

# **Report on the Investigation into the Mortality of New Zealand Insured Lives 1998-2001**

**Melville Jessup Weaver  
November 2002**

# The investigation

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- Prior investigation January 1993 to December 1997 (5 years)
- This investigation January 1998 to December 2001 (4 years)
- Melville Jessup Weaver contracted
- Reliance on offices, also validation checks by MJW
- NZ0IM, NZ01F, ungraduated experience

# Policy type classification

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- (i) Whole life, endowment assurance
- (ii) Unbundled
- (iii) Temporary, guaranteed rates
- (iv) Temporary, reviewable rates
- (v) Temporary, mortgage repayment

# Exposure in policy years

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Policy type	Exposure	%	Claims	%
(i)	2,435,098	45	15,418	78
(ii)	425,183	8	755	4
(iii)	837,675	15	2,009	10
(iv)	1,254,536	23	1,206	6
(v)	458,138	8	382	2
Total	5,410,629	100	19,770	100

# Changes in mix of policies

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Policy type	97 exposure	01 exposure
(i)	55%	45%
(ii)	13%	8%
(iii)	9%	15%
(iv)	14%	23%
(v)	10%	8%
Total	100%	100%

# Comparison of aggregate results

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Age	NZ97M %	IA90-92M %	IA95-97M %	NZ97F %	IA90-92F %	IA95-97F %
25 – 29	79	104	90	81	103	108
35 – 39	85	77	90	93	113	107
45 – 49	71	71	96	79	97	98
55 – 59	71	82	100	86	104	125
Average	79	83	94	83	99	106
97 average		104			121	

# Comparison of aggregate results

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- Age band 35 - 39 inconsistent
- Accident hump for New Zealand males
- NZ population has 2.5% to 3.0% annual improvement in years 1992 to 1997
- NZ01 has at least that improvement level
- New Zealand females experience still worse than Australian females, but gap is less

# Mortality by policy type

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- Type (a) - whole life, endowment, unbundled
- Type (b) - temporary, guaranteed, reviewable
- Type (c) - Temporary, mortgage repayment

Possibility of changes in nature  
of business written

# Comparison by policy type (males)

NZ01/NZ97				
Age	(a)	(b)	(c)	(b) to (a)
	%	%	%	%
25 – 29	80	77	54	96
35 – 39	78	99	56	127
45 – 49	82	70	42	85
55 – 59	75	67	41	89
Average	81	74	39	91
97 average	102	72	79	70

# Comparison by policy type (females)

NZ01/NZ97				
Age	(a)	(b)	(c)	(b) to (a)
	%	%	%	%
25 – 29	83	81	61	97
35 – 39	110	88	66	80
45 – 49	77	89	30	115
55 – 59	90	77	87	85
Average	87	78	55	89
97 average	109	67	88	62

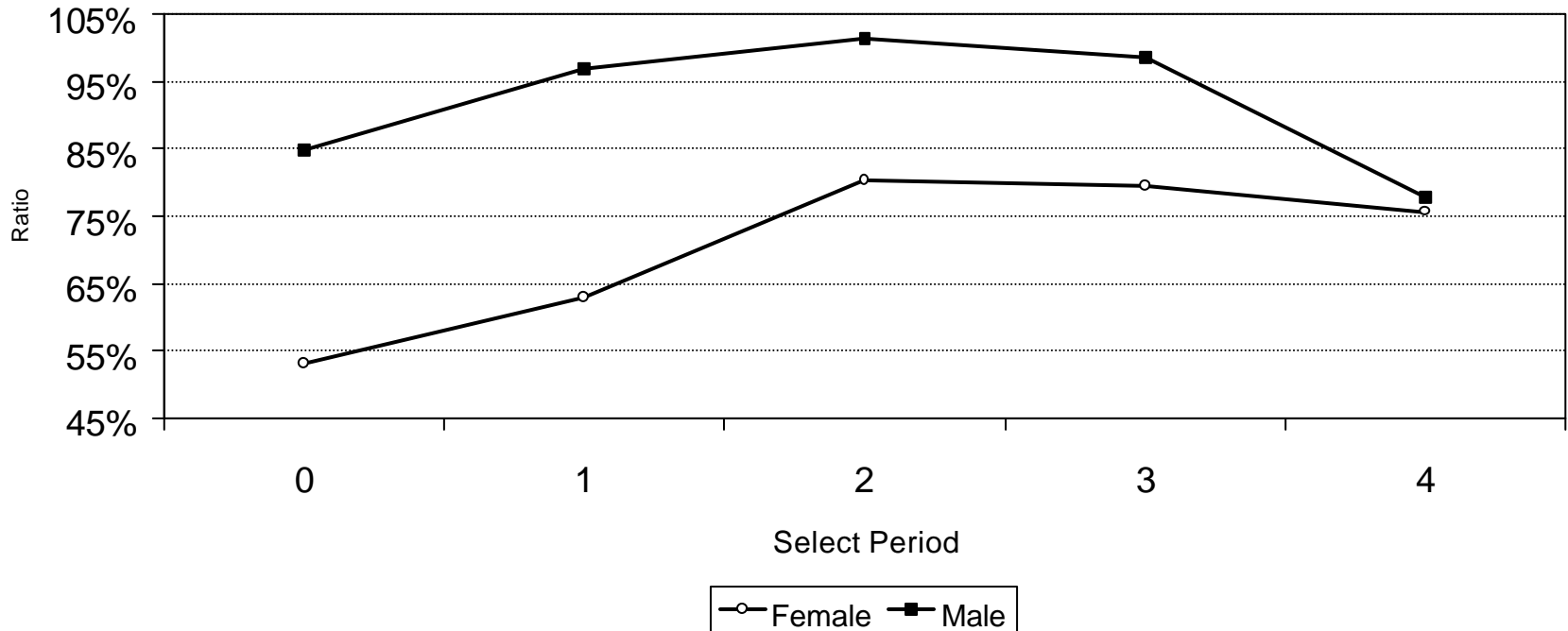
# Select rates

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Average	(a) to NZ97Ult	(b) to NZ97Ult	(c) to NZ97Ult	(b) to (a)
	%	%	%	%
Males	80	71	38	89
Females	80	84	51	105

# Select rates

## Ratio of Select to Ultimate mortality rates Ages 25 - 50 (combined) Male and Female



# Smoker/non-smoker (males)

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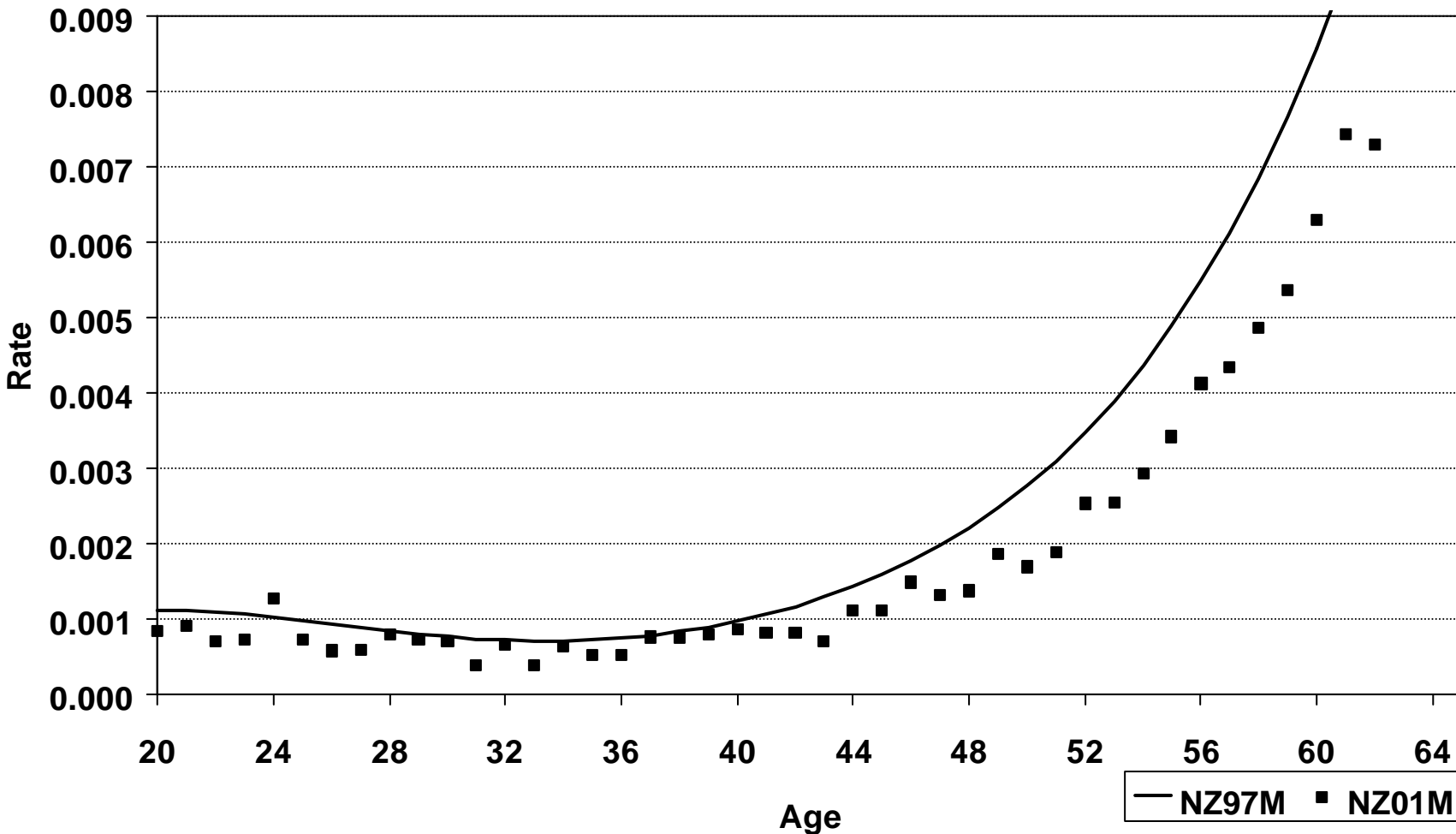
Males	Smoker to Aggregate	Non-Smoker to Aggregate	Smoker to Non-Smoker
Age	%	%	%
25 – 29	118	61	193
35 – 39	138	79	173
45 – 49	96	57	170
55 – 59	107	57	187
Average	113	64	177

# Smoker/non-smoker (females)

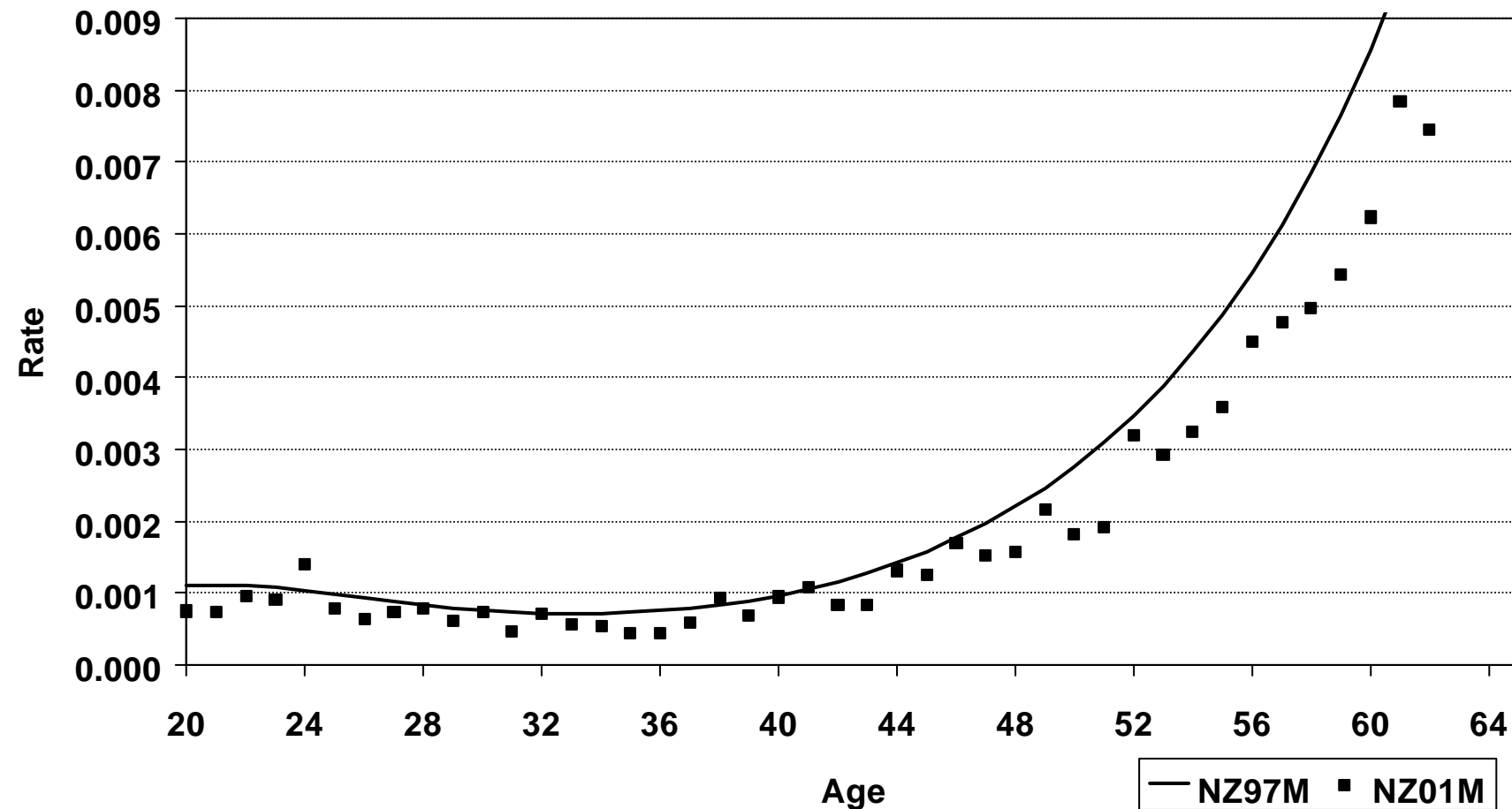
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Females	Smoker to Aggregate	Non-Smoker to Aggregate	Smoker to Non-Smoker
Age	%	%	%
25 – 29	155	53	293
35 – 39	133	73	181
45 – 49	162	68	237
55 – 59	115	69	168
Average	122	69	176

# Comparison of NZ01M and NZ97M Aggregate



# Comparison of NZ01M and NZ97M Aggregate - Policy Type (a)



# Comparison of NZ01M and NZ97M Aggregate - Policy Type (b)

