

## Description of models

As part of the mandatory pension project, financial projections were prepared for a six different pension systems. A summary of these six systems is as follows:

- The current, voluntary system
- Model A – an increase in the State pension to 50% of General Average Industrial Earnings (GAIE) (about €15,000 p.a.) and voluntary further supplementary provision
- Model B – no change to the State pension, but a mandatory supplementary pension contribution of 15% of earnings above €20,000 p.a., split between workers, employers and the Exchequer
- Model C – as for Model B but contributions split between workers and the Exchequer only
- Model D – as for model B, but contributions of 9% of earnings above €20,000 p.a., split between workers, employers and the Exchequer
- Model E – an increase in the State pension to 40% of GAIE, (about €12,000 p.a.) with mandatory supplementary contributions of 15% of earnings above €15,000 p.a.

A precise specification of the Models A to E is set out in the following table:

Model	A	B	C	D	E
<b>Contributory State pension</b>					
	50% GAIE	34% GAIE	34% GAIE	34% GAIE	40% GAIE
<b>Mandatory supplementary pension</b>					
Contribution rate	None	Employee: 5%	Employee: 10%	Employee: 3%	Employee: 5%
		Employer: 5%	Employer: 0%	Employer: 3%	Employer: 5%
		Self-employed: 10%	Self-employed: 10%	Self-employed: 6%	Self-employed: 10%
		Exchequer 5%	Exchequer 5%	Exchequer 3%	Exchequer 5%
Tax relief		No tax relief on employee/self-employed contributions	No tax relief on employee/self-employed contributions	No tax relief on employee/self-employed contributions	No tax relief on employee/self-employed contributions

Model	A	B	C	D	E
Lower income limit		200% Contributory State Pension	200% Contributory State Pension	200% Contributory State Pension	125% Revised contributory State Pension (i.e. 150% of current pension)
Upper income limit		600% Contributory State Pension	600% Contributory State Pension	600% Contributory State Pension	500% Revised contributory State Pension (i.e. 600% of current pension)

The current and alternative models were examined under a range of scenarios as follows:

- All models were projected under the central basis used in the National Pension Review.
- All models were projected on a number of bases to examine the effects of changes in the investment returns assumed or changes in the assumed immigration
- A number of the alternative models were examined on the assumption of immediate introduction or gradual introduction over 10 years
- Most of the alternative models were projected on economic assumptions varied to take estimated account of the economic effect of the mandatory system.

Details of the scenarios are as follows:

Net immigration:	Central	30,000 p.a. in 2006, falling to 5,000 p.a. from 2017
	Low	Nil net immigration
	High	50,000 p.a. until 2010, falling to 25,000 p.a. from 2020 onwards
Investment return	Central	3.6% real return
	Low	3.1% real return
	High	4.1% real return

The ESRI modelled the impact of models A, B, and C, as described in appendix

B. All of these were assumed to be introduced immediately, but model B was also examined on the assumption of gradual introduction over 10 years. The results of the ESRI modelling are given in appendix B. Based on these results, additional projections were prepared incorporating an approximate allowance for the economic effects of the pension systems. Three different adjusted bases were used:

**Basis 1**

Basis 1 was used for projections of models A and E assuming gradual introduction over 10 years. The economic impacts after the first ten years were assumed to equal those modelled by ESRI for model A assuming full impact after five years, and shown above in appendix B. For the purposes of the projections, these economic effects were assumed to grow gradually over the introductory period.

Because initial modelling showed clearly that the cost of an increased State pension would continue to grow over the period being modelled, it was assumed that the economic impact would continue to increase after the initial ten years. It was assumed that the adjustments after ten years would be doubled over the remaining 40 years.

These adjustments are summarised in table E.1 below:

**Table E.1 – basis 1 assumed economic impact**

First 10 years	GNP	99% in year 10
	Salary	95% in year 10
	Employment	97% in year 10
Following years	GNP	Reducing to 98% by year 50
	Salary	Reducing to 90% by year 50
	Employment	Reducing to 94% by year 50

**Basis 2**

Basis 2 was used for projections of models B and C assuming gradual introduction over 10 years. The economic impacts after the first ten years were assumed to equal those modelled by ESRI for model B assuming full impact after five years. For the purposes of the projections, these economic effects were assumed to grow gradually over the introductory period.

Unlike model A, the impact of models B and C do not increase at the same rate after the first ten years. It was therefore decided to make no further adjustments to the projection basis after ten years.

The ESRI modelling showed proportionately little difference between the economic effects of models B and C on the basis of the assumptions underlying their projections, so basis 2 was used for both systems. The basis 2 adjustments are shown in table E.2 as follows:

**Table E.2 – basis 2 assumed economic impact**

First 10 years	GNP	99.7% in year 10
	Salary	97.7% in year 10
	Employment	98.8% in year 10
Following years	GNP	As for year 10
	Salary	As for year 10
	Employment	As for year 10

### **Basis 3**

The ESRI were not asked to produce modelling result for model D. The estimated economic impact incorporated in basis 3 was calculated proportionately from basis 2. These adjustments are shown in table E.3:

**Table E.3 – basis 3 assumed economic impact**

First 10 years	GNP	99.8% in year 10
	Salary	98.6% in year 10
	Employment	99.3% in year 10
Following years	GNP	As for year 10
	Salary	As for year 10
	Employment	As for year 10

## Projection results

The following tables show the results of the Life Strategies projections. They are set out in the following order:

	<b>Model</b>	<b>Projection basis</b>	<b>Economic basis</b>
Table 1	Current system	NPR central	NPR
Table 2	Current system	Low investment return	NPR
Table 3	Current system	High investment return	NPR
Table 4	Current system	Low immigration	NPR
Table 5	Current system	High immigration	NPR
Table 6	Model A – immediate	NPR central	NPR
Table 7	Model A – immediate	Low investment return	NPR
Table 8	Model A – immediate	High investment return	NPR
Table 9	Model A – immediate	Low immigration	NPR
Table 10	Model A – immediate	High immigration	NPR
Table 11	Model A – 10 year phase in	NPR central	NPR
Table 12	Model A – 10 year phase in	Low investment return	NPR
Table 13	Model A – 10 year phase in	High investment return	NPR
Table 14	Model A – 10 year phase in	Low immigration	NPR
Table 15	Model A – 10 year phase in	High immigration	NPR
Table 16	Model A – 10 year phase in	NPR central	Basis 1
Table 17	Model A – 10 year phase in	Low investment return	Basis 1
Table 18	Model A – 10 year phase in	High investment return	Basis 1
Table 19	Model A – 10 year phase in	Low immigration	Basis 1
Table 20	Model A – 10 year phase in	High immigration	Basis 1
Table 21	Model B – immediate	NPR central	NPR
Table 22	Model B – immediate	Low investment return	NPR
Table 23	Model B – immediate	High investment return	NPR
Table 24	Model B – immediate	Low immigration	NPR
Table 25	Model B – immediate	High immigration	NPR
Table 26	Model B – 10 year phase in	NPR central	NPR
Table 27	Model B – 10 year phase in	Low investment return	NPR
Table 28	Model B – 10 year phase in	High investment return	NPR
Table 29	Model B – 10 year phase in	Low immigration	NPR
Table 30	Model B – 10 year phase in	High immigration	NPR
Table 31	Model B – 10 year phase in	NPR central	Basis 2

	<b>Model</b>	<b>Projection basis</b>	<b>Economic basis</b>
Table 32	Model B – 10 year phase in	Low investment return	Basis 2
Table 33	Model B – 10 year phase in	High investment return	Basis 2
Table 34	Model B – 10 year phase in	Low immigration	Basis 2
Table 35	Model B – 10 year phase in	High immigration	Basis 2
Table 36	Model C – immediate	NPR central	NPR
Table 37	Model C – immediate	Low investment return	NPR
Table 38	Model C – immediate	High investment return	NPR
Table 39	Model C – immediate	Low immigration	NPR
Table 40	Model C – immediate	High immigration	NPR
Table 41	Model C – 10 year phase in	NPR central	NPR
Table 42	Model C – 10 year phase in	Low investment return	NPR
Table 43	Model C – 10 year phase in	High investment return	NPR
Table 44	Model C – 10 year phase in	Low immigration	NPR
Table 45	Model C – 10 year phase in	High immigration	NPR
Table 46	Model C – 10 year phase in	NPR central	Basis 2
Table 47	Model C – 10 year phase in	Low investment return	Basis 2
Table 48	Model C – 10 year phase in	High investment return	Basis 2
Table 49	Model C – 10 year phase in	Low immigration	Basis 2
Table 50	Model C – 10 year phase in	High immigration	Basis 2
Table 51	Model D – 10 year phase in	NPR central	NPR
Table 52	Model D – 10 year phase in	Low investment return	NPR
Table 53	Model D – 10 year phase in	High investment return	NPR
Table 54	Model D – 10 year phase in	Low immigration	NPR
Table 55	Model D – 10 year phase in	High immigration	NPR
Table 56	Model D – 10 year phase in	NPR central	Basis 3
Table 57	Model D – 10 year phase in	Low investment return	Basis 3
Table 58	Model D – 10 year phase in	High investment return	Basis 3
Table 59	Model D – 10 year phase in	Low immigration	Basis 3
Table 60	Model D – 10 year phase in	High immigration	Basis 3
Table 61	Model E – 10 year phase in	NPR central	NPR
Table 62	Model E – 10 year phase in	Low investment return	NPR
Table 63	Model E – 10 year phase in	High investment return	NPR
Table 64	Model E – 10 year phase in	Low immigration	NPR
Table 66	Model E – 10 year phase in	High immigration	NPR
Table 66	Model E – 10 year phase in	NPR central	Basis 1
Table 67	Model E – 10 year phase in	Low investment return	Basis 1

	<b>Model</b>	<b>Projection basis</b>	<b>Economic basis</b>
Table 68	Model E – 10 year phase in	High investment return	Basis 1
Table 69	Model E – 10 year phase in	Low immigration	Basis 1
Table 70	Model E – 10 year phase in	High immigration	Basis 1