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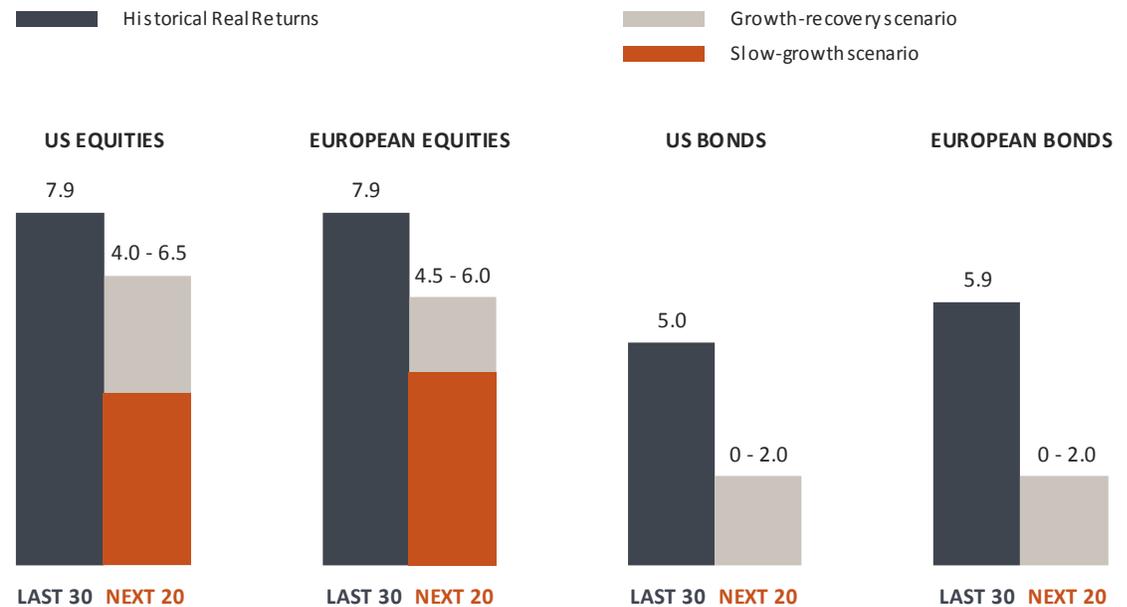
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3 EASY STEPS TO BETTER INVESTMENT RETURNS: ASSET ALLOCATION, LOCATION, AND DECUMULATION

Since the Great Recession of 2008, investors have lived in a world where low returns are not just the norm but are expected to stay that way for the foreseeable future. A recent report by the McKinsey Global Institute (MGI) warns that the past 30 years was the “Golden Age” and that the next 20 years will look more like the 100 year average.¹ This is due to a number of factors: (i) the scourge of high inflation has largely been tamed, (ii) GDP is not growing as fast as it was a few decades ago, (iii) interest rates are at multi-century lows and (iv) corporate profits are under pressure. As a result, MGI is forecasting US equity returns of 4 – 6.5 per cent per annum over the next 20 years – less than the 7.9 per cent per annum realized between 1985 and 2014 but roughly in line with the 6.5 per cent per annum average over the last 100 years. MGI believes the same reversion to the mean effect to be taking place in European equities and the fixed income markets.

The past 30 years saw returns that exceeded the long-run average.

The next 20 years could be more challenging.



For illustration purposes only. Performance histories are not indicative of future performance. Source: McKinsey Global Institute

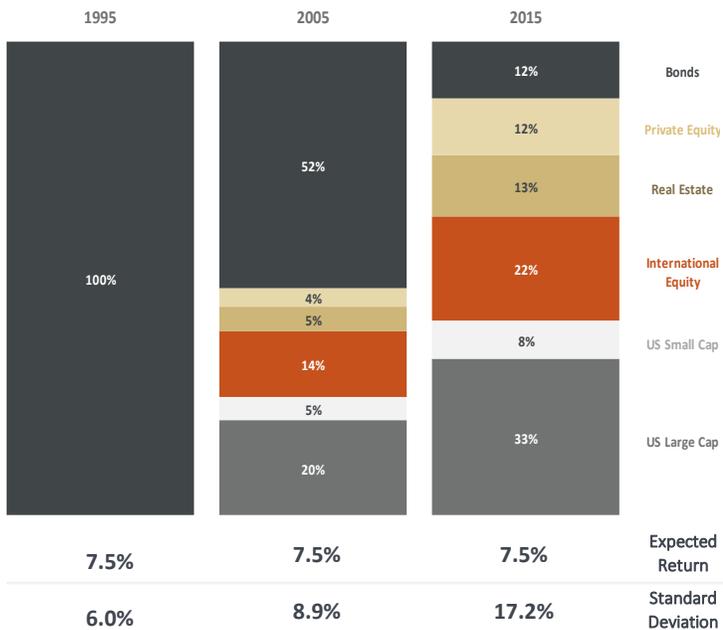
So what does this mean for the average investor? Well, looking at the next chart it shows that one has to be prepared to take greater risk to achieve the same level of return as in previous years. Just 20 years ago, an investor could earn 7.5% on a 100% bond portfolio. Even 10 years ago, an investor’s portfolio could be more than 50% in bonds and still generate that 7.5% annual return. Today, in order to earn 7.5% a year, an investor can have no more than 12% of their portfolio in bonds and, moreover, may need to have up to 25% of their portfolio in more illiquid instruments such as private equity or real estate. In other words, investors need to take substantially more risk today than they needed to 20 years ago to generate the same return. Welcome to the Brave New World!

1 McKinsey Global Institute, DIMINISHING RETURNS: WHY INVESTORS MAY NEED TO LOWER THEIR EXPECTATIONS, May 2016



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For illustration purposes only.
Source: Wall Street Journal, Callan Associates

And yet, before investors despair, there are easy tools and strategies that every investor can employ to generate better after-tax returns. Note, that the key operative term here is after-tax, which should be the only type of returns that any tax-paying investor – which let’s face it most of us are in Canada – should care about.

ASSET ALLOCATION

The first step in designing a portfolio that can generate better after-tax returns consistently is designing the asset allocation (i.e. the mix of Canadian bonds, Canadian equities, US bonds, US equities, etc.) to achieve the investor’s financial goal. [Note – see previous article on goals-based investing for a detailed account of using different asset allocations for different goals]. Many investors focus on what to buy (i.e. which stock, which bond) and when to buy. However, the evidence shows that the asset allocation decision accounts for 100% of the return levels of a portfolio leading to the comment that “(f)or aggregate returns levels, asset allocation is king!”²

² Morningstar Advisor, Asset Allocation is King, April / May 2010, p. 31

Another study looked at the characteristics of actively managed balanced funds between 1966 and 2006 and found that for funds with statistically significant positive alpha (i.e. outperformance of the relevant benchmark), which on average was 24 bps per month, asset allocation accounted for 72.7% of the portfolio return. In contrast, for funds with statistically significant negative alpha (i.e. underperformance of the relevant benchmark), which on average was -16.8 bps per month, asset allocation accounted for 129.5% of the portfolio return.³

³ Davis, Joseph H., Kinniry, Francis M Jr., Sheay, Glenn, *The Asset Allocation Debate: Provocative Questions, Enduring Realities**, Vanguard Investment Counseling & Research, 2007

Taken together, these two studies are more recent support for the long-held principle in investment management that the most important decision in designing an investment portfolio is getting the asset allocation right.

ASSET LOCATION

After the asset allocation decision is made (and again there may be different asset allocations for different goals), the next critical step is to decide asset location. In other words, in which accounts are the different asset classes going to be held? In Canada, there are different types of accounts that an individual investor can have – Registered Retirement Savings Plans (RRSPs), Locked-In Retirement Account (LIRA), Tax-Free Savings Account (TFSA), and non-registered accounts to name a few. Each of these accounts have different tax treatments and strategically managing the asset classes between these types of accounts can have a positive boost to an investor’s after-tax return.

Consider the following case – Brad and Lydia Smith – living in Ontario and each earning \$150,000 annually in employment income. Assume that they have accumulated, between the two of them, \$1,000,000 in investment assets split as follows:

TABLE A: THE SMITHS’ INVESTMENT PORTFOLIO

	\$
TFSA	96,000
RRSP	550,000
NON-REGISTERED	354,000
TOTAL	1,000,000

Let us assume that the Smiths have the following effective tax rates apply to them given their income levels and their Ontario residency:

TABLE B: MARGINAL TAX RATES ONTARIO

ASSUMPTION	
Brad & Lydia live in Ontario and each have taxable income of \$150,000	
BASIC TAX RATE	46.41%
ELIGIBLE DIVIDED INCOME TAX RATE	29.52%
OTHER DIVIDEND INCOME TAX RATE	36.97%
CAPITAL GAINS TAX RATE	23.20%
US WITHHOLDING TAX RATE	0.00%*

* Canadian tax residents typically pay 15% withholding tax on US dividends. However, for assets held in an RRSP, there is no such withholding tax. For assets held in non-registered accounts, Canadians can claim a foreign tax credit on their Canadian returns. For simplicity, a 0% US withholding tax rate is assumed herein.

Now, we make the following two assumptions: (i) the expected return for each asset class as set out in Column 2 of Table C below and (ii) the split of the expected return by income type (i.e. ordinary income, Canadian dividends, capital gains, etc.) as set out in Column 3 of Table C below. The second assumption is important because income of different types is taxed differently in Canada and reflects a reasonable split of income for each asset class. The marginal tax rates in Table B above together with the information in Columns 2 and 3 in Table C enable the effective tax rate, in Column 1 of Table C below, to be calculated for each asset class.

TABLE C: ASSET CLASS & RETURN ASSUMPTIONS

OVERALL ASSET MIX	ASSET ALLOCATION		1 EFFECTIVE TAX RATE	2 EXPECTED RETURN	3 SPLIT OF EXPECTED RETURN BY INCOME TYPE			
	\$	%			ORDINARY INCOME	CANADIAN DIVIDENDS	FOREIGN DIVIDENDS	CAPITAL GAINS**
CASH & MONEY	29,104	2.9%	46.41%	1.0%	100%			
CANADIAN FIXED INCOME	203,651	20.4%	46.41%	1.5%	100%			
GLOBAL FIXED INCOME	139,981	14.1%	46.41%	5.5%	100%			
CANADIAN EQUITIES	191,214	19.1%	25.31%	7.7%		33%		67%
US EQUITIES	181,214	18.1%	30.94%	6.4%			33%	67%
INTERNATIONAL EQUITIES	172,418	17.2%	30.94%	8.7%			33%	67%
EMERGING MARKET EQUITIES	82,418	8.2%	25.52%	12.9%			10%	90%

Let us further assume that the Smiths have their \$1,000,000 in investable assets invested simply in non-registered accounts as follows:

TABLE D: SCENARIO 1:

OVERALL	TFSA	RRSP	NR
CASH & MONEY	-	-	29,104
CANADIAN FIXED INCOME	-	-	203,651
GLOBAL FIXED INCOME	-	-	139,981
CANADIAN EQUITIES	-	-	191,214
US EQUITIES	-	-	181,214
INTERNATIONAL EQUITIES	-	-	172,418
EMERGING MARKET EQUITIES	-	-	82,418
TOTAL	-	-	1,000,000

If the Smiths' investments achieve the expected return, they will earn 4.32% on their portfolio on an after-tax basis.

By using the registered accounts, the Smiths can easily improve their after-tax returns. In this rather typical asset location strategy (as depicted below in Scenario 2), fixed income is held in RRSPs as well as Canadian equities and some international equities. Some US equities are held in the TFSA while the remaining amounts for each asset class are held in non-registered accounts. As a result, if the expected returns are achieved, on an after-tax basis, the net return for the Smiths is 5.39%. This is almost a 25% improvement over the returns in Scenario 1! Just by utilizing registered accounts.

TABLE E: SCENARIO 2

OVERALL	TFSA	RRSP	NR
CASH & MONEY	-	-	29,104
CANADIAN FIXED INCOME	-	203,651	-
GLOBAL FIXED INCOME	-	139,981	-
CANADIAN EQUITIES	-	191,214	-
US EQUITIES	96,000	-	85,214
INTERNATIONAL EQUITIES	-	15,154	157,264
EMERGING MARKET EQUITIES	-	-	82,418
TOTAL	96,000	550,000	354,000

But the Smiths can do even better by optimizing their asset location choices. For instance, it makes much more sense to hold Canadian equities in the non-registered account rather than in an RRSP or TFSA. Even though the capital gains will be taxable, dividends from Canadian companies have the second best tax treatment (not as good as capital gains but better than non-Canadian dividends). So holding foreign dividend-paying equities in an RRSP and Canadian dividend-paying equities in a non-registered account is tax smart.

Another consideration is where the Smiths should hold US dividend-paying equities? What many Canadians do not know is that RRSPs are considered by US tax authorities as retirement plans; TFSAs are not. What that means is if US equities are held in an RRSP, any dividends earned are not subject to US withholding tax (which at treaty rates is 15%). The same US dividends paid while held in a TFSA will incur the 15% withholding tax. Keep in mind that this withholding tax applies to any US domiciled equity that pays dividends to a Canadian holder. Note that in non-registered accounts, Canadians can claim a foreign tax credit for foreign withholding taxes – but not in a TFSA. So an American Depositary Receipt (ADR), a popular way for non-US companies to trade on the US stock exchanges, will be subject to US withholding tax if held within a TFSA but not if it is held in an RRSP. Of course, there may be other withholding taxes in the home country of the underlying company. A BMW ADR would have German withholding tax on the dividend income held at source, paid to the ADR and then paid out to Canadian investors subject to US withholding tax.

If the Smiths made a relatively simple tweak (see Table F: Scenario 3 below) – move Canadian dividend-paying equities out of their RRSP and into their non-registered account and US equities out of TFSAs and into the RRSP – they will benefit from a boost to their after-tax income. As a result of this simple move, if the expected returns are achieved, on an after-tax basis, the net return for the Smiths is 5.5% - a 27% improvement on Scenario 1 and a 2% improvement on Scenario 2.

** For simplicity, our scenarios have assumed that all capital gains are realized every year. However, the income taxes triggered on the sale of investments in the non-registered account resulting from accrued capital gains will need to be considered to manage taxable income in every year. For example, in a given year where a large capital gain will be triggered in a non-registered account, the withdrawal from the registered account can be reduced in order to smooth out the taxable income over the retirement years.

TABLE F: SCENARIO 3

OVERALL	TFSA	RRSP	NR
CASH & MONEY	-	-	29,104
CANADIAN FIXED INCOME	-	203,651	-
GLOBAL FIXED INCOME	-	139,981	-
CANADIAN EQUITIES	-	-	191,214
US EQUITIES	-	181,214	-
INTERNATIONAL EQUITIES	96,000	25,154	51,264
EMERGING MARKET EQUITIES	-	-	82,418
TOTAL	96,000	550,000	354,000

Table G below provides a simple “Rule of Thumb” to consider in choosing asset location for different asset classes.

TABLE G: ORDER OF INVESTING

<u>1</u> RRSP	<u>2</u> TFSA	<u>3</u> NON REGISTERED
FIXED INCOME	FIXED INCOME	CANADIAN EQUITIES
US EQUITIES	INTERNATIONAL EQUITIES	INTERNATIONAL EQUITIES
INTERNATIONAL EQUITIES	US EQUITIES	US EQUITIES
CANADIAN EQUITIES	CANADIAN EQUITIES	FIXED INCOME

APPROACHING RETIREMENT

Now that we have the Smiths’ Asset Allocation and Asset Location strategies in place, what will this mean for their progress as they approach retirement? We can model this out by making the following assumptions for our analysis:

- Both Brad and Lydia contribute \$25,000 each every year to their RRSPs and \$5,500 each every year to their TFSAs.
- They retire in 15 years’ time.
- The asset mix and returns stay constant.
- The annual inflation rate is 1.5%.
- They need 70% of current income in retirement.
- They have no other pensions (CPP, OAS, etc.)

Using these assumptions, and the three scenarios we used above for the different Asset Location strategies, we expect the Smiths to accumulate the following amounts:

TABLE H	SCENARIO 1	SCENARIO 2	SCENARIO 3
ENDING PORTFOLIO AMOUNT	\$3,190,978	\$3,627,462	\$3,676,523

ASSET DECUMULATION

Using an optimized Asset Location strategy, the Smiths can accumulate \$3.6 M in 15 years’ time – a 15% improvement from Scenario 1 where there is no Asset Location plan in place. But the Smiths are not growing their investment portfolio simply to look at a statement in satisfaction –they want to draw out money in their retirement years to pay for their desired lifestyle. And, preferably, they want their money to (i) last as long as they do and (ii) be able to cover any unforeseen expenses (such as medical care, etc.). What can the Smiths do to ensure these two post retirement goals are met?

First, the conventional thinking of moving most of your investments into bonds as you are nearing retirement needs to be turned on its head. One “rule of thumb” was that 100 minus your age should be the amount you invest in equities. In other words, once the Smiths turn 65 they should have 35% (i.e. 100 – 65) of their portfolio in equities. There are at least two problems with this thinking. First, we are living longer these days. As Table I below illustrates, the Smiths can expect to live another 15 – 20 years in retirement – a time period during which they will not be earning and, for which, they will need to fund from savings. Secondly, we are living in a low yield environment where it is no longer possible to generate a 6 – 7% annual return in a conservative bond portfolio. The combination of the two factors means that the Smiths need to plan on holding more stocks, and higher return investments that, of course, come with greater risk, if they are to meet their twin goals in retirement.

TABLE I: LIFE EXPECTANCY AT BIRTH, BY GENDER

DATE	MALE	FEMALE
1920 to 1922	59	61
1930 to 1932	60	62
1940 to 1942	63	66
1950 to 1952	66	71
1960 to 1962	68	74
1970 to 1972	69	76
1980 to 1982	72	79
1990 to 1992	75	81
2000 to 2002	77	82
2007 to 2009	79	83

Source: Statistics Canada (2012)

That means, the asset allocation and asset location planning we went through for the Smiths in their “accumulation” phase needs to be revisited for their decumulation phase. Clearly, the goals and time horizon have now changed for the Smiths and, as a result, the asset allocation strategy needs to change. And with it, the asset location strategy.

The Smiths also need to start drawing money out of their portfolios in order to fund their retirement lifestyle. The approach to withdrawing money out of the portfolio – or asset decumulation – is the third leg in a sound investment plan. Getting asset decumulation right means that the Smiths can make their savings last longer.

TAX CONSEQUENCES OF ASSET DECUMULATION

In drawing from any account, one of two taxable events may occur resulting in additional income taxes, because: i) the disposition of the investments triggers potential capital gains since the investments will need to be liquidated and ii) on the actual withdrawal from the account (e.g. withdrawals from an RRSP are taxed as ordinary income in the year of withdrawal). For the Smiths, in keeping with the assumptions previously made, the tax consequences would be as follows:

TABLE J: TAX CONSEQUENCES OF DRAWING FROM EACH ACCOUNT TYPE

	TFSA	RRSP	NR
SALE OF INVESTMENT	-	-	-.4
DRAWING FROM ACCOUNT	-	46.41% ⁵	-

⁴ The assumption previously made is that all investments are taxed on an ongoing basis as income is generated and capital gains are accrued. Accordingly, the net rate of return of 2.21% in the non-registered accounts (and summarized in Table K) already reflects the income taxes on the capital gains resulting from the disposition of an investment.

⁵ Assuming current tax rate remains in effect at time of withdrawal

ORDER OF ASSET DECUMULATION

The optimal order of asset decumulation in the RRSP, TFSA, and non-registered accounts can be determined by analyzing the after-tax cash flow available during retirement. Determining the after-tax cash flow will depend on the starting values in each account type at the time of retirement, the required withdrawal amounts to satisfy the lifestyle needs, the after-tax rate of return of investments during retirement, the effective income tax rates applicable at the time of the withdrawals and the availability of the option to defer income taxes.

Tax deferral is a positive outcome during the accumulation phase. The question is whether tax deferral continues to be as beneficial once retirement begins. The idea is to continue to have your deferred taxes in your registered accounts earn you income for as long as possible (i.e. any taxes that you do not pay in a year will otherwise be available to generate additional income). However, the Smiths should keep in mind that any income being earned in an RRSP will also be taxed at their effective income tax rate at the time of withdrawal. Therefore, the after tax-rate of return needs to account for the additional taxes payable upon withdrawal from an RRSP account.

If we continue with the Smiths' Scenario 3, which had the largest accumulation with an optimal asset allocation and location prior to retirement, the breakdown of the overall net rate of return for each of the accounts are as follows:

TABLE K: SCENARIO 3 RETURN BREAKDOWN

	TFSA	RRSP	NR	TOTAL
NET RATE OF RETURN	0.84%	2.45%	2.21%	5.5%

Once money is withdrawn from the RRSPs, the proceeds flow into taxable income in the year of withdrawal; consequently, there is a tax rate that has not been accounted for in the rate of 2.45% above. The actual after-tax rate of return in the decumulation phase would be 1.31% [$2.45\% \times (100\% - 46.41\%)$] if the same income was withdrawn in the year. Therefore, the non-registered accounts actually have the highest after-tax rate of return at 2.21%. However, the taxes for returns generated in an RRSP account do not need to be paid until actually withdrawn, which creates an opportunity for deferral of the income taxes for any monies kept within the RRSP.

By reviewing the after-tax rates of return, the Smiths may quickly assume that the non-registered accounts should be left to last since its after-tax earnings are the highest. However, the income in an RRSP is tax deferred and it is the largest "account" in Scenario 3; accordingly, the actual after-tax income should not be overlooked. In other words, which asset location is earning the Smiths the greatest after-tax amount in each year of retirement?

Let's consider different scenarios for the possible order of decumulation from the three types of accounts: TFSAs, RRSPs, and non-registered accounts. In comparing the total after-tax cash flow in retirement between the different scenarios, the net after-tax cash drawings in each year (adjusted for inflation) was kept constant. Accordingly, RRSP withdrawals were grossed up to cover the income taxes payable on withdrawals. This is an important consideration. If the withdrawals from the RRSPs have to be grossed up, the RRSPs are at a disadvantage from an earning capability perspective if it is withdrawn from first because monies will actually need to be drawn at a faster rate than from the non-registered accounts. This is relevant in the decumulation phase since any withdrawals made from any account means that the investment in that account must be sold and will no longer be available to earn income for the Smiths.

CASE A



In this case, if the Smiths start withdrawing from their RRSPs first until the account is fully depleted and then move on to the non-registered accounts, and lastly the TFSAs, the result is a total after-tax cash flow of \$3,069,725.

TABLE L: CASE A

	TFSA (\$)	RRSP (\$)	NR (\$)	TOTAL (\$)
STARTING PORTFOLIO AMOUNT	352,946	2,022,088	1,301,489	3,676,523
TOTAL INCOME EARNED	32,413	133,660	227,612	393,685
TOTAL TAXES ON WITHDRAWALS	-	1,000,483	-	1,000,483
TOTAL AFTER-TAX CASH FLOW	385,359	1,155,265	1,529,101	3,069,725

CASE B



In this case, if the Smiths take advantage of the maximum tax deferral in their RRSPs, they would start by withdrawing from their TFSAs first until the account is fully depleted and then move on to the non-registered accounts, and lastly the RRSPs. The result is a total after-tax cash flow of \$3,143,536. This represents an increase of \$73,811 (an improvement of 2.40%) over Case A. Case A and Case B both assume that the income tax rate remains at 46.41% on all withdrawals from the RRSPs. Accordingly, even in a scenario where the income tax rate is constant in retirement, there is a benefit gained by optimizing the order of decumulation. However, the Smiths can do even better than that by managing their income tax rates in each year as demonstrated in Case C.

TABLE M: CASE B

	TFSA (\$)	RRSP (\$)	NR (\$)	TOTAL (\$)
STARTING PORTFOLIO AMOUNT	352,946	2,022,088	1,301,489	3,676,523
TOTAL INCOME EARNED	3,695	503,866	131,747	639,308
TOTAL TAXES ON WITHDRAWALS	-	1,172,295	-	1,172,295
TOTAL AFTER-TAX CASH FLOW	356,641	1,353,659	1,433,236	3,143,536

Another point to consider is death. If all of the RRSP amounts are saved in the RRSP account until the death of the last to die of Brad and Lydia, the entire amount will be considered ordinary income and taxed on the final income tax return. Effectively, the estate will bear a tax liability on account of the fair market value of the RRSP account on the date of death, which may result in higher taxes as it will all be taxable in that year at the higher marginal tax rates. Therefore, the strategy of reducing taxes in a particular year of retirement is not sound as the goal should be to minimize the total taxes in a lifetime.

In addition, the law states that an RRSP must be converted into a registered retirement income fund (RRIF) by the end of the year in which the owner turns 71, and there are minimum amounts that must be withdrawn annually starting the year after the setup of the RRIF. Accordingly, if the RRSPs are left entirely alone until the age 72 (after they have been converted into RRIFs), the forced withdrawals may result in higher income taxes payable due to possibly pushing the taxpayer into a higher marginal tax bracket.

Accordingly, a better strategy for decumulation of the assets would be to spread out the RRSP withdrawals over the expected number of retirement years which we discuss next in Case C.

CASE C



The Smiths can take a more balanced approach in withdrawing from their accounts with the goal to smooth out their taxable income over their retirement years. The Smiths have control over the income because any amounts withdrawn from the RRSP accounts will be considered fully taxable income as opposed to any amounts withdrawn from the non-registered account or the TFSAs, which would not be taxable income. Accordingly, the Smiths can manage their income tax rates by managing their taxable income for the year.

In this case, the Smiths could start by withdrawing a fixed amount of \$150,000 per year from their RRSPs starting at age 66 with the remaining cash-flow needs from their TFSAs, until the TFSAs are fully depleted, and then with the remaining from the non-registered accounts, and finally from the RRSPs. By doing this, the taxable income from the RRSPs can be taxed at the next lowest bracket (assumed at 31.48%). The result is a total after tax cash flow of \$3,384,661. This represents an increase of \$314,936 (an improvement of 10.26%) over Case A and an increase of \$241,125 (an improvement of 7.67%) over Case B. In other words in Case C, the retirement funds will last for approximately one extra full year in retirement over Case A.

TABLE N: CASE C

	TFSA (\$)	RRSP (\$)	NR (\$)	TOTAL (\$)
STARTING PORTFOLIO AMOUNT	352,946	2,022,088	1,301,489	3,676,523
TOTAL INCOME EARNED	4,771	411,335	206,433	622,539
TOTAL TAXES ON WITHDRAWALS	-	914,401	-	914,401
TOTAL AFTER-TAX CASH FLOW	357,717	1,519,022	1,507,922	3,384,661

The approach in Case C has the added benefit of remaining below the required minimum RRIF withdrawal amounts, which would have forced the Smiths at age 72 to convert the RRSPs to RRIFs and start drawing down on their RRIFs resulting in paying income taxes at a higher rate than what could have been achieved if they spread the drawings over their retirement years.

It is interesting to note that the total income earned in Case B was more than Case C by \$16,769 even though Case C resulted in the highest total after-tax cash flow. The management of the income tax rates proved to be more beneficial than the income earning power of the account.

Also, an additional benefit that may be achieved by smoothing out the income is avoiding or minimizing the Old Age Security claw back, if applicable.

CONCLUSION

A real concern for investors in today's economic environment is the low returns for all asset classes. There do not appear to be any signs that this low return environment will be changing any time soon. In addition, as Canadians are living longer, there is a real concern for many that they might outlive their savings.

However, rather than chasing pre-tax returns, which puts the investors' capital at risk, there are a number of simple and legal ways to boost after tax returns. Many investors are already familiar with the benefits of asset allocation (which asset classes to hold in their portfolios). However, asset location (which types of accounts to hold those asset classes in), and asset decumulation (the order in which to withdraw monies from those accounts) can have a significant beneficial impact on boosting after-tax returns to the investor. And these days, every little bit helps.

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