

Dependency percentages for two-parent and one-parent families

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Summary

This publication uses 2003-04 Household Expenditure Survey data to suggest dependency percentages for survivors in different types of two-parent family, where one of the parents dies, and for one-parent families, where the parent dies. These percentages may provide a starting point for assessment of damages for economic loss by survivors of a deceased earner. The dependency estimates for two-parent families are very similar to those in an earlier publication, based on the Household Expenditure Survey 1998-99.

Table 1 : Dependencies when all survivors are claimants

Our estimated dependency percentages for the surviving parent and children, and for the surviving family as a whole, are:

Income of spouse as % of income of deceased	Number children	Parent	Child	Total family
0%	0	66.0%		66.0%
0%	1	43.8%	28.4%	72.2%
0%	2	34.4%	21.0%	76.4%
0%	3	28.7%	16.8%	79.1%
0%	4	24.9%	14.1%	81.3%
0%	5	22.1%	12.2%	83.1%
100%	0	32.1%		32.1%
100%	1	24.3%	20.2%	44.5%
100%	2	21.0%	15.8%	52.6%
100%	3	18.6%	13.3%	58.5%
100%	4	16.7%	11.6%	63.1%
100%	5	15.2%	10.2%	66.2%

The dependency percentages are estimates of the percentages of the deceased's after-tax income needed to restore the survivors to their former financial positions. Dependencies for parents are derived in table 6, and those for children in table 7. There is little difference between the dependency estimates for each quintile, and we have adopted percentages for all households. The percentages for each survivor add to the dependency for the whole family. For example, in a sole-earner family with three children, 28.7% for the surviving parent plus 16.8% for each of the three children gives a total of 79.1%.

Cases where the income of the surviving spouse was not equal to that of the deceased can be dealt with by linear interpolation. For example, if the survivor of a family with three children had net income equal to 70% of the deceased, the dependency of the surviving family could be estimated as

70% of 58.5% (the dependency of a family with equal incomes)	41.0%
plus 30% of 79.1% (the dependency of a one-earner family)	23.7%
<u>dependency of a family with spouse income of 70% of deceased</u>	<u>64.7%</u>

Table 2 : Dependencies when surviving parent is not a claimant

Estimated dependency percentages when the surviving parent is not a claimant are:

Income of spouse as % of income of deceased	Number children	Parent	Child	All children
0%	1	0.0%	44.4%	44.4%
0%	2	0.0%	26.3%	52.6%
0%	3	0.0%	19.5%	58.5%
0%	4	0.0%	15.7%	62.8%
0%	5	0.0%	13.3%	66.5%
100%	1	0.0%	36.2%	36.2%
100%	2	0.0%	21.2%	42.4%
100%	3	0.0%	16.0%	48.0%
100%	4	0.0%	13.2%	52.8%
100%	5	0.0%	11.3%	56.5%

Dependency percentages for each income quintile are estimated in table 8. As before, there is little difference between the dependency estimates for each quintile, and we have adopted the estimates for all households.

These dependency percentages are estimates of the percentages of the deceased's after-tax income needed to restore the children to their former financial positions, assuming that the surviving parent makes the same financial contribution towards all expenditure as he or she was making prior to the death, but that the surviving parent was a dependent prior to the death of the deceased.

Table 3 : Dependency percentages for one-parent families

Estimated dependency percentages when no other adult was dependent on the deceased are:

Number children	Child	All children
1	52.7%	52.7%
2	31.5%	63.0%
3	23.1%	69.2%
4	18.3%	73.3%
5	15.2%	76.2%

Dependency percentages for each income quintile are estimated in table 9. As before, there is little difference between the dependency estimates for each quintile, and we have adopted the estimates for all households.

These dependency percentages are estimates of the percentages of the deceased's after-tax income needed to restore the children to their former financial positions, assuming that there was no dependent adult in the household prior to the death of the deceased.

Table 4 : 2003-04 Household Expenditure Survey data

Payment type	Payments by households in the following income groups					All \$ pw
	0-20% \$ pw	20-40% \$ pw	40-60% \$ pw	60-80% \$ pw	80-100% \$ pw	
Current housing costs	76.01	99.05	142.86	150.68	206.68	135.02
Domestic fuel and power	16.57	20.20	23.50	25.77	31.95	23.59
Food & non-alcoholic beverages	78.36	111.72	145.73	181.56	247.25	152.87
Alcoholic beverages	8.77	14.15	22.61	27.03	44.08	23.32
Tobacco products	7.33	11.35	13.26	13.51	12.34	11.55
Clothing & footwear	12.75	19.50	30.68	46.40	67.07	35.26
Household furnishings & equipment	25.29	36.05	51.16	61.82	85.75	52.00
Household services & operation	31.55	41.18	54.13	65.25	88.65	56.14
Medical care & health expenses	21.66	32.23	45.59	52.79	76.72	45.78
Transport	57.34	90.07	133.73	184.40	231.01	139.25
Recreation	41.79	73.88	98.11	141.16	209.26	112.78
Personal care	7.30	10.64	15.19	21.02	31.87	17.20
Miscellaneous goods & services	27.67	41.09	72.91	100.93	151.03	78.69
Income tax	-0.05	36.68	140.18	260.61	626.11	212.54
Mortgage repayments	3.83	11.21	28.95	52.04	78.88	34.96
Superannuation & life insurance	4.50	5.67	19.04	26.21	58.20	22.71
Total	420.67	654.67	1037.63	1411.18	2246.85	1153.66

These figures are from the Australian Bureau of Statistics publication "2003-04 Household expenditure survey Australia - summary of results" catalogue no 6530.0, 11 August 2005, page 12. This document is available at <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6530.0/>

The above table excludes some payments not for commodities or services.

Assumptions

As in the equivalent table using 1998-99 data, we have assumed

- expenditure on current housing costs, fuel and power, household equipment and operation, and mortgage repayments, will be the same regardless of the number of members of the household
- expenditure on alcohol and tobacco relates only to adults, in equal shares
- all other expenditure relates to all members of the household, twice as much being expended on each adult as on each child.
- superannuation and life insurance relate only to adults, in equal shares
- expenditure on current housing costs, fuel and power, household equipment and operation, and mortgage repayments, will be shared equally between surviving members of the household (this assumption is relevant only for the purpose of determining shares between surviving members).

Table 5 : Expenditure apportionments

With these assumptions, the earnings of households in each income quintile can be apportioned as follows:

Apportionment type	Expenditure apportionments for households in the following gross income quintiles					All
	0-20%	20-40%	40-60%	60-80%	80-100%	
Housing	36.4%	33.6%	33.5%	30.9%	30.4%	32.1%
Adults only	4.9%	5.0%	6.1%	5.8%	7.1%	6.1%
Other	58.7%	61.3%	60.4%	63.3%	62.6%	61.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6 : Dependency of surviving parent who is a claimant

The dependency percentage for a surviving parent can be estimated as:

Income spouse as % of deceased	Number children	Adult dependencies for households in the following gross income quintiles					All
		0-20%	20-40%	40-60%	60-80%	80-100%	
0%	0	68.2%	66.8%	66.7%	65.5%	65.2%	66.0%
0%	1	44.1%	43.9%	44.0%	43.7%	43.7%	43.8%
0%	2	34.1%	34.2%	34.4%	34.3%	34.5%	34.4%
0%	3	28.3%	28.5%	28.7%	28.7%	29.0%	28.7%
0%	4	24.4%	24.6%	24.9%	24.9%	25.3%	24.9%
0%	5	21.6%	21.8%	22.1%	22.1%	22.5%	22.1%
100%	0	36.4%	33.6%	33.5%	30.9%	30.4%	32.1%
100%	1	26.0%	25.0%	24.8%	23.9%	23.5%	24.3%
100%	2	21.9%	21.4%	21.2%	20.9%	20.5%	21.0%
100%	3	19.2%	18.9%	18.7%	18.6%	18.3%	18.6%
100%	4	17.1%	16.9%	16.8%	16.7%	16.5%	16.7%
100%	5	15.4%	15.3%	15.2%	15.2%	15.0%	15.2%

For example, the dependency of an adult in a household with two adults and three children, in the 40-60% income quintile, where the surviving spouse had no income, can be estimated as follows:

1/4th of housing expenditure	8.4%
plus half the adults only expenditure	3.1%
plus 2/7ths of "other" expenditure	17.3%
<u>dependency of spouse with no income</u>	<u>28.7%</u>

Where the surviving parent had income equal to that of the deceased, the spouse's loss as a fraction of the deceased's income is estimated to be

1/4th of half of housing expenditure	4.2%
plus 2/5ths of (half less 2/7ths) of "other" expenditure	5.2%
<u>loss as % of household income</u>	<u>9.4%</u>
<u>divided by deceased income as % of household income</u>	<u>50.0%</u>
loss as % of deceased income	18.7%

Half the housing expenditure is included above, because the deceased is assumed to have met half the housing expenditure, and no saving in this expenditure occurs as a result of the death. The surviving adult and children are assumed to equally share the housing expenditure, so that an adult with three children will have a quarter of the housing loss.

The deceased is assumed to have met half the adults only expenditure, and consumed half of it, so that no loss occurs in respect of this type of expenditure.

The deceased is assumed to have met half the "other" expenditure, and consumed 2/7ths of it (each adult is assumed to consume twice as much as each child). A surviving adult with three children is assumed to have 2/5ths of the "other" expenditure loss.

Table 7 : Dependency of children where parent is also a claimant

The dependency percentage for each child can be estimated as:

Income spouse as % of deceased	Number children	Dependency percentages for households in the following gross income quintiles					All
		0-20%	20-40%	40-60%	60-80%	80-100%	
0%	1	29.9%	29.1%	28.8%	28.1%	27.7%	28.4%
0%	2	21.9%	21.4%	21.2%	20.9%	20.5%	21.0%
0%	3	17.5%	17.2%	17.0%	16.8%	16.5%	16.8%
0%	4	14.6%	14.4%	14.2%	14.1%	13.9%	14.1%
0%	5	12.6%	12.4%	12.3%	12.2%	12.0%	12.2%
100%	1	22.1%	20.9%	20.8%	19.7%	19.3%	20.2%
100%	2	17.0%	16.3%	16.2%	15.6%	15.3%	15.8%
100%	3	14.1%	13.7%	13.5%	13.2%	13.0%	13.3%
100%	4	12.2%	11.8%	11.7%	11.5%	11.3%	11.6%
100%	5	10.7%	10.5%	10.4%	10.2%	10.0%	10.2%

For example, the dependency of a child in a household with two adults and three children, in the 40-60% income quintile, where the surviving parent had no income, can be estimated as follows:

1/4th of housing expenditure	8.4%
plus 1/7th of "other" expenditure	8.6%
<u>dependency of child</u>	<u>17.0%</u>

Where the surviving parent had income equal to that of the deceased, each child's loss as a fraction of the deceased's income is estimated to be

1/4th of half of housing expenditure	4.2%
plus 1/5th of (half less 2/7ths) of "other" expenditure	2.6%
<u>loss as % of household income</u>	<u>6.8%</u>
divided by deceased income as % of household income	50.0%
<u>loss as % of deceased income</u>	<u>13.5%</u>

Table 8 : Dependency of children where parent is not a claimant, but was dependent on the deceased

In *Assessment of damages for personal injury and death* (Butterworths, Sydney, 4th edition, 2002, 9.3.5 Shared benefits), Luntz notes that:

Many of the benefits derived from the deceased's earnings would have been shared by the family as a whole. Thus payments for housing (whether in the form of a mortgage, rent or interest foregone), electricity, gas, etc, accrue for the benefit of all. It is erroneous to attribute any proportion of expenditure on such items to the deceased or any other non-claimant who shared the benefits and to make any deduction therefor.

Adopting this principle, we have estimated the dependency percentage for each surviving child, when there is no adult claimant, as:

Income spouse as % of deceased	Number children	Dependency percentages for households in the following gross income quintiles					All
		0-20%	20-40%	40-60%	60-80%	80-100%	
0%	1	48.2%	45.9%	45.6%	43.6%	42.9%	44.4%
0%	2	28.0%	27.0%	26.8%	26.0%	25.6%	26.3%
0%	3	20.5%	20.0%	19.8%	19.3%	19.1%	19.5%
0%	4	16.4%	16.1%	15.9%	15.6%	15.4%	15.7%
0%	5	13.8%	13.5%	13.4%	13.2%	13.0%	13.3%
100%	1	40.3%	37.7%	37.5%	35.1%	34.5%	36.2%
100%	2	23.1%	21.9%	21.8%	20.7%	20.4%	21.2%
100%	3	17.2%	16.5%	16.3%	15.7%	15.5%	16.0%
100%	4	14.0%	13.5%	13.4%	13.0%	12.8%	13.2%
100%	5	11.9%	11.6%	11.5%	11.2%	11.0%	11.3%

For example, the dependency of a child in a household with two adults and three children, in the 40-60% income quintile, where the surviving spouse had no income, can be estimated as follows:

1/3rd of housing expenditure	11.2%
plus 1/7th of "other" expenditure	8.6%
<u>dependency of child</u>	<u>19.8%</u>

Where the surviving parent had income equal to that of the deceased, each child's loss as a fraction of the deceased's income is estimated to be

1/3rd of half of housing expenditure	5.6%
plus 1/5th of (half less 2/7ths) of "other" expenditure	2.6%
<u>loss as % of household income</u>	<u>8.2%</u>
<u>divided by deceased income as % of household income</u>	<u>50.0%</u>
<u>loss as % of deceased income</u>	<u>16.3%</u>

Table 9 : Dependency of children in a one-parent family

As above for the purpose of these calculations, of the the benefits shared by the family as a whole, such as housing costs, no portion should be attributed to the deceased.

Adopting this principle, we have estimated the dependency percentage for each surviving child, where there was no dependent adult in the household prior to the death of the deceased, as:

Number children	Dependency percentages for households in the following gross income quintiles					
	0-20%	20-40%	40-60%	60-80%	80-100%	All
1	56.0%	54.1%	53.6%	52.0%	51.2%	52.7%
2	32.9%	32.1%	31.8%	31.3%	30.8%	31.5%
3	23.9%	23.5%	23.2%	23.0%	22.6%	23.1%
4	18.9%	18.6%	18.4%	18.3%	18.0%	18.3%
5	15.7%	15.5%	15.3%	15.2%	15.0%	15.2%

For example, the dependency of a child in a household with one adult and three children, in the 40-60% income quintile, where the surviving spouse had no income, can be estimated as follows:

1/3rd of housing expenditure	11.2%
plus 1/5th of "other" expenditure	12.1%
<u>dependency of child</u>	<u>23.2%</u>

Superannuation

The most common form of superannuation now involves payment of contributions by the employer but not the employee, and receipt of a lump sum on retirement. For most employees:

- tax at 15% is deducted from contributions as they are made
- tax at 15% is payable on investment earnings
- assuming retirement after age 60, no tax is payable

Treating the employer's superannuation contributions as additional wages assumes the employee's marginal tax rate, rather than these taxes on superannuation contributions, investment earnings and benefits. This may disadvantage most plaintiffs. Again, we suggest that allowance be made for

- accumulation of after-tax contributions at a realistic net investment earning rate
- sharing in the proportions applicable for a family without children
- discounting to present values at the appropriate discount rate.

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