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TRIAL LAWYERS ASSOCIATION of BC

Contingencies:
Positive & Negative

Applications to Annual Income or Dependency Losses

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All quantum experts must address both positive and negative contingencies when assessing income or dependency losses. Many experts do not research any sources for fringe benefits; and many experts overstate negative contingencies, especially for "participation" (the choice to work and how much to work) and part-time work. This short article describes the main aspects of the research available on both types of contingencies.

Some experts ignore contingencies altogether by pronouncing that the positive and negative ones "offset" each other, so have a neutral effect on the losses. First, this cannot be determined *until* the positive and negative contingencies are researched and analyzed. Second, the positive and negative contingencies are *not* related or correlated to each other, so it is unlikely they would conveniently offset each other. Third, depending on the case, one or the other may be far more applicable, meaning that they definitely would not offset each other. Like all assumptions that have to be made by quantum experts, the conclusion about "offsetting contingencies" cannot be reached until the proper analysis and research are done.

POSITIVE CONTINGENCIES: NON-WAGE BENEFITS

Positive contingencies in the context of civil litigation typically refer to non-cash benefits in the form of contributions paid by the employer, on behalf of the employee, to a group health insurance plan (medical and dental benefits, disability (STD and LTD) benefits, life insurance and AD&D) and/or group savings or registered pension plan (RPP). Coverage for employees depends largely on firm size, and is typically much more common for full-time than part-time employees, and for employees with continuous tenure rather than those who change jobs frequently.

Over 70% of employees participate in at least one non-wage benefit plan (group insurance, retirement or stock purchase plan). This is affirmed in Statistics Canada's publication *Workplace and Employee Survey Compendium 2005 ("WES 2005")*: "Non-wage benefits were widespread in 2005, with almost three-quarters of workers [75%] having access to them" (p. 49). Participation in group insurance plans was more common than in group RRSP

and stock purchase plans[1]. The *WES 2005* reports that while 48% of *all* employers offered non-wage benefits in 2005, this percentage varied dramatically by workplace size. Whereas 38 to 65% of employers with 1 to 19 employees offered non-wage benefits, 78.3% to 99.8% of employers with 20 to 500 or more employees offered non-wage benefits[2]. A rounder summary is stated in the *WES 2005* survey: "Whereas about 1 in 2 workers in small workplaces (1 to 19 employees) did *not* have non-wage benefits, around 94.0% of workers had access to these benefits in large workplaces (500 employees or more)" (p. 49).

In the absence of company-specific information about fringe benefits, we rely on Towers Watson's Benefits Data Source – Canada (BDS Canada)™ from which Brown Economic purchased "Employer provided benefit program values from 2012-13 data, Average values as a Percentage of Base Pay", as well as BDS – Canada's 2012 Participant Report. 563 organizations in Canada were polled about the extent of their coverage and percentage of gross payroll per employee that the employer pays, by industry sector, which influences the provision of and magnitude of non-wage benefits[3]. The estimates most frequently used are 7.3% to 10.2% for employer contributions to group insurance,[4] and 5 to 15% for employer contributions to retirement or pension plans. It is "good practice" to ignore the estimates discussed in human resource circles: they include a large component for "paid time off", i.e., vacation and statutory holidays and paid sick leave. Since forensic economists almost always use full-year, full-time salaries[5] (i.e., salaries that are annual figures or based on 52 weeks per year), "paid time off" is already subsumed in the loss of income calculation. This cannot be emphasized enough, because novice practitioners can make the mistake of adding 25% or more for "fringe benefits" if they rely on human resource literature.[6] Using 25%+ grossly overstates (and double-counts) the value of non-wage benefits when the full-year salary is used.

Some quantum experts allege that non-wage benefits vary by education level. There is no data to corroborate this supposition.

There are a few (rare) sources that report fringe benefits *by occupation.* Aside from the plaintiff's actual pay stub, which sometimes shows the employer's dollar contribution to various benefits (if the acronyms can be discerned), Merit Contractors' Association's *Wage and Benefit Survey Construction Trades in Alberta,*[7] published twice per year (in January and June), shows hourly rates paid by employers for wages and benefits separately. The Merit survey also polls the percentage of employers who provide

benefits, allowing us to "weight" the fringe benefits contingency by the probability the plaintiff would receive the benefits (if applicable). For specific data on fringe benefits available to construction trades people in Alberta,[8] see Brown's Economic Damages Newsletter, "Fringe Benefits: Augmenting the Benchmark Salary by a + Percentage", Vol. 10, Issue 11, December 2013. Table 7 (pages 11-12) in this newsletter issue show specific percentages for various tradespeople (carpenter, labourer, plumber, drywaller, etc.). The usefulness of the Merit surveys cannot be underestimated, since there is little data that exists which report fringe benefits by occupation.

NEGATIVE CONTINGENCIES: RELATED TO "WORKING LIFE EXPECTANCY"[9]

Economists are typically asked to provide opinions regarding the impact of negative contingencies on pecuniary awards since they all curtail the total number of hours per week, weeks per year or years per lifetime that a plaintiff or decedent would have worked. There are five main negative contingencies that are routinely considered and may be applied in cases when earnings are interrupted. They are usually applied to both the *without* incident[10] and *with*-incident[11] income profiles in lost income cases, and to the decedent and survivor's *without*-incident income profiles in fatality cases. They include:

1. PARTICIPATION: **The choice of whether to work and how much to work**, known by the economic definition of "participation". Quantum experts normally

refer to this as the "non-participation" contingency, as the percentage that is applied to decrease earnings is the inverse of the participation rate[12]. Data from the 2011 *National Household Survey* for non-participation rates for men of all ages, average of all education levels, and across all occupations was 7.4% in 2010. For women with these characteristics, the rate was 8.9% in 2010. These rates are for "experienced" workers in Canada.[13]

2. WORK ACTIVITY: **The decision to work on a full-time, full-year basis or part-time basis**. This contingency is usually referred to as a "part-time" contingency. 26.4% of women (all ages) and 12.6% of men (all ages) in Canada in 2016 worked part-time. This obscures differences due to ages, however. Students and people approaching retirement are more likely to work part-time. 19.2% of women aged 25 to 44 worked part-time in 2016. Only 6.0% of men in the same age group (25 to 44) worked part-time in the same year.[14]

3. EMPLOYMENT/UNEMPLOYMENT: **The opportunity for employment, or the job search period while looking for a position**. Quantum experts normally refer to this as the "unemployment" contingency. The unemployment rate for Canada in 2016 was 7.0%; the average from 1987 to 2016 was 8.0%.[15] University of Toronto's *Policy Economic and Analysis Program* [PEAP] forecasts the rate of unemployment for Canada to decline from 6.5% in 2018 to 6.2% in 2022, where it is expected to remain until 2040: see Figure 16 in their 2017-1 *Policy Study*.[16]

4. DISABILITY: **The chance for a long-term, permanent disability preventing a worker from returning to the labour force**. The "disability" contingency reflects only long-term, permanent injuries or illnesses, not short-term absences.[17] The only source of data for this contingency in Canada is the disability component of the Canada Pension Plan.[18] The annual disability rate between ages 25 and 65 for males ranges from 1.1% to 6.5%; the rate for females is 1.08% to 7.1%.

5. MORTALITY: **The chance the worker will die prior to retirement**. The "mortality" contingency is reflected by using Statistics Canada's catalogue 84-537-X No. 001, *Life Tables, Canada, Provinces and Territories, 2011 to 2013* released in 2017. This is the only and most recent source of Canadian mortality rates. The annual mortality rates in Canada between ages 25 and 65 range from -.01% to -11.7% for males, and -0.1% to -7.6% for females.

These five negative contingencies serve to reduce the plaintiff's expected *without*-incident income in both the pre-trial loss period (from the date of incident to the date of valuation/trial) and the future period (from the date of valuation/trial to retirement). However, the negative contingencies are typically only applied to the plaintiff's *with*-incident income in the future period (from the date of valuation/trial to retirement). When we have <u>known</u> data as to the worker's income in the pre-trial loss period (from tax returns or paystubs) there is no need to apply further negative contingencies.[19]

The first distinction to make is with regard to the nature of the negative contingencies described above. Immediately, we can see that three *of the five contingencies listed above are 'involuntary',* that is, they happen to the plaintiff whether s/he wishes (or not). Obviously, these are (in order of seriousness): mortality, disability, and unemployment. While there are lifestyle choices that can influence the probability of these events occurring,[20] the propensity for them to occur is largely outside the plaintiff's sphere of influence. For this reason, we can safely rely on the statistical estimates published for these contingencies,[21] and do not have to tailor them to the individual, other than to locate the most specific rates according to demographic characteristic.

The non-participation contingency is more difficult to quantify than the other contingencies because it is a *voluntary* one. In other words, whereas factors such as mortality, unemployment and disability can affect an individual's ability to work regardless of his/her career plans, to a large extent participation is a personal decision based on many factors that are different for men and for women. There are similar considerations for the part-time work contingency, but the biggest difference in the magnitude of this contingency is that far more women choose to work part-time than do men.

It is important to note that the source of data for both participation and unemployment rates from the *Census* or *National Household Survey* should reflect the "experienced" workforce. Quantum experts who use data for the "inexperienced" workforce, namely employed persons who had last worked for pay or in self-employment prior to the year immediately preceding the Census reference year, or who have *never* worked,[22] will apply participation and unemployment rates that are much higher than for the working (experienced) population. Since most plaintiffs worked prior to being injured (or can expect to work, if children or teenagers when disabled), it is <u>in</u>appropriate to use "inexperienced" rates. If the quantum expert is not cognizant of this distinction when s/he obtains data from Statistics Canada, their negative contingencies could be overstated (and the losses would be understated as a result).

NEGATIVE CONTINGENCIES: INFLUENCE OF DISABILITY

In the majority of sources, various authors have confirmed the notion that disability *decreases* labour force participation, and persons with disabilities experience *higher* unemployment rates than people without disabilities. This means that quantum experts would be well-versed to use research sources to buttress the use of higher non-participation and unemployment rates in the *with*-incident income profiles, compared to the *without*-incident income profiles. The *Canadian Paraplegic Association* (CPA) publishes labour force statistics specifically for spinal-cord injured Canadians.[23]

Unemployment and participation rates can also be derived from Statistics Canada's 2001 and 2006 *Participation and Activity Limitation Survey* (PALS) and 2012 *Canadian Survey on Disability* (CSD). These large surveys enable us to compare participation and unemployment rates by age, gender, type of disability (seeing, hearing, mobility, flexibility, dexterity, pain, learning, memory, developmental, mental and/or psychological) and severity of disability (mild, moderate, severe and very severe) to rates for non-disabled persons. Disabled males and females have labour force participation rates that were 31 percentage points and 28 percentage points lower than their non-disabled counterparts, respectively. Among the males in our sample, unemployment rates increase and labour force participation rates decrease as the *severity* of disability increased, as expected. Among the females in our sample, labour force participation rates decrease with the *severity* of disability, but unemployment rates do not show a discernable trend, except for severely disabled females, who report an unemployment rate twice as high as non-disabled females. Unemployment rates by *type* of disability range from 4.5% (seeing disability) to 9% (memory disability) for males and from 2% (hearing disability) to 13% (developmental disability) for

females. The unemployment rates for non-disabled males (5.7%) and females (5.4%) fall within these ranges. Participation rates by *type* of disability range from 42% (developmental disability) to 81% (hearing disability) for males and from 36% (developmental disability) to 64% (hearing disability) for females. The participation rates for non-disabled males (88%) and females (79%) are higher than the participation rates for their disabled counterparts, as expected. V

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1   *Workplace and Employee Survey Compendium 2005* (September 2008) Statistics Canada catalogue 71-585-X, Table 4.4, p. 50.

2   *Workplace and Employee Survey Compendium 2005* (September 2008) Statistics Canada catalogue 71-585-X, Table 4.3, p. 48.

3   This is one of the best sources available in Canada as it specifically polls numerous organizations and tracks actual costs, by industry sector, and it is the largest survey of its kind in Canada. Statistics Canada's publication *Workplace and Employee Survey Compendium 2005* reports non-wage coverage for employees in non-managerial occupations in Table 4.1 (pp. 41-43) but these estimates are not useful. When the hourly wages in the columns entitled "Without non-wage benefits" and "With non-wage benefits" are compared, the differences range from 16% to 30% to 46%. This would imply that the non-wage benefits are augmenting hourly pay by these percentages. The people surveyed to obtain the information in Table 4.1 must have included other variables than strictly employer premiums to group insurance and/or retirement savings plans. We do not use this source to estimate the fringe benefits contingency.

4   Group insurance includes: weekly indemnity (short-term disability) and long-term disability insurance; group life insurance and dependant group life insurance; AD&D; extended health care; and dental care, all of which are non-taxable to the employee except for the group life insurance and dependant group life insurance, which equals only 0.40% to 0.50% of the total group insurance benefit. (Source: KPMG *Tax Facts 2016-2017*).

5   This is true even for part-time, full-year salaries. The only exception where one would add a value for paid time off would be if the estimate was a *part-year* estimate (i.e., for a seasonal worker) and paid vacation pay and/or statutory holiday appear on each paycheck.

6   For instance, Statistics Canada estimates that full-time employees in Canada miss an average of 9.1 days per year due to absenteeism – due strictly to sick leave or "no show" days. Employee absences, disability payments and staff replacements cost employers more than $30 billion per year (Watson Wyatt). Unscheduled absences amount to a 4.1% direct cost to payroll (Mercer, "Health, Productivity and Absence Survey", 2006).

7   Merit Contractors' Association requires a fee for purchasing the bi-annual survey. Brown Economic absorbs this fee when using it in specific cases. There are other Merit organizations in other Canadian provinces; some of them compile income information (i.e., British Columbia and Saskatchewan) but do not produce the information for non-members. Others do not have the resources to conduct these types of surveys. (Based on personal discussions with representations from Merit organizations in other provinces).

8   The Towers Watson data and other sources indicate there is little difference in fringe benefits coverage across provinces in Canada. Because of this, it is my opinion that the Merit Contractors' Association estimates from Alberta can easily be applied to trades people in other provinces, especially since the Merit organizations in other provinces do not supply the same information as does the Alberta organization.

9   For estimates of working life expectancy and life expectancy, see Brown Economic's online calculator which can be accessed from the home page at www.browneconomic.com > **Working Life/Life Expectancy** calculator. This online calculator produces estimates of the "years to work" and "years to live" depending on age, gender, and education level.

10   "*Without*-incident" is a shorthand method of "considering what would have happened in the absence of the interruption."

11   "*With*-incident" is a shorthand method of "considering what will now happen given the interruption has occurred."

12   In other words, a 90% participation rate implies a 10% non-participation contingency. The overall "participation rate" (all persons, all ages) in Canada in 2016 was

65.7%. If this percentage were used, it would imply a –34.3% non-participation contingency. (Source: Statistics Canada CANSIM Table 282-0002). Note, however, that the 65.7% rate includes both "experienced" and "inexperienced" workers. "Inexperienced" workers are those unemployed persons who had last worked for pay or in self-employment prior to the year immediately preceding the *Census/National Household Survey* reference year, or who had *never* worked. Because of this definition, the inclusion of "inexperienced" workers typically overstates the non-participation contingency.

13   Data for "experienced" workers must be procured separately from Statistics Canada from either the Census or National Household Survey (NHS) surveys (not the Labour Force Survey, which is published annually). The next survey updating the 2010 NHS is the 2016 Census. Although statistics on income and labour force characteristics were released on Nov. 29, 2017 from the 2016 Census, the special tabulation which provides labour force characteristics for "experienced" workers from the 2016 Census will not be available until spring of 2018.

14   Sources: Statistics Canada catalogue 89F0133XIE, Women in Canada: Work Chapter Update (Ottawa, Ontario: Minister of Industry), 2007 and Statistics Canada CANSIM Table 282-0002.

15   Source: Statistics Canada CANSIM Table 282-0002, Labour Force Estimates (LFS), by sex and detailed age group, annual, Canada. Note that the unemployment contingency, however, varies significantly by age, educational attainment, industry sector, the level of economic activity, and length of tenure with an employer, rate of pay, and region.

16   P. Dungan and S. Murphy, Long Term Outlook for the Canadian Economy National *Projection through 2040* (January 2017) PEAP Policy Study 2017-1, Policy and Economic Analysis Program, University of Toronto, Table 1b (pp. iv-vi) and Figure 16 (p. 53). Data from Statistics Canada CANSIM Table 282-0004, *Labour Force Estimates (LFS), by educational attainment, sex and age group, annual* indicates that the unemployment rate for males of all ages, all education levels, and across all occupations in Canada was 7.7% in 2016. The unemployment rate for females of all ages, all education levels, and across all occupations in Canada was 6.2% in 2016.

17   A contingency for short-term absences from the labour force is not included because such absences are typical for all workers, and usually covered by sick leave pay, gratuitous employer payments, STD payments, or EI sickness benefits. Moreover, because experts use a 52-week salary for most labour force participants, this already includes pay for time off. (The estimated number of days lost per full-time worker due to illness or disability, for both sexes, was 7.8 days in 2016 for Canada. Source: Statistics Canada CANSIM Table 279-0029, Work absence statistics of full-time employees by province, census metropolitan area (CMA) and sex, annual.)

18   Some quantum experts attempt to reference the 1991 HALS data or the Canadian Life and Health Association. Disability rates that can be applied each year and derived as conditional probabilities cannot be computed from the 1991 HALS database. This is because the way in which the questions are asked in the 1991 HALS questionnaire makes it impossible to estimate an incidence rate of disability. There are also numerous drawbacks with the Canadian Life and Health Association data. First, it is not publicly available. Second, it typically combines disabled people who recover 90 days after injury (or later) and go back to work, and as a result substantially overestimates the incidence rate of disability (and as a consequence underestimates the award it is applied to), because there are more insured people who return to work after short-term injuries or illnesses than there are those who suffer from permanent, long-term absences. Third, this population only covers the insured population; workers without disability insurance would not be represented. In contrast, the CPP covers the working population, not just the insured population.

19   For instance, we know whether the plaintiff has lived in the past period, so a mortality contingency is not needed. Similarly, we know whether or not

the plaintiff has been so disabled (from an incident other than the one involving litigation) as to prevent him/her from working; if so, his/her income on the tax returns or paystubs will reflect absences from work (or payments from income-replacement schemes, such as WCB or LTD insurers), and as such a disability contingency is not needed. Further, we know if the plaintiff has worked and how much (this is captured by his/her reported income), so non-participation and part-time contingencies are not needed. Lastly, if the plaintiff has been unemployed, his/her income is lower for the periods of unemployment, and if s/he collected EI benefits, we include these in his/her income as well (unless they are collateral). Thus, it would be "double-counting" to apply an unemployment contingency.

20   Even if counsel were to argue that lifestyle choices would significantly affect the mortality or disability contingency, one must remember that the published statistics already include these lifestyle choices in the 'average' percentage. For more significant deviations, medical and actuarial opinions would be needed in order to modify the published rates.

21   The one exception might be to unemployment, since the plaintiff who quits jobs rather than is terminated can initiate job separation; but this can usually be captured by using average earnings in a scenario, since the average will reflect reductions in income due to time off work.

22   See the 2001 Census Dictionary (2002) Statistics Canada catalogue 92-378-XIE, p. 64; 2006 Census Dictionary (2010), Statistics Canada catalogue 92-566-X, p. 61; and the National Household Survey Dictionary, 2011 (2013) Statistics Canada catalogue 99-000-X, p. 70; and Dictionary, Census of Population, 2016 (available at http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/index-eng.cfm).

23   The author testified about the CPA statistics in a case reported as Biletski v. University of Regina and Regina Piranhas Summer Swim Club Inc. (October 2017), Regina (1770/2007) (SK QB), whose jury rendered a verdict for the plaintiff in excess of $9 million (plus a tax gross-up calculated on the future cost of care and loss of marriage benefits following the judgment, which ranged from $1.4 to $3.2 million). The CPA statistics were applied by Brown Economic to the plaintiff's with-incident income profiles to reflect her predicted reduced labour force participation and higher unemployment rate, which caused the income profiles to be lower than the without-incident income profiles, leading to the income loss.