Family Formation and Demand for Health Insurance
Denise Doiron (UNSW) and Nathan Kettlewell (UNSW)

Overview
- Our main research question is “how does the demand for private health insurance respond to the desire for and presence of children?”
- We use a unique panel of young Australian women to study these relationships. Our data allow us to study separately the effects of desired and actual children. At the same time we can model persistence in insurance purchase and control for unobserved individual effects; these factors have been found to be important in the demand for health insurance.
- Overall, our results support a pattern of insurance whereby women purchase in preparation of pregnancy and then cancel once they have finished family building. Children generally have a negative effect on the probability of being insured due to their impact on income but this relationship is complicated – it depends on the age of children and the level of household income.

Motivation
- It is important for policy makers to understand the underlying determinants of the demand for health insurance to evaluate the impact of various market interventions and demographic changes.
- Previous research using a limited set of controls for family formation have found inconsistent results. Our data is considerably richer than that used in previous studies.
- Coupled with the high degree of persistence in insurance cover, the possibility of younger and healthier people entering the insurance market in response to expected future pregnancy could have significant implications for the risk profile of the insured population.

Background
- All Australians can be treated for free in a public hospital under Medicare. Some people purchase duplicate private health insurance that subsidises admission to a private hospital and allows greater personal control over treatment and over doctors.
- Insurers cannot price discriminate or refuse to offer insurance. The market outcomes hence reflect personal demands which makes the modelling and the interpretation of results more straightforward.
- We only consider someone as insured if they have hospital cover.

Hypotheses
1. Demand for insurance will be higher for women who desire additional children.
   - Women value the option of giving birth in a private hospital and the greater control over doctors when in hospital.
2. Women will be more likely to be insured in the first year after childbirth.
   - Children are most vulnerable during this period and there is large persistence or inertia in insurance demand.
3. The probability of insurance cover will fall as the age of the youngest child rises.
   - Children become less vulnerable and at the same time are costly for the household (reducing the amount of disposable income).
4. High income women will be less responsive to the negative income effect from the presence of children.
   - Whether children actually increase/decrease demand will depend on a risk effect (i.e. hospitalisation of child) and an income effect (reduced budget constraint from childrearing).

Data
- The data are from the Australian Longitudinal Study of Women’s Health (representative sample of young women).
- We use a balanced panel of women for the years 1996, 2000, 2003, and 2006. In 1996, women in the sample were aged 18-23 years. Sample size is 6624 women in each wave.

Method
- The main model is the dynamic probit model suggested by Wooldridge (2005) with one period lag for insurance status. The model assumes the distribution for unobserved time invariant heterogeneity can be written as a function of the control variables and initial insurance status.
- Sensitivity analysis is conducted using (1) simple pooled probit (2) pooled probit with inverse probability weighting to correct for attrition bias (3) linear probability fixed effects model and (4) dynamic linear probability fixed effects model of Arellano and Bond (1991).
- All models include extensive controls for age, financial security, health etc.

Descriptive results
- The following charts summarise the main findings of this research.
- Chart 1 shows that women who desire additional children consistently insure at higher rates, regardless of whether they already have children (H1).

Discussion
- The regression results support the main hypotheses and are robust across specifications.
- Desire for additional children increases insurance demand by 2.6 percentage points (pps).
- Children generally reduce demand. However, responses are heterogeneous; this explains the mixed results for the presence of children in previous research.
- Additional children reduce demand by 5.4 pps on average. However, high income earners respond less negatively and some people actually purchase insurance in the first year after child birth.
- After one year there is a strong negative relationship between the age of the youngest child and insurance.
- State dependence (persistence) is important – being insured in the previous wave increases demand by 25 ppts today.
- Future research could examine how family formation and state dependence influence the risk profile of the insurance pool and the profitability of standards insurance contracts.