitant	19.70%	51,591	-	51,591	-

Joint Annuitant - Average Age	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Average Female Age	-	64.0	-	64.0	-
Average Male Age	-	65.9	-	65.9	-
Combined Average Age	-	64.4	-	64.4	-

1. Annuitant Age is Age Last Birthday as of the Annuity Purchase (Premium Payment) Date.

3. Joint Type / Continuation Results

Joint Type / Continuation Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Non-Reducing					
100% Continuation	93.96%	246,091	-	246,091	-
Total Non-Reducing	**93.96%**	**246,091**	**-**	**246,091**	**-**
Reducing on First Death					
< 50% Continuation	0.03%	68	-	68	-
50% Continuation	1.51%	3,964	-	3,964	-
> 50% and < 66% Continuation	0.45%	1,174	-	1,174	-
66% to 67% Continuation	0.42%	1,103	-	1,103	-
> 67% and < 75% Continuation	0.03%	83	-	83	-
75% Continuation	0.71%	1,851	-	1,851	-
> 75% and < 100% Continuation	0.09%	241	-	241	-
Total Reducing on First Death	**3.24%**	**8,484**	**-**	**8,484**	**-**
Reducing on Death of Primary					
< 50% Continuation	0.06%	151	-	151	-
50% Continuation	1.36%	3,560	-	3,560	-
> 50% and < 66% Continuation	0.05%	123	-	123	-
66% to 67% Continuation	0.35%	906	-	906	-
> 67% and < 75% Continuation	0.01%	34	-	34	-
75% Continuation	0.87%	2,272	-	2,272	-
> 75% and < 100% Continuation	0.04%	117	-	117	-
Total Reducing on Death of Primary	**2.74%**	**7,163**	**-**	**7,163**	**-**
Reducing on Death of Secondary					
< 50% Continuation	0.00%	5	-	5	-
50% Continuation	0.04%	93	-	93	-
> 50% and < 66% Continuation	0.00%	0	-	0	-
66% to 67% Continuation	0.00%	2	-	2	-
> 67% and < 75% Continuation	0.00%	0	-	0	-
75% Continuation	0.02%	42	-	42	-
> 75% and < 100% Continuation	0.01%	20	-	20	-
Total Reducing on Death of Secondary	**0.06%**	**162**	**-**	**162**	**-**
Total	**100.00%**	**261,900**	**-**	**261,900**	**-**
			-	100.00%	-

4. Guarantee Results

Guarantee Period Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
0 Years (Life Only)	13.87%	126,720	87,206	39,514	0
> 0 Years, up to 1 Year	0.01%	50	43	7	0
> 1 Year, up to 2 Years	0.00%	13	7	6	0
> 2 Years, up to 3 Years	0.14%	1,311	18	4	1,289
> 3 Years, up to 4 Years	0.11%	974	12	1	961
> 4 Years, up to 5 Years	6.41%	58,555	19,920	4,872	33,763
> 5 Years, up to 6 Years	0.54%	4,896	447	56	4,393
> 6 Years, up to 7 Years	0.95%	8,656	1,038	159	7,459
> 7 Years, up to 8 Years	0.46%	4,168	648	115	3,405
> 8 Years, up to 9 Years	0.32%	2,886	455	37	2,394
> 9 Years, up to 10 Years	16.21%	148,108	82,131	25,753	40,224
> 10 Years, up to 11 Years	0.11%	997	204	73	720
> 11 Years, up to 12 Years	0.25%	2,276	657	159	1,460
> 12 Years, up to 13 Years	0.13%	1,161	436	114	611
> 13 Years, up to 14 Years	0.13%	1,157	380	238	539
> 14 Years, up to 15 Years	2.91%	26,597	12,651	4,460	9,486
> 15 Years, up to 16 Years	0.10%	951	347	300	304
> 16 Years, up to 17 Years	0.11%	1,029	418	274	337
> 17 Years, up to 18 Years	0.09%	854	296	263	295
> 18 Years, up to 19 Years	0.05%	502	112	134	256
> 19 Years, up to 20 Years	4.42%	40,413	19,382	10,400	10,631
> 20 Years, up to 25 Years	0.56%	5,084	2,097	1,180	1,807
> 25 Years, up to 30 Years	0.53%	4,801	2,264	1,082	1,455
> 30 Years, up to 35 Years	0.01%	134	49	12	73
> 35 Years, up to 40 Years	0.02%	179	89	11	79
> 40 Years, up to 45 Years	0.00%	25	12	1	12
> 45 Years, up to 50 Years	0.01%	52	22	4	26
> 50 Years	0.00%	19	8	0	11
Cash Refund	47.84%	437,213	273,080	164,133	0
Installment Refund	3.73%	34,087	25,551	8,536	0
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

5. Temporary Period Results

Temporary Period Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
No Temporary Period	99.99%	913,801	529,911	261,900	121,990
> 0 Years, up to 5 Years	0.00%	0	0	0	0
> 5 Years, up to 10 Years	0.00%	38	38	0	0
> 10 Years, up to 15 Years	0.00%	11	11	0	0
> 15 Years, up to 20 Years	0.00%	15	15	0	0
> 20 Years, up to 25 Years	0.00%	0	0	0	0
> 25 Years	0.00%	5	5	0	0
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

6. Fund Type Results

Fund Type Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Non-Qualified	56.82%	519,279	317,464	123,091	78,724
Qualified IRA	41.83%	382,283	205,277	135,383	41,623
Qualified Teachers 403(b)	0.11%	964	658	214	92
Other Qualified	0.88%	8,060	4,581	2,349	1,130
Roth IRA	0.36%	3,284	2,000	863	421
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

QLAC Purchase Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Qualified IRA	99.32%	15,203	9,782	5,421	0
Qualified Teachers 403(b)	0.07%	10	5	5	0
Other Qualified	0.61%	94	67	27	0
Total	**100.00%**	**15,307**	**9,854**	**5,453**	**0**
			64.38%	35.62%	0.00%

Non-Qualified Cost Basis Results[1]	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
0% Cost Basis	0.36%	1,847	1,139	390	318
> 0%, up to 25% Cost Basis	1.56%	8,084	4,041	1,763	2,280
> 25%, up to 50% Cost Basis	3.60%	18,676	9,556	4,058	5,062
> 50%, up to 75% Cost Basis	4.35%	22,589	11,464	5,292	5,833
> 75% and < 100% Cost Basis	2.50%	12,976	7,038	2,995	2,943
100% Cost Basis	73.15%	379,865	242,613	95,224	42,028
> 100% Cost Basis	0.90%	4,699	2,677	919	1,103
Default Cost Basis	13.58%	70,543	38,936	12,450	19,157
Total	**100.00%**	**519,279**	**317,464**	**123,091**	**78,724**
			61.14%	23.70%	15.16%

1. The first seven rows of the table (the ranges of 0% to > 100%) include all non-qualified results where a cost basis value can be indicated as part of the survey request (where a premium is given, to calculate the annuity income). The "Default Cost Basis" category includes all other non-qualified survey activity (where an income is given, to calculate the required annuity premium); this is because the cost basis is set to 100% of the calculated premium by default for these surveys. For all other fund types, the results are not included for the following reasons: (a) for ROTH IRA surveys the cost basis is set to 100% (resulting in no taxable portion), and (b) for all other qualified surveys the cost basis is set to zero.

7. Survey Type Results

Survey Type Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Surveys where Premium is Given					
> $0, up to $25,000	2.08%	19,041	13,411	2,679	2,951
> $25,000, up to $50,000	6.14%	56,123	37,402	9,741	8,980
> $50,000, up to $75,000	5.13%	46,836	30,539	9,049	7,248
> $75,000, up to $100,000	18.09%	165,293	109,785	39,201	16,307
> $100,000, up to $200,000	19.69%	179,977	108,373	50,778	20,826
> $200,000, up to $300,000	11.77%	107,594	59,824	36,640	11,130
> $300,000, up to $400,000	5.77%	52,701	27,578	19,900	5,223
> $400,000, up to $500,000	5.90%	53,944	29,239	20,305	4,400
> $500,000, up to $750,000	4.17%	38,097	18,225	15,858	4,014
> $750,000, up to $1,000,000	4.03%	36,805	18,454	14,467	3,884
> $1,000,000	2.34%	21,376	9,976	8,620	2,780
Total Surveys where Premium is Given	**85.11%**	**777,787**	**462,806**	**227,238**	**87,743**
Surveys where Income is Given[1]					
> $0, up to $5,000	0.81%	7,380	4,745	1,287	1,348
> $5,000, up to $10,000	1.75%	15,973	9,546	3,289	3,138
> $10,000, up to $15,000	2.62%	23,917	13,191	6,709	4,017
> $15,000, up to $20,000	1.42%	12,984	6,701	3,640	2,643
> $20,000, up to $30,000	2.91%	26,550	12,308	7,793	6,449
> $30,000, up to $40,000	1.44%	13,132	5,864	3,152	4,116
> $40,000, up to $50,000	1.09%	9,935	4,079	2,490	3,366
> $50,000, up to $75,000	1.38%	12,605	5,101	3,199	4,305
> $75,000, up to $100,000	0.58%	5,262	2,057	1,441	1,764
> $100,000, up to $200,000	0.68%	6,173	2,741	1,352	2,080
> $200,000	0.24%	2,172	841	310	1,021
Total Surveys where Income is Given	**14.89%**	**136,083**	**67,174**	**34,662**	**34,247**
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

Survey Average - Premium Size / Annual Income	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Surveys where Premium is Given	-	$280,349.24	$254,212.84	$337,174.22	$271,041.27
Surveys where Income is Given	-	$37,012.65	$32,538.83	$34,262.88	$48,570.96

1. The income ranges specified in the "Surveys where Income is Given" results reflect payment amounts to the client on a per annum basis (an annual total is provided to accommodate the various payment frequencies other than annual, including: monthly, quarterly and semi-annually).

8. Payment Frequency Results

Payment Frequency Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Monthly	80.96%	739,899	426,992	210,281	102,626
Quarterly	0.39%	3,551	2,488	560	503
Semi-Annully	0.08%	774	369	155	250
Annually	18.56%	169,646	100,131	50,904	18,611
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

9. Purchase (Premium Payment) Date Results[1]

Purchase Date Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
0 Days (Same as Survey Date)	72.77%	665,031	408,108	159,937	96,986
1 Day	0.45%	4,121	2,057	1,527	537
2 Days	0.24%	2,202	1,082	855	265
3 Days	0.27%	2,448	1,270	826	352
4 Days	0.26%	2,361	1,206	868	287
5 Days	0.28%	2,571	1,352	914	305
6 Days	0.42%	3,818	1,735	1,600	483
7 Days	21.92%	200,284	96,008	85,731	18,545
8 Days	0.21%	1,934	1,009	631	294
9 Days	0.17%	1,515	769	537	209
10 Days	0.16%	1,441	709	529	203
11 Days	0.12%	1,103	616	308	179
12 Days	0.10%	896	510	263	123
13 Days	0.10%	881	489	234	158
14 Days	0.14%	1,258	727	343	188
15 Days	0.08%	740	450	197	93
> 15 Days, up to 1 Month	1.18%	10,800	6,301	2,915	1,584
> 1 Month, up to 2 Months	0.56%	5,086	2,671	1,765	650
> 2 Months, up to 3 Months	0.17%	1,585	845	564	176
> 3 Months, up to 6 Months	0.22%	2,023	1,120	716	187
> 6 Months, up to 1 Year	0.19%	1,772	946	640	186
> 1 Year	0.00%	0	0	0	0
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

1. A purchase date of one month is qualified as follows: (a) the purchase date is on the same day exactly one calendar month from the date the quote is run, or (b) the date the quote is run is on the 31st day for the months of March, May, August or October and the purchase date is on the 30th day for the months of April, June, September and November (respectively), or (c) the date the quote is run on the 29th, 30th or 31st day for the month of January, and the purchase date is on the 28th day for the month of February (or the 29th day in the case of a leap year).

10. Income Start Date Ranges

Income Start Date Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
0 Days (Same as Purchase Date)	2.89%	26,433	17,357	8,360	716
> 0 Days, up to 7 Days	0.26%	2,395	1,394	654	347
> 7 Days, up to 14 Days	0.40%	3,610	2,000	999	611
> 14 Days and < 1 Month	1.50%	13,742	7,311	4,257	2,174
Exactly 1 Month[1]	55.74%	509,406	296,286	125,133	87,987
> 1 Month, up to 2 Months	2.90%	26,505	13,758	8,230	4,517
> 2 Months, up to 3 Months	1.23%	11,242	5,741	3,474	2,027
> 3 Months, up to 4 Months	0.80%	7,283	3,600	2,334	1,349
> 4 Months, up to 6 Months	1.20%	10,925	5,095	3,954	1,876
> 6 Months, up to 8 Months	0.86%	7,904	3,626	2,859	1,419
> 8 Months and < 1 Year	1.52%	13,894	5,908	5,236	2,750
Exactly 1 Year[2]	1.97%	18,027	10,004	5,620	2,403
> 1 Year, up to 2 Years	4.15%	37,933	20,339	13,864	3,730
> 2 Years, up to 3 Years	3.25%	29,719	15,422	12,057	2,240
> 3 Years, up to 4 Years	2.66%	24,306	13,311	9,498	1,497
> 4 Years, up to 5 Years	2.92%	26,644	14,755	10,315	1,574
> 5 Years, up to 6 Years	3.10%	28,343	16,530	10,186	1,627
> 6 Years, up to 7 Years	1.73%	15,801	9,285	5,882	634
> 7 Years, up to 8 Years	1.50%	13,746	8,402	4,923	421
> 8 Years, up to 9 Years	1.07%	9,757	5,836	3,668	253
> 9 Years, up to 10 Years	1.73%	15,769	9,970	5,360	439
> 10 Years, up to 15 Years	4.71%	43,087	31,450	10,668	969
> 15 Years, up to 20 Years	1.15%	10,524	7,307	2,939	278
> 20 Years	0.75%	6,875	5,293	1,430	152
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

1. An income start date of exactly one month is qualified as follows: (a) the income start date is on the same day exactly one calendar month from the purchase date, or (b) the purchase date is on the 31st day for the months of March, May, August or October and the income start date is on the 30th day for the months of April, June, September and November (respectively), or (c) the purchase date is on the 29th, 30th or 31st day for the month of January, and the income start date is on the 28th day for the month of February (or the 29th day in the case of a leap year).

2. An income start date of exactly one year is qualified as follows: (a) the income start date is on the same day exactly one calendar year from the purchase date, or (b) the purchase date is on the 29th day for the month of February, and the income start date is on the 28th day for the month of February in the following year (in the case of a leap year).

11. Index Results

Index Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
None					
No Index Rate Specified	96.97%	886,173	514,610	252,396	119,167
Total None	**96.97%**	**886,173**	**514,610**	**252,396**	**119,167**
CPI-u					
CPI-u Index Rate Specified	0.14%	1,246	867	379	0
Total CPI-u	**0.14%**	**1,246**	**867**	**379**	**0**
COLA					
<0.50%	0.00%	0	0	0	0
0.50%	0.00%	5	0	2	3
>0.50% and <1.00%	0.00%	2	1	1	0
1.00%	0.36%	3,297	1,957	1,072	268
>1.00% and <1.50%	0.00%	11	2	6	3
1.50%	0.01%	68	36	19	13
>1.50% and <2.00%	0.00%	8	0	7	1
2.00%	1.23%	11,216	5,922	4,304	990
>2.00% and <2.50%	0.00%	40	21	19	0
2.50%	0.03%	281	162	105	14
>2.50% and <3.00%	0.00%	12	8	4	0
3.00%	1.03%	9,410	5,251	3,088	1,071
>3.00% and <3.50%	0.00%	3	2	1	0
3.50%	0.00%	19	11	6	2
>3.50% and <4.00%	0.00%	2	0	2	0
4.00%	0.10%	899	440	229	230
>4.00% and <4.50%	0.00%	4	4	0	0
4.50%	0.00%	1	1	0	0
>4.50% and <5.00%	0.00%	2	2	0	0
5.00%	0.09%	857	491	202	164
>5.00%	0.03%	314	192	58	64
Total COLA	**2.89%**	**26,451**	**14,503**	**9,125**	**2,823**
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

12. Rating Results[1]

Rating Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Rating not Requested	41.64%	380,555	240,073	94,917	45,565
A.M. Best	24.40%	223,011	130,576	48,175	44,260
Fitch	0.33%	3,032	1,748	874	410
Moody's	0.04%	336	176	130	30
Standard & Poor's	33.59%	306,936	157,407	117,804	31,725
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

1. The display of ratings data is often controlled at the Distributor level. In some cases surveys will always show a particular rating, in others the advisor chooses whether or not to show the rating.

13. State of Issue Results

State Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Alabama	0.97%	8,898	4,899	2,823	1,176
Alaska	0.55%	4,987	4,169	568	250
Arizona	2.67%	24,438	14,056	7,091	3,291
Arkansas	0.51%	4,664	2,601	1,285	778
California	10.22%	93,406	60,984	22,592	9,830
Colorado	2.39%	21,852	12,027	6,137	3,688
Connecticut	2.15%	19,667	11,444	5,431	2,792
Delaware	0.32%	2,902	1,803	752	347
District of Columbia	0.15%	1,328	1,014	145	169
Florida	9.09%	83,080	49,933	23,011	10,136
Georgia	2.40%	21,902	13,082	6,468	2,352
Guam	0.01%	48	26	1	21
Hawaii	0.67%	6,136	4,168	1,236	732
Idaho	0.39%	3,574	1,882	1,121	571
Illinois	4.10%	37,431	21,889	10,864	4,678
Indiana	1.81%	16,505	9,020	5,303	2,182
Iowa	1.07%	9,813	5,159	2,796	1,858
Kansas	0.88%	8,068	4,538	1,884	1,646
Kentucky	0.87%	7,924	4,207	2,612	1,105
Louisiana	0.97%	8,868	4,866	2,957	1,045
Maine	0.38%	3,470	1,919	1,078	473
Maryland	1.81%	16,534	9,932	4,577	2,025
Massachusetts	3.70%	33,794	18,328	10,782	4,684
Michigan	2.93%	26,795	14,040	8,385	4,370
Minnesota	2.26%	20,680	10,282	6,318	4,080
Mississippi	0.37%	3,354	2,023	911	420
Missouri	1.90%	17,372	9,716	5,434	2,222
Montana	0.23%	2,145	1,240	579	326
Nebraska	0.62%	5,671	2,959	1,576	1,136
Nevada	0.53%	4,834	2,870	1,244	720
New Hampshire	0.66%	6,075	3,102	1,837	1,136
New Jersey	4.14%	37,854	23,062	10,834	3,958
New Mexico	0.49%	4,466	2,413	1,246	807
New York	5.85%	53,456	35,029	13,032	5,395
North Carolina	3.40%	31,088	17,473	9,282	4,333
North Dakota	0.20%	1,835	925	455	455

13. State of Issue Results (Continued)

State Results	Overall %	Overall Volume	Single Life	Joint Life	Certain Only
Ohio	3.32%	30,326	15,567	9,918	4,841
Oklahoma	0.77%	6,993	3,600	2,503	890
Oregon	1.26%	11,518	6,743	3,373	1,402
Pennsylvania	4.68%	42,744	24,560	11,985	6,199
Puerto Rico	0.03%	238	160	32	46
Rhode Island	0.36%	3,252	1,853	1,045	354
South Carolina	1.33%	12,191	6,407	4,158	1,626
South Dakota	0.25%	2,275	1,285	620	370
Tennessee	1.42%	12,947	6,572	4,025	2,350
Texas	7.01%	64,085	35,157	20,334	8,594
Utah	0.84%	7,668	3,863	2,482	1,323
Vermont	0.26%	2,389	1,251	753	385
Virgin Islands	0.01%	53	19	24	10
Virginia	2.48%	22,619	13,499	6,277	2,843
Washington	2.21%	20,219	12,055	5,560	2,604
West Virginia	0.28%	2,575	1,479	797	299
Wisconsin	1.69%	15,403	8,109	4,863	2,431
Wyoming	0.16%	1,461	721	504	236
Total	**100.00%**	**913,870**	**529,980**	**261,900**	**121,990**
			57.99%	28.66%	13.35%

14. Survey Content

This report is based on all U.S. Payout Annuity survey activity processed by CANNEX that could potentially result in a sale. In other words, it includes surveys paid by distribution companies and run by advisors or the annuity desk of distributors. It excludes:

1. Surveys run by insurance carriers because the assumption is that these are for market research purposes;

2. Surveys run by advisors or the annuity desk of distributors that are not paid for - i.e. those flagged as "demo" because the survey includes the note: "not intended to be used to advise or sell a product to a potential customer";

3. Surveys originating from a public facing web site because it is assumed that this is a consumer running this survey and that he/she will eventually receive a CANNEX survey through an advisor;

4. Surveys originating from web sites that do not list specific carriers because it is assumed that these are for general research purposes;

5. Surveys in which no carriers quote.

   Note - single carrier quotations originating from an insurance carrier's intranet, extranet or web site that is hosted by CANNEX are also considered as survey activity.

CANNEX

The Market Valuation of Annuitized Assets (INCOME VALUE)

Position Paper

Updated: December 2019

This paper provides an overview of the case and methodology for providing a fair market value for an income annuity contract

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Updated: December 2019

Contents

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The Market Valuation of Annuitized Assets (a/k/a Income Value)

This paper provides an overview of the case and methodology for providing a fair market value for an income annuity contract.

I. The Imperative (Business Case)

A. Background

Immediate income annuities have long been recognized by academics and financial experts as one of the most efficient vehicles to generate cash flow for an investor in retirement. It is one of the oldest (2,000 years +) and simplest financial products available – but probably one of the least understood. Various retirement income strategies now incorporate the use of income annuities as a holding within a financial portfolio to better support cash flow needs. Because of this, the industry has been working to better align these guaranteed income contracts seamlessly with other investments and custodial accounts.

Today, allocating to insurance products in support of retirement income can be still considered a sophisticated process where simplified tools and aids are not yet readily available to the public. Therefore, it's usually up to a financial advisor to advocate and implement a plan incorporating these contracts. However, income annuities are not broadly adopted across the industry by financial professionals and are still considered a niche product. There are a few reasons for this lack of adoption:

1. Behavioral Finance Challenges

Research has shown that investors greatly value the opportunity to receive guaranteed lifetime income to support their lifestyle; however, many are unwilling to forgo any potential loss of control of their money in exchange for receiving these guarantees. Product allocation strategies that place only a portion of one's savings into an income annuity help address some of these fears (i.e., it's not an "all or nothing" proposition).

2. Awareness and Education

Many advisors (along with the media and public) are still somewhat confused about the differences between income annuities[1] and savings annuities[2]. There is also a general lack of awareness that an investor or their estate has, in many cases, access to their remaining principal in an income annuity contract in the event of death or a change in financial needs. Some speculate that the absence of this information within various training and accreditation programs (e.g., CFP Courses and Exam) helps contribute to this misunderstanding.

3. Alignment with Common Financial Practices and Business Models

Once a purchase of an income annuity is made, those assets disappear from a client's consolidated statement and, most significantly, they disappear from the AUM[3] report of the advisory firm (the primary scorecard for performance from upper management down to the advisor). Many feel that making the income annuity holding as visible as other investments and products within internal and external reporting would help bring the product more into the mainstream. Registered Investment Advisors are also becoming more interested in using income annuities within a fee based environment.

B. Industry Initiative

The initiative to create a valuation for annuitized contracts focuses on the last of these three barriers. In December of 2010, financial service organizations across the industry started to work together to define a common standard for market valuation and identify information

and technology requirements for this standard throughout the financial services value chain (Research & Education, Sales & Planning, Quotes & Illustrations, New Business Processing, and In-Force Policy Support).

C. Valuation Options

A survey was conducted in early 2011 to assess current practices and preferences within the industry to understand what type of information and valuation methods would be appropriate in various situations. Generally, the valuation of an income annuity could be applied to client statements, advisor reporting, tax reporting, financial planning, and potential fee-based practices. Various options for valuation were defined and tested including:

1. **Fair Market Value (or Replacement Cost):**
   The actuarial present value of the remaining benefits that can be provided by the income annuity contract. This value is tied to both long term and short term U.S. Treasury Rates and can fluctuate with the market. It is also tied to a standard industry-wide actuarial table (i.e., annuity mortality table) specific to the gender of the individual.

2. **Initial Premium:**
   The actual amount of premium (i.e., deposit) that was used to purchase the income annuity contract.

3. **Commuted Value (or Liquidity Value):**
   The amount of money you would receive if you left the income annuity contract early before all guaranteed benefits are paid out.

4. **Death Benefit (or Beneficiary Guarantee):**
   The amount of money your beneficiaries would receive if you die before all guaranteed benefits are paid out.

5. **Cumulative Payments to Date**
   The total amount of payments that have been received from the income annuity to date.

Of all these options, the fair market value (or replacement cost) was the most attractive alternative. Unfortunately, this was a value that did not have a common standard and, thus, was rarely used in practice. As such, there was a strong preference for establishing a standard method for reporting income valuation. A summary of results from this survey can be found in **Appendix A**.

D. Conclusion

Based on the results of the survey, financial service organizations decided to define a common methodology and process to communicate a fair market value (or replacement cost) for the industry. This value is referred to as INCOME VALUE throughout the remainder of this document.

II. "INCOME VALUE" Defined

A. Definition

In practice, INCOME VALUE is defined as the actuarial present value of remaining benefits from an annuitized contract.

Other potential designations for INCOME VALUE were evaluated including:

- Economic Value of Annuity Income
- Standardized Present Value
- Fair Market Value
- Replacement Value

Feedback obtained from a number of distributors and manufacturers found that INCOME VALUE was the simplest and most attractive identifier. All firms agreed that a common identifier was necessary for both internal and external purposes. Distributors may wish to provide additional context and explanation around INCOME VALUE if they report it externally to their clients. It is envisioned that a standard Disclosure Statement/Document wouldprovide an explanation of how INCOME VALUE is calculated and clarification that it is not a cash value, etc (refer to Sec. V.A.1 in this document)

B. Scope

The market valuation of annuitized assets would cover the following products:

- *Immediate Income Annuities (Fixed or Variable)*
- *Deferred Income Annuities (i.e., Longevity Insurance)*
- *Fully or Partially annuitized assets of a SavingsAnnuity Contract (Fixed, Indexed or Variable)*

C. Methodology

The base methodology defined below focuses on fixed rate annuitization since this is the most common form selected in the market today (i.e., >95%). Variations to this methodology are addressed later in this section for variable annuitization as well as other features like payment adjustments.

1. Overview of Calculation

a) Summary:

(1) Depending upon the mode of payment (e.g., monthly), each income payment is discounted back to the valuation date using a common industry benchmark for **economic value**.

(2) Then, the **probability of survivorship** is calculated for each payment period based upon a common mortality table.

(3) Finally, the economic values are **combined** with the morality probability to derive the INCOME VALUE. This calculation may happen as frequently as daily depending upon the need of this information.

b) The details (formula) of the calculation are as follows:

x is the age of the annuitant(s) at the valuation date
t is the time (in years) between the valuation date and the income payment
i is the discount rate for each income payment

(1) Economic Value of Income Payment = Income Payment(t) $\cdot$ $(1+i)^{-t}$
Economic Value of Death Benefit = Death Benefit(t) $\cdot$ $(1+i)^{-t}$

(2) Probability of receiving income payment at time t = Survivorship Factor(t)
- If the payment is not life-contingent, the survivorship factor is 1
- If the payment is life-contingent, the survivorship factor is the probability of the annuitant surviving from the valuation date until time t
    - For joint annuitants, the survivorship factor is the probability of either annuitant surviving until time t

Probability of receiving death benefit at time t = Mortality Factor(t)
- The mortality factor is the probability of surviving from the valuation date until time t-1 but dying before time t
    - For joint annuitants, the mortality factor is the probability of at least one annuitant surviving until time t-1 but both having died before time t

(3) Income Value for each payment period =
Income Payment $\cdot$ $(1+i)^{-t}$ $\cdot$ Survivorship Factor(t)
+ Death Benefit(t) $\cdot$ $(1+i)^{-t}$ $\cdot$ Mortality Factor(t)

- Total Income Value (for all payment periods) =

$$\sum_{t} \left[\begin{array}{l} \text{Income Payment} \cdot (1+i)^{-t} \cdot \text{ Survivorship Factor}(t) \\ \text{+ Death Benefit}(t) \cdot (1+i)^{-t} \cdot \text{ Mortality Factor}(t) \end{array} \right]$$

Note: Consistent with current practices, the time period for life contingent payments will stop at age 115.

2. Variables Used in INCOME VALUE Calculation

a) Discount Rate for Economic Value

(1) The Income Annuity Yield Curve - Summary

- The *Income Annuity Yield Curve* is a spot rate curve that is derived on a daily basis from the average retail payout results of the top income annuity providers in the industry. Using this curve as the discount rate helps better calibrate the present valuation with the actual pricing and credit experience of guaranteed income manufacturers.

- As a **point of reference** and education for investors and financial advisors, two sub-components of the *Income Annuity Yield Curve* are also provided:
  a) *U.S. Treasury CMT Value* – Treasury values for 1, 5, 10 & 30 years are provided.
  b) *Crediting Rate Spread Value* – Spread values for 1, 5, 10 & 30 years are also provided. The Treasury and Spread values added together should equal the 1, 5, 10, and 30 year rates on the interpolated *Income Annuity Yield Curve*.

- A **Sample Valuation Table** is also provided that would allow a user/firm to validate or audit that their INCOME VALUE calculation is accurate against the industry standard.
- An independent third party (i.e., CANNEX) will calculate and distribute the *Income Annuity Yield Curve* along with the other components described above.

b) Mortality

The appropriate mortality tables and improvement scales defined in this process would be available from existing sources in the industry.

(1) **Gender** (Sex Distinct)
Sex distinct tables will be used for in all cases including situations where unisex mortality rates may be used in pricing for certain states (e.g., Montana, Massachusetts) or fund types (e.g., qualified).

(2) **Mortality Table** (A2000)
The A2000 table has been the most commonly used and recognized table in the industry. Although some carriers have since incorporated the A2012 table, many still deploy A2000 with a projection.

(3) **Improvement Scale** (G for Male; G/2 for Female)
The most common use of projection scales is also applied.

(4) **Mortality Projections**
Projections of mortality will be limited to a static basis only. In other words, a static projection of 12 years (= 2012 – 2000) is used to update the mortality table to the current year of valuation from the base year of 2000. In 2013, it will be projected 13 years and then 14 years in 2014 and so on. Dynamic projections are not used for income valuation.

c) Variables that are Excluded from INCOME VALUE Calculation

The following elements are excluded from the calculation:

- State Premium Taxes
- Other Taxes (i.e., Qualified vs. Non-Qualified Funding)
- Compensation, Loads and other expenses specific to a carrier

Expenses like premium tax will not be factored into the calculation since this is a one-time event at the time of purchase, similar to the deduction of any load on investment products (e.g., mutual funds) for commission. The objective is to treat all contracts consistently. Therefore, the INCOME VALUE is not so much a representative of Replacement Cost as it is an Economic Value.

3. Construction and Management of the Income Annuity Yield Curve

a) Methodology (Income Annuity Yield Curve)

The following standards have been defined for producing and providing an *Income Annuity Yield Curve* for the industry. The accurate calculation and management of this curve is necessary to ensure the integrity of INCOME VALUE standard.

(1) How Many Carriers are represented in the Curve?

- There are over 60 manufacturers in the U.S. market today that provide some form of income annuity product. It would be impractical (and unnecessary) to incorporate the entire universe of SPIA rates in calculating a spread.
- It is recommended that the top 10 payout results on the CANNEX SPIA Exchange are used to derive the daily Income Annuity Yield Curve. Actually, the first two (2) results would be eliminated so as not to distort the curve due to competitive decisions by some carriers, so therefore the results from **#3 through #12** are used for the calculation. This approach is similar to other benchmarks in the market, like the Lipper Indices for Mutual Funds, where the top and bottom sets of results are excluded from a calculation to eliminate the outliers.
- There are some other assumptions about the carriers used to derive the Income Annuity Yield Curve:
    - Credit Strength (e.g., at least an A Rating)
    - Competitiveness (e.g., #3 through #12)
    - Independent Calculation of Payout Results (i.e., not self-reporting)
    - Commitment to the Income Annuity Market

(2) How is the Curve derived?

- A premium amount for $1,000 benefit per month is generated from 10 representative carriers in the market for the following scenarios:
    - Life only
    - Male and Female
    - Ages: 55-70
    - Deferral period: 0, 2, 3, 4, 5, 6 years

- These premiums are obtained from CANNEX's Income Annuity Exchange service. An average premium is calculated for each of these 192 scenarios.
- The Treasury Rates for 1-year, 5-year, 10-year, and 30-year tenors (currently pulled from the US Treasuries website) are used as the base yield curve (these are spot rates based on semi-annual compounding frequency).
- A series of calculations are performed to derive the crediting spreads that closely match the average premiums of the 192 scenarios to their corresponding Income Values. (Please see

Appendix B of the Technical Document INCOME VALUE for more details on this process).

(3) How often is the Income Annuity Yield Curve Updated?
The curve will be updated on a **daily basis**. Various distributors and carriers may choose to calculate and update INCOME VALUE on a monthly basis; however, the point in time they perform that calculation may vary during a particular month.

(4) Where can you obtain the Income Annuity Yield Curve?
CANNEX Financial Exchange will perform the Yield Curve calculation and provide the supporting information (U.S. Treasury and Crediting Spreads; Sample Income Value Table). Please refer to the Income Annuity Yield Curve FAQ document for details on where and how to access the rates..

4. Application of Methodology for Different Types of contracts

a) Joint Life, Single Life, Period Certain and Temporary Period Contracts
The methodology would not vary across these types of contracts. The INCOME VALUE would reflect the state of the existing benefit.

b) Deferred Income Annuity Contracts (DIA / Longevity)
The same Adjusted Discount Curve can be used for DIA contracts. The appropriate discount rate will be used for Income Payments that are scheduled to begin later (i.e., rates from the longer end of the curve). If there is a death benefit during the deferral period, the present value should factor that in as well.

c) Variable Annuitization
Substitute the current AIR in force with contract instead of the adjusted discount rate curve to derive the economic value of each income payment.

d) Payment Adjustments

- COLA/fixed adjustments:
  Fixed increases to income payments (i.e., COLA) can be accommodated with the methodology.
- CPI Adjustments:
  Apply the current CPI to future income payments

5. Other Considerations for Methodology

a) Frequency of Income Valuation (Monthly)
Although some distributors may wish to receive valuation information on a daily basis, it is suggested that INCOME VALUE be updated on a monthly basis for a variety of reasons:

- To align with the clearing and transmittal capability of the majority of carriers in the market today.

- Aligning the change in value to the payment mode (e.g., monthly) may be sufficient for such a long term instrument.

Distributors or carriers may choose to update INCOME VALUE on a variety of dates on a particular month:

- End of Month
- On the Payment Date
- New Contract Issue Date

For this reason, a VALUATION DATE (i.e., "value as of date") would be required as part of the valuation information transmitted between a carrier and a distributor (see Section IV below – Operational Requirements).

b) Variance in valuation between Carriers

It is recognized that there will be some minor differences in programming and assumptions used by insurance carriers in calculating INCOME VALUE. Since valuation is essentially different from annuitant to annuitant based on the specific profile of consumer and the type of contract they hold, this variance would be minor. Examples of these differences include:

a. Different rounding rules
b. Age definition as of the Valuation Date
c. Pivotal Date for the income value calculation
d. Different methods to calculate Cash Refund and Installment Refund
e. Monthly vs. Annual cash flow models

6. Validation of Methodology

Various test cases were run that reflected variations in discount rates and mortality assumptions. The results demonstrated the difference across various types of contracts. A summary of this analysis is found in **Appendix B** of this document.

7. Monitoring & Future Enhancement of Methodology

It is anticipated that over the course of time there may be some changes necessary for certain inputs or processes used to support the calculation of INCOME VALUE. Insurance carriers who are accommodating this calculation on their administrative systems should take this into account. Some examples of potential changes include:

- Industry update of mortality tables used (e.g, from A2000 to "A2012").
- Common adoption of enhanced improvement scales (e.g., G2 for valuations being discussed by SOA).

It is assumed that there would be ongoing monitoring and a periodic review of the methodology by an industry committee to discuss best practices as well as propose and agree to any necessary modifications. For now, CANNEX will conduct a periodic review of the INCOME VALUE and Income Annuity Yield Curve methodology and canvas the industry for input and discussion with regard to any necessary enhancements to the methodology and standards.

III. The Potential Use and Application of INCOME VALUE

A. Household Reporting / Client Statements

1. "To Disclose or Not to Disclose"

It is assumed that each distributor will position and display INCOME VALUE is a manner that is consistent with their retirement product and planning philosophy as well as their marketing and compliance standards.

a) Some may choose not to display INCOME VALUE on any client statement or reports since they do not want to give the impression that the value is readily accessible without penalty or consequences.
b) Some may choose to display INCOME VALUE in a section that is separate from any aggregated values from other products.
c) Some may integrate the INCOME VALUE with other product values to form a Total Account Value for the client.

2. What's In a Name?

There was strong feedback from the survey that the designation INCOME VALUE should be referred to consistently across the industry and market. Variation on the name from distributor to distributor could present confusion to both advisors and consumer and potentially diminish the impact of this platform improvement.

B. Assets Under Management (AUM) Reporting for Financial Advisors

1. Internal Reporting & Incentives

Distributors should be able to apply INCOME VALUE to certain AUM reports and provide a more accurate accounting of the amount of assets they manage on behalf of their clients. Under their own discretion, certain distributors may also choose to incorporate INCOME VALUE as part of any advisor level qualification or incentive programs.

2. Billing for Fee-Based Advisors

The fee based segment of the advisory market continues to grow. In fact, a large portion of financial advisors incorporate both commission and fee-based programs as part of their revenue model for the services they provide. Using a standardized method for INCOME VALUE would be an improvement from what some firms use today under this practice (e.g., a proprietary calculation of either fair market value or another form of value like commuted value or initial premium). INCOME VALUE for annuitized assets may be more consistent with using current market value for investments in a transparent, fee based model.

a) How does it work?

The most common practice today is for an advisor to charge a fee at a level consistent to a bond or other fixed income instrument. In the case of an annuitized asset, the fee cannot be deducted from the product itself, but rather from another liquid holding within the portfolio (e.g., a cash account, other investments) or paid as an expense from a bank account.

b) Is this practice "Legal"?

Some advisors have traditionally viewed an income annuity as a "dead asset" and therefore do not feel that they can justify a fee against a portion of a portfolio "they

can't manage". However, many advisors have adopted this practice (with supporting opinion letters and approvals) because they view the management of an income annuity as part of an overall portfolio that needs to generate cash flow to support a variety of financial needs in retirement. The advisor is still able to make both short and long term decisions regarding the income annuity product itself and/or how it is allocated within a broader portfolio – a different service than managing a portfolio for just accumulation and growth.

C. Financial Planning

Today, there are a variety of financial planning concepts and tools that support the allocation of an income annuity within a broader financial portfolio. Almost all of these tools are presented and implemented when the plan is first presented and implemented on behalf of a client. However, over the course of time, a client's needs or circumstances may change and rebalancing (or reallocation) of their portfolio is necessary. It is felt that the use of INCOME VALUE would improve the decision making in this rebalancing process since it takes into account the value required to support existing cash flow as well as estate planning needs.

D. Tax Reporting

Today, the IRS has certain codes that require the fair market value of an individual retirement annuity (i.e., income annuity) for certain tax reporting purposes. One such code specifies that "the actuarial present value of any additional benefits…is to be determined using reasonable actuarial assumptions, including reasonable assumptions as to future distributions, and without regard to an individual's health" [Sec 1.401(a)(9)-5]. In other words, this is a proprietary calculation that varies from manufacturer to manufacturer. It is felt that the use of INCOME VALUE would help standardize the calculation of fair market value across the industry resulting in more consistent tax reporting to the IRS.

E. Other Applications

a) Market Sizing

With the incorporation of INCOME VALUE, it may be possible to derive the aggregate size of the income annuity (and annuitized asset) market. Up to this point, market sizing of income annuities has been reported on a sales premium basis from year to year. Sizing the total market based on INCOME VALUE may provide a better perspective as to what portion of American assets are tied to income contracts as well as provide a gauge for the overall capital capacity for insurance carriers to back income guarantees across the U.S.

IV. Operational Requirements for INCOME VALUE

A. Technical Documentation

A Technical Document for Income Valuation is available and contains the basic specifications and requirements for an insurance carrier to accommodate the calculation and transmission of INCOME VALUE. It is assumed that Broker Dealers or other receivers of INCOME VALUE will leverage existing processes consistent with central clearing organizations like the DTCC. Ultimately, the timing and expectations about what is communicated with regard to INCOME VALUE will be determined and managed directly between the product manufacturer and the distributor.

B. Capability of Product Administrative Systems to Calculate INCOME VALUE

The calculation of INCOME VALUE is a new function and process for most administrative systems that support annuitized contracts. Generally, there are two options available to the manufacturer to produce an INCOME VALUE for the contracts they hold:

1. In House Calculation

This functionality would be developed by the manufacturer. INCOME VALUE and VALUATION DATE would then be fed into the appropriate positions and values file (i.e., PVF) that is transmitted to DTCC or another recipient (see B below).

2. Outsource Calculation

The manufacture may choose to outsource the build and/or management of this functionality to a third party. The data requirements for the calculation already exist within the DTCC PVF format. The process and work flow may vary across manufacturers, however, the calculation itself would be consistent to the industry standard.

C. Data Requirements for Transmitting INCOME VALUE Data/Information

1. Existing Processes used for Annuities

a) Full File (PVF):

Today, most insurance carriers transmit detailed information about each annuity contract to the DTCC (The Depository Trust & Clearing Corporation) via a Full Positions File (i.e., PVF) so that distributors can apply that information to various internal and external reports. The DTCC suggests that this information be transmitted at minimum on a weekly basis; however, certain distributors require this information daily.

b) Focus File (PFF):

A Focus File (i.e., PFF) facilitates the daily transmission of only the valuations of deferred annuity contracts. This was provided so that carriers could transmit a smaller data file on a more frequent basis without the strain of compiling all policy information on a daily basis.

c) New Business File (PNF)

Another smaller positions file (i.e., PNF) that facilitates the daily transmission of new business data for any or all annuity contracts sold.

2. Adoption of the Current Process Today

The PVF process has been broadly adopted by both manufacturers and distributors and, in the case of deferred annuities, the PFF file is used by a number of firms. On the other hand, the PNF file for new business information still has not been adopted by a majority of the distributors. Even though the PNF provides a logical value to the industry, the business case for small to medium size distributors to invest the time and resources to configure to this process has not evolved.

One possible option to transmit INCOME VALUE information would be to create a new and smaller positions file (e.g., "PIF" – Income File) that is separate from the primary PVF (a process that may be more attractive to manufacturers). However, adding a 4th variation of the transmittal process may slow adoption of INCOME VALUE among a majority of the distributors in the market. Having 2 options for INCOME VALUE transmission (via PVF and a new PIF) may also create too much variation for manufacturers to accommodate. If INCOME VALUE is to be broadly communicated across the industry, then it is important to align with an existing process that is broadly adopted among distributors.

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a) Enhancements & Use of the PVF/Full Positions File

It is recommended that the transmission of INCOME VALUE (and the contract elements that help derive INCOME VALUE) can be accomplished through the existing PVF format. Details for these requirements can be found in **Technical Document for INCOME VALUE**. The following enhancements or conditions would need to be accommodated for the PVF process:

(1) <u>New Contract Value Code (INV = Income Value)</u>

The following Contract Value Qualifiers are available today for income annuity or annuitized contracts. In most cases, these values are based on proprietary (i.e., non-standard) calculations from each carrier:

- AV (Actuarial Present Value)
- CV (Commuted Value)
- CMP (Compensation Based Value) for trail commissions
- PR (Total Premium or Initial Premium)

The following Contract Value Identifier would need to be added to accommodate an industry standard calculation of INCOME VALUE:

- INV (Income Value)

(2) <u>Other Accommodations</u>

If the carrier wishes to use the PVF to accommodate either the external calculation of INCOME VALUE , then "Gender" would need to be added to the file.

b) Frequency (Weekly minimum; Monday transmission)

It is recommended income annuity contract data with an associated INCOME Value be updated on a **weekly or monthly basis** through the DTCC to align with existing capabilities of both distributors and manufacturers. Allowing manufacturers to compile information from a separate admin system (from annuitized contracts) over a weekend would allow a larger percentage to meet the service level agreements (SLAs) set with distributors who typically expect to receive contract data early each day. For those distributors who require a daily transmission, the INCOME VALUE could remain the same throughout the week until such time the value is updated.

V. Implementation of INCOME VALUE Standards

A. Communications & Disclosures

1. Client / Investor Communications

a) Disclosure Statements

If INCOME VALUE is to be made available on external reports to the client, it is assumed that the appropriate disclosures would be provided by each party that communicates this data. Naturally, such disclosures would have to be review and approved by each party before making it available.

2. Industry Communications

a) FAQ Fact Sheet

A list of "Frequently Asked Questions" has been compiled by the industry working committee to help sales and service providers better prepare for inquires they may receive about INCOME VALUE.

b) Library of Client / Investor Material

Over time, the industry may develop additional material that further enhances the explanation or application of INCOME VALUE. It may be appropriate to establish a central repository for these materials so that best practices can be shared or accessed.

B. Education & Awareness

1. Awareness & Adoption by Accreditation Programs

It would be appropriate to contact various associations and standards boards to introduce the concept of INCOME VALUE so that it could eventually be incorporated into any training or continuing education programs that are delivered. These groups may include:

a) Society of Actuaries
b) Certified Financial Planning
c) Others

Appendix A - Industry Survey Results for Income Annuity Valuation

Executive Summary

INTRODUCTION

This report presents the results of a survey conducted on behalf of the Retirement Income Industry Association (RIIA) and CANNEX by Mathew Greenwald & Associates, Inc. The goals of the survey were to gauge:

- Current use of income annuity value data;
- Reaction to ways of presenting the present value of in-force annuities;
- Perceived value of adopting a standardized approach to valuation; and
- Reaction to a proposed standard for income annuity valuation.

METHODOLOGY

The survey was conducted online between February 22 and March 11, 2011.
A list of 185 firms with an interest in income annuities, including manufacturers, distributors, service providers, and clearing firms, was compiled by an RIIA working group. Of these, 49 responded to the survey, for a response rate of 26%.

Of the 49 respondents, 18 (37%) work for a life insurance company with independent distribution, and nine (18%) are with an insurance company with captive agents. Roughly one in ten works for a service provider (12%), an independent broker dealer (10%), or a captive broker dealer (10%).
Thirty seven percent of responding firms are in annuity distribution, 31% distribute and manufacture annuities, and 6% manufacture annuities; 27% neither distribute nor manufacture annuities.

KEY FINDINGS AND IMPLICATIONS

Few companies provide income annuity statements to their clients (16% issue separate statements and 14% issue consolidated statements), and even fewer provide specific information about the present value of income annuities to their clients (36% of those who provide statements).

- All who report the current value of income annuities to their clients have a proprietary system in place to measure that value.

There is considerable support, however, for providing information about the current value of annuities, particularly to owners and agents.

- Two out of three respondents believe providing information about the value of the income stream on their statements would be valuable to clients (63%; 24% believe this would be *very* valuable).
- A similar share (64%) believes compensating their advisors based on the present value of their clients' income annuities would be valuable, even though most compensate their agents through commissions.

There is also strong support for establishing a standard method for reporting income annuity valuation.

- Eight in ten believe having a standardized valuation method for SPIAs would be valuable overall (80%), most often because it would provide comparable data for those who have more than one such product.

- Six in ten also believe a standardized valuation method would encourage their sales force to sell more income annuities (61%), though there is no consensus on whether fee-based advisors should base their fees against an industry standard.
- Finally, any valuation of income annuities should be easy to explain to clients and advisors, should make clear that any cash value shown cannot be withdrawn, and, if standardized, should have the same name across the industry.

A standardized approach to income annuity valuation may create some issues that would need to be addressed, however.

- Six in ten respondents, for example, believe the potential for variance in value between the actual premium paid and current value, even though it would only exist for a few days, would be a problem (61%).
- Some are also concerned about reporting the value of an income annuity that would fluctuate with interest rates (42%).

Of five different ways of determining the value of income annuities specified in the survey, the "Fair Market Value" approach is most often identified as the most appropriate, whether for AUM reporting, as a basis to charge against, or within a planning allocation process.

- A solid majority – seven in ten – agree with the proposed "Fair Market Value" valuation approach, in which the actuarial present value would be tied to both long and short-term U.S. Treasury rates (71%).
- And although many find it reasonable, some do raise concerns about whether the proposed risk-free rates are appropriate or whether advisors need additional compensation for managing SPIAs, suggesting that the benefits of this approach to both advisors and clients should be presented consistently across the industry if this approach is adopted.

Appendix B – Analysis of INCOME VALUE Methodology Options

I. Introduction

To date, attempts to place a valuation on an Income Annuity contract have been isolated and proprietary. Distributors and manufacturers agree that a standard needs to be defined for a method of on-going valuation. Different methodologies had been considered by a RIIA working Committee on this topic (e.g., Replacement Cost, Statutory Reserves, etc). It has been agreed that a common methodology for the "Fair Market Value" of an annuitized asset should be defined.

II. Proposed Valuation Methodology

a. Definition
Fair Market Value / Replacement Cost = Actuarial present value of remaining benefits

b. Calculation
Depending upon the mode of payment (e.g., monthly), each income payment is discounted back to the valuation date using a common industry benchmark for economic value. Then, the probability of death is calculated for each payment period based upon a common mortality table and scale. Finally, the economic values are combined with the morality probability to derive a fair market replacement value of the benefit. This calculation may happen as frequently as daily depending upon the need of this information.

c. Standard Variables

i. Economic Value

1. Variables
   a. **Market Benchmark** = U.S. Treasury CMT
   b. **Terms / Durations** = 1yr, 5yr, 10yr, 30yr
   c. **Spread** = TBD

2. Background
   a. **Benchmark** - When considering the choice between U.S. Treasury and a Moody's Rate there was a trade-off between having a benchmark that aligned closely with corporate crediting rates (i.e., Moody's) versus one that provided multiple rates across a time horizon (i.e., Treasurys). It was felt that aligning a valuation across a yield curve would be more appropriate and accurate given the duration of an annuitized asset.
   b. **Terms / Duration** - For the calculation, rates will be interpolated between the 1yr , 5yr , 10yr and 30yr rates. The 1 yr rate will be used for time periods less than 1 yr (i.e., 1 – 11 mths) and the 30 yr rate will be used for time periods greater than 30 years. Consistent with current practices, duration for life contingency will stop at age 115.
   c. **Spread** - Given the choice of U.S. Treasuries, the working committee felt it would be appropriate to establish a spread to: a) improve calibration between Treasuries and actual credit/pricing experience, and b) provide a lever to correct for a severe market imbalance (e.g., 2008). The spread could be established and monitored by

an industry committee or automatically calculated based on average pricing experience from a group of carriers.

i. **Proposal: Crediting Rate Spread (i.e., discount rate curve)**
Calculate the industry average payment for specific cells at 1, 5, 10 & 30 yrs from a representative list of carriers to derive a single equivalent interest rate that would produce the average payout amount with a standard mortality assumption (see below).

ii. Mortality

1. *Variables*
   - **Table** = A2000
   - **Scale** = G for male; G/2 for female; open ended projection
   - **Gender** = Sex Distinct, where applicable

2. *Background*
   - **Table** - A variety of Mortality table options were evaluated. The group felt that it was appropriate to use the one that is most commonly used and recognized in the industry (A2000).
   - **Scale** - At this time the group is also proposing the most common use of projection scales: G for males and G/2 for females.
   - **Gender** - Finally, the use of sex distinct tables would support a more accurate calculation for replacement cost. Unisex tables will be used for those states that require it.

III. Analysis & Assessment of Methodology

a. Methodology Options

An assessment was performed the proposed set of variables by comparing the use of different options within the calculation. A sample of the combinations tested is shown here:

Methodology Option	1	2	3	4	5	6	7	8
Interest Rate Basis	U.S. Treasury	U.S. Treasury	Moodys Aaa	Moodys Baa	U.S. Treasury	U.S. Treasury	U.S. Treasury	SPIA
Spread	-0.50%	0.00%	0.00%	0.00%	2.00%	2.00%	2.00%	0.00%
Sex Distinct	Y	Y	Y	Y	Y	Y	N	Y
Mortality table	A2000	A2000	A2000	A2000	A2000 B	A2000	A2000	A2000
Projection Scale	G	G	G	G	G	G	G	G
Male Projection Multiplier	100%	100%	100%	100%	100%	100%	100%	100%
Female Projection Multiplier	50%	50%	50%	50%	50%	100%	50%	50%

i. Interest Rates & Spreads

It was felt that a full interest rate curve would be most appropriate for the calculation of economic value for a long term instrument like an income annuity. A single rate benchmark like Moody's would not fit the criteria. As such, four (4) options emerged in deriving a discount rate:

1. **Option 1 (Case 2 Above): U.S. Treasury Rates (with no adjustment)**
   The discount rate used income valuation would just be tied to the U.S. Treasury CMT for common durations (e.g., 1, 5, 10 & 30 years). A rate curve would then be interpolated between each point. The 1 year rate will be used for time periods less than 1 year (i.e., 1 – 11 months) and the 30 year rate will be used for time periods greater than 30 years.

   Advantages:

- *Tying discount rates directly to U.S Treasuries would make the concept easier to understand – both for advisors and consumers.*

Disadvantages:

- *The resulting calculation of INCOME VALUE would be significantly less accurate than other options (see below).*

2. **<u>Option 2a (Case 1 Above):</u> U.S Treasury Rates with a Fixed "Crediting Rate Spread"**

An industry defined spread would be applied to the U.S. Treasury curve to help better calibrate the discount rates with the actual pricing and credit experience of the manufacturers.

The spread is calculated in the following manner:

- An average premium amount for $1,000 per month benefit is derived from 10 representative carriers in the market for the following scenarios:
- Using both the U.S. Treasury Curve and the standard mortality assumptions outlined in the section below, a series of calculations (i.e., runs) are performed that detects the spread amount that most closely matches the average premium amounts from the 6 scenarios.

Advantages:

- *A simple modification to bring U.S. Treasury Rates more in line with actual experience.*
- *Linking the methodology to U.S Treasuries would make the concept easier to understand – both for advisors and consumers.*
- *The "black box" element of the methodology would be confined to a single variable (the spread) versus an entire index (see Option 3 below).*

Disadvantages:

- *The use of a single spread across the U.S. Treasury curve could be insufficiently sensitive to adapt to extreme Treasury curve situations, perhaps including today's case.*
- *The process to derive the spread may be more complex than the process of delivering a completely new benchmark with Industry Average Spot Rates (Option 3).*

3. **<u>Option 2b (Case 1 Above):</u> U.S Treasury Rates with a Variable "Crediting Rate Spread"**

Similar to Option 2a, however, a series of spread rates are interpolated along a curve and applied against each monthly payment on an interpolated U.S. Treasury Curve. .

Advantages:

- *The most accurate calibration against a common benchmark*

Disadvantages:

- *A more complex process to manage compared to Option 2a (especially if performed daily)*

4. <u>Option 3 (Case 8 Above):</u> Industry Average Spot Rates

With this method, a new benchmark would be defined and established for the industry (e.g., The Retirement Income Discount Rate Table). It would be calculated by an independent entity. This table of rates would be derived in the following manner:

- Calculate the average payment amount per $1,000 of premium of 10 representative carriers with both a Life Contingent Contract and a Life with 10 Year Certain for a Male aged 55, 70, and 85.
- Solve for the single crediting rate for each of these payment amounts using the standard mortality variables as defined below (A2000; projection scale G for Male and G/2 for Female).
- Calculate the durations for the cash flows for each of the ages (i.e., cells)
- Set the spot rates equal to the crediting rates just determined for the respective durations of the cells for each of the three ages (e.g., 11, 8, and 5 year durations, respectively) and interpolate a curve in between points. The age 55 rate is used for any term beyond the highest duration.

Advantages:

- *This benchmark would be representative of the financial circumstances underlying the products in the market.*

Disadvantages:

- *The communication and adoption of a new benchmark with financial advisors could be very challenging.*
- *Monitoring and management of the process to identify (and update) the list of representative carriers necessary for average and the flawless calculation of the benchmark.*

ii. Results of Assessment

1. Scenarios

Each case was run with the same 6 scenarios to compare the accuracy of the results:

- Male Age 55
- Male Age 70
- Male Age 85
- Female Age 55
- Female Age 70
- Female Age 85

2. Results

Methodology Option	1	2	3	4	5	6	7	8
Interest Rate Basis	U.S. Treasury	U.S. Treasury	Moodys Aaa	Moodys Baa	U.S. Treasury	U.S. Treasury	U.S. Treasury	SPIA
Spread	-0.50%	0.00%	0.00%	0.00%	2.00%	2.00%	2.00%	0.00%
Sex Distinct	Y	Y	Y	Y	Y	Y	N	Y
Mortality table	A2000	A2000	A2000	A2000	A2000 B	A2000	A2000	A2000
Projection Scale	G	G	G	G	G	G	G	G
Male Projection Multiplier	100%	100%	100%	100%	100%	100%	100%	100%
Female Projection Multiplier	50%	50%	50%	50%	50%	100%	50%	50%

Life with 10	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Cannex Survey Avg
Male 55	$202,851.75	$215,099.81	$183,794.70	$166,184.81	$269,937.01	$275,746.14	$284,643.34	$206,436.36	$203,197.93
Male 70	$157,116.80	$163,866.42	$141,374.05	$131,578.11	$188,257.97	$194,212.51	$201,348.95	$154,875.56	$156,256.10
Male 85	$117,482.74	$120,781.27	$105,908.66	$101,023.95	$130,950.72	$133,896.21	$134,572.14	$114,010.20	$118,165.04
Female 55	$210,918.55	$224,242.18	$191,389.85	$172,251.68	$285,891.69	$294,985.05	$284,643.34	$215,853.21	$210,907.28
Female 70	$165,068.57	$172,533.23	$148,501.87	$137,689.59	$200,867.71	$210,745.32	$201,348.95	$163,125.45	$163,787.55
Female 85	$118,289.18	$121,646.00	$106,623.58	$101,655.39	$132,023.23	$137,058.31	$134,572.14	$114,814.85	$119,516.87

Percent From Average Premium in Cannex

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8
Male 55	0%	6%	10%	18%	33%	36%	40%	2%
Male 70	1%	5%	10%	16%	20%	24%	29%	1%
Male 85	1%	2%	10%	15%	11%	13%	14%	4%
Female 55	0%	6%	9%	18%	36%	40%	35%	2%
Female 70	1%	5%	9%	16%	23%	29%	23%	0%
Female 85	1%	2%	11%	15%	10%	15%	13%	4%
Penalty	3.1	26.4	58.8	97.7	132.8	156.5	153.3	12.7

Life Only	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Cannex Survey Avg
Male 55	$200,840.96	$212,740.76	$181,777.65	$164,280.98	$266,951.80	$273,070.67	$282,571.11	$204,193.81	$200,859.28
Male 70	$147,985.65	$154,277.02	$133,178.62	$123,845.33	$176,221.12	$183,327.53	$192,704.79	$145,897.70	$146,553.00
Male 85	$85,416.69	$87,620.56	$77,499.11	$74,159.22	$90,426.55	$96,461.89	$98,832.03	$82,985.18	$83,944.66
Female 55	$209,793.98	$222,773.64	$190,135.02	$171,067.97	$284,037.63	$293,472.67	$282,571.11	$214,439.22	$209,825.28
Female 70	$159,178.78	$166,273.21	$143,155.11	$132,647.93	$192,989.89	$204,233.89	$192,704.79	$157,257.90	$157,583.80
Female 85	$88,738.22	$91,065.94	$80,450.95	$76,925.64	$94,636.07	$104,566.95	$98,832.03	$86,215.50	$88,735.63

Percent From Average Premium in Cannex

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8
Male 55	0%	6%	9%	18%	33%	36%	41%	2%
Male 70	1%	5%	9%	15%	20%	25%	31%	0%
Male 85	2%	4%	8%	12%	8%	15%	18%	1%
Female 55	0%	6%	9%	18%	35%	40%	35%	2%
Female 70	1%	6%	9%	16%	22%	30%	22%	0%
Female 85	0%	3%	9%	13%	7%	18%	11%	3%
Penalty	3.8	29.9	54.2	93.0	125.4	163.3	158.2	8.5