

Part 2

Continued.... How safe is your retirement?

There is an additional issue that could make the state pension deficit situation even worse and that is cash flows and the timing of the returns. According to the Bloomberg article cited in Part 1, the US Census Bureau estimated for the last ten years, participant's contributions into their plans increased by 70%, but the payouts of benefits increased by 130%. The Census Bureau further estimates that 14 states pay out benefits in excess of 10% of assets in their plans, obviously unsustainable if you are earning 4%, or even if you make believe you are earning 8%.

The final step in this analysis is also intuitive, but something you may never have seen before. The article has been highlighting [average annualized returns](#) because that is the how the financial world quotes rates of return over a period of time, but never have you seen your IRA grow every year by exactly 8.0% for ten years. Sometimes higher, sometimes lower, by reinvesting the appreciation each year back into your portfolio to compound, it will result in an [average annualized return](#) of 8.0%.

But what happens when the market is down and you take money out. The withdraw is now a higher percentage of the assets than before the portfolio "corrected", so it will take an even higher rate of return to get back to the same value as before. The timing of when you take money out of a portfolio and the corresponding annual rates of return has a direct impact on the investment's portfolio's ability to meet and fund future liabilities (retirement checks).

Take a look at the table below, showing accumulation and distribution phases of an individual retirement account. Group pension plans are somewhat dissimilar as they have new entrants and vesting schedules to add additional layers of calculations, but the broader concept of withdraws in excess of contributions and annual earnings will still spell the same problems.

On the left hand side it shows two columns, each \$100,000 invested for 20 years, both with an average annualized return of 8%. One will notice that the annual returns in the first column are exactly reversed in order compared to the second column. The order of returns is unimportant as you are accumulating assets and both result in the average annualized 8% return.

On the right hand side of the chart, the same two columns and rates of return exist, but now we are in the distribution phase and with drawing annually 5% of the first year total assets in the plan, growing with 3% inflation. Both columns on the right hand side start with the same dollar amount and with draw the same amount each year. One account goes to zero by the 16th year, while the other account continues to grow. The difference is in the timing of the returns. The left column of the withdraw phase has the bad years early on and the other column has good years early on.

Why the Sequence of Returns Matters

The sequence of returns may have less of an impact on the portfolio of a long-term investor who is accumulating assets for retirement. However, *during* retirement, the interplay between an investor's rate of withdrawal and the sequence of returns can have a dramatic impact on a portfolio's overall ability to last.

Factors Affecting Portfolio Results Before and After Retirement

Accumulation Phase

- Average Annualized Returns
- Asset Allocation
- Staying Invested

Age 65

Distribution Phase

- Sequence of Returns
- Product Allocation
- Portfolio Protection

Annual Income = None Starting Value for Portfolio A and Portfolio B = \$100,000					Annual Income = 5% of first-year value adjusted thereafter for inflation Starting Value for Portfolio A and Portfolio B = \$684,848				
Age	Annual Return	Portfolio A Year-End Value	Annual Return	Portfolio B Year-End Value	Age	Annual Return	Portfolio A Year-End Value	Annual Return	Portfolio B Year-End Value
41	-12%	\$87,695	29%	\$129,491	66	-12%	\$566,337	29%	\$852,571
42	-21%	\$69,426	18%	\$152,281	67	-21%	\$413,086	18%	\$967,355
43	-14%	\$59,707	25%	\$189,590	68	-14%	\$318,927	25%	\$1,168,029
44	22%	\$72,984	-6%	\$178,404	69	22%	\$352,432	-6%	\$1,061,698
45	10%	\$80,136	15%	\$204,272	70	10%	\$348,431	15%	\$1,177,105
46	4%	\$83,595	8%	\$221,183	71	4%	\$323,772	8%	\$1,234,855
47	11%	\$92,707	27%	\$281,124	72	11%	\$318,176	27%	\$1,528,614
48	3%	\$95,210	-2%	\$274,939	73	3%	\$284,653	-2%	\$1,452,871
49	-3%	\$92,155	15%	\$315,355	74	-3%	\$232,143	15%	\$1,623,066
50	21%	\$111,507	19%	\$375,272	75	21%	\$236,215	19%	\$1,886,771
51	17%	\$130,129	33%	\$498,737	76	17%	\$229,644	33%	\$2,461,500
52	5%	\$137,026	11%	\$554,097	77	5%	\$194,417	11%	\$2,687,327
53	-10%	\$123,597	-10%	\$499,795	78	-10%	\$126,543	-10%	\$2,375,148
54	11%	\$137,316	5%	\$526,284	79	11%	\$90,304	5%	\$2,450,746
55	33%	\$182,493	17%	\$614,174	80	33%	\$68,219	17%	\$2,808,226
56	19%	\$217,167	21%	\$743,150	81	19%	\$27,833	21%	\$3,344,606
57	15%	\$249,091	-3%	\$719,305	82	15%	\$0	-3%	\$3,182,338
58	-2%	\$243,611	3%	\$738,726	83	-2%	\$0	3%	\$3,211,664
59	27%	\$309,629	11%	\$819,247	84	27%	\$0	11%	\$3,503,440
60	8%	\$335,262	4%	\$854,602	85	8%	\$0	4%	\$3,594,592
61	15%	\$383,875	10%	\$938,354	86	15%	\$0	10%	\$3,885,017
62	-6%	\$361,226	22%	\$1,147,022	87	-6%	\$0	22%	\$4,685,257
63	25%	\$449,727	-14%	\$986,439	88	25%	\$0	-14%	\$3,963,710
64	18%	\$528,878	-21%	\$780,941	89	18%	\$0	-21%	\$3,070,398
65	29%	\$684,848	-12%	\$684,848	90	29%	\$0	-12%	\$2,622,984
	8%	\$684,848	8%	\$684,848		8%	\$0	8%	\$2,622,984

NO DIFFERENCE

BIG DIFFERENCE

► Total income generated by portfolio during retirement = \$718,045

\$1,248,438

The sequence of returns has an average compounded annualized return of 8% over 25 years and year-to-year volatility that is consistent with a portfolio predominantly comprised of stocks. Annual returns have been rounded to the nearest whole number. The accumulation portfolios assume a starting value of \$100,000 at age 40 and no annual withdrawals. The distribution portfolios assume a starting value of either \$100,000 or \$684,848 at age 65 as well as a 5% first-year withdrawal thereafter adjusted for 3% inflation annually. Except where noted, the average annualized return for the 25-year period is 8%. Source: Standard & Poor's.

If the \$1.0 Trillion of unfunded liabilities for state pension plans may be doubled or tripled as projected by Rauh./Novy-Marx due to the higher unrealistic growth assumptions versus past earnings history. We then need to also consider the impact of the timing of the cash flows, with draws and the actual annual returns versus the [average annual rate of return](#). In the above chart, at age 71, in the withdraw column, the value of the asset is \$323,722, under the assumption of negative returns early in the payout phase. In order for the scheduled retirement benefits to be paid out through age 90, the account would need to be increased to \$525,184, assuming a constant 8% return for the balance of the payout years. This is an increase of existing assets by 60%.

Is this where we are today? The state pension funds have been averaging 4-4.5% returns for last ten years, versus 8% projected, withdraws or benefits being paid out are around 10% of assets in the plans. Could the tax payers across the country write a check for an additional 30, 40, 50 or 60% of existing assets to stabilize the retirement plans?

How big of a problem is this? The Stimulus Bill, passed shortly after Pres Obama took office was \$800 Billion, a third of which went to states to help pay the states Medicare commitments for a year or two. With state pension plans currently underfunded by \$1.0 -3.0 Trillion, as evidenced in this article, your understanding of the issue makes it imperative that you share your concerns with friends, family and neighbors to address the problem at hand before our debt implodes upon us.

By Ernest Chisena

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In Part 3, "Tell us the Truth, the Whole Truth", the Public School Employee Retirement System of Pennsylvania. Brought to our attention at the West Chester School Board meeting in late summer 2010, the information shared brought to light the importance to all taxpayers of future funding requirements as well as the viability of the promised retirement for our teachers and administrators.