SECURITY FOR SOCIAL SECURITY:

IS PRE-FUNDING THE ANSWER?

Proposition 1: Social Security is not a large private sector pension. It is instead, a macroeconomic means of wealth transfer, whereby workers transfer wealth to the elderly through their social security contributions. This is true whether the plan is pre-funded or pay-as-you-go.

$$C = \frac{\int_{65}^{\infty} e^{-\delta x}\, l_x \, dx}{\int_{20}^{65} e^{-\delta x}\, l_x \, dx}$$

where: δ is the real rate of interest earned on the invested funds, after inflation (both before and after retirement)

and l_x is the probability of being alive at age x.

$$C = \frac{\int_{65}^{\infty} e^{-rx} L_x \, dx}{\int_{20}^{65} e^{-rx} L_x \, dx}$$

where: r is the rate of increase of national wages on which contribution are made

and L_x is the actual number of people in the system aged x.

$$C=\frac{\int_{65}^{\infty} e^{-\delta x}\, l_x\, dx}{\int_{20}^{65} e^{-\delta x}\, l_x\, dx}$$

$$C=\frac{\int_{65}^{\infty} e^{-rx}\, L_x\, dx}{\int_{20}^{65} e^{-rx}\, L_x\, dx}$$

Proposition 2: The contribution rate required for a fully-funded social security system is highly dependent on the real rates of return realized on invested assets. The contribution rate required for a pay-as-you-go social security system is highly dependent on the ratio of dependents to workers and the rate of increase in covered wages. The latter, in turn, is dependent on the growth rate of the labour force and the growth rate of worker productivity.

Proposition 3: There is nothing inherent in the mechanisms of a fully-funded social security system to make it any more stable than a pay-as-you-go system.

Proposition 4: In a country with a corrupt government, the only thing riskier to the worker than a pay-as-you-go social security system is a funded social security system.

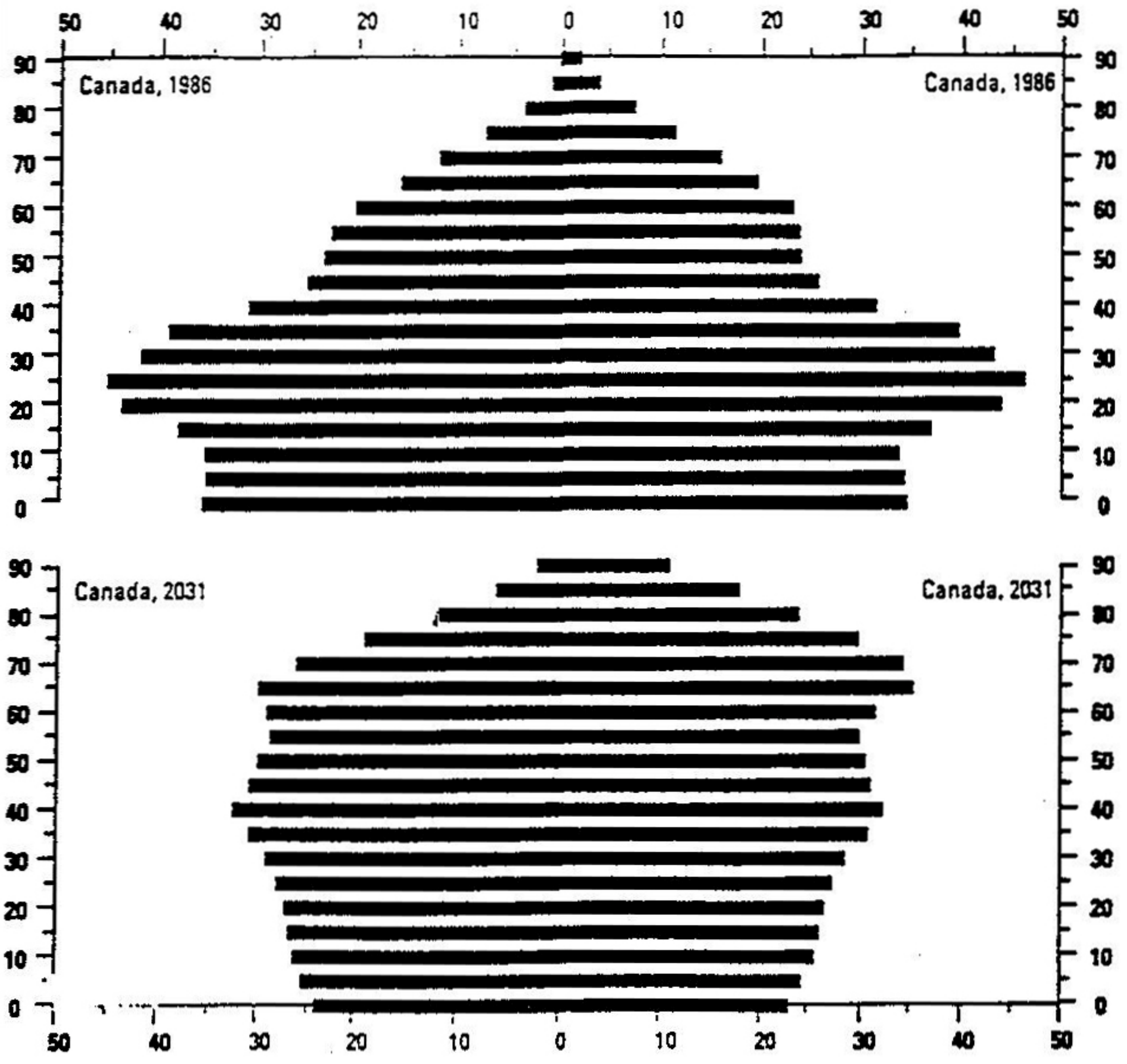
TABLE 1
LIFE EXPECTANCY IN THE UNITED STATES

Year	At Birth		At Age 65	
	Male	Female	Male	Female
1920	55.6	57.6	12.2	12.7
1960	66.8	73.2	12.9	15.8
1990	71.8	78.8	15.1	19.0
1998	73.4	79.4	15.7	19.2

TABLE 2
LIFE EXPECTANCY IN CANADA

Year	At Birth		At Age 65	
	Male	Female	Male	Female
1931	60.0	62.1	13.0	13.7
1951	66.3	70.8	13.3	15.0
1971	69.3	76.4	13.7	17.4
1991	74.6	80.9	15.7	19.9

Changes in the Age Structure



1960s

Senior dependency ratio	0.33
Annual increase in real wages	2.0%
Real rates of return	2.0%

Funding Arrangement	**Projected Cost as Percentage of Payroll**
Pay-as-you-go (mature plan)	11.0%
Fully funded	16.5%

1980s

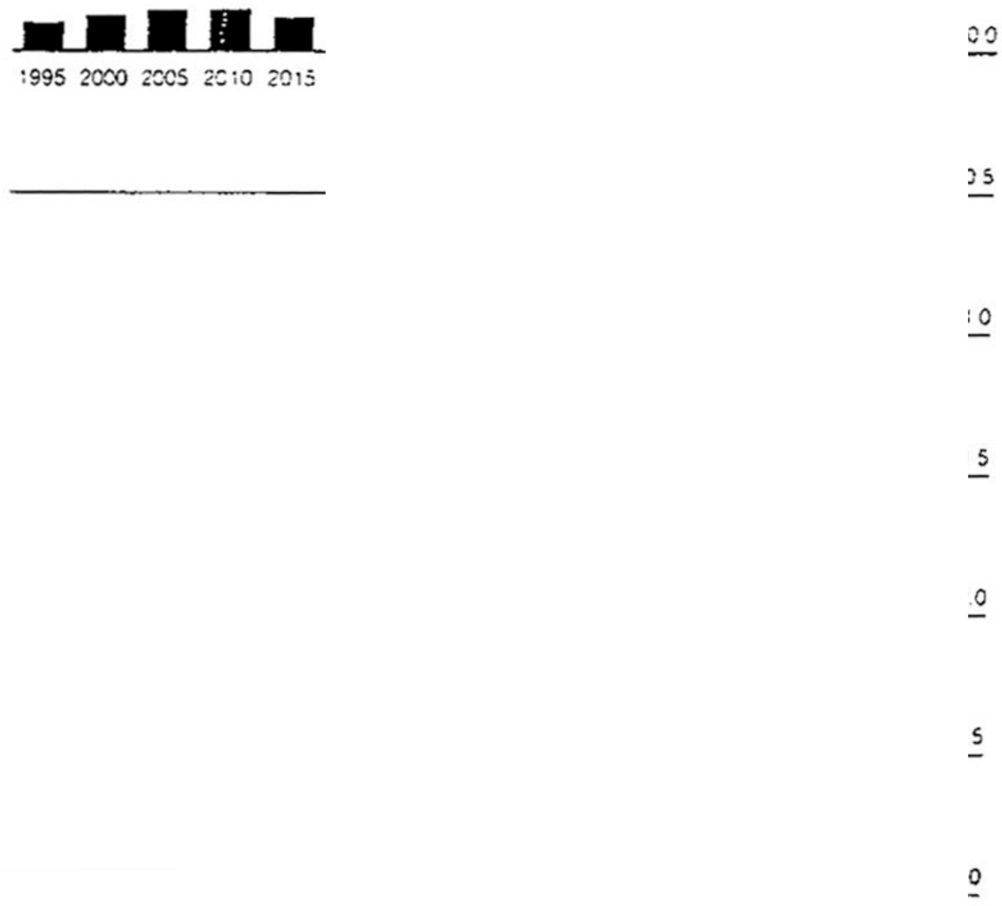
Senior dependency ratio	0.40
Annual increase in real wages	1.0%
Real rates of return	4.0%

Funding Arrangement	**Projected cost as Percentage of Payroll**
Pay-as-you-go (mature plan)	14.5%
Fully funded	7.2%

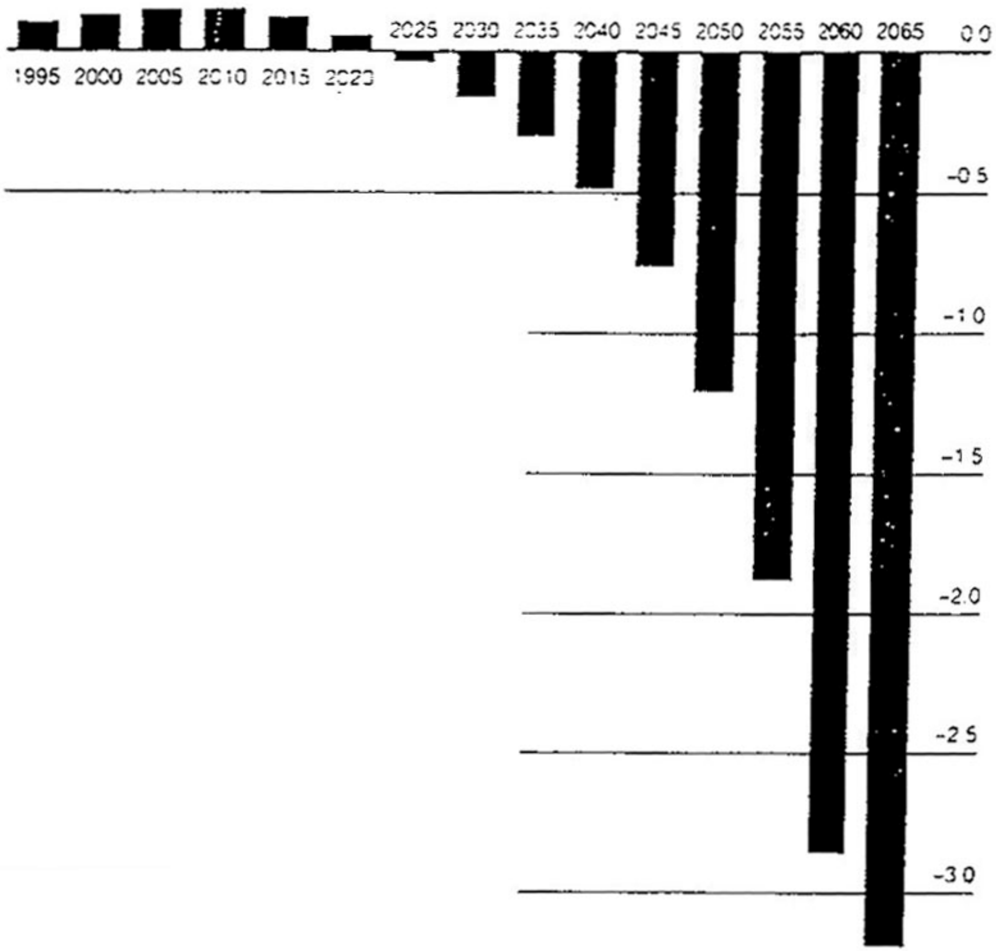
Proposition 5: The fact that both the Canadian and U.S. social security systems were essentially started as pay-as-you-go systems was not a mistake. Further, just as a funded system may make more sense today, it is entirely possible that economic variables could shift and once again favour pay-as-you-go financing.

Proposition 6: A fully-funded social security system is not demographically immune. A fully-funded system is as dependent on the next generation of workers and their productivity as a pay-as-you-go system.

Net Flow of Assets Into or Out of Pension and Retirement Savings 1995 to 2065



Net Flow of Assets Into or Out of Pension and Retirement Savings 1995 to 2065



Proposition 7: For pre-funding to have any consequence on the security of social security, three requirements must be satisfied (all three); namely:

- **Pre-funding must increase gross national savings.**
- **Those increased savings must be invested so as to increase worker productivity**
- **Pre-funding must be the best way to achieve the first two requirements.**

Growth in Private Pension Assets Relative to Gross National Savings 1980-1991

Country	Gross saving (% of GDP) 1980	Gross saving (% of GDP) 1988	Pension Assets (% of GDP) 1980	Pension Assets (% of GDP) 1991	Change 1991-1980
Canada	23.1	20.3	18.7	35.0	16.3
Denmark	20.3	15.0	26.3	60.0	33.7
France	25.4	19.8	1.0	3.0	2.0
Germany	23.7	22.2	2.6	4.0	1.4
Japan	34.4	31.2	3.2	8.0	4.8
Netherlands	23.9	22.3	46.0	76.0	30.0
Switzerland	28.0	28.4	51.0	70.0	19.0
U.K.	17.7	16.8	28.1	73.0	44.9
U.S.	19.5	16.1	40.7	66.0	25.3

Proposition 8: The best way to increase national savings is not to move to a fully-funded social security system. Rather it is to pay down the national debt.

Proposition 9: Macro-economically, there is very little difference between a pay-as-you-go social security system and a funded system where the assets are all government bonds.

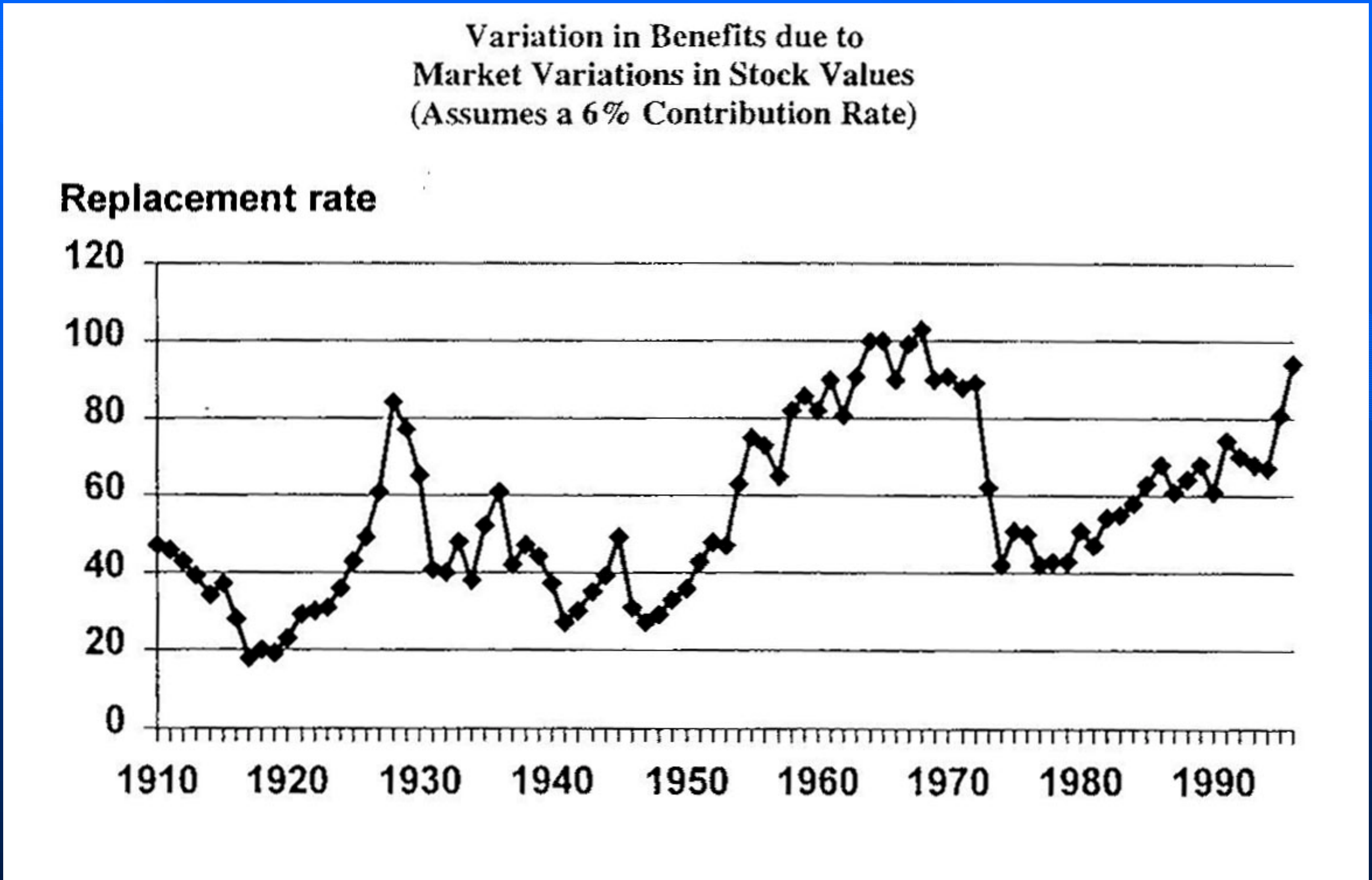
SHIFT SOCIAL SECURITY

TO A

DEFINED CONTRIBUTION SCHEME

Administrative Costs in Australian Individual Account Plans in 1997

Average Balance	Administrative Costs as Percent of Assets
$ 1,000	14.82 %
$ 5,000	2.96
$10,000	1.48
$20,000	0.74
$30,000	0.49


Variation in Benefits due to
Market Variations in Stock Values
(Assumes a 6% Contribution Rate)
Replacement rate
120
100
80
60
40
20
0
1910
1920
1930
1940
1950
1960
1970
1980
1990

Proposition 10: There is nothing in the history of any country's social security system or in the literature on social security that supports the contention that more funding of social security leads to either:

--higher national savings rates, or

--improved worker productivity

Thus, one cannot conclude that reform of social security to a more funded system is the best way to achieve these laudable goals.

Proposition 11: In short, proposed moves to higher levels of pre-funding of social security in both Canada and the U.S. require further public policy debate. Society should not rely on fuller funding of social security to solve the problems inherent in providing retirement income security to an aging population.

Proposition 12: The three ingredients that will provide security for social security are:

1. **A healthy and growing national economy.**
2. **An efficient and accurate records administration system.**
3. **An honest government.**

These cannot be attained by changing the way you finance social security. In fact, the method of financing social security may be close to irrelevant to its future security.

UNITED STATES

1983

SYSTEM	DESIGN	FINANCING
OASDI	DB	PAYGO
E'ER QPP	DB	FULLY FUNDED
INDIVIDUAL SAVINGS	DC	FULLY FUNDED

UNITED STATES

2003

SYSTEM	DESIGN	FINANCING
OASDI	DC	FULLY FUNDED
E'ER QPP	DC	FULLY FUNDED
INDIVIDUAL SAVINGS	DC	FULLY FUNDED