

# VISION

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## Saving for Retirement – Part II

**I**n our September 2010 Vision ([link](#)), we described how a couple can maintain their lifestyle after retirement with only half their final earnings. This finding raised new questions: what happens at different income levels, how does income tax change the picture, and what are the implications for pension plan design? This current issue of Vision completes the story.

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## OTHER PUBLICATIONS BY MORNEAU SHEPELL



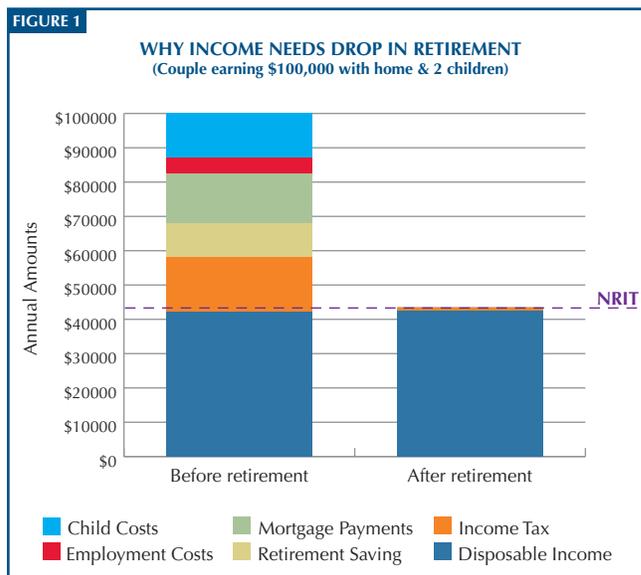
PUBLICATION	WHAT IT IS	FREQUENCY
<i>60 Second Survey</i>	A quick (4-question) survey on a pension or benefits topic of current interest; results are sent a week later	Monthly
<i>News &amp; Views</i>	Description of recent pension & benefits developments	Monthly
<i>30,000 Feet</i>	A companion to <i>News &amp; Views</i> , briefly summarizing developments most likely to have lasting implications	Quarterly
<i>Vision</i>	In-depth analysis of a major pension or benefits issue of long-term significance	2-4 times a year
<i>Universe</i>	Survey of pooled fund investment returns	Quarterly
CICA Accounting Survey	Survey of economic assumptions used for accounting purposes by 100 Canadian public companies	Annual
Statistics	Compendium of pension and benefits statistics	Annual
Morneau Shepell Handbook	Reference manual on pensions and benefits, published by CCH	
Summary of Pension Legislation	On-line detailed summary of differences in pension legislation by jurisdiction (published by CCH)	

Now that any expansion of the Canada/Quebec Pension Plan has been shelved indefinitely, Canadians will have to rely even more heavily on personal savings and pension plans for their retirement income. We pick up the story from our last *Vision* which demonstrated that retirement income targets may be lower than is commonly believed because certain major expenditures drop off by retirement.

Last time, we showed that a working couple with two children and household earnings of \$100,000 could maintain their lifestyle in retirement with income of just \$51,000 a year (51%) from CPP, OAS and RRSPs. For the sake of simplicity, this calculation was performed on a pre-tax basis. In our latest analysis, presented below, we have reflected the impact of income tax and the results are even more startling. The target retirement income for this particular couple reduces from 51% to only 43%. (Later, we will see how this target income varies based on one's circumstances.)

Figure 1 illustrates how retirement income equal to 43% of final pay can provide the same disposable income as before retirement. Not only do seniors finally escape a variety of pre-retirement expenditures, they also benefit from an income tax system that confers several advantages, including an age credit (starting at 65), a pension income credit, and the ability to split pension income or transfer credits between spouses.

That is not to say that saving for retirement has been rendered obsolete; far from it. Even with a reduced target of 43%, this couple would still have had to save 6.5% of pay for 35 years to generate the retirement income shown in Figure 1. We will generalize these results below.



**DISPOSABLE INCOME DEFINED**

We define disposable income as employment income net of income tax and specific pre-retirement expenses including mortgage payments, child-raising costs, retirement savings, payroll taxes, and employment-related costs. This differs slightly from our last *Vision* in that income tax is now also taken into account.

## THE NEUTRAL RETIREMENT INCOME TARGET

As in the last *Vision*, we will use the term “neutral retirement income target” (**NRIT**) to define the level of retirement income (from CPP, OAS, RRSPs and pension plans) that generates the same disposable income after retirement. In Figure 1, the NRIT is indicated by the dotted line at 43% of final pay.

We can think of retirement planning as a balancing act with the NRIT acting as the equilibrium point. Save too little and you won’t have enough retirement income. Save too much and you will be depriving yourself unnecessarily during your working lifetime. It is only when you save at the rate needed to achieve your NRIT that your pre- and post-retirement lifestyles are in balance. Retirement planning starts with an appreciation of the relationship between disposable income, NRIT and the required savings rate to attain NRIT.

That said, the NRIT is a guideline rather than an absolute rule. Many RRSP-savers will purposely aim for retirement income that is a little less or a little more than their NRIT. So will many pension plan sponsors. We will explain the reasons for this further on.

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## HOW NRIT VARIES BY INDIVIDUAL

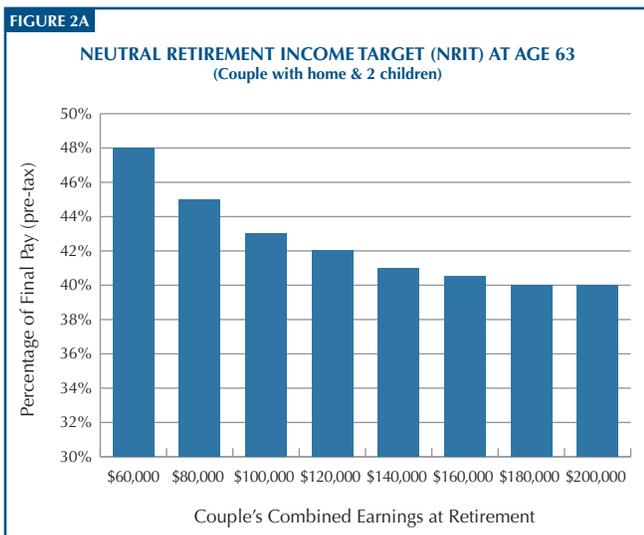
The NRIT is highly sensitive to two factors and moderately sensitive to four other factors, as summarized in Table 1.

**TABLE 1 – FACTORS AFFECTING NRITS**

Factors that <i>significantly</i> reduce NRIT	Factors that <i>moderately</i> reduce NRIT
Being a homeowner (with a mortgage)	Higher earnings
Raising children	Being married
	Earlier retirement age
	Not belonging to a pension plan

As an example, retiring earlier reduces the NRIT because it requires higher savings, which translates into lower disposable income before retirement.

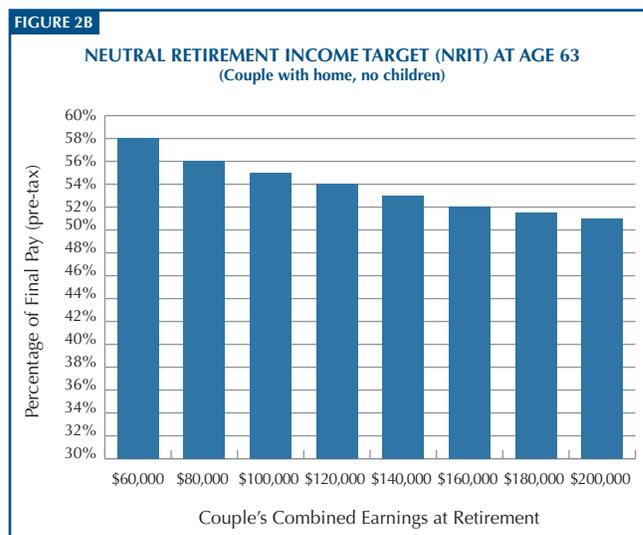
Figure 2a shows how the NRIT varies by earnings level. In this chart, we assume the household consists of a 2-earner couple who owns a home, has two children and saves through RRSPs, the same as in Figure 1.



There are two interesting aspects to Figure 2a:

- The NRIT is less than 50% at all earnings levels.
- The NRIT does decline as earnings increase but not by much; here the NRITs range from 48% at the low end of the earnings spectrum to 40% at the high end<sup>1</sup>.

Figure 2b shows NRITs in the case of a couple who owns a home but does not have children.

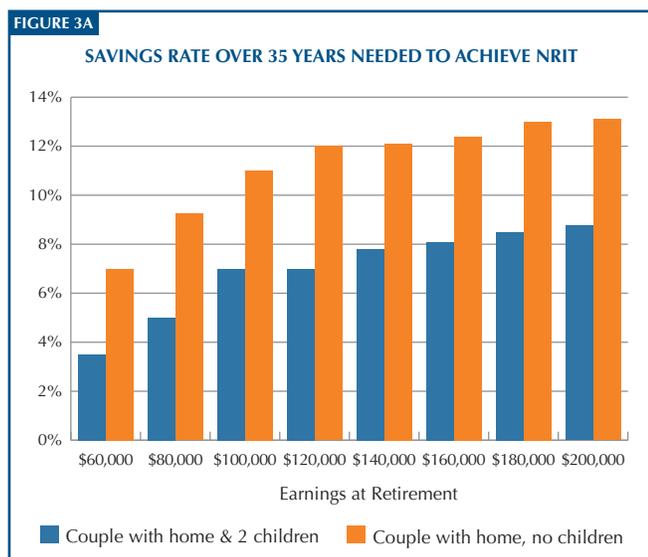


The NRITs shown in Figure 2b are higher by 10 to 12 percentage points than they are for the couple with children. For instance, at \$100,000 the neutral retirement income target is 55% versus 43% in Figure 2a. A couple without children enjoys higher disposable income throughout their working lives and - assuming they have been spending the extra income - will need more income in retirement to continue that lifestyle.

<sup>1</sup> This Vision does not address the income needs of households earning less than \$60,000. GIS comes into the picture at lower income levels and puts into question any form of private saving other than through TFSAs. A household with less than \$40,000 in employment income may be able to replace 100% of their employment earnings at age 65 with income solely from C/QPP, OAS and GIS.

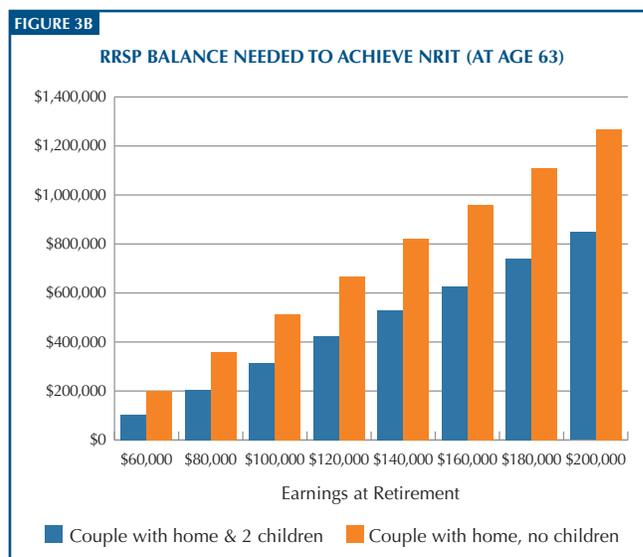
## IMPLICATIONS FOR RRSP SAVERS

The lower than expected NRITs represent good news for savers. The bad news is that even these rather modest targets require a high savings rate. In other words, pensions are costly. Figure 3a shows the savings rates that are needed over a 35-year period to achieve the foregoing NRITs.



In general, couples without children need to save about 4% of pay more than couples with children. The savings rates required are rather daunting, especially at higher income levels.

Assuming one actually manages to save at the rates shown in Figure 3a for 35 years, Figure 3b shows the expected balances in their RRSP account at retirement.



As a general rule of thumb a couple with children needs RRSP savings equal to about 3 to 4 times final earnings while a couple without children should be targeting 5 to 6 times final earnings if they want to continue their lifestyle in retirement. To the extent one is prepared to draw on Pillar 4 assets (see sidebar), these multiples can be reduced. We caution that these estimates are highly dependent on the projection assumptions, especially the real return on savings and the retirement age (see the appendix).

### PILLAR 4 ASSETS

Pillar 4 assets were covered in the previous two *Visions* and relate to assets outside of RRSPs, DPSPs or registered pension plans. The primary source for most people is the equity in their home; a recent survey revealed that 77% of savers plan to downsize their home at or near retirement and use the difference to supplement their retirement income. Other Pillar 4 assets include a second home, inheritances, savings that are not tax-sheltered and TFSAs. The more one uses Pillar 4 assets, the less one needs to save through RRSPs or other retirement vehicles. This *Vision* conservatively assumes one does not draw on Pillar 4 assets at all in retirement.

## IMPLICATIONS FOR OCCUPATIONAL PENSION PLANS

The principles of pension equilibrium and NRITs apply to pension plans as much as they do to RRSPs, but there are two differences, one major and one minor. The minor difference is that the NRITs will be a few percentage points higher when a pension plan is involved. That is because the plan participants do not need to contribute as much if the employer is paying part of the cost, so disposable income during their working years will be that much higher.

The major difference is that the “one-size-fits-all” nature of pension plans makes it hard for all members to achieve their retirement income targets with any precision since NRITs vary widely by individual. At a given earnings level, the range between the highest and lowest NRIT might be as much as 20 percentage points. How does a plan sponsor set the pension target under these conditions?

There are a number of arguments for setting the target near the lower end of the range. Employer-sponsored plans reflect only the earnings of the plan member, not the member’s spouse. To the extent that total household earnings are higher, the NRIT will be lower, so basing the target solely on the employee’s earnings provides a cushion. In addition, most people who have pension coverage will also have Pillar 4 assets, which can be used to supplement retirement income.

Perhaps the most compelling argument in favour of a lower target for a mandatory pension plan is a philosophical one. Approximately 74% of employers<sup>2</sup> believe that employees should take some responsibility for their retirement. This suggests keeping the pension target below the average NRIT so that plan

members can make voluntary contributions, if they so choose, to top up their pensions and reach their own NRIT.

We can also see a couple of reasons to set the retirement income target in a pension plan closer to the high end

of the range. Many middle-income families struggle with heavy expenses during their working lifetime and might wish to enjoy a little more discretionary spending in retirement. And in certain industries, a higher retirement target may be necessary for competitive reasons, as a tool to attract and retain employees.

In our October 2005 *60 Second Survey*, 26% of employer respondents felt that the employer-sponsored arrangements – when combined with government programs – should provide comprehensive retirement coverage on a *mandatory* basis. These employers would tend to sponsor plans with higher retirement income targets. In the extreme case, the pension formula would be set high enough to enable all plan members to achieve their NRITs, even it means that many of them will exceed their NRIT in the process.

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<sup>2</sup> Based on our October 2005 *60 Second Survey*.

### “BEST FIT” PENSION PLAN FORMULAS

Assuming plan sponsors want to pick a middle position within the range of acceptable outcomes, a mathematical approach is to find the pension formula that provides the “best fit” to the NRITs of plan members. The pension target will exceed the NRIT for some members and fall a little short for others but “best fit” means the deviations will be minimized. In a real-life situation, this approach would require knowledge of the demographic characteristics of the entire plan membership (e.g. home ownership, marital status, number of dependent children).

In this section, we can roughly approximate a best fit result by using the NRITs for single persons who own a home. The NRITs for that particular cohort lie conveniently between the NRITs for couples with children and couples without children, albeit closer to the upper end. Hence, it will be a little better than the best-fit formula. What plan formula is needed to produce pensions that match the NRITs for this cohort? We will address this question both for DC and DB plans and make the basic assumption that attaining the target benefit should require 35 years of plan participation.

In the case of a DC plan, we can replicate the NRITs fairly precisely with an employee contribution formula of 5% of pay below the YMPE and 8% of pay above it, with the employer making a matching contribution. This DC formula is a little richer than the typical DC pension plan in the private sector but would not be unusual. Many variations are possible, such as a lower required employee contribution with the option to contribute more.

We do caution that this result is based on the assumptions given in the appendix and actual results are almost certain to vary. For instance, if employees do not invest prudently, investment returns might suffer and the required contribution rate could be even higher. The necessary DC formula will vary over time depending on the capital markets. Currently, real rates of return are relatively low, which translates into a DC plan contribution requirement that is higher than would have been the case ten years ago.

In the case of a DB plan, a formula that comes fairly close to matching the NRITs for a single person is 1% of final average 5 years’ earnings up to the final average YMPE and 1.5% of such earnings over that threshold. This assumes no bridging supplement is payable on retirement before age 65. If there were a bridging supplement, the basic formula would be a little lower.

This result assumes the DB member contributes 4.5% of pay up to the YMPE and 7% of pay over the YMPE. If member required contributions were lower, pre-retirement disposable income would be higher, meaning that a richer pension formula would be needed. The converse is also true. This inverse relationship is counter-intuitive: the less one contributes, the richer the pension formula needs to be to attain the NRIT.

Note in the case of both the DB and DC plans that the formulas need to be integrated with the Canada/Quebec Pension Plan in order to produce the right level of retirement income at all earnings levels. In general, an integrated formula enables a plan to match NRITs at all earnings levels much more closely

### CONCLUSIONS

If one issue has been overlooked during the ongoing pension debate, it is the importance of pension equilibrium. Attention has been concentrated on the formidable challenge of accumulating enough retirement income and not enough on the negative implications that heavy saving has on pre-retirement disposable income. We should not lose sight of the need to maintain a decent standard of living in our working years as well as in retirement.

Pension equilibrium leads to the notion of NRITs. While neutral retirement income targets are lower than many of us may have thought, they still require a high savings rate if they are to be attained. In the case

of individuals who rely solely on RRSPs, it is unlikely that most of them will attain their NRITs without making use of Pillar 4 assets. This underscores the continued importance of occupational pension plans as a vehicle to help Canadians reach their retirement goals. The proposed new Pooled Registered Pension Plans will also help.

Employers who already sponsor a DB or DC pension plan may wish to review their retirement income targets in light of NRITs. The result may be a recommendation to change the contribution formula or pension formula or both.

REALITY CHECK

Some of these findings are at odds with conventional views about retirement saving, so some stress-testing is in order. Consider the counter-arguments:

1. Not everyone owns a home and makes mortgage payments.

About 75% of retirement-age Canadians are homeowners. Of the other 25%, a disproportionate number earn less than the \$60,000 threshold that we used in our analysis. In the highest quintile of earnings, which starts at just under \$100,000, 93% of Canadians are homeowners. It is therefore natural to base our main retirement targets on the situation for homeowners. The minority who are not homeowners would either have to save more, retire later, or resign themselves to a more modest lifestyle in retirement.

2. The mortgage may not be paid off by retirement.

An individual in this situation must seriously question his or her investment strategy. If any of their retirement savings were invested in fixed income securities, which is likely, they would be better to pay off the mortgage first.

3. The mortgage may have been paid off well before retirement so disposable income in the years leading up to retirement may be understated.

We assumed mortgage payments were made over 25 years and then spread over 35 years to smooth out this pre-retirement expense. It means we may be overstating mortgage costs in some years (after the mortgage is liquidated) but understating it in others. In some cases, child-raising expenses and mortgage payments may have been eliminated well before retirement. It is likely that in most of those cases,

couples will use this breathing space to make up for a lack of retirement saving during the early years of their career, so disposable income might not rise by much after all.

4. Were mortgage payments and child-raising expenses overestimated?

We tried to be slightly conservative in our examples. We assumed 20% of pay was allocated to mortgage payments for 25 years, which is well below the 28% guideline endorsed by banks. We then spread the 25 years of payments over 35 years, which essentially reduced the annual expenditure for calculation purposes to less than 15%. The child expenses were taken from averages in published statistics (cited in a previous Vision) and were also spread over 35 years.

5. People will need more disposable income in retirement for activities like travel and recreation since they will have more free time.

The problem with this argument is that employers are not buying it and the statistics do not bear it out. Of the 217 employers who responded to a recent Morneau Sobeco 60 Second Survey, 99% said that retirement targets should be set at (or below) a level that allows employees to match their pre-retirement standard of living. Only 1% felt the corporate retirement policy should be to target a higher standard of living in retirement. As for the statistics, the average senior spends just \$1,865 in travel each year<sup>3</sup>. To reconcile this with anecdotal experience, one can speculate that a flurry of spending on travel immediately after retirement is followed by lower spending later on in retirement.

<sup>3</sup> Survey of Household Spending, 2008.

## APPENDIX

### ASSUMPTIONS USED IN THE PROJECTIONS

Type of information	Assumption used	Additional comments
Retirement Age	63	Very close to the target retirement age of the typical Canadian organization
Age when saving for retirement starts	28	
Form of pension	Life, guaranteed 10 years	
Price inflation	2% per year	
Wage inflation	3.5% per year	This is the rate at which final pay was deflated to determine historic earnings when calculating RRSP accumulations
Fund return net of expenses	5.25%	This translates into a 3.25% real return which is a little more conservative than the assumption in the CPP valuation
Indexing of retirement income	50% of change in price inflation	This is deemed acceptable given that CPP and OAS are fully indexed and consumption tends to decline with age
Annuity rate	4.25%	This is before incorporating the indexing, above
Mortality rate	UP 1994, with mortality improvement projected to 2020	
Mortgage payments	20% of gross income for 25 years	This is well below the rule of 28. We pro-rate the payments over 35 years when determining disposable income
Child-raising expenses	9% of earnings per child	The Vanier Institute shows child-raising costs average \$9,000 per child. We assume this cost is incurred for 25 years and pro-rate over 35 years to derive disposable income.
Employment expenses	3.5% of earnings	This includes commuting costs, business attire, employee-paid benefit costs, union dues, etc.
C/QPP benefit	80% to 95% of maximum	We assume that there will be years of low earnings which reduce the C/QPP benefit payable. We further reduce C/QPP if final earnings are below the YMPE.
OAS benefit	Maximum paid	We assume 100% of OAS is paid to both the primary earner and his/her spouse.
Income tax calculation	We recognized the basic tax credits including basic personal amount, spousal, age amount if 65, children under 18, pension income amount and the ability to transfer credits to a lower-income spouse. Ontario tax rates were used.	

# VISION

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## ABOUT MORNEAU SHEPELL

Morneau Shepell Inc. is Canada's largest human resource consulting and outsourcing firm focused on pensions, benefits, employee assistance program (EAP) and workplace health management and productivity solutions. We offer business solutions that help our clients reduce costs, increase employee productivity and improve their competitive positions by supporting their employees' financial security, health and well-being.

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