

Defined Benefit and Defined Contribution Pension Schemes

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Acknowledgement

Shifting Public Sector DB Plans to DC

The experience so far and implications for Canada



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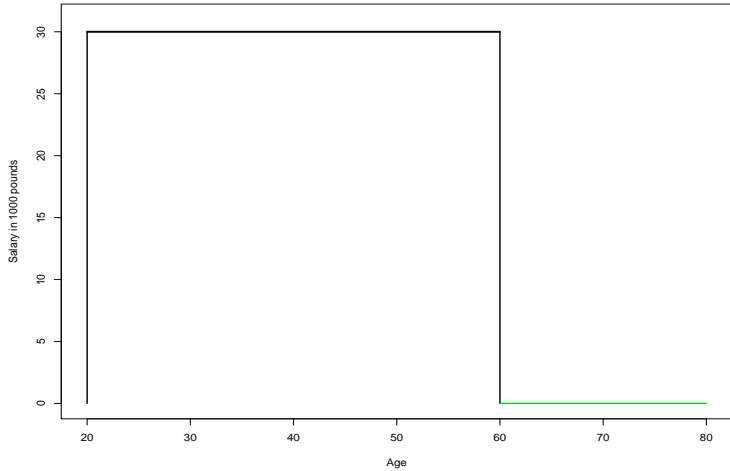
Pensions

Old age pensions

Let's begin with a very over-simplified model,

... and gradually develop it.

Work, earn, retire

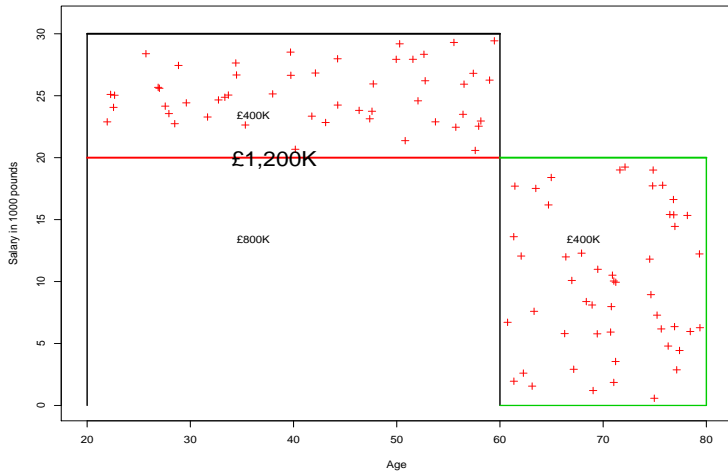


Pensions: simple definitions

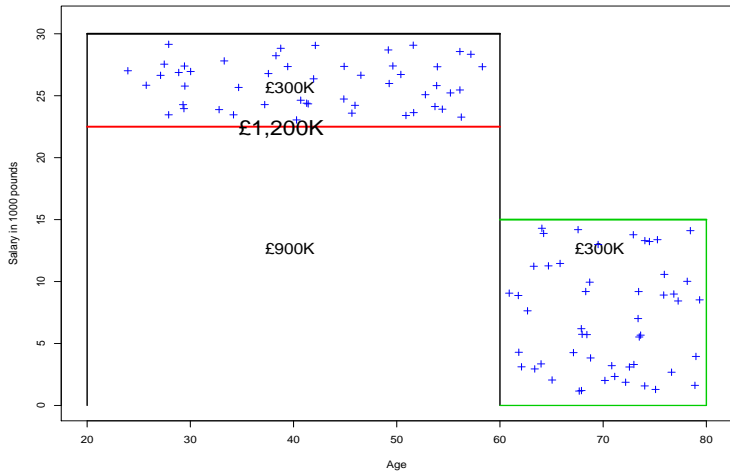
defined benefit plan a set monthly amount upon retirement . . .

defined contribution plan a retirement savings program . . .

Work, earn, retire



Work, earn, retire



Pensions: simple definitions

defined benefit plan under which an employee receives a set monthly amount upon retirement . . . average salary

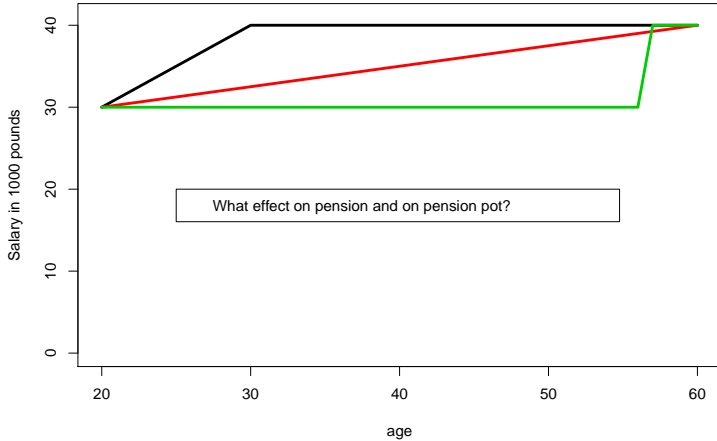
defined contribution plan a retirement savings program . . . employer and an employee make contributions to employee's individual account during employment

Pensions: simple definitions

defined benefit plan under which an employee receives a set monthly amount upon retirement . . . years of service, . . . highest average salary over . . . years

defined contribution plan a retirement savings program . . . employer and an employee make contributions to employee's individual account during employment

Salary paths



What effect on pension and on pension pot?

Final salary

Average final salary

Average over	Black	Red	Green
Last 3 years	£40,000	£39,750	£40,000
Last 5 years	£40,000	£39,500	£38,000
Last 10 years	£40,000	£38,875	£34,000

Pension

Average over	Black	Red	Green
Last 3 years	£20,000	£19,875	£20,000
Last 5 years	£20,000	£19,750	£19,000
Last 10 years	£20,000	£19,438	£17,000

Contributions

Accumulated contributions

	Black	Red	Green
Contribution	£387, 750	£350,000	£310,000
Average over	Black	Red	Green
Last 3 years	19.38	17.61	15.50
Last 5 years	19.38	17.72	16.31
Last 10 years	19.38	18.01	18.24

Pensions: defined contribution annuity

I have £500,000 in my DC pot. I buy an annuity, an insurance policy which pays an income as long as I live. Age 65.

Jan 2018 - level, single life £25,402.

March 2018 - level, single life £27,730

March 2018 - level, single life, 5 year £27,010

March 2018 - RPI, single life, 5 year £16,315

March 2018 - 3%, single life, 5 year £27,730

March 2018 - level, joint life £25,245

August 2016 - level, single life £23,480

Dec 2013 - level, single life £30,920

Slow decline: how annuities have plunged since 1990

Data: Retirement IQ. Based on £10,000 for a 65-year-old male



Highcharts

Pensions: defined contribution annuity

£500,000 DC pot. I buy an annuity, age 65.

- Fee to set-up annuity (£25,000?)
- Annual management fee (1%?)
- 'Glide-path'
- Life expectancy ONS.

Type	Woman	Man
Period life expectancy	21.1	18.7
Cohort life expectancy:		
Principle	22.9	20.8
Moderately High	23.2	21.0
Low	21.9	19.8

Managing uncertainty since 1972

Anyone recognise where this motto is written?

Anyone want to guess the author?

Pensions: demography

- family structures: marriage rates, other dependents
- life expectancy
- retirement age
- early retirement
- ill-health retirement
- death in service
- transfers

There is data. Statistical models can be used.

Pensions: economics

What happens to the money saved each year?

“Do not store up for yourselves treasures on earth, where moths and vermin destroy, and where thieves break in and steal.”

Tiffany: “How do you store a whole ham?”

Miss Level “In other people.”

Pensions: economics

What happens to the money saved each year?

“Do not store up for yourselves treasures on earth, where moths and vermin destroy, and where thieves break in and steal.”

Matthew 6:19

Tiffany: “How do you store a whole ham?”

Miss Level “In other people.”

A Hat Full of Sky, Terry Pratchett

Pensions: economics

What happens to the money saved each year?

- Inflation

- Investments

Private Markets Private equity, Property, Real assets, Private credit, Special situations

Public Markets Equities, Credit markets, Hedge funds, Government bonds

There is data. Statistical models can be used.

Shifting Public Sector DB Plans to DC

1. The perceived advantages to closing DB pension plans in the private sector do not translate directly into the public sector.

Shifting Public Sector DB Plans to DC

2. Several U.S. states that have looked at converting DB plans to DC have concluded that it would cost considerably more to maintain similar benefits.

Shifting Public Sector DB Plans to DC

3. Our modelling has shown us that for an efficient 10-billion DB plan, converting to individual-account DC arrangements to provide the same value of pension benefit would **increase the ongoing cost** of the plan by about **77%**.

Pooled 26%

Shifting Public Sector DB Plans to DC

4. In addition to bearing perpetually increased costs for the new DC plan, the post- transition plan sponsor (often government) would face an increase in financial risk coming from the closed DB plan that would run parallel to the new DC plan for many decades.

Shifting Public Sector DB Plans to DC

5. If the motivation for a conversion to DC is to reduce costs, then it should be noted that shifting to DC actually increases the cost of delivering a comparable pension benefit

Shifting Public Sector DB Plans to DC

6. If the motivation for a conversion to DC is to reduce exposure to the financial risks associated with sponsorship of the pension plan, then it should be noted that other plan design options are available . . . that do not require sacrificing the plan's investment efficiency.

Shifting Public Sector DB Plans to DC

7. If the motivation for a conversion to DC is to address an existing unfunded liability, then it should be noted that converting to DC does nothing to address the past-service unfunded liability that a plan may have accumulated.