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Did the Death of Australian Inheritance Taxes Affect Deaths?

Joshua S. Gans* Andrew Leigh†

*Melbourne Business School, University of Melbourne, joshua.gans@gmail.com

†Australian National University, andrew.leigh@anu.edu.au

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Abstract

In 1979, Australia abolished federal inheritance taxes. Using daily deaths data, we show that approximately 50 deaths were shifted from the week before the abolition to the week after. This amounts to over half of those who would have been eligible to pay the tax. Although we cannot rule out the possibility that our results are driven by misreporting, our results imply that over the very short run, the death rate may be highly elastic with respect to the inheritance tax rate.

KEYWORDS: behavioural responses to taxation, timing of deaths, estate tax

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I. Introduction

According to Benjamin Franklin, the two certainties in life are death and taxes. But can changes in taxation affect the death rate? Is it possible that some people prolong life in order to reduce their inheritance tax bill?

The seminal study of the responsiveness of death rates to inheritance tax changes is Kopczuk and Slemrod (2003), who analyse a series of changes to the US estate tax. Their results are not consistent across all tax changes, but overall, they find a small positive death elasticity. This accords with other studies that have found that changes in tax rates and benefits can affect the timing of marriages (Sjoquist and Walker 1995; Alm and Whittington 1995) and births (Dickert-Conlin and Chandra 1999; Gans and Leigh 2006a). Non-economic factors may be important too. For example, Gans and Leigh (2006b) find that the millennium coincided with an increase in the number of conceptions, births and deaths in Australia.

In this paper, we study a more dramatic change than that analysed by Kopczuk and Slemrod – the complete elimination of inheritance taxes in Australia. Prior to their abolition in 1979, Australian rates had been high. Afterwards, inheritances were entirely exempt from federal inheritance taxes. Indeed, Australia today remains one of the only developed nations without some form of explicit or *de facto* inheritance tax.[1]

Although we cannot rule out the possibility that our results are driven by misreporting, or by some other contemporaneous event not considered here, our results imply that over half of those who would have paid the inheritance tax in its last week of operation managed to avoid it. This suggests that over the very short run, the death rate may be highly elastic with respect to the inheritance tax rate.

II. Australian Inheritance Taxes

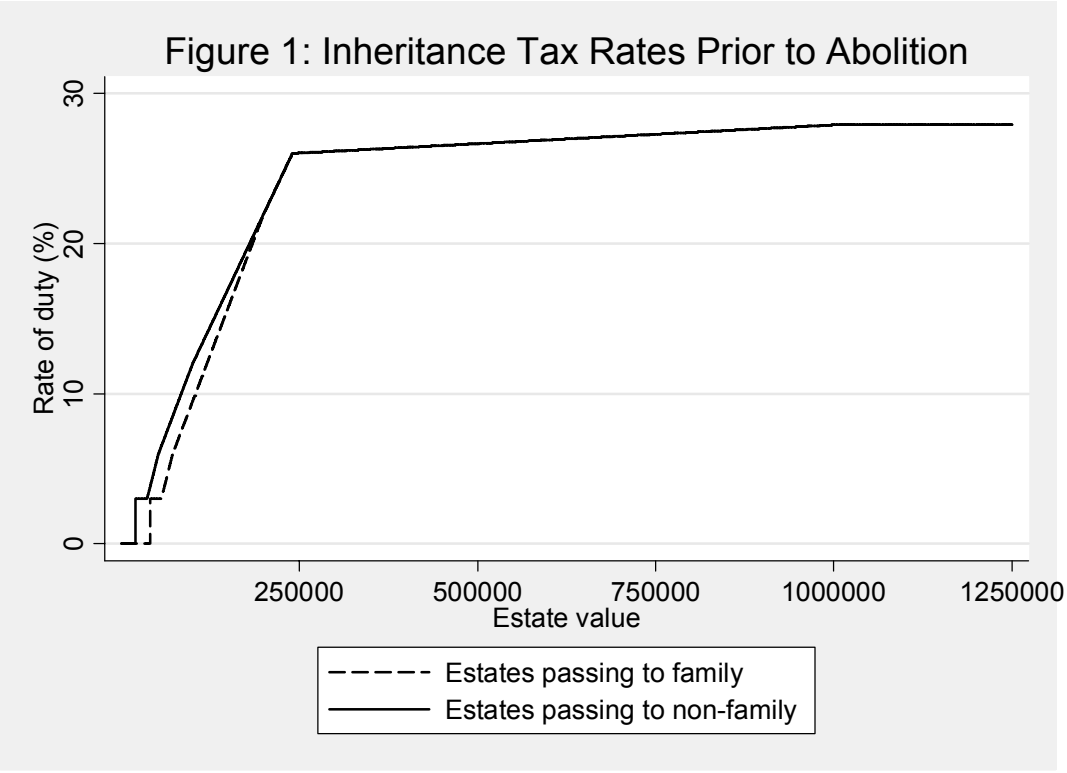
A campaign to abolish inheritance taxes in Australia took hold during the 1970s.[2] The first victory of the abolitionist was the announcement by the state of Queensland in 1976 that it would abolish all state inheritance taxes. Over the next two years, most of Australia's other states followed Queensland's lead, and abolished their state inheritance taxes. This gave momentum to the federal abolitionist movement, and in November 1977, the federal government formally

[1] While Canada abolished its inheritance tax in the 1970s, it now taxes realized capital gains at death—amounting to a *de facto* form of inheritance tax. When Australia abolished its inheritance tax in 1979, most forms of capital gains were untaxed, and capital gains were not constructively realized at death. In 1986, Australia introduced a separate capital gains tax.

[2] For more background on the abolition of inheritance taxes in Australia, see Pedrick (1981) or Smith (1993).

announced that it would scrap federal inheritance taxes. The federal legislation was finally passed in June 1978, to take effect a year later. Since the Australian tax year runs from 1 July to 30 June, any person dying on or before 30 June 1979 was subject to federal inheritance taxes, while any person dying on or after 1 July 1979 was entirely exempt from inheritance taxes.

Unlike other moves to eliminate inheritance taxes (for example, the legislated abolition of the US estate tax from January 1, 2010), the Australian rates were not phased down prior to abolition. Indeed, the inheritance tax rates and thresholds had remained largely unchanged from 1941 to 1979, despite the fact that inflation had substantially reduced the real value of the thresholds.



Prior to abolition, the rates prevailing on Australian estates operated on a sliding scale (Commissioner of Taxation 1979).[3] Estates worth less than $100,000 were tax-exempt if passing to non-family members, and estates worth less than $200,000 were exempt if passing to family members.[4] The highest rate was 27.9

[3] All figures in this paper are in 1979 Australian dollars. Multiplying by 3.55 yields 2006 Australian dollars. Multiplying by 2.66 yields 2006 US dollars.
[4] Family members were defined as the widow, widower, children, or grandchildren.

percent, which applied to estates worth $1 million or more.[5] Figure 1 shows the inheritance tax rate schedule. Gifts were also dutiable, and subject to a similar set of tax rates.

During 1978-79, the last tax year in which the inheritance tax applied, the Australian Taxation Office assessed duty on 9828 estates. This is equivalent to 9 percent of the 108,840 Australians who died during that tax year. Among those who paid the inheritance tax, the median duty was $1935 (3 percent of estate value), and the mean duty was $7764 (8 percent of estate value). Across all those who died in tax year 1978-79, the median duty was zero (the typical decedent was exempt), and the mean duty was $701. To put this in context, average per-capita wealth in June 1979 is estimated at $26,700 (Australian Treasury 2005).

III. Empirical Analysis

To test whether the timing of deaths responds to the inheritance tax rate, we use daily data on the number of Australian deaths. These data are collected by state and territory offices of births, deaths and marriages, and compiled by Australian Bureau of Statistics.[6] They cover all recorded deaths from January 1, 1974 to December 31, 2003.[7]

Figure 2 charts the number of deaths during the final week of June and the first week of July 1979. In the last week of June, when inheritance taxes still applied, the number of deaths dropped sharply. It then rises in July, immediately after the tax was abolished.

To formally test the effect of the abolition of inheritance taxes on the number of deaths, we estimate the regression:

$$Deaths_i = \beta_1 I_i^{NoTax} + \beta_2 I_i^{DayOfWeek} + \beta_3 I_i^{DayOfYear} + \beta_4 I_i^{Year} + \varepsilon_i \quad (1)$$

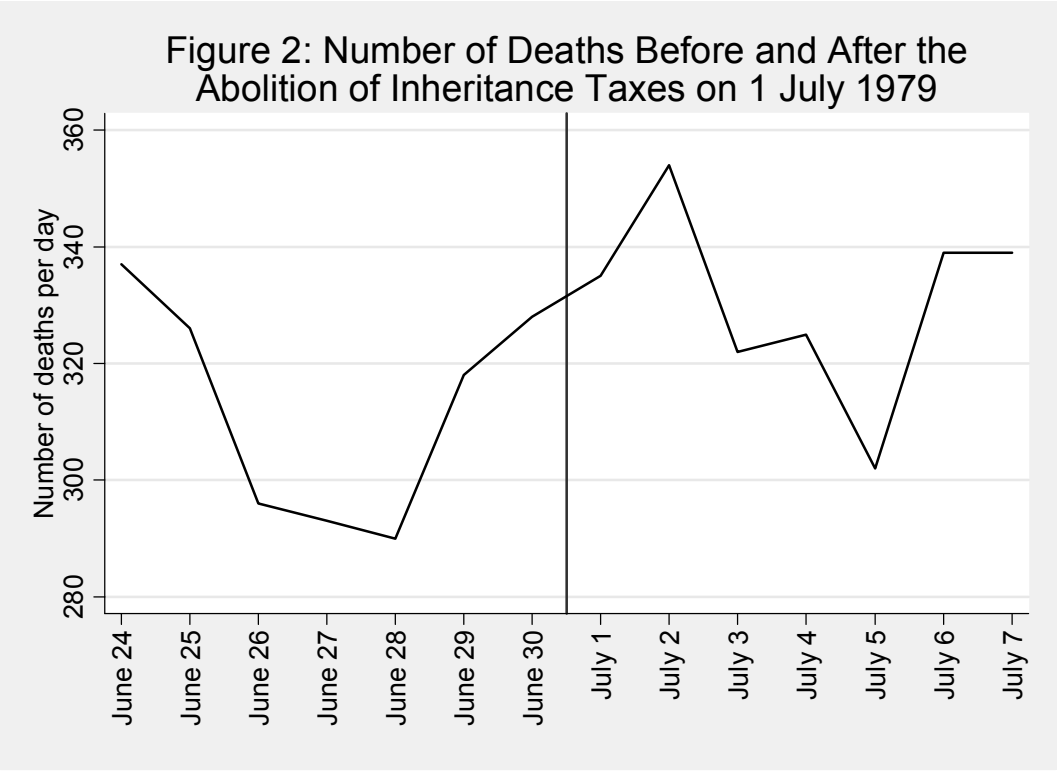
where *Deaths* is the number of people recorded as having died on day *i*, and the indicator variables respectively denote the period after inheritance taxes had been abolished (from 1 July 1979 onwards), the day of the week (e.g. Monday, Tuesday), the day of the year (where day number 182 is 30 June, day number 183

[5] The exempt amount was 20 percent higher for the estates of deceased primary producers.

[6] We were unable to obtain deaths data disaggregated by state/territory. Nor were we able to obtain data on the demographic characteristics of decedents.

[7] We opt to use the raw number of deaths as our dependent variable (instead of the death rate) since the population denominator is only available on a monthly basis. Given that our analysis spans the end of June and the beginning of July, dividing by monthly population figures would only induce measurement error into our analysis. Our econometric analysis includes year fixed effects, thus allowing for nonlinear changes in the population denominator from year to year.

is 1 July), and the calendar year.[8] We estimate the regression both with the dependent variable as the number of deaths, and the log of the number of deaths.[9]



By using all late-June and early-July deaths over a thirty-year period, we are able to precisely identify day of week, day of year, and year effects, and distinguish these effects from the abolition of the inheritance tax.[10] (Since the

[8] Since our focus is on effects that might be specific to 28 June, 29 June, and so on, we define a day of the year variable that is unaffected by leap years. For reasons of space, we do not show the coefficients on the year, day-of-year, and day-of-week indicator variables. In general, these are small. For example, with Sundays as the omitted day-of-week indicator, we find about 8-10 fewer deaths on Wednesdays and about 8-11 more deaths on Saturdays. Other days of the week are statistically indistinguishable from Sundays.

[9] Since our analysis uses short windows, Table 1 shows Huber-White standard errors. An alternative is to use Newey-West standard errors, forcing Stata to ignore the gaps between the windows. This approach produces standard errors that are similar to those shown in Table 1.

[10] We are not aware of any other policies after 1979 that would have affected the decision to die in one tax year relative to the next. In 1976-78, the abolition of state inheritance taxes may have created an incentive to die in the subsequent tax year, but since we are using data aggregated to the national level, this effect is likely to have been small. In any case, our results are robust to dropping these earlier years from our analysis.

regression includes year fixed effects, the coefficient on the inheritance tax indicator variable, β_1, is identified from the difference between June 1979 and July 1979.) In effect, our regression specification allows us to ask the question: holding constant day of week, day of year, and year fixed effects, and how did the number of deaths in June 1979 (before abolition) compare with the number of deaths in July 1979 (after abolition)?

To see the effect of the abolition of inheritance taxes on the timing of deaths, we progressively widen the window of analysis. The first column of Table 1 restricts the sample to the last 3 days of June and the first 3 days of July, the second column to the last 5 days of June and the first 5 days of July, and the third to the last 7 days of June and the first 7 days of July. In the seven-day window, the mean number of deaths per day was 372.13, and the standard deviation was 34.25. Over the same period, the mean of the ln(number of deaths) measure was 5.91, with a standard deviation of 0.09.

Table 1: Do Inheritance Taxes Affect Deaths?

	(1)	(2)	(3)
Window	**±3 days**	**±5 days**	**±7 days**
Panel A: Dependent variable is number of deaths			
No Inheritance Tax	24.185**	22.629**	14.202*
	[11.964]	[9.284]	[8.376]
Observations	180	300	420
R-squared	0.75	0.69	0.67
Total number of deaths shifted	*36*	*57*	*50*
Panel B: Dependent variable is ln(number of deaths)			
No Inheritance Tax	0.076**	0.071**	0.046*
	[0.036]	[0.029]	[0.026]
Observations	180	300	420
R-squared	0.74	0.7	0.68

Notes: Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. All specifications use data from 1974-2003, and include day of year, day of week, and year fixed effects. *Window* denotes the number of days before and after the start of July. For example, the ±7 day window covers the last seven days of June and the first seven days of July. *Total number of deaths shifted* is half the *No Inheritance Tax* coefficient, multiplied by the number of days in the window that fall on July 1 or later.

We observe a statistically significant effect of the abolition of inheritance taxes on the number of deaths. Our estimates suggest that about 50 reported deaths were shifted from the last week in which the inheritance tax applied to the first week of its abolition, with most of the effect occurring within three days of

the policy change.[11] Since our analysis is based only on formal death records, we cannot reject the possibility that the effect we observe reflects misreporting of the death date, rather than changes in the actual timing of deaths.

While the effect magnitude that we observe seems small in absolute terms, it suggests that around 5 percent of all deaths occurring during that window were shifted out of the eligibility range. Since only 9 percent of all decedents paid inheritance taxes, this indicates a very high elasticity among eligibles.[12] Dividing the effect by the share of eligibles suggests that *over half of those who would have paid the inheritance tax in its last week of operation managed to avoid doing so*.

IV. Conclusion

Public finance is often motivated by the insight that individuals appear to be motivated – at least in part – by a bequest motive. Viewed in this light, it is perhaps not so surprising to learn that a policy change that causes a sharp discontinuity in the value of one's bequest may affect the timing of death (or, at the very least, the reporting of that death).

These findings have implications for any instance in which policymakers are proposing to abolish inheritance taxes. For example, under current US law, the estate of an individual worth more than $3.5 million will be taxed at a marginal rate of 45 percent if they die in the final week of December 2009, but untaxed if they die in the first week of January 2010. Our results from the abolition of inheritance taxes in Australia suggest that a significant number of US taxpayers who would face the estate tax if they died in the last week of 2009 may well shift their reported death date to the first week of 2010. Even the super-rich cannot cheat death forever, but some may be able to stay alive long enough to avoid the estate tax.

Indeed, it is even plausible that the timing of deaths may be affected by the *introduction* of an inheritance tax. If the elasticity of the death rate with

[11] Our calculation of the number of deaths moved is half the *No Inheritance Tax* coefficient, multiplied by the number of days in the window that fall on July 1 or later. Note that this assumes that any decrease in deaths in the pre-period window is matched by an increase in deaths in the post-period window. This calculation may be a lower bound. For example, if the inheritance tax abolition caused a death to be moved from 10 days before the abolition to one day after, or from 1 day before the abolition to 10 days after, then our calculation could be underestimated by as much as a factor of two.

[12] We believe that the marginal decedent would know both the size of their estate and the prevailing inheritance tax rates with a high degree of certainty. It is therefore unlikely that the abolition induced a behavioural change among those whose estates were too small to be eligible. Conversely, since considerable media coverage was given to the decision to abolish federal inheritance taxes, it is unlikely that eligibles would have been ignorant of the date of abolition. It was a significant issue in the 1977 federal election, and the parliamentary debates in 1978 were highly publicised.

respect to a rise in inheritance taxes is of the same magnitude as the elasticity of the death rate with respect to a fall in inheritance taxes, then any country that introduces an inheritance tax should expect a spike in the death rate in the week before the law takes effect.

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