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A COMPARISON OF RETIREMENT BENEFITS UNDER THE U.S. AND CANADIAN SOCIAL INSURANCE SYSTEMS

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The national social insurance program in Canada began with the passage in 1951 of the Old Age Security Act, which took effect January 1, 1952. Under this Act, old-age pensions are currently payable without a means test to those persons aged 65 and over who meet minimum residency requirements. These OAS pensions are earned at the rate of 1/40 of a fixed maximum amount (not earnings-related) for each year of Canadian residency after age 18 (with a minimum of 10) up to 40 years. The pension amounts are increased quarterly to reflect changes in the cost of living.

In the early 1960s, a movement to establish an earnings-related national pension plan for Canada gained strength. In 1965, the Canada Pension Plan was enacted into law; it began operations January 1, 1966. This plan provides strictly earnings-related benefits to retirees at age 65 equal to 25% of average indexed earnings (with no dependents benefits available). These benefits are increased annually to reflect changes in the cost of living. Provinces were given the option of establishing independent plans with benefits at least equivalent to those of the CPP; only Quebec has chosen to do so, and the benefits under the Quebec Pension Plan are virtually identical to those under the CPP.

The OAS and CPP programs may be considered together to be the non-means-tested cash-benefits portion of the Canadian social insurance system. Benefits under this system may be compared with those under the Old-Age, Survivors, and Disability Insurance program, which makes up the non-means-tested cash-benefits portion of the United States social insurance system. This Actuarial Note presents a comparison of benefits under the two systems for hypothetical workers at several earnings levels. Although differences in exchange rates limit strict comparability, this comparison indicates relative levels of earnings replacement under two fairly similar social insurance systems.

Hypothetical earnings histories have been designed for workers retiring at age 65 in January 1981. This retirement age was chosen because it is the minimum permitted in Canada; however, using that age introduces a complication into the calculation of OASDI benefits. Workers attaining age 62 in 1978 (and, therefore, attaining age 65 in 1981) are the last cohort eligible for OASDI benefits under the "coupled" benefit formula which applied before enactment of the 1977 Amendments. In order to present a comparison which is more representative of the permanent provisions in present OASDI law, rather than of the transitional provisions, a theoretical "decoupled" formula (of the type in "permanent" ongoing law, based on indexed earnings) was developed and applied to the hypothetical workers for whom Canadian benefits were calculated.

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This theoretical decoupled formula for those attaining age 62 in 1978 uses earnings indexed to the year of attainment of age 60 (as prescribed by the 1977 Amendments) and a PIA formula with bend-points of $170 and $1024, rather than the $180 and $1085 which apply to those attaining age 62 in 1979. The 1978-formula bend-points used in the theoretical formula bear the same relationship to the average covered wages in 1976 as the 1979-formula bend-points do to the average covered wages in 1977. The PIAs calculated with the theoretical decoupled formula are increased by the applicable CPI increases of 6.5%, 9.9%, and 14.3% for 1978, 1979, and 1980, respectively. (In all cases considered, benefits calculated with the theoretical decoupled formula are smaller than those calculated using the law actually applicable to these workers. The amounts of decrease vary from about 8 to 12%.)

Benefits to spouses and other dependents have, for the sake of simplicity, been disregarded in this analysis. The Canadian OAS system provides means-tested benefits to spouses aged 60-65 who meet minimum residency requirements. The CPP provides no benefits for spouses of retired workers. The OASDI system pays a spouse 50% of the worker's PIA at age 65 or over and also provides benefits for qualifying children.

Table 1 presents a summary of the benefit calculations for hypothetical workers at four earnings levels. Table 2 shows the maximum creditable earnings in both countries for 1951-81. Table 3 presents replacement rates for the hypothetical workers.

The replacement rates shown in Table 3 are defined as the ratio of the initial benefit rate to the earnings in the year before retirement. For the low earner case, the Canadian replacement rate of 67.6% is more than 8 percentage points above the U.S. replacement rate of 59.0%. For the average case and the Canadian maximum case, which is only slightly higher, the replacement rates in the two countries are very close (around 45%), with the Canadian system having a slightly higher rate in both cases. Because the Canadian benefit payable in the Canadian maximum case is the largest possible for a retiree in January 1981 at age 65, the Canadian replacement rate declines as earnings increase above the maximum. The maximum creditable earnings in the U.S. have been substantially higher than in Canada for every year; therefore, the U.S. rate does not decrease as rapidly for earnings which are above the Canadian maximum creditable earnings. The U.S. replacement rate exceeds the Canadian one at an earnings level slightly above the Canadian maximum and then at all higher earnings levels. At the U.S. maximum earnings level, the U.S. replacement rate of 27.6% is about 5 percentage points higher than the Canadian replacement rate of 22.1%.

In summary, the Canadian and U.S. social insurance systems provide very similar age-65 retirement benefits to workers at average-earnings levels. At low-earnings levels, the Canadian system provides somewhat larger benefits; at high-earnings levels, the U.S. system provides significantly larger benefits, because of the much higher U.S. creditable earnings base.

Table 1

SUMMARY OF BENEFIT CALCULATIONS FOR RETIRED WORKERS IN THE U.S. AND IN CANADA

Earnings Level	Initial Monthly Benefit U.S.	Initial Monthly Benefit Canada
Low 1/	$317.00*	$363.46
Average 2/	472.90*	476.25
Maximum (Canada) 3/	474.50*	476.45
Maximum (U.S.) 4/	596.10*	476.45

*These are theoretical benefits based on the formula described below. The actual benefits payable to workers retiring in 1981 at age 65 would be based on a different formula.

Beneficiary Data: Date of Birth--January 1916
Date of Retirement--January 1981
Age at Retirement--65

Computation Period: U.S.------22 highest years of indexed earnings, 1951 and later
Canada---153 highest months of indexed earnings, 1966 and later

Indexing Procedure: U.S.------earnings in any year before attainment of age 60, multiplied by ratio of national average covered wages in year of attainment of age 60 to comparable figure for year being indexed. Earnings in later years used in their actual amounts.
Canada---earnings in any year, multiplied by ratio of average maximum pensionable earnings in year of retirement and preceding two years to maximum pensionable earnings in year being indexed.

Benefit Calculation: U.S.------Average Indexed Monthly Earnings equal to total indexed earnings in computation period, divided by number of months in computation period. Primary Insurance Amount equal to 90% of first $170 of AIME, plus 32% of AIME in excess of $170 but less than $1024, plus 15% of AIME in excess of $1024. Benefit equal to PIA increased by 6.5%, 9.9%, and 14.3% for 1978, 1979 and 1980, respectively.
Canada---Average Monthly Pensionable Earnings equal to total indexed earnings in computation period, divided by number of months in computation period. Benefit from CPP equal to 25% of AMPE. Benefit from OAS equal to $202.14 in January 1981.

1/ Equal to 2080 hours per year at U.S. minimum wage.
2/ Equal to U.S. average covered wages in each year. Figure used for 1980 is preliminary.
3/ Equal to Canadian maximum pensionable earnings in each year and later. For 1951-65, equal to maximum for 1966 indexed back by U.S. series of average covered wages.
4/ Equal to U.S. maximum taxable wages in each year.

Table 2

MAXIMUM EARNINGS CREDITABLE FOR BENEFITS, 1951-81

Year	U.S. 1/	Canada 2/
1951	$3,600	---
1952	3,600	---
1953	3,600	---
1954	3,600	---
1955	4,200	---
1956	4,200	---
1957	4,200	---
1958	4,200	---
1959	4,800	---
1960	4,800	---
1961	4,800	---
1962	4,800	---
1963	4,800	---
1964	4,800	---
1965	4,800	---
1966	6,600	$5,000
1967	6,600	5,000
1968	7,800	5,100
1969	7,800	5,200
1970	7,800	5,300
1971	7,800	5,400
1972	9,000	5,500
1973	10,800	5,600
1974	13,200	6,600
1975	14,100	7,400
1976	15,300	8,300
1977	16,500	9,300
1978	17,700	10,400
1979	22,900	11,700
1980	25,900	13,100
1981	29,700	14,700

1/ Maximum taxable earnings.
2/ Maximum pensionable earnings. CPP began operations in 1966 and does not credit earnings before then.

Table 3

BENEFIT AMOUNTS AND REPLACEMENT RATES 1/

Earnings Level2/	January 1981 Benefit (Annualized)		1980 Earnings	Ratio of Benefits to Previous Earnings	
	U.S.3/	Canada		U.S.	Canada
Low	$3,804	$4,362	$6,448	59.0%	67.7%
Average	5,675	5,715	12,455	45.6	45.9
Maximum (Canada)	5,694	5,717	13,100	43.5	43.6
Maximum (U.S.)	7,153	5,717	25,900	27.6	22.1

1/ Defined as the ratio of initial monthly benefit annualized to earnings in the year before retirement.
2/ These earnings levels are defined in the footnotes to Table 1.
3/ These are theoretical benefits based on the formula described in Table 1.