

# Adequacy and Sustainability of Care and Support for the Elderly: How do Developed Countries Rate?












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# Countries

- **North America:** Canada  USA 
- **Europe:** England  France  Germany   
Ireland  Netherlands  Sweden 
- **Asia:** Japan  South Korea 
- **Australia** 

# Which Countries Programs For the Elderly Are Adequate?

- Australia
- Canada
- Japan
- Korea
- USA

# Which Countries Programs for the Elderly Are Adequate?

- Australia      **Often**
- Canada
- Japan      **Often**
- Korea      **Often**
- USA

# Agenda

1. Introduction
2. Methodology
3. Defining adequacy
4. Defining sustainability: current vs. potential
5. Findings
6. Discussion and recommendations
7. Future research
8. Your comments

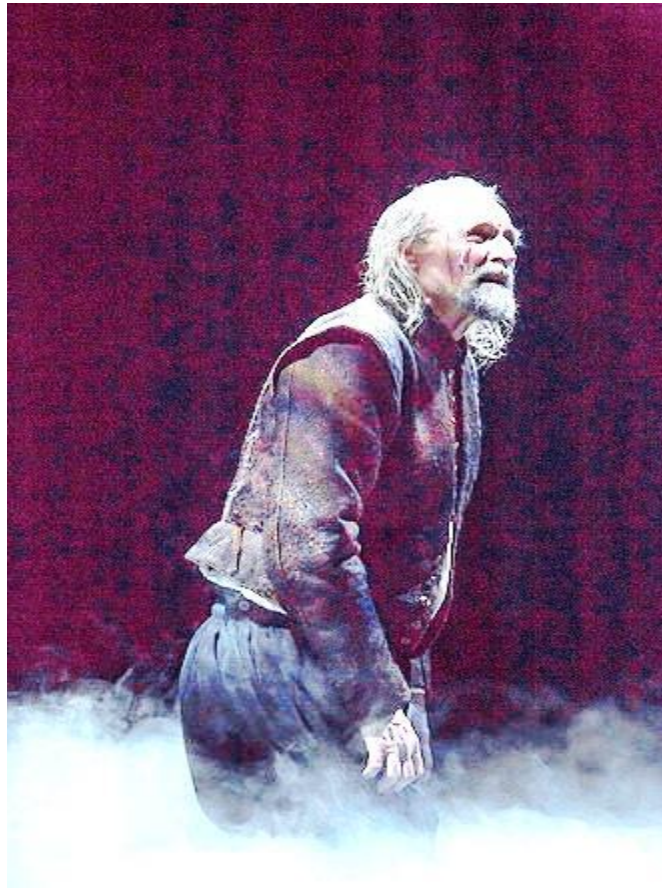
# Programs

- Social security (retirement)
- Health care
- Long term care

# Why use fuzzy sets?

- Adequacy and sustainability sound like absolutes
- But there are many variables and much graduation
- Unlikely that a program will be completely out of the set or completely in the set for every situation

**“Our basest beggars are in  
the poorest thing superfluous”**





# Approach:

## Adequacy Assessment

- Define specific family compositions
- Calculate income from state pension
- Compare to general expenses and specific expenses for drugs and LTC
- Determine score
- Compute index score across all family compositions

# Family Composition One

- Couple both aged between 65 and 70
- Male retired on state pension
- Had career earnings at average national wage
- No other earnings or savings
- Annual drug expenses of \$2,000 (before state plan)
- General living expenses: 53% of average national wage

# Family Composition Two

- Single female age 85 or older
- Receiving state survivor pension
- Based on male who had career earnings at average national wage
- No other earnings or savings
- Annual drug expenses of \$1,200 (before state plan)
- General living expenses: 38% of average national wage

# Four Family Situations Considered

Family Composition → Care Status ↓	One - Couple	Two – Surviving Female age 85+
No institutional care required	rent not own CN	rent not own SN
One member requires institutional care	rent not own CY	Institutionalized SY

# State Pension Compared to General Living & Total Expenses for Each of CN, CY, SN, SY






Label (Social protection)	Comparison	Score
Completely out of set	$sp < 50\% gle$	0
Somewhat inadequate	$50\% gle \leq sp < 100\% gle$	0.33
Somewhat adequate	$100\% gle \leq sp < 100\% te$	0.67
Completely adequate	$100\% te \leq sp$	1

- **sp** state pension
- **gle** general living expenses excluding care and drug expenses
- **te** total expenses



# Average Score By Country and Label

Score	At Least One Raw Score of 1	Label
0	No	Completely inadequate
$0.2 > \text{score} > 0$	No	Mainly inadequate
$0.4 > \text{score} \geq 0.2$	No	Often inadequate
$0.4 > \text{score} \geq 0.2$	Yes	More inadequate than not
$0.6 > \text{score} \geq 0.4$	No or Yes	Not adequate or inadequate
$0.8 > \text{score} \geq 0.6$	No	More adequate than not
$0.8 > \text{score} \geq 0.6$	Yes	Often adequate
$1 > \text{score} \geq 0.8$	Yes or No	Mainly adequate
1	Yes	Completely adequate

# Adequacy: Results & Assessment- Anglo Saxon



ID					
CN	0.33	0.33	0.33	1	0.33
CY	1	0.67	0	1	0
SN	0.33	0.33	0.33	0.33	0.33
SY	1	1	0	1	0.33
Index	0.67	0.58	0.17	0.83	0.25
Label	Often Adequate	Not Adequate or Inadequate	Mainly Inadequate	Mainly Adequate	Often Inadequate

# Adequacy: Results & Assessment- Europe

ID				
CN	0.33	0.33	1	1
CY	0.33	1	1	1
SN	0.33	0.33	1	1
SY	0.33	1	1	1
Index	0.33	0.67	1	1
Label	Often Inadequate	Often Adequate	Completely Adequate	Completely Adequate



# Adequacy: Results & Assessment- Asia

ID		
CN	0.33	0.33
CY	1	1
SN	0.33	0.33
SY	1	1
Index	0.67	0.67
Label	Often Adequate	Often Adequate

# Adequacy Comments

- Divide between English-speaking countries (except Australia and Ireland) and many European countries reflects differences in philosophy underlying system design
  - Expectation that the individual will save for retirement
  - Tendency to think of LTC as an individual or family responsibility but provide for the needy – both Australia and Canada have provided LTC support
  - Ireland provides a separate spouse's benefit
  - Canada provides OAS to all of qualifying age

# Adequacy Policy

## Recommendation 1

- **Consider introducing a demogrant (or a spouse's pension like Ireland)**
- **It can fill gaps left by earnings-related state pensions**
- **Both Canada and Sweden use this approach**

# Adequacy Policy

## Recommendation 2

- **Some form of comprehensive universal LTC insurance needs to be in place**
- **LTC is an insurance risk**
- **Different ways can be used to provide insurance coverage**
- **Australia, Canada – government subsidies with co-payments and means testing**
- **Germany, Japan, South Korea – mandatory insurance**

# Adequacy Policy

## Recommendation 3

- **State survivor pensions need to be improved**
- **Based on the change in general living expenses a state survivor pension of 70% of the primary pension would be more adequate**

# Which Countries Programs for the Elderly Sustainable?

- Australia
- Canada
- Japan
- Korea
- USA

# Which Countries Programs for the Elderly Are Sustainable?

- Australia      **Likely but Potentially Sustainable**
- Canada
- Japan
- Korea      **Potentially Likely Sustainable**
- USA      **Potentially Sustainable**

# Sustainability Labels

Score	Label
0 – 0.20	Unsustainable
0.21 – 0.40	Likely unsustainable
0.41 – 0.60	Possibly sustainable
0.61 – 0.80	Likely sustainable
0.81 or higher	Sustainable



# Current Sustainability

1. **Stability of current funding rates for social security**  
– a measure of the sustainability of social security in its current form
  2. **Level of spending on health care as a percentage of GDP** – an indicator of revenues already committed
  3. **Ratio of “grandmothers to granddaughters”** – a determinate of a family’s ability to provide care and support to its elderly family members
- **Calculate an average score and determine assessment**

# Current Sustainability Components 1 & 2

Score	Stability of SS Funding Over Long term	HC Spending GDP %
1	Yes	Less than 10.0
0.5	Possibly	10.0 – 14.9
0	No	15.0 or higher

# Current Sustainability Component 3







**Absolute Ratio 2010 (r)**

$\leq 0.35$	1
$0.35 < r \leq 0.7$	0.8
$0.7 < r \leq 1.05$	0.6
$1.05 < r \leq 1.4$	0.4
$1.4 < r \leq 1.75$	0.2
$> 1.75$	0






**Ratio Change (2010/1950)**

$\leq 1.75$	1
$1.75 < r \leq 2.5$	0.87
$2.5 < r \leq 3.25$	0.75
$3.25 < r \leq 4$	0.62
$4 < r \leq 4.75$	0.5
$4.75 < r \leq 5.5$	0.37
$5.5 < r \leq 6.25$	0.25
$6.25 < r \leq 7$	0.12
$> 7$	0

# Assessment of Current Sustainability – Original 6

Item						
SS Stability	1.0	0.5	0	0.5	1.0	0
HC Spending	0.5	0.5	0.5	0.5	0.5	0
GM:GD	0.78	0.8	0.8	0.58	0.74	0.84
Index	0.76	0.6	0.43	0.53	0.75	0.28
Label	Likely Sustainable	Possibly Sustainable	Possibly Sustainable	Possibly Sustainable	Likely Sustainable	Likely Unsustainable

# Assessment of Current Sustainability - Extended

Item					
SS Stability	0.5	0	0.5	0	0
HC Spending	1	1	1	1	1
GM:GD	0.84	0.9	0.1	0.46	0.68
Index	0.78	0.63	0.53	0.49	0.56
Label	Likely Sustainable	Likely Sustainable	Possibly Sustainable	Possibly Sustainable	Possibly Sustainable

# Potential Sustainability

1. Consider Old Age Support Ratio in 2008 and 2050 – an indication of demographic pressures on the tax base
  2. Consider total tax revenue as % of GDP – a measure of ability to pay
  3. Consider expenditure on public pensions in 2010, 2030, 2050 – an indicator of the extent to which public spending is already committed
- Calculate an average score and determine assessment

# Level of OASR Assessment Scale

OASR (2008, 2050)	Score
4.0 or higher	1
3.0 – 3.9	0.75
2.0 – 2.9	0.5
1.5 – 1.9	0.25
Less than 1.5	0

# Tax Level Assessment Scale







Total Tax Revenue as % of GDP	Score
Less than 30.0	1
30.0 – 34.9	0.8
35.0 – 39.9	0.6
40.0 – 44.9	0.4
45.0 – 49.9	0.2
50 or higher	0



# Public Pension Expenditure 2010, 2030, 2050

% of GDP	Score
Under 5	1
5.0 – 8.5	0.75
8.6 – 11.5	0.5
11.6 – 14.9	0.25
15 or higher	0

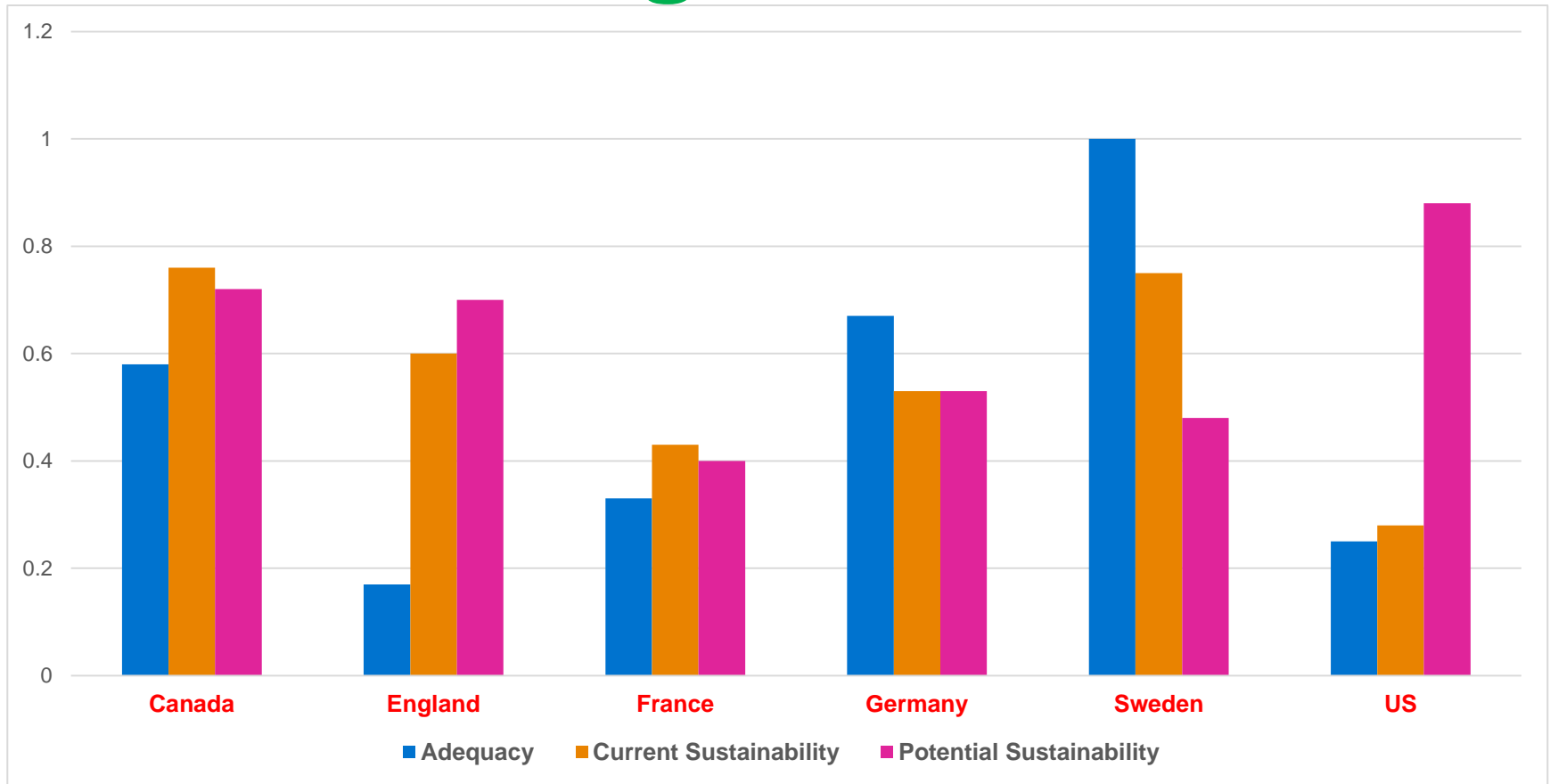
# Assessment of Potential Sustainability – Original 6

Item						
OASR	0.61	0.75	0.56	0.56	0.75	0.64
Tax Burden	0.8	0.6	0.4	0.6	0.2	1
PP Spend	0.75	0.75	0.25	0.42	0.5	1
Index	0.72	0.7	0.4	0.52	0.48	0.88
Label	Likely Sustainable	Likely Sustainable	Likely Unsustainable	Possibly Sustainable	Possibly Sustainable	Sustainable

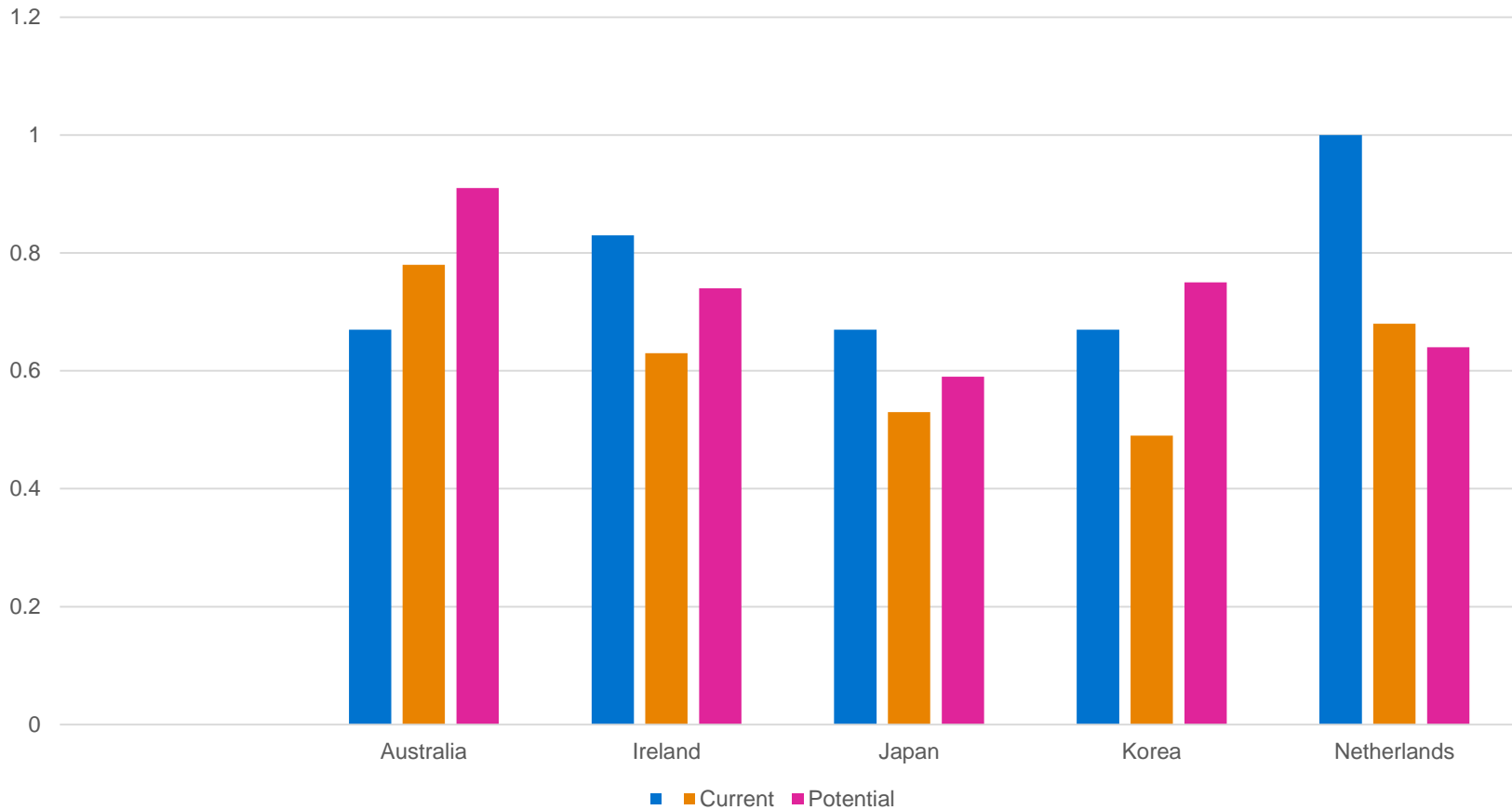
# Assessment of Potential Sustainability - Extended

Item					
OASR	0.72	0.56	0.28	0.33	0.72
Tax Burden	1	1	1	1	0.6
PP Spend	1	0.67	0.5	0.92	0.58
Index	0.91	0.74	0.59	0.75	0.64
Label	Sustainable	Likely Sustainable	Possibly Sustainable	Likely Sustainable	Likely Sustainable

# Adequacy & Sustainability Original Six



# Adequacy & Sustainability Extended



# Overall Assessment

## Top 3

Netherlands

Sweden

Australia

## Bottom 3

England

France

USA

# Comments - Netherlands

## ❖ Adequacy – Completely Adequate

1. **High pension income**

2. **Strong LTC system**

## ❖ Current Sustainability – Possibly Sustainable

1. **Pension funding needs stabilizing**

2. **Well controlled HC spending**

## ❖ Potential Sustainability – Likely Sustainable

1. **Aging not severe**

2. **Moderate tax burden**

# Comments - Sweden

## ❖ Adequacy – Completely adequate

1. State pension provides adequate income
2. LTC – mainly state provided

## ❖ Current sustainability – Likely Sustainable

1. **NDC pension provides stable funding**

## ❖ Potential sustainability – Possibly sustainable

1. Aging not severe
2. Tax burden & public pension commitment leave **little room to adjust** but tax rates are reducing



# Comments - Australia

## ❖ Adequacy – Often Adequate

1. Significant state pension
2. Strong LTC system

## ❖ Current Sustainability – Likely Sustainable

1. Questions regarding pension funding stability
2. Well controlled HC spending

## ❖ Potential Sustainability – Sustainable

1. Aging not severe
2. Lots of fiscal room

# Comments - England

## ❖ Adequacy – Often inadequate

1. Relatively low state pension
2. LTC costs an additional burden

## ❖ Current sustainability – Possibly Sustainable

1. Questions regarding stability of social security financing rate

## ❖ Potential sustainability – Likely sustainable

1. Aging not severe
2. Tax burden & public pension commitment provide room to adjust

# Comments - France

## ❖ Adequacy – Often Inadequate

1. Complex system – final pension requires long service, uses a long averaging period, and price-valorization
2. High deductible for LTC

## ❖ Current – Possibly Sustainable and Potential – Likely Unsustainable

1. Social security rate won't support full benefits over actuarial horizon
  2. Relatively rapidly aging population
  3. Little fiscal headroom (tax burden, public pensions)
- ❖ Little room to reduce adequacy of benefits; working longer is a solution, but is there the public will to do so?

# Comments - USA

## ❖ Adequacy – Often Inadequate

1. Modest SS benefits
2. Considerable HC and LTC costs borne by individuals

## ❖ Current – Likely Unsustainable

1. SS rate won't support full benefits over actuarial horizon
2. Health care expenditures exceed 15% of GDP

## ❖ Potential – Sustainable

1. Aging not as severe as many developed countries
2. Comparatively low total tax revenue as a % of GDP
3. Low commitment to public pension expenditure

## ❖ Potential to raise taxes but is it feasible politically?

# Comments - Canada

## ❖ Not Adequate or Inadequate

1. Modest CPP benefits
2. Demogrant helps raise levels
3. LTC support for lower income

## ❖ Current – Likely Sustainable

1. Level funding for CPP
2. Health care expenditures need to be watched

## ❖ Potential – Likely Sustainable

1. Fiscal measures within an acceptable range

# Areas for Future Research

1. Constructing indices and fuzzy sets differently
2. Considering social attitudes
3. Including private savings, employer-provided benefits, and family support
4. Having a model that would permit testing of various assumptions and changes