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The Total Career Benchmark Model: A Pension Model for *Retirement 20/20*

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Abstract

The Total Career Benchmark (TCB) model in this paper, consistent with *Retirement 20/20* principles, focuses on reconstructing and maintaining a consistent and reasonable sharing of risks and rewards among the four stakeholders: individuals, society, employers, and the markets. The model takes advantage of modern technology for the necessary tools. This is done by establishing a series of benchmarks used to define tax shelter limits and target pensions and other items like accrued benefits to date. The key benchmark in the TCB model (which is referred to as the Annual Service Factor) links “Tier I” to “Tier II.” The Annual Service Factor is at the root of a system that includes a simplified and predictable “lifetime” component and a very flexible “personal” component for each individual. The “lifetime component” is the insurance aspect, whereas the “personal” component enables individuals to tailor retirement benefits to their own personal needs. Implicit within each of these components is the critical “investment risk” for the contribution streams to cover the “lifetime risk” and the “demographic risk.” Individuals and employers will look to the markets as a vehicle to which the “lifetime risk” and a portion of the “investment risk” can be transferred. The necessity for society to monitor will still be present but will be greatly simplified by the TCB model. The self-adjusting, consistent benchmarks under the TCB model mean that all four of the stakeholders will speak the same language. Individuals and employers can easily compare what they have to what they need—and even more importantly can determine how to accrue what is needed. This is done by transferring the skills of the expert staff within the retirement industry away from time wasted on the ever-increasing stack of bureaucratic requirements. Instead the talent of these people will shift to developing creative risk management solutions, within an effective and sustainable system, through the use of advanced technology. In the end, under the TCB model, each employee has the equivalent of an individual defined-benefit pension plan with adjustment features available to reflect both personal and market changes. An individual’s ability to tax shelter income over a career will be unaffected by the design of any employer pension plan. All funds allocated to an individual remain the individual’s and are not used to subsidize another person—except for the inherent risk sharing of an annuity.

Executive Summary of the Total Career Benchmark Model¹

The *Retirement 20/20 (R20/20)* process (*Retirement 20/20 Accomplishments to Date*) recognizes the necessity to go back to first principles and to develop a system that achieves the underlying goals of retirement savings from the perspectives of all of the stakeholders. The direct stakeholders are employees, employers, and society in general—through the government. All three of these groups, employees, employers, and society—hereafter referred to as the threesome, are very much in need of a predictable, understandable and sustainable retirement system. The indirect stakeholder is the market, which has a critical role to play in order to guarantee that the threesome is able to achieve the underlying goals of an effective retirement system.

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The Total Career Benchmark (TCB) model, developed in this paper, with a focus on Canada and the province of Ontario, is based on the fundamental goals that I previously described in an earlier paper (Walker, 2008). Although that paper was not directly in response to *R20/20*, the proposals in it were closely in line with the principles of *R20/20* (*Retirement 20/20* Archive).

In this summary of the TCB model I will focus on the main instruments that are being used and how they work together to ensure proper allocation of risk, governance and administration. The transparency under the TCB model will greatly assist in the transition from the current system. The TCB model will lower employer, and employee, cost and risk while at the same time increasing employee understanding, increasing employee appreciation of benefits, and increasing employee acceptance of responsibility for their portion of the risk. The model also focuses on making sure that the income replacement ratio at retirement is consistent with societal goals for those with lower income levels. The only way these seemingly divergent goals can be attained simultaneously is by simplifying both the environment and the benefits. Lower employer risk does not have to mean higher employee risk. Lower employer administrative and governance costs as plan sponsors will help to make higher employee benefits possible—particularly for small to mid-size companies and the self-employed.

The cost savings under TCB will not be as a result of removing funds from the intended purpose of providing retirement income but will instead be from a combination of:

1. The removal of the necessity for a significant portion of the bureaucracy that binds the current Canadian retirement system and many other nations' retirement systems.
2. Taking advantage of current technology to implement consistent, standardized, and sophisticated processes that increase understanding and spread risk on a national basis.

An employer or an individual deferring the same percentage of income as they do now for retirement purposes will actually receive a much higher proportion of that deferral as “retirement income” under the TCB model. TCB should effectively provide each employee with the equivalent of an individual, personalized, defined-benefit (DB) pension plan by combining an insurance foundation built upon a “Lifetime Account” and a personal needs component funded through a “Personal Account.” From an employer perspective, the TCB model permits the provision of DB-type benefits using “defined contributions.” A key element implicit within TCB is that all individuals, including those who are self-employed or who are not part of an employer-sponsored plan, will have access to some of the risk management mechanisms that are now available only to members of large DB plans.

The new TCB system will be such that weaknesses inherent in the current system are not grandfathered but are eliminated in a smooth transition to the new system. The transition process to the TCB model will be by evolution with some initial overlap. The strengths of the current system will stay, but in a manner under which risks and opportunities are much more fairly apportioned to every working Canadian. The manner in which TCB can change, or integrate with, the entire retirement scenario in Canada, including employer-sponsored DB and/or defined-contribution (DC) plans, individual tax-sheltered retirement savings (RRSPs), and public mechanisms like the Canada Pension Plan (CPP) and Old Age Security (OAS), will be discussed.

It is also critical when reviewing changes as fundamental as the TCB model that we consider the very different electronic tools that are now available to individuals, as well as their skill and propensity to use them, compared to even 15 years ago. An analogy that I have frequently used in presentations about my

total career benchmark idea has been that it is time for the pension iPod. Many of the fixes proposed for our current pension system are the equivalent of trying to squeeze extra songs onto an old LP. The TCB model is the pension equivalent of being able to have multiple personal playlists along with a huge number of songs and other features on your “record player.”

The use of the CPP to determine the benchmarks for TCB provides an effective basis for the integration of Tier I and Tier II. It should be noted that in Canada the common terminology is to refer to three “Pillars,” where Pillar 1 is totally government-funded benefits such as OAS and the Guaranteed Income Supplement (GIS), Pillar 2 is the CPP/Quebec Pension Plan (QPP), which requires contributions, and Pillar 3 includes employer-sponsored registered plans as well as individual RRSPs. In this paper Pillar 1 plus Pillar 2 equals Tier I and Pillar 3 equals Tier II. I use the Tier I and Tier II terminology for consistency with *R20/20* terminology. It is also assumed that the current Tier I benefits will remain in place in Canada when the TCB model is implemented.

The TCB model is built on a solid foundation of “benchmarks” that work together to enable country-wide risk sharing of the “lifetime risk,” while minimizing demographic and cohort risk, and even risk sharing of unpredictable items like a market crash. At the same time these “benchmarks” enable the use of optional benefits for idiosyncratic risks and bring much better transparency to the overall retirement system. In the current pension system the term “plan sponsor” implicitly also includes the roles of “plan governor” and “plan guarantor.” Under the TCB model the “plan sponsor” role will only include the responsibility to “champion” and to help “pay for” plan benefits. The “guarantor” and “governor” responsibilities will transfer to the regimes that actually provide the plan’s lifetime benefits.

The simplest benchmark that will be used is the Canadian Retirement Age. This is defined as the normal retirement age for the CPP, which is currently 65. Another CPP item, upon which some other benchmarks are based, is the Yearly Maximum Pensionable Earnings (YMPE, which is \$47,200 in 2010). Under the CPP the YMPE is used both to calculate annual contribution limits and annual benefit amounts, and grows in step with the Average Industrial Wage (AIW). The YMPE will be used in a similar manner within the TCB model providing a direct link to Tier I benefits. The YMPE can, in my opinion, be viewed as an annual rounded version of the AIW in Canada.

The defining benchmark under the TCB model is the Annual Service Factor (ASF), which restates every individual’s annual income as a multiple of the YMPE (e.g., an individual with 2010 income of \$59,000 gets an Annual Service Factor of 1.25, calculated as \$59,000 divided by \$47,200). This benchmark means that at any time an individual will know his accumulated ASFs to date, and average ASF to date and can easily project future ASFs. By using the ASF as the base, all past and future earnings are stated in current year dollars. Under the TCB model ASFs are accrued during three separate phases—the Phase-In Period, the Pension Accrual Period, and the Phase-Out Period. The basic target pension amounts under TCB are based on the Pension Accrual Period. ASFs accrued during the other two phases, together with the portion of any ASF that causes an annual tax limit to be exceeded before the career tax limit has been hit, are used to provide the necessary adjustment mechanisms to recognize the different career patterns that individuals experience.

The next critical benchmark is the Pension Unit. One Pension Unit is defined to provide an annual lifetime pension income beginning at the Canadian Retirement Age and continuing on a life-only basis. At any given time before the Canadian Retirement Age the target deferred pension payable by 1 Pension Unit is equal to the YMPE for that year divided by 1,000 (e.g., in 2010 one Pension Unit would provide a deferred annual retirement income equal to \$47.20 beginning at the Canadian

Retirement Age). Prior to the Canadian Retirement Age the Pension Unit grows in step with the YMPE (e.g., a Pension Unit earned in 2002 when the YMPE was \$39,100 will have grown from \$39.10 in 2002 to \$47.20 in 2010). After the Canadian Retirement Age the Pension Unit is indexed at the same rate as CPP retirement pensions.

Under TCB the annual income tax contribution limits will be established by setting the annual target number of Pension Units at 20 times the individual's Annual Service Factor (which equals 2 percent of earned income for that year) to an annual maximum of 60 Pension Units. The career target pension limits will be based on a maximum Pension Unit accrual limit during the Pension Accrual Period combined with top-ups by using ASFs from the Phase-In Period. The career target units will take into account projected Pension Units from both the CPP and OAS. It will be much easier for an individual to focus on a target of 1,000 Pension Units than on a dollar amount that is constantly changing. When the target unit amount goes up significantly it will be as a result of a salary increase much in excess of the national average. That type of increase occurs more frequently, and has more impact on projected career average, in the early part of a career.

Benchmark worth factors will also be established, and reported to all, that consistently show the value of a Pension Unit both as a cost to an employer and as a cost to an individual. The benchmark worth factors will consistently show how much one Pension Unit is worth and/or how much it would cost to purchase one Pension Unit, at any given age by either employer or employee. The worth factors do not represent the actual cost to either the employer or the individual but instead give them a basis for assessing their provider's costs compared to others (e.g., if for an individual of a certain age the benchmark worth factor is \$255, then 10 Pension Units are worth \$2,550). It is important to note that the "purchase" of a Pension Unit is intended to fully "fund" the promised deferred annuity. The funding levels will recognize (within each Age-Specific Plan [ASP] as described below) the anticipated values of both future contributions and future liabilities.

The standardization of Pension Units enables a very broad spreading of risk. A unique aspect of a "Pension Unit" is that the annuity payout of each unit begins at the Canadian Retirement Age regardless of whether or not the individual has actually retired. Any portion of the Lifetime Account used for early retirement, before the Canadian Retirement Age, will be by "cashing in" existing Pension Units rather than by receiving annuity payments. An election not to receive a pension until after the Canadian Retirement Age will result in an increase in the number of Pension Units rather than an increase in the pension amount per unit. This is necessary to maintain the consistency and meaning of the Pension Unit amounts and values as benchmarks. It also makes a flow of Pension Units from Lifetime Account to Personal Account and vice versa, until career limits are hit, easier.

There is a lack of transparency in the current rules for establishing tax shelter limits in Canada. Most people, especially those who are not members of DB plans, believe that no Canadian can tax shelter deferred retirement savings at a rate greater than 18 percent of annual income. This is not the case. It should be noted that in setting the contribution levels that I have developed for my TCB examples, I have used, as a career base, the current limit (27 percent of annual income and even more in some cases) available to any member of a DB plan (*Registered Plans Directorate Newsletter*, no. 96-3, Nov. 25, 1996), which requires employee contributions or which permits voluntary employee contributions. Therefore the TCB model does not include a direct increase in the tax-sheltered contributions limits currently available. Instead the TCB model rearranges the total career limits in a manner that gives all individuals the same access, regardless of the plan design used by their employer.

By changing the structure for tax sheltering deferred retirement income it will be possible to address the tensions between “investment and insurance, choice and default” as have been identified in the *R20/20* initiative to date (Kessler 2009). Under TCB each individual, regardless of whether they are a member of an employer-sponsored plan, will have a Retirement Account that has two separate components—a Lifetime Account and a Personal Account. The Lifetime Account covers the “lifetime risk” and will include all employer contributions and all “required” employee contributions to a sponsored plan. As long as an individual has not exceeded annual or career limits, the individual can, at any time, voluntarily contribute to the Lifetime Account and/or to the Personal Account. The Personal Account funds all “ancillary benefits” such as survivor benefits, early retirement benefits, upgrades from career average to “best five” earnings, etc. It will also be possible to transfer funds from one account to the other, under certain criteria, without affecting the total Retirement Account contribution limit.

Standardizing the lifetime component, as is done under the TCB model, will make it possible to establish a series of what I will refer to as “Approved Annuitization Funds” and “Age-Specific Plans.” The Approved Annuitization Funds (AAFs) will deal directly with the plan sponsor, or individual, with respect to the purchase of Pension Units, cash contributions, and the transfer of risk. Once a transfer of cash from a plan sponsor, or an individual, has been made to an AAF, the AAF then tracks assets and liabilities not by sponsor but rather by ASPs. This is because at the instant the AAF receives the cash transfer the obligation of the AAF is to provide annuity benefits to an ASP for each individual of a particular age. The AAF has become the insurer for the ASP that will receive annuity benefits from the AAF and distribute them to individuals after the Canadian Retirement Age.

The “real” pension plans under the TCB model are the ASPs. The AAFs and the ASPs are the “plan governors” and “plan guarantors.” An individual who changes jobs remains within the same ASP and does not suffer a loss of pension value. All individual data are transferred to the ASPs, which will then pass the data on to the Centralized Retirement Account System. Legislation will establish the rules for AAFs, ASPs, and the Centralized Retirement Account System. The Centralized Retirement Account System will be a national government unit since it is tracking individual tax information. The AAFs and ASPs will overlap with each other and will be mostly private sector but with some public sector participation.

Under TCB the proposal is that the largest pension plans, especially the large public sector plans that have very large pools of funds and employ many pension and investment experts, be permitted to annuitize benefits for smaller plan sponsors and possibly even for individuals by being designated as AAFs. Other financial institutions in the market, like insurers and banks, could also provide AAFs. ASPs will be national from a risk-sharing perspective but could be based in different provinces.

The existence of AAFs and ASPs means that an employer has fully met all pension obligations once the employer pays for the Pension Units promised to each employee under any employer-sponsored plan. The employer can, and in most instances should, set up a DB-type plan in which a promise is made to provide a specific number of Pension Units equal to a multiple of the ASF for each employee during the year. As will be shown in this paper, variations in plan design can be quite flexible. Therefore, from an employer point of view, a DB plan effectively becomes a DC plan.

Once annuity payments begin, the ASPs will, over time, be systematically combined with each other until the final transfer to the ultimate TOP plan, which will be established in a manner that includes the portion of the population at the upper level of their life expectancy to the end of their lifetime. This transfer process will provide a moving risk-averaging basis for the ASPs that will assist in spreading the “lifetime risk” and will also avoid the “tontine” effect within any ASPs.

In contrast to current DB plans, the role of the AAFs is to act as the “insurers” for the ASPs. Therefore the funding methods and asset allocation will be different than for current pension plans. It is important to stress that the ASPs will have their own investment policies, which DB plans do now, based on assets, liabilities, and future cash flow. This will have a major impact on the allocation of investment income within an AAF. An AAF will establish its own investment policy based on the number of Pension Units it holds from each ASP. AAFs can trade Pension Units with each other to properly balance their assets, liabilities, and investment portfolio. For an ASP the date at which annuity payments will begin is known, and it is also known that any “new” liabilities will be funded as they are accepted. There will be a need for a “participation” component and some reserving as the funds mature. Even though the funds come to the AAFs from the plan sponsors and/or individuals, the actual “group insurance” clients are the ASPs.

It may be helpful both to review the Glossary and to read the Example of Company Communication to Employees in Appendix A1 as an additional preface.

The actual level and value of some benchmarks included in the paper are for illustrative purposes only. The actual values to be used will require further research and study beyond the scope of the paper.

1. Designing and Building the Total Career Benchmark Model

In this section I will discuss the factors that were considered in determining how to allocate risks, roles, and governance responsibilities in both the design and building of the TCB model. The following four sections will then discuss the design and building of the specific components for each of the stakeholders.

In discussing the design the components will be analyzed in a general way that is applicable to any society. In building the model the design and structure will be adjusted to fit the current Canadian system in the province of Ontario with specific identification of the strengths that are built on and the weaknesses that are removed under the TCB model. The new system must be such that weaknesses inherent in the current system are not grandfathered but are eliminated in a smooth transition to the new system.

1.1 Designing the Total Career Benchmark Model

Under the TCB model the role of stakeholders will be dramatically different than under the current model. In designing the TCB model it is critical to define both the role, and the tools necessary to fulfill the role, for each of the direct stakeholders in the threesome (individuals, society, and employers) as well as for the indirect stakeholder—the markets. The ultimate goals of the threesome—providing adequate retirement benefits, with appropriate sharing of risks and rewards, to each individual in society by using a combination of Tier I and Tier II—will, of course, require help from the markets. For the TCB model it was necessary to use a “retrospective” approach to achieve the desired goals by first identifying the critical needs and roles for the individual component. Once those needs and roles have been identified we then consider needs and roles for the societal components, then for the employer components, and finally for the market components. Society, employers, and the market will all have a shared responsibility to provide education for individuals in a manner that ensures that they all will have the ability to compare and assess retirement vehicles at least as efficiently as they can now determine which house is the best fit for their family.

Reallocation and reduction of risk has been a priority in designing the TCB model. The major risk in retirement planning is the “lifetime risk.” Everyone is more and more aware of the risk of outliving their retirement savings. At the same time, as life expectancy is increasing, there is a trend away from DB plans. The “lifetime risk” is one for which a ready solution is available—annuities. Annuities, or a modernized variation, should, once again, be required on any plan that receives a tax shelter. About two-thirds of the total accumulated retirement savings over a career must be allocated to the “lifetime risk.” The DB design and regulation under TCB should be such that the accumulated benefit for a particular period of service, and a prescribed normal retirement age, is consistent for all employees regardless of gender, marital status, job changes, career income pattern, or target retirement age.

The second major risk is the demographic risk. Demographic risk has had a large impact on many plans with generous “ancillary benefits” such as unreduced early retirement. Traditional DB designs are such that there are frequently situations in which one category of members effectively subsidizes another: younger subsidizes older, short service subsidizes long service, normal retirement subsidizes early retirement, and single subsidizes married. Most of these “hidden subsidies” are a function of the plan design and contribute to the lack of transparency inherent within the current system. They also have been a huge factor in the trend away from DB plans. In the design of the TCB model an attempt is made to remove both the “unfairness” faced by some plan members and the “demographic risk” faced by employers as plan sponsors. If these aspects are not removed there will never be a resurrection of DB plans.

We can largely separate demographic risk from the “lifetime risk” by recognizing that much of the demographic risk is within the control of the employee rather than the employer. A portion of the demographic risk can, and should be, characterized as “personal circumstances risk” or in *R20/20* terminology “idiosyncratic risk.” The decision to marry, the decision to change jobs, and the decision to retire early are all aspects that are, to varying degrees, much more within the control of the employee than the employer. The employee has more ability to plan for personal factors than does the employer. This was considered in the design of the TCB model. The “cohort” portion of demographic risk, which can have much more impact on the employer, is also directly factored into the TCB model design.

Under the TCB model the “plan sponsor” role will be more narrowly defined to include only the responsibility to “champion” and to help “pay for” plan benefits. The “guarantor” and “governor” responsibilities, which are currently implicit within the term “sponsor” in the current system, will be split out and assigned to “plan governors” who will have the responsibility to manage all plan assets, liabilities, and risks.

1.2 Building the Total Career Benchmark Model

From an individual’s, and a societal, point of view, DB plans are the best tool for providing adequate pensions because of the strong insurance aspect. In building the TCB model it is recognized that the insurance aspect must be stressed, but the “insurer” must be strong. I have always found it very ironic that a small private sector company sponsoring a DB plan is not required to fund for annuity promises to the same extent as a large, well-capitalized insurer. The TCB model focuses on building strong “insurers” and providing the tools to all employers, whether big or small, to pay a reasonable price for the “insurance” without being the “insurer.”

Currently the very best pensions are enjoyed by employees of large private sector companies and by public sector employees. The two most positive characteristics of the very best pension plans are the following: 1) the income replacement ratio at retirement, for employees with long service, is generally adequate, inflation-protected, and guaranteed for life; and 2) employees are required to make significant contributions, often equal to the employer contributions. As a result members appropriately share in both the risks and rewards of the plan's performance. These two characteristics go a long way toward minimizing the "risk asymmetry" between plan members and plan sponsors that has occurred in many DB plans. These are strengths to be built on.

Members of the very best pension plans, which are all DB plans, benefit from the ability to tax shelter a much higher proportion of income (by at least one-half as a percentage of income) than do members of DC plans or individuals with no employer-sponsored pension plan. The higher tax shelter limits are primarily as a result of the current system failing to explicitly place a value on ancillary benefits (*Registered Plans Directorate Newsletter, no. 96-3, Nov. 25, 1996*), except when a member of the unrepresented group (discussed below) leaves a plan. The ability to have at least an extra 9 percent to tax shelter ancillary benefits, some of which are absolutely needed (e.g., indexing of benefits before and after retirement, spousal survivor benefits), as well as some desirable ancillary benefits (e.g., the use of final average earnings, unreduced early retirement pensions) is another strength of the current Canadian DB system to build on.

It is very important to note that the inability to directly tax shelter for such ancillary benefits except in a DB plan is an aspect of the Canadian tax system that is very non-transparent to most Canadians—including many with a high level of financial knowledge. The majority of private sector employees currently do not have full access to the available tax shelter room under the Canadian Income Tax Act due to factors beyond their control but within the control of their employer. Many employers have to control risks and costs by opting for a DC plan or a group RRSP or no plan at all rather than a DB plan. Other employers may be in a position to sponsor a DB plan but opt to make it non-contributory for employees for administrative simplicity. Ironically both employers and employees are likely to view the absence of employee contributions as a generous feature. In making these decisions the employers are not attempting to limit their employee's ability to tax shelter funds but they are! In most cases, neither the employer nor the employee recognizes this nontransparent aspect of the Canadian tax system. These decisions by the employer (i.e., to sponsor anything other than a DB plan requiring employee contributions) reduces the employee's ability to tax shelter "deferred income" by at least one-third. This unfairness aspect with respect to ancillary benefits for plans other than DB ones is a weakness that must be removed from the current system. This weakness is removed under the TCB model since the amount of deferred income that an individual can tax shelter over a career is totally independent of plan design.

Another weakness of the current system is the inability to recognize and adjust for the significant difference that occurs among individuals with respect to career income patterns—including job changes. This weakness can be alleviated by at least aligning the ability to tax shelter income with the necessity to pay income tax as in done under the TCB model.

At present in the Canadian System there is one very large group of employees who are totally unrepresented by any advocacy group. The unrepresented employee group consists of those who have been members of DB plans and then terminate employment, or die, before becoming eligible to receive a pension. This group also includes employees who opt not to take advantage of subsidized early retirement. This group is unrepresented primarily because most employees don't realize that they have been, or likely will be, part of this unrepresented group at least once during their career. The most

frequent job changes are also most likely to occur in the early stages of a career and/or when income is low. This is a weakness that must be eliminated.

One of the key strengths of the TCB model is the portability that it provides to employees who change jobs.

2. Designing and Building the Individual Components of the TCB Model

2.1 Designing the Individual Components

The role of the individual will vary significantly from one individual to another. Some employees will want their employer, society, and the markets to accept full responsibility for their retirement plan. These employees will still have to make contributions to the pension plan and accept at least a basic level of responsibility for monitoring where they are at any given time. Many employees will want to play an active role in the retirement planning process with help from their employers and/or financial advisers. There will also be a significant portion of employees, likely a higher proportion than we have now, who will want to use the modern tools available to them to personally control the retirement process for themselves and their family.

As TCB evolves, employee knowledge of the basic structure and terminology will increase significantly, and all employees, regardless of the type of plan they are in, will be speaking the same language. They should also not have to learn a new language every time they change jobs. They will also become aware that a regular review of their retirement funding status is necessary.

The individual's role is to actively participate in the process of saving for retirement. In order to meet the goals of the TCB model both mandatory and voluntary contributions will be required from both employees and employers. Employee contributions could be nonmandatory on the portion of income up to the AIW and/or until employer contributions reach a certain level. A very key element of TCB will be to provide employees with clear, self-adjusting, consistent benchmarks. The consistent terminology and structure of TCB must be such that at any given time each employee will have some sense of where they are on the path to retirement and will be able to map out the remaining directions. Part of the responsibilities of each of the other stakeholders will be to provide education and information to an employee that is consistent with both the individuals' needs and desires to understand and control the process throughout their career. Employees who do not have the desire or the expertise to control their own retirement fund accumulation should be able to transfer that responsibility to qualified financial advisers, including actuaries, within the market.

There is a tendency, which I have observed many times over my career, for an individual to place a much greater value on a "lump sum" compared to a "lifetime annuity" that actually has an equal or even greater value. The tools provided under the TCB model must assist employees to more accurately understand the relative value, and the risks involved, when deciding between a "lump sum" and the "lifetime annuity." Benefits under the TCB model are designed to be built on a strong foundation provided by the "insurance portion" funded through the Lifetime Account. The strength of this foundation enables optional benefits and risk management to be provided by a lump-sum amount accumulated in the Personal Account.

The individual components must be designed to reflect the variations that occur both from individual to individual and over any one individual's life cycle. One of the constant issues that have been

identified as an underlying weakness in the current systems is the lack of understanding by employees. In the design of the TCB model the focus is on providing tools to individuals that help them to understand the basic fact that the receipt of the income you earn while working must be spread out over an entire lifetime. In any one year a portion of earned income must be deferred to provide retirement income. The portion required to fund Tier II retirement benefits increases both with age and with income. The TCB model must be a collection of tools that, at any given time, enables an individual to visualize where they are, where they need to be, and how to get there.

The tools provided to assist in understanding under the TCB model design will also help to motivate individuals to fulfill their own portion of the responsibility to fund for retirement. The TCB tools must be understandable to the individual and must not vary in meaning, but only in value, from year to year. In the designing of the TCB model the individual tools are collected into an electronic toolbox called the “Retirement Account.” The toolbox itself is divided into two sections: the “Lifetime Account” and the “Personal Account.” Communications experts will be able to rename and display the tools more effectively than the technical terminology used in this paper.

The Lifetime Account is the biggest section of the toolbox and includes the measuring tools necessary for individuals to assess where they are with respect to the lifetime (i.e., insurance) component of their Retirement Account. The tools in the Lifetime Account section of the toolbox must be such that they include benchmarks for annual earned income, career income, tax shelter limits, accrued pension benefits, etc. The design of TCB includes the following tools for this purpose: Service Factors, Worth Factors, and Pension Units.

The Personal Account section of the toolbox includes the measuring tools necessary for individuals to assess where they are with respect to the personal (i.e., optional) component of their Retirement Account. The tools used for the Lifetime Account section of the toolbox are also used for the Personal Account section. Several additional tools will be required for efficient use of the Personal Account, such as the optional ability for couples to assess spousal Retirement Accounts together to provide the “family version” using each of the Lifetime Account tools. During the phase-in to full retirement another necessary tool will be the ability to transfer one spouse’s accrued Pension Units to the other spouse’s Lifetime Account (on an actuarially equivalent basis). This will greatly assist families in providing appropriate levels of spousal survival benefits.

2.2 Building the Individual Tools

Most of the TCB tools are “individual” in nature. Building the individual tools requires links between Tier I and Tier II (or in Canadian lingo a link of Pillars 1 and 2 with Pillar 3). The CPP forms the base for the primary benchmarks. The link to the CPP is intended to achieve three major goals:

- Government benefits such as CPP (which moves in tandem with the AIW) and OAS can be directly included in the benchmarking process.
- The CPP administration process can be used to establish a central source for all tax shelter records.
- The methodology used by the CPP to track member records can be easily expanded to cover

private sector plans in a manner that will permit the private sector to move in tandem with the CPP as the market changes (a specific example of CPP methodology is in the Appendices).

The links to the CPP are driven by four key items:

- The YMPE
- The CPP normal retirement age (which is now age 65)
- The maximum CPP contributory period (currently from age 18 to age 70)
- Post-retirement indexing.

In the remainder of this paper the normal retirement age under the CPP will be referred to as the *Canadian Retirement Age*. There are some unique aspects to the CPP methodology used to track member records. The key feature that will be used in the design of TCB is a simple method used to track year-by-year contributions and pensionable earnings. The Annual Service Factors under the TCB model are calculated using the same methodology as is used by the CPP. By linking to CPP it is possible to simplify the overall administration under the TCB model. The model also provides the mechanism to make any future changes needed in such areas as the Canadian Retirement Age as life expectancy and career patterns continue to evolve.

From the time that an individual is required to make contributions to the CPP the following factors and benchmarks are calculated and available online as part of the Retirement Account toolbox. *A “Flowing Example” based on an individual named Sam begins in this section. Please note that in this Flowing Example the actual calculations are shown. **Sam does not have to do the calculations but simply uses the “tools” in the Retirement Account.** The Flowing Example flows forward throughout the remainder of this paper. It is assumed in the Flowing Example that we are at the end of 2010 and that the YMPE is \$47,200. Information in the Flowing Example is based on one sample set of individual data (which can be found in the Appendices):*

1. The **Annual Service Factor (ASF)** is the earnings to date in a calendar year divided by the YMPE. Implicit within the ASF is pre-retirement indexing in accordance with the YMPE, which is indexed in accordance with the AIW.

Flowing Example 1: Sam’s earnings of \$70,800 in 2010 resulted in an ASF equal to 1.5000 (\$70,800 divided by \$47,200).

Under TCB the ASF (consistent with that used under CPP) will be calculated throughout the CPP contributory period, which could be as long as 52 years—age 18 to age 70. The CPP currently includes a 15 percent dropout period for years when the service factor is low (as well as some other dropouts). The impact of this dropout is to increase the CPP retirement benefit that an individual receives. An increase in the dropout period, up to 17 percent by 2014, has been accepted (*Proposed Changes to the Canada Pension Plan 2009*). Under TCB, there will not be a dropout period for low-income years. Instead the structure will be set up to recognize and adjust for the varying career patterns that affect almost everyone by using an opposite approach under which the income during the Phase-In and Phase-Out Periods, which is likely to be low, can be added to income during the Pension Accrual Period. To adjust for career pattern differences, and ancillary benefits to be funded from the Personal

Account, requires some more Individual tools. These tools will assist in properly allocating funds throughout a career into the Lifetime Account and the Personal Account.

2. The **Phase-In Period** is any year beginning with the year an individual turns 18 up to the year an individual turns 30. The Phase-In Period tool is included for several reasons. First, it is to recognize the fact that many individuals are still continuing their education during this period and have not yet started full-time employment. One also tends to have very frequent job changes over this life phase and lower income levels. Another important reason for this tool is to make sure that when an ASP starts to accumulate Pension Units (Tool 9 defined below) for a particular age, there will be an immediate significant flow of funds into the plan since most individuals will have started their career. During this period an individual can still receive employer contributions to the Lifetime Account based on ASFs, and will still be part of an ASP. However, the funds cannot be converted to Pension Units until the individual starts to use the next tool shown below—the Pension Accrual Period. Effectively the total income during this 12-year period can be added together and carried forward into the Pension Accrual Period to augment career average earnings subject to career limits.

Flowing Example 2: Sam had ASFs totalling 6.4600 during the Phase-In Period.

3. The **Pension Accrual Period** begins with the year an individual turns 30 and ends with the year the individual turns age 65—the Canadian Retirement Age. The Pension Accrual Period covers what for most individuals is the period during which a very high proportion of total career income is attained. The actual accrual of Pension Units does not begin until the individual enters the Pension Accrual Period. Annual and career maximum Pension Unit accrual limits are applied during this period. The annual limits are based on the current year's ASF and will be applicable each year. The career limits are based on the “best 5” consecutive ASFs during the Pension Accrual Period and the number of years in the CPP contributory period to date to a maximum of 40 for consistency with the CPP. The Pension Accrual Period will be the basis for the Target Career Average Pension defined below. ASFs accrued during the Phase-In Period can be carried forward into the Pension Accrual Period in a manner that assists in offsetting low-income years or career gaps.

Flowing Example 3: Currently Sam has ASFs during the Pension Accrual Period totalling 20.8800.

4. The **Phase-Out Period** begins with the year an individual turns 65—the Canadian Retirement Age—and ends with the year the individual turns 70. The Phase-Out Period tool is also included for several reasons. First, it is to recognize that more and more individuals choose to work beyond normal retirement age and/or choose to phase into retirement. As noted in the definition of a Pension Unit, the annuity payout of each unit begins at the Canadian Retirement Age regardless of whether or not the individual has actually retired. Any portion of the Lifetime Account used for early retirement, before the Canadian Retirement Age, will be by “cashing in” existing Pension Units rather than receiving annuity payments. An election not to receive a pension until after the Canadian Retirement Age, in the Phase-Out Period, will result in an increase in the number of Pension Units rather than an increase in the pension amount per unit. This is necessary to maintain the consistency and meaning of the Pension Unit amounts and values as benchmarks. This Pension Unit feature also enables individuals to watch “actuarial equivalence” as it happens. ASFs accrued during the Phase-Out Period can still be used to buy new Pension Units unless and until the career maximum limit has been reached.

You will note that Tools 2, 3, and 4 cover the total CPP contributory period.

5. The **Career Service Factor** (CSF) is the sum of ASFs to date.

Flowing Example 4: Sam's CSF of 27.3400 (6.4600 plus 20.8800) in 2010 means that career earnings to date, in 2010 dollars, are \$1,290,448 (27.3400 times the YMPE of \$47,200).

6. The **Designated Service Factor** (DSF) is the sum of ASFs accrued during the Pension Accrual Period plus any ASFs from the Phase-In Period that have been converted to Pension Units.

Flowing Example 5: Sam's DSF is 20.8800 in 2010 since none of Sam's ASFs of 6.4600 from the Phase-In Period have been converted to Pension Units. The portion of Sam's career earnings to date during the Pension Accrual Period is equal to \$985,536 in 2010 dollars.

7. The **Future Service Factor** (FSF) is a projection of future Annual Service Factors to the Canadian Retirement Age. The default value of the FSF assumes that the most recent ASF remains level until the Canadian Retirement Age.

Flowing Example 6: If the most recent ASF is 1.5000 and 19 years remain until the Canadian Retirement Age, the default FSF is 28.5000 (1.5000 times 19). Future career earnings, in 2010 dollars, are projected to be \$1,345,200 (28.5000 times the YMPE of \$47,200). On an earnings level Sam is about halfway through the career phase. Sam's projected DSF is currently 49.3800 (20.8800 plus 28.5000).

8. The **Retirement Service Factor** (RSF) equals the CSF plus the FSF. The RSF represents the total career earnings at the Canadian Retirement Age.

Flowing Example 7: Sam's projected RSF is 55.8400 (a CSF of 27.3400 plus an FSF of 28.5000).

9. A **Pension Unit** is defined to provide an annual pension amount equal to the current YMPE divided by 1,000 payable beginning the month following attainment of the Canadian Retirement Age. Annuity payments begin at this time regardless of whether or not the individual has actually retired (explained below). As with the service factors, Pension Units are in current dollars. A Pension Unit is assumed to increase annually with the YMPE until the Canadian Retirement Age and to increase thereafter in accordance with the annual increase in CPP pensions using the CPP Pension Index. A unique aspect of a "Pension Unit" is that the annuity payout of each unit is from an ASP. Any adjustments necessary to a Personal Account as a result of market meltdowns, changes in Canadian Retirement Age, etc., will be by adjusting the number of Pension Units rather than the defined benefit provided by a Pension Unit.

Flowing Example 8: In 2010 one Pension Unit provides an annual pension amount of \$47.20 calculated as the YMPE of \$47,200 divided by 1,000.

10. The benchmark **Lifetime Worth Factor** is a present value factor, expressed as an integer dollar value, calculated based on the individual's age in years and months to provide one Pension Unit. The factors will be released to the media on a regular periodic basis and will always be available to the employee as part of the employee's online Retirement Account data. Worth Factors for early retirement ages prior to normal retirement age will also be available. Each year the individual can

monitor the increased benefit amount provided by each Pension Unit, the increase in value of each unit, the total accrued units to date, and the units per year needed to reach the target pension.

Flowing Example 9: Sam has a Lifetime Worth Factor of \$382 at the end of 2010 meaning the 18 Pension Units accrued by Sam in 2010 are worth \$6,876 calculated as \$382 times 18. At any time the value of the accrued Lifetime Pension equals the Lifetime Worth Factor times the Number of Pension Units in the Lifetime Account.

11. The **Target Career Average Pension Units** for an individual are equal to 20 times the projected DSF. This includes all ASFs accrued during the Pension Accrual Period plus any ASFs carried forward from the Phase-In Period that have already been used to purchase Pension Units, plus the FSFs. This equates to a 70 percent best “35 Years” career average based on the individual’s average “topped up” earnings during the Pension Accrual Period. When assessing the individual’s status relative to the target, Pension Units projected to be provided by both the CPP and the OAS are included. The variation in the methodology used for annual and career limits provides the means to adjust for differences in career earnings patterns, particularly for very low earnings years early in a career and/or participation gaps for other personal reasons such as raising a family. The Target Career Average Pension Units is another TCB “benchmark,” which represents the “wide-ranging” income replacement goals of individuals. The tools within the Retirement Account toolbox allow an individual or family to vary their Target Pension Units to meet their personal goals.

Flowing Example 10: Sam’s projected Target Career Average Pension Units based on the 49,380 ASFs accrued during the Pension Accrual Period, as calculated above, are 988 (20 times 49,380). Based on Sam’s projected RSF, about 366 of the Target Pension Units will be available, in total, from the CPP and the OAS. This means that about 622 Pension Units (988 minus 366) will be needed in Sam’s Lifetime Account by the Canadian Retirement Age. The projected Pension Units in Sam’s Lifetime Account based on his current employer’s plan are 580. Sam will need to add an additional 42 units (622 minus 580) to reach the target by the Canadian Retirement Age.

12. The **Target Career Average Pension** is equal to the Target Career Average Pension Units times One Pension Unit Amount.

Flowing Example 11: Sam’s projected target pension amount based on 988 Pension Units is \$46,634 (988 times \$47.20) in 2010 dollars.

The individual TCB tools described so far are primarily used in the Lifetime Account portion of the TCB toolbox. The Personal Account portion of the toolbox is designed to cover the personal portion of “demographic risk” that evolves and tends to decrease over an employee’s career. A critical personal component of “demographic risk” is the variation which occurs in the timing of career income. This timing variation is handled by the combined tools in the Lifetime Account and the Personal Account.

Flowing Example 12: Sam’s ASF increased from 1.4100 in 2009 to 1.5000 in 2010 as a result of a promotion. Sam’s Target Career Average Pension is based on a career average ASF of 1.4109 (49,380 divided by 35). Sam’s projected “best 5” factor is currently 1.5000. Sam upgrades the Target Pension Units to 1,050 (1.5000 times 20 times 35) to be more consistent with current earnings. To meet this upgraded target, compared to the target in Example 10, Sam will need an additional 62 (1,050 minus 988) Pension Units. To meet this revised personal target Sam needs a total of about 104 additional Pension Units (62 plus the 42 from Example 10, or 1,050 minus 366 minus 580 if calculated directly). Sam has a choice as to whether to buy some Pension Units immediately using the cash balance in the Lifetime Account or by transferring in

some funds from the Personal Account. Another option under Sam's employer plan is to simply buy the extra Pension Units each year by payroll deduction.

Under TCB the Personal Account can be used to maintain fairness from one employee to another in contrast to the current situation under many DB plans (e.g., a person deciding not to retire early does not lose the “value” of a subsidized early retirement benefit [Schirle 2008] but instead maintains the funds in the Personal Account to use for other personal needs or desires at a future date). Under the TCB model an individual whose income stays relatively level as a multiple of the YMPE will usually not have to top up to “best 5” average earnings.

The Personal Account should be used first to supplement any employer-provided pensions up to the target Career Average Pension. The remaining funds can then be used to recognize personal differences such as retirement age, single vs. married, etc. The personal risk component should be the component that provides the most flexibility, particularly in the years when an employee's retirement is far off in the future. The risk and cost of early retirement is gone by normal retirement age. It is also important to recognize the very significant changes in family income structure as more and more families have two-income earners. The ability to split pension benefits after retirement in Canada and the new Tax-Free Savings Accounts (TFSAs) also substantially change the planning as retirement approaches. Individuals who are not married at retirement may want, and need, a larger proportion of their funds at retirement left in the Personal Account, particularly if they are in poor health.

Whether you are measuring DB benefits or DC benefits, the TCB model will provide a comparison scale. Over time the terminology will evolve and will become everyday lingo for all. Behind the scenes, like with the Richter scale, the process to develop the ongoing measures will be extremely complex as well as reflective of the current markets and demography. Actuarial and investment risk management expertise will be needed to develop the factors. Over time the current terminology (e.g., DB, DC, RRSP, etc.) will be replaced with new terms like Lifetime Account, Personal Account, Annual Service Factors, Pension Units, etc. In Canada we have “loonies and toonies.” Who knows what a Pension Unit will be called (a punie?) if it ever becomes retirement “currency”?

It is important to stress that the actual level and value of the benchmarks (other than the YMPE) included in this paper are for illustrative purposes only. The actual values to be used will require further research and study beyond the scope of this paper.

3. Designing and Building the Societal Components of the TCB Model

3.1 Designing the Societal Components

No society can build an ongoing, effective, self-adjusting retirement system without building the primary tools at the government level. The role of society must be to provide a mechanism and overall governance structure that works in a transparent and fair manner. Most societies already have some Tier I tools in place to provide a basic foundation upon which to build a Tier II system. Unfortunately as time goes on the underlying rules for the Tier II systems have built one layer of bureaucracy on top of another and have dramatically reduced the effectiveness of Tier II products. The typical plan document required for a DB plan is often 50 or more pages in addition to investment and governance documents. Just as with our computers, it is necessary to move up to a more current version or, at the very least, reboot on a regular basis.

The first role of society under the TCB model will be to establish a system that provides fairness to all individuals. The ability to tax shelter deferred income until retirement must integrate Tier I with Tier II and should provide neutrality of value over a career rather than just annually. Further, the system should make sure that any portion of Tier I benefits that are intended for those in need cannot be “claimed” by those who are not in need through nontransparent means.

Society in general, rather than a specific pension plan sponsor, must control how much tax-sheltered funding is available to an individual. The first societal TCB design tool required will therefore be Restructured Tax Shelter Limits, under which there is neutrality throughout a career rather than by age. This will permit a higher percentage of earnings to be contributed to a tax-sheltered fund as an employee ages. This is consistent with both the cost of a lifetime benefit and with the ability to set aside funds for retirement. Another benefit of this pattern will be an increased understanding on the part of employees that the value and cost of their pension increase as they age.

The TCB model design establishes tax limits and plan designs in a manner such that the ability to tax shelter funds for retirement is independent of the plan provided by any given employer but is rather specific to the individual’s earnings over their career and directly linked to a nation’s AIW through a Tier I component. The plan design under TCB is such that no one employee subsidizes any other employee—there is neutrality in value.

The critical societal need is to provide adequate retirement income to all individuals in a manner that shares risks and rewards. The societal components of any retirement system design must recognize both current and future generations. In any system the design must include a link of Tier I benefits to Tier II benefits. It is also critical that the design include a reasonable sharing of risk throughout society when a major crisis occurs. Further, under the TCB model, Tier I benefits are directly reflected in setting overall tax shelter limits.

The second, equally important, role of society is the effective governance and risk management of pension funds. Under the TCB model the highest level of governance and risk management will, of course, be at the government level. However, a key part of the TCB model will be to set up a mechanism under which the governance and risk management of specific pension funds are largely transferred to the market—but at a level where these roles are fulfilled by professionals. In designing the TCB model a key consideration was to simplify the system in a manner that reduced the need for much of the current governance that exists by properly redefining roles and by dramatically reducing both the number and types of plans that need governance.

The second TCB societal design tool necessary to help government fulfill its key roles is the Centralized Retirement Account System. This system will track the data contained in the individual’s electronic toolbox called the “Retirement Account” containing the “Lifetime Account” and the “Personal Account.” Deferred compensation for an individual represents deferred taxes for a government. The fundamental individual benchmarks under the TCB model were designed to include items that are automatically included on tax filings. From the first time that an individual files a tax return there will be a Retirement Account. All funds in an individual’s Retirement Account are “deferred income.”

The existence of the Personal Account, together with the underlying fairness of the TCB model, should remove the need for much of the existing legislation (e.g., employers do not have any responsibility at all for items like “spousal survivor benefits”). Society will have a very critical role in working jointly

with the markets to set up the system under which individual Retirement Accounts are administered and tracked.

In designing the TCB model it was obvious to me, and to virtually everyone else with any knowledge of the current retirement systems, that for an individual or a small employer to have any hope of meeting the objectives of *R20/20* there must be access to a large “pension fund” (Ambachtsheer 2008). As part of its role society must provide the tools that give this access. Rather than having complex legislation for employer-sponsored pension plans, it will be the responsibility of government to set up modern legislation for the third and fourth required societal tools: AAFs and ASPs that are accessible to all individuals.

Under the TCB model the AAFs are designed to “sell” Pension Units to plan sponsors and/or individuals. The units sold are then reported to, and tracked by, an ASP. The ASP is effectively the “real” pension plan and is responsible for monitoring all members, all assets and all liabilities. AAFs can hold units for many ASPs and for many different plan sponsors. The AAFs that hold almost all of the actual assets and liabilities are likely to be primarily private sector. The ASPs may be either public or private (e.g., an AAF may also be primarily responsible for one or more ASPs).

The TCB model design uses ASPs to share risk and to maintain intergenerational equity. There are enough employees born in the same year—or even the same year and month—to permit a national Age-Specific Pension Plan. The “Age-Specific Plans” and “Approved Annuitization Funds” will help to fulfill both the governance and risk management role of society. An anomaly of the current DB systems is that the wealth transfer inherent in the systems is usually from the lower income to the higher income (e.g., a worker has to change jobs, creating an “actuarial” gain for a DB plan, which helps to fund early retirement for someone who can afford it). The TCB model removes this anomaly.

3.2 Building Society’s Tools

The most important single tool that society must provide to achieve the goal of adequate retirement income is the ability for an individual to defer income on a tax-sheltered basis in a fair manner over a total career. The transparency provided by the TCB design will also help to guarantee that any Tier I benefits—such as the Guaranteed Income Supplement (GIS) in Canada—that are intended to benefit those individuals who, because of circumstances beyond their control, need societal help, will always be used for the intended purpose.

Major changes to the Canadian tax shelter limits occurred in 1990, which dramatically increased the level of fairness among DB plans, DC plans, and RRSPs. This change came at a time when there were many more DB plans than there are now. Changes have occurred in overall limits since 1990. The tax limits include a percentage limit, currently 18 percent, and a maximum earnings level to which the percentage can be applied.

There is still considerable unfairness under Canada’s current tax rules since it is possible for a member of a DB plan to tax shelter up to 27 percent of annual earned income, or even more in some situations because “ancillary benefits are disregarded in computing pension adjustments (PAs) and past service pension adjustments (PSPAs)” (*Registered Plans Directorate Newsletter*, no. 96-3, Nov. 25, 1996). A “Flexible” DB plan is permitted to allow members to tax shelter an additional 9 percent of earnings through voluntary contributions to the plan—which must be used upon termination or retirement to purchase ancillary benefits. I am using the “Flexible” plan example simply because it is the most

transparent unfairness component in Canada when comparing DB to DC. This additional amount is not considered when calculating the member's "PA" and is therefore over and above the "18 percent of earnings" limit that applies to DC plans and RRSPs. In simple terms the "PA" (Pension Adjustment) is the "value" placed on a DB benefit for tax shelter purposes and does not vary by age. The "PA" is equal to 9 times the benefit accrued in a year (minus an arbitrary \$600 which gives a little more tax shelter room to DB members), ignoring any increase as a result of indexing or increases in final average earnings. The "PA" overstates the value for younger members and understates the value for older members. If a member leaves a DB plan before the transfer value of his accrued pension exceeds his accumulated "PAs," he receives a PAR (Pension Adjustment Reversal) to restore some tax room.

I stress that a simple increase in the tax shelter limits from 18 percent to 27 percent for DC plans and RRSPs would not achieve society's goal to provide adequate tax-sheltered retirement income for the highest possible proportion of the population. The TCB model recognizes the necessity to guarantee that the readjustment in tax shelter limits is focused on making sure that the "insurance" aspect is met as is the case now when an individual is a member of a good DB plan. It is critical that the "fairness" aspect also be recognized since under the current system the DB plans do take advantage of the "unrepresented group" and intergenerational transfers. None of the solutions I have seen suggested to date fully recognize that the reason that the best DB plans work is because there is the nontransparent ability to both tax shelter a higher proportion of income and to indirectly transfer value from one plan member to another.

Once again I note that under the TCB model tax shelter limits are provided on a personal basis and are not a function of plan design. This is consistent with the philosophy expressed in my prior paper (Walker 2008) and also an important factor addressed in a paper (Pierlot 2008) that analyzes the unfairness in the Canadian system for tax sheltering retirement funds in some detail. Under the TCB model I have not adjusted the limits to match the maximum possible tax shelter percentage that is currently available, and largely nontransparent, in the richest DB plans. Instead the tax shelter limits under the TCB examples (which are for illustrative purposes only) are set to be slightly less, on a simple average basis, over the CPP contributory period than the current "27 percent" per year that is now available under DB plans permitting "Flexible" contributions.

If we look at only the Pension Accrual Period, or consider late entrants to the workforce (e.g., immigrants), about two-thirds of the illustrative TCB model contribution limits goes to the Lifetime Account and about one-third to the Personal Account. This is consistent with the requirements under current "Flexible" plans since the Personal Account under the TCB model is to be used for "ancillary benefits."

Under the TCB model examples, the Lifetime Account Contribution Limits during the Pension Accrual Period are split into five-year age groupings. The groupings are such that the limit at the upper end of the grouping includes a small margin for the estimated cost of a "20-Unit Plan" for that age. Over a career the maximum pension that can be accrued under the TCB model, at the Canadian Retirement Age, is comparable to the maximum pension currently available under some of the very best DB plans. A more detailed discussion of the illustrative TCB limits used in the examples, to the current limits, is included in the Appendices of this paper.

An important feature of tax limits under the TCB model is that they will be expressed as a percentage that is multiplied by the ASF and then by the YMPE. This enables the carryforward of unused contribution room on a basis that is indexed in accordance with the AIW.

Flowing Example 13: Sam's total annual Retirement Account tax shelter limit in 2010 is 42 percent of the

YMPE (28 percent times the ASF of 1.5). If the combined employer and employee contributions to Sam's Retirement Account in 2010 equal 22 percent of the YMPE, Sam gets to carry forward unused contribution room equal to 20 percent of the YMPE (42 percent minus 22 percent).

This feature is currently implicitly available to DB plan members (i.e., by using final average earnings or upgrading benefits in a career average or unit credit plan) but not to other individuals. Further, if government is concerned that people will defer their contributions until they can claim a deduction at their highest tax rate, the structure of the TCB model provides the solution. It would be easy to give tax credits based on the carryforward room at the same rate as if the “carried forward” ASF had been accrued during the year the room is used.

For employees whose employer sponsors a plan, whether DB or DC, the TCB model would include a legislated requirement that all employer contributions be converted to Pension Units (i.e., annuitized) prior to the Canadian Retirement Age. This requirement is consistent with the employer's purpose for providing retirement benefits. Further such a requirement reduces risk for both employees and employers. For employees who do not have the benefit of an employer-sponsored pension, annuitization of a defined amount, which varies as a career progresses, will be required. The amount would be calculated to provide a Mandated Income Replacement Ratio (including government benefits such as CPP and OAS). The income replacement ratio, and the income it is applied to, would reflect the year-by-year tax-sheltered limits up to the date of retirement. The TCB model is designed to encourage individuals to recognize the “insurance” value of Pension Units.

Government will also be required to develop the mechanisms necessary to enable the establishment and governance of the following important societal tools for TCB:

- The Centralized Retirement Account System
- The Approved Annuitization Funds
- The Age-Specific Plans.

4. Designing and Building the Employer Components of the TCB Model

4.1 Designing the Employer Components

The role of the employer changes the most of any of the stakeholders under the TCB model. The employer may still have a “retirement plan,” but the employer is no longer the “insurer of the plan” but rather is a “contributor” to the plan. When considering the role of the employer it is again important to emphasize that employer pension contributions will be regarded, and defined, as deferred compensation. It will be stressed to employees that their compensation includes both an “immediate” and a “lifetime deferred” component. The design of any effective system must recognize this and also recognize that an employer's immediate obligation is met once the deferred income has been transferred to the employee. The deferred component is not immediately taxable to the employee but is an immediate tax deduction for the employer.

The role of employers will primarily be to provide annual contributions to the employee's Lifetime Account. An equally important part of the employer's role will be to provide education to the employees with respect to their retirement plans.

An employer's role in a retirement system must be consistent with both societal goals and the employer's business goals. The TCB model design recognizes this. In designing the TCB model, making sure that an employer is no longer faced with a choice about taking on the huge risks, costs, and complexities of the current DB plans or the governance and administrative requirements of other plan types, or no plan at all, was an important consideration. Instead the employer sees the ability to "design" and sponsor a plan that is consistent with the company goals and financial situation. However, the transparency of the TCB design is such that although the employer does not have to worry about increasing liabilities for past "promises," employers will know that in order to attract and retain the employees they need they must highlight and promote the value of their own pension plans. Although the employer will still be considered to be a plan "sponsor" under the TCB model, the sponsorship risks, both to the employer and the employee, will plummet.

As noted above, the role of employers will primarily be to provide annual contributions to the employee's Lifetime Account. Better pension benefits provided by an employer will receive the same recognition from an employee, or a prospective employee, as higher immediate income does. An employer-sponsored plan can, and should, require some level of employee contributions to the Lifetime Account. It should be stressed that under the TCB model self-employed individuals will also be considered to be "employers."

Under this stakeholder category it is important to include trade unions even though they are not technically the "employer" of their members. Trade unions are frequently the "sponsors" of multi-employer pension plans. Under the TCB model design, unions could still be the sponsors of such plans, with funding from employers and/or employees. However, just as with employers, the unions would no longer be responsible for taking on the risks and costs associated with the current pension system but would be working with, and for, the "contributors" to the plan.

Once again I emphasize that the TCB design is intended to make it possible for both employers and employees to consider the employer funding of both immediate compensation and deferred retirement compensation to be the employee's total "employment compensation." One of the creative features that could be available would be to have an option that a bigger proportion of the total "employment compensation" could voluntarily be deferred.

4.2 Building the Employer's Tools

The employer's tools will generally be available from the market. However, the employer must "sharpen" the tools for effective use. Even if TCB legislation does not require that an employer provides a pension plan, it will be necessary for most employers to do so as the TCB process matures. It is absolutely necessary that one of the rules under the TCB model be that all employer-sponsored plans provide funding for the same basic benefit—the "Pension Unit." The funding methods used for an employer plan could be flexible and designed to provide Pension Units as a direct multiple of the ASF (a DB-type design) or funding the Lifetime Account as a percentage of income (a DC-type design). The most effective design would likely be a "hybrid." An employer who does not sponsor a plan, or sponsors a plan that does not fully meet the target pension amounts, should try to provide access to an AAF for employees who wish to acquire additional Pension Units for their Lifetime Account.

The richest plan would be a "20-Unit Plan" under which each member receives a number of Pension Units equal to 20 times the Annual Service Factor (ASF). This would equate to a 2 percent DB plan. It is most likely that a plan this rich would be offered only by an individual who is self-employed, as is the

case now with IPPs (Individual Pension Plans in Canada). At the next level, if the employer wanted to duplicate a current “rich” plan that provides benefits of 1.4 percent up to the YMPE, and 2 percent over the YMPE, a “14 plus 6” plan could be provided. Under such a plan the number of Pension Units that a member would receive would be 14 times the ASF plus 6 times the portion of the ASF greater than 1. The best design would likely be a Target Number of Units as a direct multiple of the ASF. Under this design the employer would contribute a level percentage of income within each five-year age grouping. There would be an immediate conversion to units up to the target each year. Any excess contributions would remain in the Lifetime Account as a cash balance. In years where the level contribution is insufficient to fund the units the cash balance is used to top it up.

Another option to the employer would be a “hybrid” plan—for example, a plan that provides all employees with a “10 Unit” plan during the Pension-Accrual Period plus a DC component under which the employer matches the CPP contribution rate on the total ASF during the Phase-In Period and on the portion of the ASF greater than 1 (i.e., income above the YMPE) after the Phase-In Period. Both the “14 plus 6” plan and the “hybrid” plan then integrate directly with the CPP. The “14 plus 6” plan would provide an Income Replacement Ratio of just over 70 percent for a member whose income was at the maximum of three times the YMPE throughout DPAP when CPP and OAS are factored in. A “14 plus 6” plan will almost always hit or exceed the target pensions.

Employee contributions could be required or voluntary under any plan design. An option that many smaller employers should consider would be to provide full funding for a “10-Unit Plan,” which, when CPP and OAS are included, provides a greater than 70 percent career average income replacement ratio for those whose income is equal to or less than the YMPE (i.e., an average ASF less than or equal to 1). In order to meet their target pension there could then be an option for higher income employees to purchase additional Units by payroll deduction. The 10 Unit plan would provide a career average income replacement ratio of 35 percent, excluding CPP and OAS.

Flowing Example 14: Sam is a member of a “10 and 6” plan. The 18 Pension Units accrued during 2010 were calculated as 10 times the 2010 ASF of 1.500 plus 6 times 0.5000 (the portion of the ASF greater than 1). The 18 Pension Units accrued in 2010 will provide a deferred annual indexed pension amount of \$849.60 (18 times \$47.20 in 2010 dollars) beginning at the Canadian Retirement Age. At the end of 2009 Sam had accrued 220 Pension Units under the employer’s plan. As of Jan. 1, 2010, the total deferred benefit from these accrued Pension Units increased from \$10,186 (220 times the 2009 Pension Unit amount of \$46.30) to \$10,384 (220 times the 2010 Pension Unit amount of \$47.20).

The grouping of employees within an AAF will be by age rather than by employer. If over time the average age of an employer’s staff, weighted by compensation, increases significantly, the employer can pursue many options to reduce cost and can include the employees in the solution. An older workforce would likely be amenable to allocating a greater portion of its compensation to pension benefits. If the employer does find it necessary to reduce DB benefits, only future benefits are affected. Employees would then have additional contribution room available. A more positive scenario would be to make the pension plan richer to attract new employees and to retain current employees.

The employer will need to build some educational tools specific to its plan (see Example in Appendices). Also the plan design and the educational material should try to show the benefit of “the creative feature” previously mentioned under which an employee can voluntarily opt to defer a bigger proportion of total “employment compensation” until retirement. As the TCB model matures, the bench-

marks, and regular reporting to employees, will make them more and more aware of the value, and the necessity, to increase the number of Pension Units they hold.

Each of the employer plans that have been discussed in this section are still effectively “DC” plans for the employer from a risk point of view. The employer plans are either directly purchasing on a DB basis, or making available on a DC basis, Pension Units to be deposited into the Lifetime Account and ASP of each employee. The overall contributions of the employer providing a “DB”- or “hybrid”-type plan will vary but only based on the age groupings and incomes of their current employees. The liabilities of the employer will not grow as their workforce grows older and retires. The employer plan will not suffer from an “actuarial loss” if many employees retire early; nor will the employer plan benefit from an “actuarial gain” when some employees move to another employer. When considering variations in plan design, the employer should still consult pension experts to project costs based on their employee demographics by age and compensation. From a Plan Sponsor perspective, virtually any plan design now used, except for those highly dependent on cross-member subsidization, is possible under the TCB model.

5. Designing and Building the Market Components of the TCB Model

5.1 Designing the Market Components

The market will have a very important role in helping to guarantee the success of both the TCB model in general and in assisting individuals to meet their retirement objectives.

The role of the markets is to provide the vehicles by which the other three stakeholders can manage both the investment risk and the insurance risk. The market will be required to develop innovative products that are specific to the needs of the threesome. The market will be paid for its products by the other three stakeholders. A particularly important role for professionals in the market will be to provide advice to both employers and employees.

The TCB design focuses on the market for two defining portions of the model: the use of modern technology and the ability to share risk nationally rather than by employer. Another important underlying principle that I think should be built into communications about tax-sheltered “deferred compensation” under the TCB design is that it forms the base for all retirement income and should always be analyzed as the “first layer” of income received by a retiree. You do not build your estate from the capital within your “deferred income accounts” but rather from the actual retirement income as it is received. Post-retirement income from other sources gets added to the “first layer” of income from “deferred compensation.” For example, in applying the career limits under the TCB model, the “claw back” of OAS benefits is based strictly on Tier I and Tier II income.

There are almost no currently active employees who are uncomfortable with using a computer and other even more modern tools. The pension system that we now have was founded long before personal computers. The TCB design anticipates individuals being as comfortable reviewing their pension needs online as they are “chatting” online and “texting” from the beach. A key aspect of the TCB model design is that the online system will be standard on a national level, which over time will greatly increase societal understanding of retirement planning.

The Centralized Retirement Account System, the AAFs and the ASPs will be possible because of new innovative products that will come from the market. These products will include both educational materials and products designed to meet personal needs at retirement.

The TCB model design also anticipates that the market can provide the insurance products needed for disability, and other similar types of risks, by including deferred retirement compensation as part of “employment compensation.” The market should also provide a mechanism so that an individual who is employed by an employer that does not sponsor a plan can access an AAF and either purchase Pension Units or make contributions to the Lifetime Account.

An AAF is intended to be very large and to have the investment and risk management expertise to accept multiple transfers of pension liabilities from multiple employer sponsors through the payment of monthly contributions that are specific by employee. It is important to stress that large pension funds that become AAFs are not accepting new members into “their plan” but are instead becoming insurers for the ASPs. Using modern tools on a daily basis, these contributions and liabilities are sorted into Age-Specific groupings and reported to the ASPs, which are the overall plan “governors.” A key market tool will be a mechanism by which the AAFs can trade Age-Specific Pension Units with each other to keep their own pension assets and liabilities structured in a manner consistent with their investment policies and the investment policies of the ASPs. This will also help to manage cohort risk.

The ASPs envisioned under the TCB model are somewhat the opposite of the attempted “pay as you go” philosophy that is part of the current DB structure. The “old” way requires constant new entrants to fund the plan and is subject to huge demographic risk, as we have seen. Once the ratio of retirees to active employees changes dramatically many DB plans are in huge trouble. At first glance many will think that ASPs have a built-in guaranteed failure since at some point every person of the same age will be retired. That is not the case. Under the TCB model design the ASPs, in concert with the AAFs, provide a mechanism whereby private sector employers and employees can have the same “cohort” demographic risk as is present within a Tier I plan. Although this is a strange way to explain it, I view the ASPs as building an individual annuity under which the individual dies “a little bit at a time” rather than all at once. This, together with other aspects of the TCB model, will also enable the ASPs to include adjustment mechanisms and creative investment vehicles that would not be available to most of society currently.

5.2 Building the Market’s Tools

By standardizing the Lifetime Component it is possible for the market to establish a series of AAFs. Some of these AAFs may also be approved by government to be the “governors” for some ASPs. As previously noted, AAFs could be provided by insurers, banks, other financial institutions or even other large DB pension plans, which could accept new “Age-Specific” annuitants both to spread risk and to provide income. With the centralized administration proposed for the TCB model the annuitization process will be one in which the annuity payments flow to a central distributor for the ASP and then to the annuitant. It should be noted that, of course, there will be a new ASP each year. The organizations governing the ASPs, which are actually owned by the members, can be governing several such plans at a time. It was previously mentioned that some AAFs could also govern some ASPs.

Following the TCB goal to take maximum advantage of current technology will enable the market to have very sophisticated processes and complexities behind the scenes while at the same time producing

a “product” that is readily understood, and easy to implement, by its users. The market, together with society and employers, must use existing and evolving technology to develop the standard communication networks necessary for the proper integration of all four stakeholders into the TCB structure of Centralized Retirement Accounts, AAFs and ASPs.

The market will also have both the opportunity and the necessity to develop innovative products to help educate employees and employers, to assist employees in the effective use of the funds in the Personal Account, and to develop other sophisticated products that take maximum advantage of current technology.

Under TCB the Lifetime Accounts, and the annuitization process, are standardized. However, the Personal Accounts are not standardized and provide individuals with the ability to tailor the use of their Personal Accounts specific to their wants and needs. This feature of TCB should strengthen the overall process and play to the strengths of the market.

The primary new market instruments that will be required under TCB are group annuity products that will vary only by year and month of birth. The TCB standardization will make annuitization much cheaper and more available for low-income people and will make small top-ups an option for everyone. The premiums charged at younger ages should include a small “participation” or “variable rate” portion that phases out as the Canadian Retirement Age approaches. This will enable some additional risk management and will also help to minimize the bounces in the cost of Pension Units.

An additional feature of the new market instruments will be the manner in which ancillary benefits, such as spousal survivor benefits, are handled during the payout phase. There could be an innovative insurance product developed when a member elects to buy spousal survivor benefits using funds from the Personal Account or by reducing the number of Pension Units in the Lifetime Account. Ideally such a product would permit ASPs to continue to pay out units as “life only.” The insurer would be paid when the election was made. If the member predeceases the spouse, then the insurer pays the lump-sum amount necessary to purchase the required number of Pension Units from the spouse’s ASP.

Disability coverage under the TCB model should be constructed like the current group and individual disability products. The ASPs would not directly provide disability insurance but instead would permit the continued accrual of Pension Units by payments from the disability insurer, which develops an innovative product that includes deferred retirement compensation as part of “employment compensation” for determining disability benefit levels.

6. The Stakeholders’ Vision of TCB at Work

As previously stated, the primary goal of the TCB model is to bring fairness, consistency, and understanding to the Canadian Retirement System. In this section I will outline what I believe will be the stakeholders’ vision of the TCB model after it has been introduced and has become the primary system. It is important to realize that despite the fact that our current system appears to have become old and outdated, it is still relatively new to society. In fact, there are still Canadian retirees, collecting DB pension benefits, who had already been born when employer pension contributions first became tax-deductible in Canada. When we look at the manner in which other societal tools, which also were created during the 20th century, have changed over the same time period, it is critical that we envision a retirement system that is obviously modern and designed to mature through flexible updates rather than changes necessitating “grandfathering,” “greatgrandfathering,” etc.

As previously noted, one of the constant issues that has been identified as an underlying weakness in the current system is the lack of understanding by employees. This is not surprising since even many people who are directly involved with pension plans are sometimes not aware of critical issues that do not impact directly on the plans they work with—due to the lack of transparency within our current system. Under the TCB model everything will be available to review and to understand. There will not be significant differences in plan design from one employer to another. The main difference in design will be by employee rather than by employer. The employee will be obligated to defer income into the Lifetime Account. At the same time the employee will have the option to contribute to a Personal Account. The Lifetime Account will be very easy to understand and will be tracked regularly and communicated to the employee. The options available under the Personal Account will be more complex, but they will be directly related to the employee's personal choices and needs.

6.1 What Does Society See?

When discussing society we must recognize both current and future generations. At present the percentage of income that can be sheltered is independent of age. This causes distortions both in motivation to contribute and in pension benefit costs. As discussed in the Design section, the tax shelter limits under TCB will be by age groupings, stated as Pension Units, and designed to give equality over a career. Not only do these limits give equality over a career but they also recognize lifestyle changes and goals as an individual moves from one life stage to the next. Under the TCB model the tax limits will be such that intergenerational fairness will be visible to both politicians and bureaucrats. Any cost or benefit shifting from one age group to another will be within the same demographic group. No longer will a 35-year-old pay more so that a 55-year-old can pay less, or so that a 70-year-old can receive more. Instead under TCB an individual who pays too much at age 35 will benefit from either a lower cost or a greater benefit in future years.

The direct TCB link to the CPP, and the indirect link to the OAS, means that any necessary changes to such Tier I benefits automatically shift to all tax-sheltered retirement plans. As an example, consider that in this paper I have referred to age 65 (which is the current “normal retirement age” for both the CPP and the OAS) as the Canadian Retirement Age. The government can therefore establish demographic benchmarks for changing the Canadian Retirement Age automatically as society changes rather than face a political crisis. If the Canadian Retirement Age changes, the number of Pension Units in each Retirement Account will also change. Further, because of the TCB structure, the timing of such potential changes can be tracked and, again, will not result in any intergenerational transfer.

Society in general will place a much greater value on the Tier I benefits provided by CPP and OAS due to the benchmarking provided under the TCB model. The monitoring of both Tier I and Tier II benefits by using TCB Pension Units will be easy and consistent.

As TCB matures, the governments, both federal and provincial, will see a significant reduction in the number of pension plans that have to be monitored for any governance reason. Ultimately the monitoring will be of only the AAFs and the ASPs. A portion of each ASP will be part of several AAFs. Both the AAFs and the ASPs can, and likely will, have separate provincial components. However, the risk-sharing basis will be national.

In a broad sense personal (or “demographic”) rules, such as the requirement for spousal survivor benefits, will not come into play until a triggering event such as retirement, death, or a marriage breakdown actually occurs. The pre-retirement death benefit will be equal to the value of units and cash

accumulated in the Lifetime Account until an individual is eligible for early retirement. Under the TCB model until one of these triggering events occurs there is no need for society to monitor or impose conditions on any of the other three stakeholders.

In discussing society as a stakeholder I consider it necessary to also include the media. The development of consistent benchmarking, and regular communication of benchmark updates, in a manner that brings consistency and understanding to our retirement system has been a goal of mine for almost 10 years. I am confident that if the TCB model is introduced, the media will monitor, report, and comment on the major benchmarks regularly. This will assist in making the system viable and in alerting employers and employees of potential automatic adjustments that may occur. Due to the standardization of Pension Units, etc., the TCB model will also make it possible to add preliminary “lifetime income” education to a high school curriculum.

The governments will of course see the need for monitoring of the TCB system. At the highest level there will be a Centralized Retirement Account System. This will be established at a national level with provincial components. Standardized reporting of transactions will come from all AAFs and financial institutions offering Personal Accounts. The next level of governance will be for the AAFs and the ASPs. However, the monitoring of each AAF and ASP will be by the provincial or federal pension authorities. At maturity of the TCB model there will be fewer than 1,000 ASPs (if we ultimately use both year and month of birth to set up a plan) and even fewer during the Phase-In Period (if only year of birth is used).

6.2 What Do Employers See?

The TCB model totally changes the pension options available to employers. The employer is no longer faced with a choice about taking on the huge risks, costs, and complexities of the current DB plans or the governance and administrative requirements of other plan types or no plan at all. Instead the employer sees the ability to “design” and sponsor a plan that is consistent with the company goals and financial situation. The plan design is primarily built on quantity, but some extra quality can be built into the plan. Once the employer has selected the plan design the administration of it will be extremely easy. The plan design can be completed with help from professionals (i.e., actuaries) and the market.

The benefits provided to each employee will be by payroll deduction. Once the payroll deduction has been made the employer’s financial obligation to the employee is up-to-date since the TCB model recognizes that pension contributions are “deferred compensation.”

Once the employer has implemented a plan, the employer will have an obligation to assist in the education of employees about the employer’s own plan and retirement planning in general. The TCB model is such that the tools for such training will be readily available. The companies’ human resources professionals will all be very familiar with the TCB benchmarks such as the Annual Service Factors and Pension Units. If the employer so chooses, tools would be available through the market to track the history of the Pension Units, which the company has provided for any and all employees. By tracking such data the employer can appropriately receive proper credit for the value of all Pension Units provided.

Under the TCB model self-employed individuals will be considered to be “employers.” The “carryforward” aspect of the career contribution limits will also assist small businesses as they move to maturity. In addition, the income “bounces” that frequently occur for the self-employed or small businesses also benefit from the “carryforward aspect.”

Under the TCB model an employer who provides a DB plan will very clearly be recognized as providing “deferred compensation” rather than a “reward for long service.” This will also remove the asymmetry that currently exists when, in certain circumstances, plan members are sometimes found to have a right to plan surplus but no responsibility for funding plan deficits.

As previously stated, it is important to include trade unions in this stakeholder category even though they are not technically the “employer” of their members. Trade unions are frequently the “sponsors” of multi-employer pension plans. Under the TCB model unions could still be sponsors of such plans, with funding from employers and/or employees. However, as with employers they can “design” the plan, based on the union goals, but again the plan design will be built primarily on “quantity.” The quality that the union can provide will be in the education of members as to the benefits that they have accrued. As with employers, the union does not have to accept the huge governance risks that they now face under certain plan designs. In particular, union plan trustees would be working on making sure that current union members benefit from current plan design. They will know that past Pension Units accrued by current plan members and past plan members are safe, in a manner consistent with society as a whole.

It is important to note again that once an individual leaves any particular plan sponsor, whether by termination, death, or retirement, the plan sponsor has no further responsibility or risk with respect to accrued benefits.

6.3 What Do Individuals See?

For all individuals, whether active or retired, the most important thing that they will see under TCB is the online details of their Retirement Account. Under the current system some employees who are members of very large DB pension plans do have online access to their personal pension information. Many other individuals have no such access. Under TCB the online access will be standard for everyone and will include detailed information about the individual’s Retirement Account including the breakdown between the Lifetime Account and the Personal Account. In addition to accessing their own Retirement Account an individual can access the current status of their own ASP. Following are some of the TCB Visions available in various career phases.

The use of Pension Units, rather than a percentage benefit, will assist in employee understanding. Each year the number of accrued Pension Units should increase, the number needed to reach the retirement target should decrease, the value per unit will increase, and the annual pension amount per unit will also increase. Instead of trying to think in dollars 25 years in the future, the individual can, and will, easily monitor and understand the growth in number and value provided contained within his basket of Pension Units. To the individual the Pension Units will appear to be like “shares” held as part of a long-term investment and should help to make annuitization more attractive.

6.3.1 Before Retirement

The default values will be in current-year dollars. There will be a projection of future ASFs to the Canadian Retirement Age as well as an indicator of how many additional units will be needed to meet the target pension goals. The individual will be able to easily try different projection scenarios but in contrast to most calculators now will not have to put in assumptions about interest rates and inflation but only about changes in job status such as a promotion.

The individual's historical data will also be available in current-year dollars. However, if the individual wants to see where he was 10 years ago, in dollars of that year, only the "Display Year" entry has to be changed. Future projections are always in the dollars of the current calendar year.

The individual benchmarks will also be shown and will include:

- The current annual pension amount provided by one Pension Unit at the Canadian Retirement Age
- A benchmark worth factor for the individual's ASP, which indicates how much the purchase of one Pension Unit is expected to cost the "average plan sponsor"
- A second benchmark worth factor for the individual's ASP, which indicates how much the purchase of one Pension Unit is expected to cost an "individual."

Included in the data displayed will be a record of the individual's current Lifetime Account tax shelter room available as well as the availability of any carryforwards from the Phase-In Period, or from lower income years.

The employee's Lifetime Account does not include only the accrued Pension Units but may also include a cash amount that may be part of a DC contribution, a cash participation dividend, or a carryforward from the Phase-In Period. The best thing that the employee sees is the growing value and need for Pension Units as retirement nears. The employees will realize that the Pension Units are their "Income Shares" for the future and that they need more to reach their target.

The Personal Account balance and current Personal Account tax shelter room available will also be shown. The Personal Account funds can also be used for some special programs currently available to those with RRSPs such as the Home Buyer's Plan and the Lifelong Learning Plan. The individual's Retirement Account will also track the status of these plans. It should be emphasized that the individual's contributions to the Personal Account are independent of the employer and may be held by any eligible financial institution. Deposits and balances must regularly be reported electronically to the Centralized Retirement Account System.

The online account will also include tools that use the employee's career data to display charts, ratios, and numbers that show the relative value in current dollars of the employee's career earnings to date, the employee's future career earnings to Canadian Retirement Age, and the employee's Lifetime and Personal Accounts. These visuals will help the employees to picture their pension and know where they are.

The Personal Account is intended to be available for "Demographic" or personal circumstances risks such as early retirement, spousal survivor benefits, post-retirement health care, etc.

A feature that will also be available online, subject to approval by both spouses, would be joint access to both accounts to do projections and assess the family position in retirement planning.

6.3.2 During Early or Phased Retirement

All information available to employees who are not yet phasing into retirement is also available to those who have elected early or phased retirement. It is important to again note that under TCB any

payments made from the Lifetime Account before the Canadian Retirement Age represent a cashing in of Pension Units rather than an annuity. The online Retirement Account information would indicate the maximum withdrawal amount available until the Canadian Retirement Age based on the required lock-in provisions to meet the minimum at Canadian Retirement Age. Early retirement withdrawals can be made directly from the Personal Account, or the individual could elect to purchase a term-certain annuity to the Canadian Retirement Age using Personal Account funds.

During phased retirement an employee will still be receiving ASFs and will be eligible for additional Pension Units through an employer plan or by direct purchase.

Individuals who continue to work after reaching the Canadian Retirement Age have now entered the “double flow” retirement phase. The ASPs begin annuity payouts automatically at Canadian Retirement Age. Individuals who do not want to begin receiving their lifetime pension have two options. The first is to have the payments go directly into their Personal Account to continue deferring taxes. The second is to automatically purchase more Pension Units within the Lifetime Account with the annuity payments. Both options will, of course, be subject to the tax shelter limits for each account.

During the phased retirement period after the Canadian Retirement Age, the individual can also accrue ASFs and will be eligible for additional Pension Units through an employer plan or by direct purchase. The online Retirement Account will track and report regularly all components of the phased retirement.

6.3.3 After Total Retirement

After total retirement the online Retirement Account will track the Lifetime annuity payments received and any value changes as a result of indexing or corrective adjustments. Further, the Personal Account will also be tracked.

As the retiree ages the particular ASP to which he belongs will change over time. Such changes will be tracked, and the anticipated date of the next Age-Specific change will be shown. At any time the retiree, or the retiree’s representative, can determine the history of payments received by the retiree from the Lifetime Account and the Personal Account and from both CPP and OAS.

6.4 What Does the Market See?

There will be many levels to the market. Initially the IT market, actuaries, pension consultants, and lawyers will be extremely busy setting up the TCB structure.

The financial sector will be extremely active in developing new innovative products for AAFs and employers. These products will include both educational materials and products designed to meet personal needs at retirement. The pension regulators will require spousal survivor benefits. Under TCB spousal benefits will be a form of insurance with the cost borne by the individual family. As one spouse, or the other, approaches Canadian Retirement Age, product help and advice may be needed. Insurance companies will be needed to provide special products to the AAFs and the ASPs.

A key need from the market will be disability insurance. This will not be built into the TCB Pension Units. However, plan sponsors could provide disability benefits as part of their own group disability coverage, and insurers could make such products available on an individual basis, in a manner such that the purchase of Pension Units could continue during a period of disability. In developing the TCB structure ASFs could be

defined to continue at the same level as they were at the time the disability commenced, which would permit either the plan sponsor or the individual to purchase Pension Units during a period of disability.

What does an AAF see? As previously discussed, AAFs can take many forms. First, the AAF sees the market for its annuity product. Different AAFs will aim for different parts of the market. Once an AAF has obtained a client it will see a regular inflow of assets and liabilities. The AAF will have provided its table of annuity costs for each Age-Specific group to the plan sponsor in a manner that can be used by the plan sponsor's payroll administrator. After each payroll activity the AAF will receive funds for ASPs based on the plan sponsor's plan design. The AAF will then allocate the funds to each Age-Specific account. For some plan designs all funds will immediately be converted to Pension Units. For these plans funds will stop flowing to the AAF for a given individual if an annual plan maximum has been reached. For other plan designs (e.g., target plans), funds may continue to flow to the AAF for an individual after the annual plan maximum has been reached and will be held in the individual's Lifetime Account as cash. The AAF is responsible for tracking all benefit accruals while an individual is a member of the sponsor's plan.

What does an ASP see? The ASP is a central administrator and governor. The ASP tracks all data for the specific age Lifetime Accounts of all individuals. The ASP also knows which AAF holds all of the Pension Units and the cash balance for each individual. If a member leaves a particular plan any cash balance remains in the AAF and can be converted to Pension Units at any time. The member would make such a request through the ASPs.

Actuaries are part of the market and would have a major role to play within AAFs and ASPs and directly with plan sponsors and individuals. Financial Planners and Financial Advisors will have a critical role to play both in providing educational services regarding TCB and in assisting individuals in planning for retirement. The investment risk for the lifetime component is with the AAFs. However, the Personal Account can accumulate funds based on the individual's ability and propensity to accept or avoid risk. The "lifetime risk" will be covered by annuities so the Personal Account can be more flexible although it is likely that a portion of the personal account could also be annuitized upon retirement with the purchase of optional ancillary benefits.

In the long term a portion of the market (i.e., lawyers and accountants) may not be thrilled with the TCB model as pension auditing and litigation will decline massively.

7. Analysis of How the TCB Model Works

In this section I will analyze the structure of the TCB model and include some direct comparisons to the current system in Canada.

7.1 What Are the Stakeholders' Roles?

The roles of the stakeholders have already been discussed in the Designing the TCB Model sections of this paper. In this section I just want to comment on some potential changes in the meaning of some words if and when the TCB model ever comes into being. In particular the phrase "Plan Sponsor" can be ambiguous under the TCB model. The employer can be a Plan Sponsor under TCB, but the roles and responsibilities will be much different than for a current "Plan Sponsor."

The primary sponsor of a plan under TCB is the employer. However, under TCB the plan structure is such that any self-employed individual or an individual who is not covered by an employer plan can access their ASP using one of the market's AAFs.

The sponsorship of a plan is dramatically different under the TCB model. Plans will continue to be sponsored by employers, but the governance and investment risk will be transferred to the AAFs and ASPs. The employees, trustees, and board members will all be pension experts. The ASPs also participate in society's monitoring and governance of the AAFs and vice versa.

Under TCB the ASPs are the real plans that have the responsibilities, other than funding, that current DB plan sponsors have. Also the AAFs are going to be coordinating with both "employer-sponsored plans" and the ASPs. In this section I will also discuss the role of the AAFs, the ASPs, and the Centralized Retirement Account System.

7.1.1 Role of the Approved Annuitization Funds

The AAFs will deal directly with the plan sponsor, and/or individual, with respect to the purchase of Pension Units, cash contributions, and the transfer of risk. Once a transfer of cash from a plan sponsor, or an individual, has been made to an AAF, the AAF then tracks assets and liabilities, not by sponsor, but rather by ASPs. For the plan sponsor or individual the AAF will track administrative records of contributions and the purchase of Pension Units. The plan governance obligation moves to the AAF, which transfers all individual data both to the Centralized Retirement Account System and to the ASPs. From an administrative point of view an employee account with an AAF could operate much like trading does on the stock markets. An individual who changes jobs remains within the same ASP and does not suffer a loss of pension value.

For the AAFs, even though the funds come from the plan sponsors and/or individuals, the actual "group insurance" clients are the ASPs. There will be a need for a "participation" component and some reserving as for the liabilities of each ASP. Some AAFs could also serve as ASPs.

7.1.2 Role of the Age-Specific Plans

The ASPs are the actual plan "governors." They track all assets and liabilities for their member owners and monitor all trading of Pension Units among the AAFs. The vast majority of the ASPs' assets will be held and invested by the AAFs. Each ASP will be required to follow mandated investment, risk management, and governance policies that must also be followed by the AAFs. Certain AAFs may also be "governors" for some ASPs. Both the AAFs and the ASPs can, and likely will, have separate provincial components. However, the risk-sharing basis will be national. The ASPs ultimately will manage the payout of the lifetime annuities. Until the Canadian Retirement Age there will likely be one ASP for each year of birth. As TCB matures it may be possible to have an ASP for each month and year of birth. After the Canadian Retirement Age, the ASPs will merge over time. Any one ASP ultimately "dies" except for the final TOP plan.

For example, the ASPs might stay as one-year plans through about age 75, at which point they move into the Age 76–Age 80 plan, then to the Age 81–Age 85 plan, then to the Age 86–Age 94 plan, and finally to the TOP plan at age 95. The actual process of moving from one ASP to the next would require significant risk

and investment monitoring so that the transfer of liabilities and assets from one to the other maintains the number of units for each member. Please note that this example is strictly to illustrate the process and no testing has been done for the age groupings shown. This process is to allow for ongoing sharing of the “lifetime risk” and to provide the adjustment mechanisms that will be needed to sustain the system. Also, in the actual implementation of the TCB model the more effective labeling of the ASPs might be “Birth Year Plans” (e.g., the 1965 plan).

7.1.3 Role of the Centralized Retirement Account System

The role of the Centralized Retirement Account System will basically be to track all individual data for the individual Retirement Accounts and to provide the online information system. The Centralized Retirement Account System may have to be a government unit to protect the privacy of individuals’ tax information. However, the technology part could likely still be private sector. At present it is my understanding that the Canada Pension Plan database includes historical individual earnings data back to the start of the CPP. This would include total pensionable earnings, not just the portion eligible for CPP. This would assist in the transition to the TCB model.

Also the Centralized Retirement Account System would alert the AAFs and ASPs when an individual is approaching either an annual or a career contribution limit. Again, with the TCB process modern technology will permit this to be an automated process.

7.2 Governance and Risk Management

7.2.1 Individual Risk and Governance Responsibilities

An employee will have some governance responsibilities to monitor the status of the Lifetime Account. The employer and the market will provide the tools under TCB for an individual employee to manage, and/or effectively avoid, the “lifetime risk.” An employee without the benefit of an employer-sponsored plan will also have to make regular contributions to the Lifetime Account and faces the risk of inadequate retirement income. This type of employee should become much rarer under the TCB model as it matures. The necessity and the ability for an individual to monitor where they are relative to retirement risk is a critical element within TCB as employees “picture their pension,” and this will help in minimizing the risk of inadequate retirement income.

The individual will be responsible for the governance of the Personal Account. The investment risk in the Personal Account is with the employee. The market will be providing innovative products, and will include professional advisors, to whom the individual may be able to transfer a portion of both governance and risk. It is very important to note that the Personal Account is the primary “choice” component in the TCB model, although there will be some choice also with respect to the Lifetime Account.

Individuals will also be exposed to the general risks facing all societies, but a significant portion of this risk will be shared nationally under the TCB model.

7.2.2 Employer Risk and Governance Responsibilities

The proper governance of pension plans has very high priority in Canada. This has led to a situation that places both additional administrative costs and direct fiduciary responsibilities and risk on the plan

sponsor. The governance requirements also place significant fiduciary responsibilities and risks on the trustees of a pension plan. In many cases the trustees are not pension and/or investment experts. Under the TCB model, the governance responsibilities for determining the funding levels and investment policies will not be directly with the plan sponsor but will instead be with the AAFs and ASPs.

The demographic risks accepted by private sector DB plan sponsors have really come to the forefront over the last couple of decades. This has led even very large, new, modern companies to avoid the traditional DB design. The major demographic risk is, of course, the aging of the workforce and an increased ratio of retirees to active workers. This major risk is handled under the TCB model by using Age-Specific groups during both the pre-retirement and the post-retirement phase.

Compared to the current system, employers, under TCB, will have a significant reduction in the fiduciary and governance risks. There will also be less financial risk due to a significant reduction in the volatility of contributions and in administration costs. Currently employers have a “pension governance” responsibility. Under TCB “pension governance” responsibility for an employer will be part of “employee compensation governance.” The primary risk facing employers will be the necessity to design a TCB “employer-sponsored plan” and to make annual contributions to their employees’ Lifetime Accounts. From an employer point of view, if there is a significant change in the demographics of the active workforce, under TCB it will be easy to adjust the level of benefits—or to adjust a portion of the total compensation allocated to retirement planning.

As with single-employer plans, the governance role in multi-employer or jointly sponsored plans can also now be focused on the deferral of an appropriate proportion of total compensation to retirement benefits. The structure of the TCB model will make it much easier for pension plan sponsors and plan trustees to determine the implications of any adjustments to their plans as the impact will be immediate. The “deferred” component of pension risk is no longer with the plan sponsor.

7.2.3 Society’s Risks and Governance Responsibilities

Society’s primary risk under TCB is that the combined accumulation of funds by employers and employees will be inadequate to fund pension benefits over a lifetime and result in increased government costs for certain Tier I benefits. The “optional” portion of this risk can be reduced a lot by requiring some basic sponsored plans. The “lifetime risk” can largely be eliminated by regularly monitoring the changing life expectancy of society, since under TCB the Pension Units for both Tiers I and II will all be scheduled to begin payouts at the Canadian Retirement Age.

The only explicit intergenerational transfer under the TCB model occurs at the very end of a lifetime and reflects only mortality improvements between two “touching” generations. The TCB model effectively groups all individuals with the same year of birth into one pension plan. By using some of the principles that were previously used for “participating insurance,” any value transfer from young to old, or vice versa, is within the same group under the TCB model and simply represents funding timing rather than an actual cost transfer.

Under TCB there is implicit protection against significant demographic shifts since benefits are not allocated by employer or by location but by year of birth. Post-retirement, the TCB model combines groups over time until the TOP group is reached. The TOP group is the group that represents those approaching the end of life (e.g., possibly the 95th to the 100th percentile based on the then-current

population mortality). The existence of the ASPs, and the participation of AAFs, will assist in developing effective and creative investment policies with assets allocated based on the current status of the plan. As a result, under any major market collapse each ASP can adjust benefits or costs in a non-destructive manner. All other post-retirement groups merge over time into more “mature” groups. As a group matures, both its assets and liabilities transfer to the more mature group. TOP is the ultimate group and has an ongoing flow of funds in and avoids the possibility of a hidden tontine. This post-retirement flow from one cohort to another should help to offset any systematic longevity risk inherent within any one cohort. As with the Canadian Retirement Age, regular monitoring, and complex, actuarial and investment monitoring of the post-retirement Age-Specific groups will help to control big bounces and maintain equity.

Society will have the overall responsibility for providing the rules and governance structure for the AAFs and ASPs, which will have to be extensive and complete. The number of plans requiring monitoring, once TCB matures, will only be a small fraction of the current number but will cover the total workforce.

7.2.4 The Market’s Risk and Governance Responsibilities

The governance requirements of the AAFs and ASPs will be significant. However, they will be of a significant size and will be able to have a trustee board consisting of pension experts. The primary focus of both AAF staff and trustees will be on the proper risk management and delivery of the pension promises made by the AAF in delivering their products. All contributions to Lifetime Accounts will go directly to an AAF, and indirectly to an ASP. The market, through the AAFs and ASPs, becomes the “plan governors” under the TCB model. The markets then accept the “lifetime risk” and the inherent investment risk included with said funding. All responsibility for asset and liability management transfers to the AAFs and ASPs. The societal components of plan risk sharing, and effective governance sharing, built into the TCB tools, through both the accumulation phase and the payout phase, will mean that any individual AAF or ASP can manage risk effectively. The design of the products under TCB will include some mechanisms that will automatically self-correct, and the AAFs and ASPs will both have professional staff and trustees. The ability to reallocate demographic and investment risk by trading Pension Units will be one of the risk management tools available to the market.

The market, through vehicles other than the AAFs and ASPs, will also be expected, and motivated, to accept some additional “insurance” risk by providing other innovative products when an individual is phasing into retirement and needs access to certain ancillary benefits by using funds from the Personal Account. Disability coverage under the TCB model will be constructed like the current group and individual disability products, and this will also involve a risk transfer to the market.

7.2.5 Demographics and Cohorts

One of the main advantages that large public sector plans have is the ability to manage demographic risk. A public sector plan is much less exposed to the insolvency risk facing many private sector plans. As discussed in several sections of this paper, the TCB model is designed to minimize demographic and cohort risk through the use of the AAFs and ASPs. Effectively, under the TCB model, each employee’s pension benefits are only affected by demographic and cohort risk on a “national” level. The link to the Tier I CPP permits this but in a manner that does *not* require a direct expansion of Tier I benefits. I

actually believe that the TCB model will reduce the need for non-funded Tier I benefits like the Guaranteed Income Supplement (GIS).

7.2.6 What Happens during Extreme Events?

No system can totally protect from major disasters such as the market meltdown that we recently experienced. The demographic and cohort risk under the TCB model is much less under an extreme event due to the recommended AAFs' and ASPs' structure under the TCB model. The risk of an extreme event affecting members of either a particular AAF or an ASP due to plan members all being in the same location, or in the same industry, will be significantly reduced.

It is also possible under the TCB model to give the same ability to recover from an extreme event to all individuals in a manner that means the downturn risk is shared by society as a whole. This can be done by reducing the number of Pension Units and by doing so providing the necessary tax shelter room to recover. There has been a huge amount of press coverage in Canada about the fact that large DB plans have mechanisms available to them that will enable the plan sponsor, and indirectly plan members, to tax shelter the additional funding needed to make up for plan deficits. In both Canada and the United States, the auto sector received huge government bailouts using taxpayer money partly because of pension funding issues. Even more significantly, in Canada, many taxpayers are very upset that they must fund, through their taxes, the recovery of some of the richest public sector plans. There is no ability within the current system for a member of a DC plan, or an RRSP, to contribute additional amounts as a result of the market meltdown.

Under the TCB model all of the benchmarks are made to the CPP. The manner in which this link is used for determining and applying the annual and career tax shelter limits will provide all individuals with the same right and ability to make up for market downturns by providing additional tax-sheltered funding. It should be noted that the employer, as plan sponsor, would not have an obligation to fund the deficit—but would also have the right to fund the deficit.

7.2.7 Is There a Moral Hazard Risk?

There will always be some aspect of a moral hazard risk in any structure involving money. The transparency provided by the TCB model benchmarks should minimize such risk by providing constant comparisons. Furthermore the governance structure of the AAFs and ASPs should help to reduce such risk. If a “moral hazard” incident occurs, the risk sharing under the TCB model will alleviate the impact on any one person or cohort. Even if an individual's employer has always dealt with the same AAF, the individual's risk is not solely with that AAF but rather it is spread over all AAFs that hold any units of the member's own ASP.

7.3 Funding and Administration

The simplification for both funding and administration has already been somewhat discussed in the “Design” and “Building” sections of this paper. It is important to emphasize, over and over, the administrative simplification that an employer would have under TCB, whether sponsoring a DB plan or a DC plan or a hybrid. All the employer has to track is the actual purchase of DB benefits from an AAF or the actual DC contributions to such a fund.

The administration of current DC plans and group RRSPs is relatively easy until the governance requirements are considered. The administration and reporting requirements of DB plans are a totally different story. The history of DB plans, most especially the grandfathering of past benefits prior to a plan change or company merger, has created a situation where even a current plan sponsor requires a super complex administrative system. The reporting requirements take a huge amount of resources.

Under the TCB model the administrative responsibility will dramatically reduce. The most significant portion of the administrative responsibility will be handled by payroll deductions. Under TCB the employer will still have a responsibility to educate employees about their pension. However, the employer will not have to develop its own plan website to provide employees with the “calculator,” etc., because a centralized site will be available. Also the terminology of TCB is standard, which means that the employer will not have to develop educational material from scratch. An employer who offers a particularly rich plan will have the ability to produce plan materials. This material can easily demonstrate to employees the extra value that they are receiving.

The funding of benefits will be shared by employers and employees. All employer contributions will go to the Lifetime Account. Ideally the employer should fully fund a base benefit that would help to guarantee an adequate income replacement ratio, including CPP and OAS benefits, on earnings up to the YMPE. Above this base benefit employee contributions should be required. Since the employee will be the primary funder for the Personal Account, the employer should fund about two-thirds of the Lifetime Account contributions on an employer-sponsored plan. Again it is important to note that individuals can make voluntary contributions to the Lifetime Account and also that transfers can be made from the Personal Account to the Lifetime Account as long as the annual and/or career limits have not been exceeded.

7.4 Investments

Investments within the Lifetime Account will be handled by AAFs and overseen by the Age-Specific funds both during the accumulation and the payout phase. Responsibility for the handling of these funds will be transferred to the market, through the AAFs and ASPs, by employers and employees. On a portion of the Lifetime Account the individual can still decide if and when to annuitize cash balances.

A major necessary part of the investment policy for AAFs and ASPs will be to develop a reasonable system for directly allocating total AAF investment income to each ASP consistent with that ASP's current assets and liabilities. Once again I mention that the ability of the AAFs to trade Pension Units with each other should help in this process.

Currently, under DC plans and RRSPs, the entire investment responsibility is with the individual. In building the basic “insurance” foundation under TCB by using the Lifetime Account, it is critical that investment expertise, including the ability to react to market changes in an effective manner, be a priority. The large asset base for the AAFs and the ASPs, combined with their investment expertise, will benefit all individuals by following a “dynamic risk glide path” (Tretikova and Yamada 2009) rather than the “predetermined glide path” that most individuals have a propensity to follow.

The employee has responsibility for investments within the Personal Account. This responsibility should most often be transferred to the market by the employee. However, some employees have both the desire and the skill to handle their own investments. If this is done strictly within their Personal Account the employee assumes both the risks and rewards of making proper investments. Under TCB society will be largely protected by the existence of the Lifetime Account, which provides the foundation for retirement benefits. I have always viewed the “annuity” component of my own “deferred compensation” as risk diversification.

8. The Transition to TCB

The transition process to the TCB model is likely to be most effective by evolution with some initial overlap.

8.1 Potential Transition Issues and Obstacles

As with any fundamental change there will be major transition issues. However, the process can be extended over a period of time such that allowance can be made for individuals and/or plan sponsors who do not want to move immediately. A key element upon implementation must be that all “new” plans follow TCB. Further, for any plans that are grandfathered under the old system, none of the “significant” positive benefits under TCB can be added (e.g., the higher tax limits at older ages).

The transition issues will include how to handle current plans that wish to stay in place after the TCB model is introduced. Younger members of such plans, as well as older members who have decided not to take early retirement, are quite likely to want to use the new TCB model immediately.

A major obstacle is the impact of current legislation on existing plans. This will be discussed below under “Transition from Current Plans.”

8.2 Legislative Changes

The regulatory framework for TCB will be driven first of all by a fundamental shift in the national government’s rules for tax sheltering retirement savings. It is absolutely necessary that one of the rules for TCB must be that all employer-sponsored plans provide funding for the same basic benefit—the Pension Unit by using the AAFs.

Current provincial legislation would apply only through the transition period to TCB. New provincial and national legislation would not focus on the plan design as it currently does but would instead focus on the required level of contributions from both employers and employees as a career progresses. Items such as spousal survivor benefits would not be a function of plan design but instead would be mandated to apply at the point when the Personal Account is used to supplement the Lifetime Account beginning at the age when the individual is eligible for early retirement.

The key annual tax-sheltered limit is the total percentage of earnings that can be contributed to an individual’s Retirement Account including both the Lifetime and the Personal Accounts. Rather than the artificial “9” factor that is used now to calculate the Pension Adjustment (PA) for DB plans, the actual portion of the Lifetime Account tax shelter limit used will be based on the actual combined

contributions made by both the employer and the employee in any year. This will eliminate the need for the current system of PAs and Pension Adjustment Reversals (PARs).

In several provinces, one of the most complex, time-consuming and inconsistent processes in the current retirement system is the division of pensions as a result of a marriage breakdown. Under TCB this could be handled easily just as it is under the CPP by a simple transfer of Pension Units from one spouse to the other. This item by itself will save some plan sponsors and members millions of dollars.

8.3 Phasing in the TCB Model

This section gives a brief discussion of the phasing in of the TCB model.

8.3.1 Early Years

The first step will be the development of the master TCB administration system and the rules for AAFs and ASPs. Pension Units and ASFs should be introduced early into the tax shelter rules to help people see where they are with respect to their current plans. By introducing the terminology early, the transition from current plans will be made easier. Once this has been done, the actual plan transition to the TCB model can begin by setting up the first group of AAFs and ASPs. One of the first ASPs to be set up should be the ultimate TOP plan for immediate use by current plan sponsors who are winding up their plans.

For years the focus in Canada has included trying to standardize current pension legislation. That has proven to be an impossible task. The transition to the TCB model will permit the standardization to occur going forward. Each pension regulator may need different transition rules, based on current laws, for transferring current plans to the TCB model, but once the transition is over the national standardization will have happened.

In the early years employers, as is the situation now, will not be required to provide retirement benefits. Over time rules should be established, likely varying by size of employer and income level of employees, that will require that a portion of all employee compensation be deferred until retirement through employer contributions to the employee's Retirement Account. Employee contributions should be required at a level at least equal to the CPP contribution rate on income above the YMPE.

8.3.1.1 Tax Shelter Transition

The transition of an individual's tax shelter room to the TCB model will be highly dependent on both the individual's age and the individual's history with respect to both prior contributions and plan membership. The first step would be to determine how much tax shelter room, as a percentage of the current YMPE, that the individual would have accumulated had the TCB model been in place from the individual's age 18.

Once that is determined the actual amount that the individual has used must be calculated based on the individual's history, which will be affected by the type of plan, if any, that the individual was in. Members of current "rich" plans, as well as younger individuals who have maxed out their RRSP contributions, may be over the career-to-date limits under TCB. Virtually all other non-DB plan members will be under the career-to-date TCB limits. Decisions would be required for each scenario.

8.3.1.2 Transition from Current Plans

A current DC plan has an account balance for each employee. The current balance would be directly transferred into the employee's Lifetime Account. For tax shelter purposes this amount would be deemed to be equal to a specific number of Pension Units. The employee would be given a choice as to whether to actually convert to Pension Units immediately, which most should do, or to leave the balance as DC. The employee's RRSPs would be assigned to the employee's Personal Account (they would not have to actually be transferred). Again the RRSPs would be deemed to be equal to a specific number of Pension Units. The employee's future status from a tax shelter point of view would then be calculated. For an individual who only has an RRSP there will likely have to be some choice. The transition method most consistent with the TCB model would be to transfer at least two-thirds of the RRSP funds into the Lifetime Account. An alternative would be to put current RRSP funds into the Personal Account but with a condition that all future contributions are to the Lifetime Account until the required Pension Unit amounts have been met.

For a DB plan the process would be to calculate the value of the employee's current accrued benefits under the plan wind-up provisions, but without the "grow-in" feature if the employer is going to continue a similar plan under TCB. Employees who are currently retired obviously stay on the current system, but even for them, a process could be established such that, as the AAFs and ASPs mature, an existing plan could effectively transfer the risk, possibly to the TOP fund, just as would happen with a current plan wind-up. For an active employee, once the employer has established the level and type of TCB it will introduce, the employee's current pension value can be calculated with a portion being allocated first to the Lifetime Account of the TCB and the remainder to the Personal Account.

There will have to be a transition period, likely a minimum of 5 years and possibly up to a maximum of 15 or 20 years for existing employer-sponsored DB pension plans to evolve to the TCB system. The transition period selected will be partially dependent on how much historical earnings data can be obtained from the Canada Revenue Agency and the CPP administrative systems. A critical element in the transition will be the current funding level of the plan. Procedures should be established, which will be quite complex, for establishing a final wind-up date for the current plan. The transition date should be at a time when the plan is fully funded to cover all current accrued benefits. A possible alternative would be for the plan sponsor to establish a new plan under the TCB system, which is projected to provide the same "total" value to employees as the current plan. If the plan is currently in a deficit position, such that a 100 percent transfer of current accrued member benefits to the new plan cannot be accomplished, the employer and employees could agree, subject to specific transition regulations, that rather than continue funding the current plan any deficiencies could be determined on a member-by-member level and funded in the new TCB plan.

Union-sponsored multi-employer plans may be the most difficult transition group, primarily because of the potential need to fund current plan obligations. They may also be the easiest to transition since going forward TCB is the ultimate multi-employer plan. The unions can negotiate the benefit level of the Lifetime Account on either a DB basis or a DC basis or possibly both.

Those who are self-employed or small employers are the group that will receive the most immediate benefits from the TCB model. If they do not currently have a registered DB or DC plan, they can introduce either, or both, by contacting an AAF. Transition from a current Individual Pension Plan (IPP) should be easy since the sponsor and the member are one and the same. In addition there is a strong possibility that the institution holding the funds for the IPP will become an AAF.

There are some special plans, or plan features, currently for certain groups such as firefighters, judges, etc., in which the annual accrued benefit or early retirement age is much more generous than proposed under TCB or even, in some cases, more generous than permitted under current legislation. Any benefits that are over and above the standard benefits available to the general public will have to be handled as “special cases” with any extra benefits administered and funded outside of the TCB model.

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Glossary for the Total Career Benchmark Model

Age-Specific Plans (ASPs): ASPs will be the actual pension plans under the TCB model and are the plan “governors.” There will be ASPs for each year of birth (e.g., 1965 plan), effectively owned by the members, which will merge in stages during the post-retirement phase until finally becoming part of the TOP plan.

Annual Pension Accrual: For each year in the Pension Accrual Period an individual can accrue defined benefits and/or contribute to a tax-sheltered retirement savings fund an amount sufficient to provide an annual pension benefit, commencing at age 65, equal to 2 percent of employment income, or self-employed income, earned during the year. The annual pension benefit will be indexed in accordance with the YMPE before retirement and at the same rate as CPP retirement pensions, using the CPP Pension Index, after retirement.

Annual Service Factors (ASFs): For each year during the Pension Accrual Period an ASF equal to the individual’s pensionable earnings divided by the YMPE will be calculated and recorded on the individual’s permanent records.

Approved Annuitization Fund (AAF): AAFs are designated by the government to provide annuity benefits known as Pension Units for plan sponsors and individuals. Under TCB the proposal is that the largest pension plans, especially the large public sector plans that have very large pools of funds and employ many pension and investment experts, may be permitted to be designated as AAFs. Other financial institutions in the market, like insurers and banks, could also provide AAFs. Some AAFs may also manage some ASPs.

“Best 5” Factor: The “best 5” factor is defined as the average of the best five consecutive ASFs during the 35-year accrual period.

Career Service Factor: The Career Service Factor is the sum of the ASFs accrued to date.

Centralized Retirement Account System: This is the system used to track all individuals’ Retirement Accounts and tax shelter room.

Future Service Factor: The Future Service Factor is the sum of the ASFs from the current date until the Canadian Retirement Age.

Lifetime Account: The Lifetime Account covers the “lifetime risk” and includes all employer contributions and all “required” employee contributions to a sponsored plan. At any time the Lifetime Account

may include both Pension Units and a cash amount. As long as an individual has not exceeded annual or career limits, the individual can, at any time, voluntarily contribute to the Lifetime Account and/or to the Personal Account.

Lifetime Freeze Factors: For employees whose employer sponsors a plan, whether DB or DC, the TCB model would include a requirement that all employer contributions be annuitized prior to, or upon, retirement. This requirement is consistent with the employer's purpose for providing retirement benefits. Further, such a requirement reduces risk for both employees and employers. For employees who do not have the benefit of an employer-sponsored pension, annuitization of a defined amount will be required. The amount would be calculated to provide a Mandated Income Replacement Ratio (including government benefits such as CPP and OAS). The income replacement ratio, and the income it is applied to, would reflect the year-by-year tax-sheltered limits up to the date of retirement. It would also be possible to set income breakpoints so that the required locking-in/annuitization portion could trend downward as income rises (e.g., for an employee with 35 years of employment: 70 percent income replacement ratio for salary up to the YMPE, 50 percent income replacement ratio for salary between 1 and 2 times the YMPE and 30 percent income replacement ratio for salary greater than 2 times the YMPE).

Lifetime Risk: The Lifetime Risk component of the TCB model incorporates two key factors: 1) the risk of outliving your retirement funds if you retire at the Canadian Retirement Age; and 2) the annual inflationary increases (as measured by the YMPE of the CPP before retirement and the increase in CPP benefits after retirement). The YMPE increases are based on the annual increase in the Average Industrial Wage (AIW). Annual CPP benefits after retirement increase annually by using the CPP Pension Index, which follows the consumer price index.

Lifetime Worth Factor: A Lifetime Worth Factor will be established for each age (initially by age in years but ultimately evolving to a factor specific to the individual's birth date by month and year) that shows the value of the annual pension benefit provided by one Pension Unit. The assumptions used for these factors will vary by age using sophisticated analytical techniques.

Pension-Accrual Period: The Pension-Accrual Period begins with the calendar year an individual turns 30 and ends with the calendar year the individual turns 65. The first accrual year begins on the first of the month immediately following the month in which the 30th birthday occurs. The last (35th) accrual year ends on the last day of the month immediately preceding the month in which the 65th birthday occurs. The YMPE used for pension accumulation for all accrual ages is the calendar year during which the age is attained.

Pension Unit: A Pension Unit provides an annual deferred pension, commencing at the Canadian Retirement Age, equal to YMPE divided by 1,000. After the Canadian Retirement Age the Pension Unit is indexed at the same rate as CPP retirement pensions using the CPP Pension Index.

Personal Account: The Personal Account is an account in which an individual accumulates funds for the "personal risk" component of retirement savings. The Personal Account can also be used for other special benefits such as the Home Buyer's Plan and the Lifelong Learning Plan, which are currently available to people with registered retirement savings plans (RRSPs) and to accumulate funds for post-retirement health risks.

Personal Risk: The Personal Risk component of the TCB model incorporates risks other than the risks included in the Lifetime Risk component and includes:

- Early retirement
- Spousal survivor benefits
- Bridge benefits
- Salary increases greater than YMPE (i.e., AIW) increases
- Cost-of-living increases greater than YMPE increases
- Pension participation gaps during the Pension Accrual Period
- Spousal Pension Participation Gaps
- Post-retirement health risk.

Phase-In Period: The Phase-In Period is any year prior to the year an individual turns 30. During the Phase-In Period the employee does accrue ASFs, which can be used to top up benefits in the future. Employer and employee contributions are permitted during this period. The employer contributions will be made to the Lifetime Account, and the employee contributions will be made to the Personal Account.

Phase-Out Period: The Phase-Out Period is any month, up to age 70, after the individual turns 65—the Canadian Retirement Age. During the Phase-Out Period the employee does accrue ASFs, which can be used to top up benefits in the future. Employer and employee contributions are permitted during this period. The employer contributions will be made to the Lifetime Account, and the employee contributions will be made to the Personal Account.

Retirement Service Factor: Until the Canadian Retirement Age the Retirement Service Factor is equal to the Career Service Factor plus the Future Service Factor.

Spousal Pension Participation Gaps: A Spousal Pension Accrual Gap occurs during any year of the Pension Accrual Period when the spouse has no taxable employment income.

Target Career Average Pension: The Target Career Average Pension commences at the Canadian Retirement Age on a life-only basis (i.e., without survivor benefits) and is equal to 70 percent of the individual's career average earnings between age 30 and age 65 (the Pension Accrual Period), including any ASFs from the Phase-In Period that have been used to purchase Pension Units, indexed in accordance with the annual increase in the YMPE before retirement and the annual increase in the CPP after retirement.

TOP Plan: The TOP plan will be the only ASP which lasts forever. It will be established in a manner that it includes the portion of the population at the upper level of their life expectancy and will be the final plan into which the ASPs merge. The entry-age level into the TOP plan will change over time as life expectancy changes.

Appendices

A1: Example of Company Communication to Employees

A Quick Overview of YOUR GREAT COMPANY PENSION PLAN

Within the pension system in Canada it is well recognized that each employee has to spread his career income out over an entire lifetime. This means that a portion of total income must be set aside and saved until retirement. The portion set aside is called “deferred compensation.”

We are very proud of the pension system in Canada, which uses the Canada Pension Plan as a base upon which company pension plans, such as ours, can be built. We are even more proud of the significant portion of our employees’ retirement needs which can be achieved by the deferred compensation funding that we provide for our employees through our company Pension Plan. In addition to the deferred compensation that we provide to you each year through your Retirement Account, we also want to help you plan for your retirement as you proceed through your career. We will do this by providing additional information and training for you as you manage your Retirement Account.

This brochure is intended to give you a quick overview of our plan and how it integrates with government-sponsored plans such as Old Age Security (OAS) and the Canada Pension Plan (CPP). Our pension plan helps by providing you with Pension Units each year that will be an income source when you retire.

OAS

- Old Age Security
- Available to all Canadians; no contributions required

CPP

- Canada Pension Plan
- Available to all employed Canadians. Funded by equal contributions from both employers and employees.

Our Plan

- Available to all of our employees whether part-time or full-time
- Employer pays for all benefits calculated based on plan formula. Employees have the right to purchase additional benefits to payroll deductions.

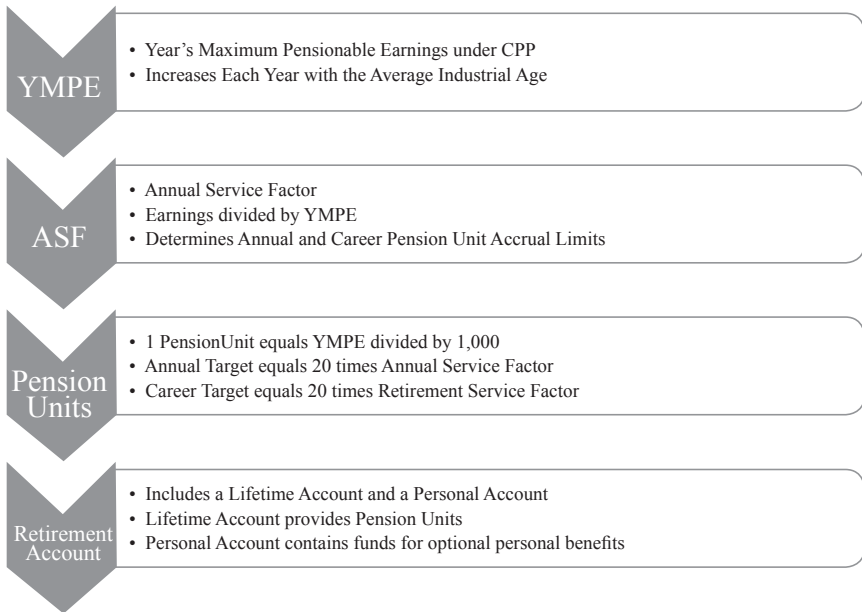
First, what is a Pension Unit? Every year the CPP updates the maximum earnings level for which CPP retirement benefits are earned. This maximum (known as the YMPE) is based on the Average Industrial Wage in Canada. In 2010 the YMPE has been set at \$47,200. An individual retiring at the Canadian Retirement Age, which is age 65 in 2010, with 1,000 Pension Units, would receive an annual lifetime pension, without survivor benefits, equal to the YMPE of \$47,200. This means that each Pension Unit that you accumulate will provide you with deferred compensation equal to the YMPE divided by 1,000 (i.e., \$47.20 in 2010). The amount of deferred compensation provided to you by each of your Pension Units increases each year at the same rate as the YMPE. For example the YMPE has grown to \$47,200 in 2010, from \$37,600 in the year 2000. As a result, the amount provided by a Pension Unit earned in 2000 has grown from \$37.60 in the year 2000 (\$37,600 divided by 1,000—or just replace the comma with a decimal point!) to \$47.20 in 2010. After the Canadian Retirement Age the amount you receive each year from one Pension Unit increases at the same annual rate as CPP retirement benefits.

The number of Pension Units that are earned each year under our plan, and other employer-sponsored pension plans in Canada, is based on a factor called the Annual Service Factor, which restates your income each year as a multiple of the maximum income for which the CPP provides benefits (i.e., the YMPE). For example if your annual earnings in 2010 are equal to the YMPE at \$47,200 your Annual Service Factor will be 1.0000. If your annual earnings in 2010 are equal to one-half of the YMPE (one-half of \$47,200 equals \$23,600) your Annual Service Factor will be 0.5000. Similarly, if your annual earnings in 2010 are equal to double the YMPE (2 times \$47,200 equals \$94,400), your Annual Service Factor will be 2.0000.

Each year your goal should be to accumulate total Pension Units equal to 20 times your Annual Service Factor. This will be equal to 2 percent of your income. If your Annual Service Factor is 0.5000, you should aim for 10 Units. If your Annual Service Factor is 1.0000, you should aim for 20 Units. If your Annual Service Factor is 2.0000, you should aim for 40 Units. For the portion of your income less than the YMPE, the combined benefits from the OAS and the CPP are likely to provide more than one-half of your annual goals. In your Retirement Account you will be shown "career data," which includes all Annual Service Factors that you have accrued to date. There will also be a target career pension shown based on a 35-year career. Since the target is based on a 35-year career, the total number of Pension Units that you should aim for over a career is 20 times the total of your Annual Service Factors during the 35 years before you retire.

Why does your Retirement Account show this target? This target recognizes that once you retire the income that you need to maintain your pre-retirement lifestyle is likely to decrease somewhat, compared to your working income, due to several factors. These factors include reduced taxes, reduced work-related expenses, no need to continue saving for retirement, etc. The target aims to replace 70 percent of your career average earnings with Pension Units plus benefits from the OAS and CPP. It is important to note that because the Annual Service Factors are synchronized with the YMPE, your career average earnings have been adjusted for the average increase over the total Canadian workforce. For example, an Annual Service Factor of 1.000 in 1990 shows that your income was \$28,900 (the YMPE in 1990). When that factor is used to calculate your career average earnings in 2010, the \$28,900 has been adjusted to \$47,200 to reflect the growth in the Average Industrial Wage over that 20-year period. This is also the case for any Pension Units that you have accrued. Your Annual Service Factors only increase significantly from year to year when you are receiving promotions or annual raises that are much in excess of the general average wage growth. Your Annual Service Factors only decrease significantly from year to year when you have a period of unemployment or accept a lower-paying job.

The following chart shows the flow from the YMPE to your Retirement Account.



Let us now look at our company plan and show how it helps you to achieve your goals. Our plan is a very generous “10 plus 6” plan. Under our plan we calculate the number of Pension Units that we will pay for and have deposited into the Lifetime Account portion of your Retirement Account. For our “10 plus 6” plan the calculation takes two steps. First we multiply your Annual Service Factor by 10. In step 2 we allow for the fact that the CPP provides retirement benefits only up to an Annual Service Factor of 1 (which means income equal to the YMPE). We do this by multiplying the portion of your Annual Service Factor that is greater than 1 (i.e., the part of your income that does not generate CPP benefits) by 6.

If your Annual Service Factor is 0.5000, our plan provides 5 Pension Units (10 times 0.5000). If your Annual Service Factor is 1.0000, our plan provides 10 Pension Units (10 times 1.0000). If your Annual Service Factor is 2.0000, our plan provides 26 Pension Units (10 times 2.0000 plus 6 times 1.0000). Let us check what proportion of the career target pension you can expect our plan to fund if you spend the last 35 years of your career with us.

Over 35 years an average Annual Service Factor of 0.5000 would result in a target number of Pension Units equal to 350 (20 times 35 times 0.5000). Over the 35-year period our plan will provide 175 Pension Units (5 times 35). The combined CPP and OAS benefits will provide more than enough benefits (an amount in excess of 260 Pension Units) to significantly exceed the Target Pension of 350 Pension Units when added to the 175 Units from our plan.

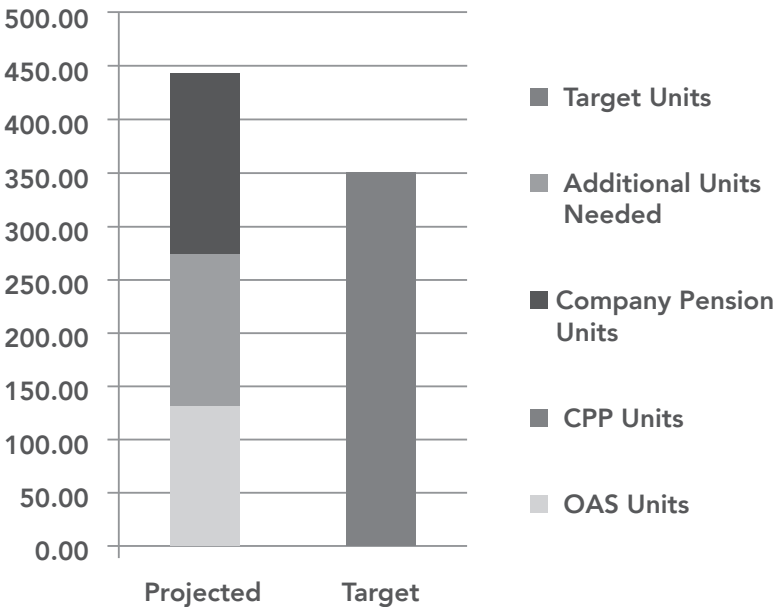
Over 35 years an average Annual Service Factor of 1.0000 would result in a target number of Pension Units equal to 700 (20 times 35 times 1.0000). Over the 35-year period our plan will provide 350 Pension Units (10 times 35). The combined CPP and OAS benefits will provide more than enough benefits (an amount in excess of 350 Pension Units) to exceed the Target Pension when added to the 350 Units from our plan.

Over 35 years an average Annual Service Factor of 2.0000 would result in a target number of Pension Units equal to 1,400 (20 times 35 times 2.000). Over the 35-year period our plan will provide 910 Pension Units (26 times 35). The combined CPP and OAS benefits will provide enough benefits (an amount in excess of 350 Pension Units) to exceed 90 percent of the Target Pension. An employee at this income level should make some voluntary contributions to the Lifetime Account to top up to 100 percent of the Target.

Pension Units help you to keep your retirement planning easier because you don't have to guess how much a dollar today will be worth 25 years from now. In our examples you just think of it as, "If I was retiring today with my 35 years of service, what would my retirement income be compared to my current working income?"

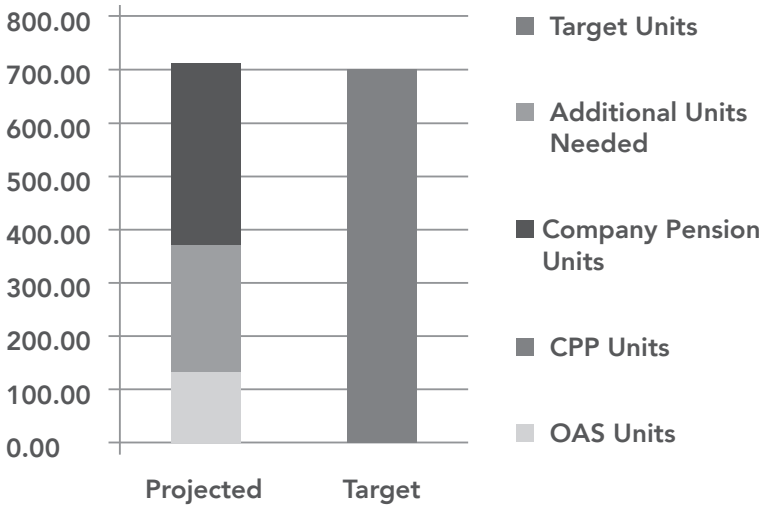
If your 35-year average Annual Service Factor is 0.5000, our pension plan plus CPP plus OAS will give you about 435 Pension Units (175 plus 260). If you were at the end of your 35-year career today, these Pension Units would provide you with \$20,532 (435 times \$47.20) of annual income in retirement. This is equal to 87 percent of your current income of \$23,600. Chart 1 shows that you are projected to be well above your target of 350 units. Therefore you do not have to plan for additional Pension Units to meet the target.

Chart 1



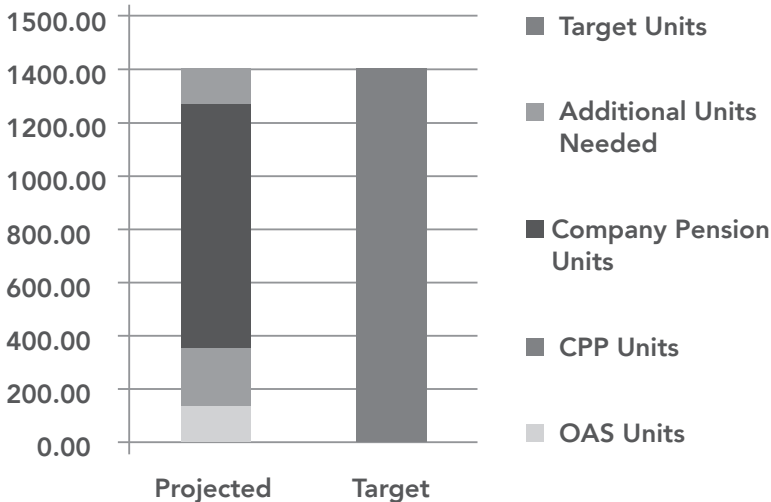
If your 35-year average Annual Service Factor is 1.0000, our pension plan plus CPP plus OAS will give you slightly more than your target of 700 Pension Units. If you were at the end of your 35-year career today, these Pension Units would provide you with at least \$33,040 (700 times \$47.20) of annual income in retirement. This is equal to 70 percent of your current income of \$47,200. Chart 2 shows that you are projected to be just over target. You do not have to plan for additional Pension Units to meet the target but it might be prudent to add some to give yourself margin.

Chart 2



If your 35-year average Annual Service Factor is 2.0000, our pension plan plus CPP plus OAS will give you about 1,260 Pension Units (910 plus 350), which is a little below your target of 1,400 Pension Units as can be seen in Chart 3. If you were at the end of your 35-year career today, these Pension Units would provide you with \$59,472 (1,260 times \$47.20) of annual income in retirement. This is equal to 63 percent of your current income of \$94,400. You have a higher-than-average income and you might not need to hit the 70 percent target due to higher post-retirement tax savings or other differences. However, you should review your financial situation and, if you feel that a bigger retirement income is needed, you can purchase additional Pension Units for your Lifetime Account. You can do this by payroll deduction and purchase your Pension Units directly from our company's AAF.

Chart 3



Please remember that your target pension is based on accruing Pension Units at a rate equal to 20 times your Annual Service Factor. On the portion of the Annual Service Factor greater than 1 (i.e., the portion of your income greater than the YMPE), you need to aim for an additional 4 Units per year to achieve the target since the company “10 plus 6” plan provides you with 16 of the targeted units. At a certain high pension income level (an amount just in excess of that provided by 1,400 Pension Units in 2010), some benefits from the OAS will be reduced. The Targeted Number of Pension Units shown in your Lifetime Account will reflect this adjustment.

Now let's look at how your Pension Units are managed throughout your career and your retirement. We, as your employer, purchase the Pension Units for you from our AAF. Your accrued Pension Units are then immediately reported to your ASP. The ASP that you belong to is based on your year of birth. For example, if you were born in the year 1980, you are a member of the “1980 Plan.” You will be a member of the same ASP until about five or six years after the Canadian Retirement Age, at which point your ASP becomes part of an “Ages-Specific Plan,” which includes more than one year of birth. This process of increasing the number of years of birth within the Ages-Specific Plan you belong to will continue until you reach an age at which you have outlived about 95 percent of those who were born the same year as you. At that point you will become a member of the TOP plan, which will continue to pay your Pension Unit benefits until your death.

Now let's cover some questions and answers.

Question 1: What happens to my Pension Units when I die?

Answer 1: If you die before the Canadian Retirement Age the value of your Pension Units will be paid to your named beneficiary by your ASP. If your spouse is the named beneficiary it may be possible to transfer your Pension Units to your spouse's Retirement Account on a tax-sheltered basis if there is room in your spouse's Lifetime Account. If you have a spouse at the date you first become eligible for early retirement, currently age 55, you and your spouse will have to make a decision about what your target spousal survivor benefits will be. This may require some funding from your Personal Account depending on the decision that you and your spouse make. If you die after you retire all benefits cease unless you have elected and paid for survivor benefits using funds from your Personal Account.

Question 2: What happens if I decide to retire, or work part-time, before the Canadian Retirement Age?

Answer 2: If you retire before the Canadian Retirement Age any pension income that you elect to receive before the Canadian Retirement Age will be by using funds accumulated in your Personal Account. If you have exceeded the minimum requirements within your Lifetime Account it may be possible to cash in some Pension Units. This will reduce the amount of Pension Income that you will have available when the Pension Unit annuity payments begin at the Canadian Retirement Age. It will be possible for you to cease full-time employment and continue to accrue Pension Units from any part-time employment. If you are working only part-time you will also have the option to top up your income using funds from your Personal Account.

Question 3: What happens if I decide to retire, or work part-time, after the Canadian Retirement Age?

Answer 3: If you continue working after the Canadian Retirement Age you will still be able to accrue additional Pension Units until age 70. Note, however, that the annuities from your Pension Units accrued before, and after, the Canadian Retirement Age will be in pay mode. You will have the option

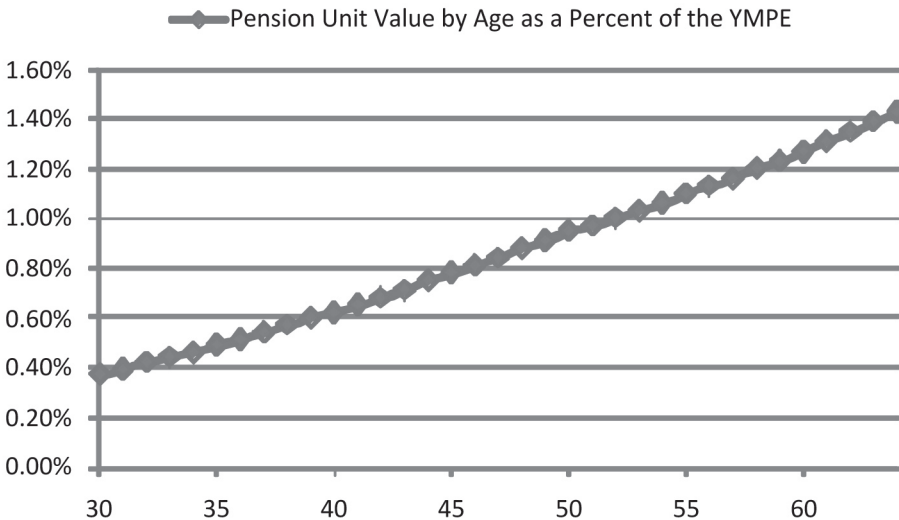
to have these payments directly transferred to your Personal Account on a tax-sheltered basis, provided you have not exceeded the career limits. You will also have the option to use the annuity payments within your Lifetime Account to purchase additional Pension Units, provided you have not exceeded the career limits.

Question 4: What happens if I change employers?

Answer 4: If you change employers the Pension Units that you have accrued to date are totally unaffected. Before changing jobs a key factor that you should check is if your new employer provides a pension plan that is as generous as our “10 and 6” plan. The “deferred compensation” provided by your new employer might be considerably lower than that provided by our pension plan and might offset any increase in your immediate compensation.

Question 5: How much is a Pension Unit worth?

Answer 5: The value of your Pension Units will constantly increase as you get closer to the Canadian Retirement Age. This is because the annual amount payable grows each year and also because you are getting closer to the payout phase. This also means that the cost of Pension Units purchased by you or by your employer will increase as you get closer to retirement. A bigger proportion of your income should be consistently set aside for retirement as you proceed through your career. The chart below shows the current value of 1 Pension Unit expressed as a percent of the YMPE.



In our next brochure we will discuss how to effectively use your Personal Account.

A2: Flowing Examples Data

FIRST PAGE OF DATA FOR "FLOWING EXAMPLES"	
These examples are all based on an individual names "Sam" (Samuel? Samantha? I don't know!) Sam was born on Jan. 1, 1965.	
The Data below are at the end of 2010. Sam became a member of an "a plus b" plan upon entering the Pension Accrual Period at age 30 in 1995.	
Phase-In Period Years to Date	12
Pension Accrual Period Years to Date	16
Total CPP Contributory Years to Date	28
Years Remaining Until Canadian Retirement Age	19
Total Annual Service Factors During the Phase-In Period	6.4600
Total Annual Service Factors During the Pension-Accrual Period	20.8800
Total Career Service Factor to Date	27.3400
Most Recent Year ASF	1.5000
Projected Future ASFs Based on 2010 Annual Service Factor	28.5000
Projected Total PAP ASFs	49.3800
Projected PAP 35 Year Average Service Factor	1.4109
Target Career Average Pen. Units (20 times Total PAP ASFs)	987.6000
Target PAP Career Average Income Replacement Ratio	70.00%
Estimated Units from CPP	235
Estimated Units from OAS	131
Target Pension Units Needed in Lifetime Account at Retirement	621.6000
Current Accrued Pension Units	238.0800
Projected Additional Units from Employer Plan	342.0000
Projected Total Units in Lifetime Account	580.0800
Projected Total Units Including CPP and OAS	946.0800
Additional Units Needed to Meet 35-Year Average Target	41.5200
Projected PAP Career Average Income Replacement Ratio	67.06%
Additional Units Needed per Year to Meet Target Career Average	2.1853
Projected "Best 5 Factor"	52.5000
Target "Best 5" Pen. Units (20 times Projected Best 5 Factor)	1050
Additional Units Needed to Meet "Best 5" Target	103.9200
Additional Units Needed Per Year to Meet "Best 5" Target	5.4695
Current Value of One Unit	\$382
Cost to Add Needed "per year" units in 2011 to meet Career Average Target	\$835
Cost to Add Needed "per year" units in 2011 to meet "Best 5 Target"	\$2,089

A2: Flowing Examples Data

SECOND PAGE OF DATA FOR "FLOWING EXAMPLES"

		Pension Units Multiple for Total Income-a			10					
		Extra Units over YMPE-b			6					
Age at Start of Year	Year	YMPE	Annual Service Factor	Career ASFs	Annual Pension Units Accrued	Annual Unit Limit	Total Pension Units Accrued	Career Unit Limit to Date	Pro-Rated CPP + OAS	Unused Portion of Career Limit
45	2010	47,200	1.5000	27.3400	18.0000	30.0000	238.0800	546.8000	192	116.7200
44	2009	46,300	1.4100	25.8400	16.5600	28.2000	220.0800	516.8000	183	113.7200
43	2008	44,900	1.4000	24.4300	16.4000	28.0000	203.5200	488.6000	174	111.0800
42	2007	43,700	1.4000	23.0300	16.4000	28.0000	187.1200	460.6000	165	108.4800
41	2006	42,100	1.3900	21.6300	16.2400	27.8000	170.7200	432.6000	156	105.8800
40	2005	41,100	1.3800	18.8600	16.0800	27.6000	154.4800	404.8000	146	104.3200
39	2004	40,500	1.3800	18.8600	16.0800	27.6000	138.4000	377.2000	137	101.8000
38	2003	39,900	1.3600	17.4800	15.7600	27.2000	122.3200	349.6000	128	99.2800
37	2002	39,100	1.3500	16.1200	15.6000	27.0000	106.5600	322.4000	119	96.8400
36	2001	38,300	1.3400	14.7700	15.4400	26.8000	90.9600	295.4000	110	94.4400
35	2000	37,600	1.3200	13.4300	15.1200	26.4000	75.5200	268.6000	101	92.0800
34	1999	37,400	1.1600	12.1100	12.5600	23.2000	60.4000	242.2000	92	89.8000
33	1998	36,900	1.1400	10.9500	12.2400	22.8000	47.8400	219.0000	82	89.1600
32	1997	35,800	1.1300	9.8100	12.0800	22.6000	35.6000	196.2000	73	87.6000
31	1996	35,400	1.1200	8.6800	11.9200	22.4000	23.5200	173.6000	64	86.0800
30	1995	34,900	1.1000	7.5600	11.6000	22.0000	11.6000	151.2000	55	84.6000
29	1994	34,400	1.0400	6.4600	0	0	0	0	46	N/A
28	1993	33,400	1.0300	5.4200	0	0	0	0	37	N/A
27	1992	32,200	1.0200	4.3900	0	0	0	0	27	N/A
26	1991	30,500	0.9200	3.3700	0	0	0	0	18	N/A
25	1990	28,900	0.8200	2.4500	0	0	0	0	9	N/A
24	1989	27,700	0.4400	1.6300	0	0	0	0	0	N/A
23	1988	26,500	0.2900	1.1900	0	0	0	0	0	N/A
22	1987	25,900	0.2500	0.9000	0	0	0	0	0	N/A
21	1986	25,800	0.1700	0.6500	0	0	0	0	0	N/A
20	1985	23,400	0.1700	0.4800	0	0	0	0	0	N/A
19	1984	20,800	0.1600	0.3100	0	0	0	0	0	N/A
18	1983	18,500	0.1500	0.1500	0	0	0	0	0	N/A

A3: Canada Pension Plan Example

There are some unique aspects to the CPP methodology used to track member records. The key feature that has been incorporated into the TCB model is a simple method used to track year-by-year contributions and pensionable earnings. The maximum possible CPP contribution period to normal retirement age is 47 years (from age 18 to age 65). In simple terms any member whose income is greater than or equal to the Yearly Maximum Pensionable Earnings (YMPE) for a given year is given a service factor of “1,” which is the maximum credited service for the year. If the member’s income was just one-half of the YMPE the members credited service is “0.5.”

When a member retires or becomes eligible for benefits, the year-by-year factors are added up. The proportion of the maximum possible benefit that the member is entitled to is simply the sum of the member’s year-by-year factors divided by the number of years in the contributory period (the actual CPP benefit calculations reflect the number of months rather than years in the contributory period). The CPP does provide for “dropouts” of a certain percentage of low-income years and also allows for dropouts for other reasons that will not be described here. The standard dropout is the lowest 15 percent (about to increase to 17 percent by 2014) of the years from age 18 to age 65. Suppose a member reaches age 65 and has had 30 years in which income was greater than the YMPE, 15 years where income was equal to one-half of the YMPE and two years with zero income. In this case the dropout period is 15 percent of 47 or 7 years. Therefore the number of years in the contributory period is 40 (47 minus 7). The sum of the member’s highest 40 credited service factors is 35 (30 years at YMPE or greater plus 10 years at one-half of the YMPE). Note that five of the years at 50 percent plus the two years at zero have been dropped out. The proportion of the maximum benefit to which this member is entitled is therefore 87.5 percent (35 divided by 40). If there had not been a dropout period, the proportion of the maximum benefit to which this member is entitled would have been only 79.8 percent (37.5 divided by 47).

A4: TCB Example Tax Shelter Limits

The total career maximum Pension Unit accrual limit under TCB will be based on all ASFs accrued during the total CPP contributory period (i.e., age 18 to 70). For the examples in this paper the career Pension Unit limit, including units from CPP and OAS (net of required OAS repayments or “claw backs”), has been set as the smallest of 2,400 Units or 800 times the average of the “best 5” consecutive ASFs, to a maximum of 3.0, at the Canadian Retirement Age and beyond. In order to hit either of these limits the individual will have to use funds from the Personal Account or continue accruing benefits after the Canadian Retirement Age.

It is important to note that 2,400 Units is equal to 2.4 times the YMPE and 800 times the “best 5” consecutive ASFs and represents 2 percent per year for 40 years. The 40-year period is to allow for the possibility of a 70 percent income replacement ratio if unreduced early retirement is elected at age 60 (which would include 30 years during the DPAP and five years during the Phase-In Period). The maximum number of Pension Units will almost always exceed the individual’s Target Lifetime Pension Units at the Canadian Retirement Age. Age 60 is the earliest age at which benefits are available under the CPP. Beginning in 2013, the first year that a CPP member will have contributed from age 18 to age 65, the “40-year maximum” is consistent with the number of years necessary to qualify for a maximum normal retirement age pension under the CPP after the “15 percent dropout.”

Under the current 2010 tax shelter limits the maximum annual benefit for a DB plan is \$2,494.44. If we consider this amount to be indexed, which it is before retirement in final average plans and after retirement in many of the richest Canadian DB plans, the 2010 limit is equal to 52.85 Pension Units under the TCB model (\$2,494.44 divided by \$47.20). An individual with a maximum career of 40 years and final average earnings high enough to exceed the annual benefit limit could accrue the equivalent of 2,114 Pension Units (52.85 times 40). This amount does not take into account CPP benefits, which would be equal to about 237 Pension Units. Thus the overall limits used in the TCB examples (2,400 Units) are quite close to the current limits (2,351 Units).

Under TCB in any career year during the Pension Accrual Period the number of Pension Units a member is allowed to accrue will be equal to 20 times that year's Annual Service Factor (20 times the ASF equals 2 percent of earned income during the year) to a maximum of 60 Units (based on 20 times a maximum ASF of 3.0). The current salary necessary to qualify for a maximum 2 percent DB pension accrual is \$124,722 (\$2,494.44 divided by 0.02). Under TCB this would equate to an ASF of 2.6424 in 2010 (\$124,722 divided by \$47,200). The annual limits do not directly factor in payments from the CPP and OAS. In any year the employee's accrued career-to-date limit, which does include pro-rated CPP and OAS benefits, cannot be exceeded. If the individual does not exceed the annual Pension Unit limit, or the accrued career-to-date limit, cash amounts can be contributed to the Lifetime Account. In addition the individual can also contribute to the tax-sheltered Personal Account.

This results in the Pension Accrual Period portion of the career maximum being equal to 2,100 Pension Units (35 times 60), which in 2010 would result in a maximum pension, including CPP and OAS, equal to \$99,120 (2,100 times \$47.20). ASFs accrued during the Pre-Accrual Period will be carried forward to the Pension Accrual Period and can be used to top up to the career limit. Similarly ASFs accrued after attaining the Canadian Retirement Age (i.e., the Phase-Out Period) can also be used to top up Pension Units to the career limit. To achieve the career limit at least five years with ASFs in either the Pre- or Post-Accrual Periods would be necessary. If in a particular year an individual has exceeded the annual Pension Unit limit the portion of the ASF greater than the maximum can also be used, or carried forward, to top up benefits if the individual has not yet exceeded the accrued career limit.

Subject to the career limits, an individual's Target Lifetime Pension Units under TCB at the Canadian Retirement Age is equal to the Service Factors accrued during the DPAP multiplied by 20. This target number of Pension Units provides an income replacement ratio equal to 2 percent per year of career average indexed earnings from the beginning of the DPAP to the Canadian Retirement Age. This amount can be topped up for ASFs accrued during the Phase-In Period by making contributions to the Lifetime Account. At retirement the Personal Account can be used to purchase ancillary benefits including spousal survivor benefits and a shift to "best 5" average earnings. The target number of Pension Units, and the overall career limit, also includes benefits, available from both the CPP and OAS (net of required OAS repayments or "claw backs").

As noted in the Building Society's Tools section, a paper by pension lawyer James Pierlot (Pierlot 2008) analyzes the unfairness in the Canadian system for tax sheltering retirement funds in some detail. Current tax shelter limits can be found by using the link <http://www.cra-arc.gc.ca/tx/rgstrd/papsapar-fefespf/lmts-eng.html>.

The following table shows the contribution limits that I used for testing the proposed structure of the TCB model. The limits shown are for illustrative purposes only. In developing these factors I used the

UP94 Projected to 2020 unisex mortality table to estimate the value of a life-only annuity commencing at age 65 with a 3 percent discount rate. The present value factor used was 14.7400. Prior to age 65 I used a discount rate of 4 percent from age 30 or less to age 65. The pre-retirement discount rate was then phased down to 3 percent by age 50, using equal annual reductions. I stress again that these factors were used to test the concepts within the TCB model and the actual factors to be used are far beyond the scope of this paper.

Tax Shelter Limits Used in TCB Model Examples as a Percentage of Income			
Age Range	Total Retirement Account Limit	Lifetime Account Limit	Personal Account Limit
18 to 24	10.00%	5.00%	5.00%
25 to 29	12.00%	7.00%	5.00%
30 to 34	19.00%	10.00%	9.00%
35 to 39	22.00%	13.00%	9.00%
40 to 44	25.00%	16.00%	9.00%
45 to 49	28.00%	19.00%	9.00%
50 to 54	31.00%	22.00%	9.00%
55 to 59	34.00%	25.00%	9.00%
60 to 66	38.00%	29.00%	9.00%
67	37.00%	28.00%	9.00%
68	36.00%	27.00%	9.00%
69	35.00%	26.00%	9.00%
70	34.00%	25.00%	9.00%

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