Speeding up for a son? Fertility transitions among first and second generation migrants to Canada

Alicia Adsera (Woodrow Wilson School and Office of Population Research, Princeton University and IZA (Bonn) adsera@princeton.edu

Ana Ferrer (Department of Economics, University of Calgary) aferrer@ucalgary.ca

Extended Abstract

1. Introduction and background literature:

A large literature has focused in exploring the phenomenon of "missing women" in some countries, particularly in Asia and the Middle East (Sen 1990, Klasen and Wink 2003).

Both unequal treatment of children across gender-lines (Das Gupta 1987; Gandhi Kingdon 2002)) and selective abortion have been found to explain the noticeable higher shares of boys in societies where families express a strong preference for having a son.

Fertility decline may have exacerbated bias (Das Gupta and Bhat 1997) though declared "son preferences" seem lower with lower ideal family size (Bhat and Zavier 2003) and bias seem to decrease with development (Chung and Das Gupta 2007 for Korea). The marriage squeeze and the wish for grandchildren may also reduce pressure for sons (Bashkar 2009).

Why is son preference prevalent in some societies? The most general reasons are: Old age insurance for elderly parents; wage premium for men; work in agriculture.

In some regions cultural traditions reinforce these pathways. <u>In South Asia</u>: Among hindus only sons can light the funeral pyre (Arnold, Choe and Roy). In India women leave home at marriage (Foster and Rosenzweig). Dowry payment is usual.

<u>In China</u>: Lineage traced through male, need to produce son to continue family line. Traditional sayings "A daughter is a thief", "Raising a daughter is like watering a plant in another man's garden" (cited by Milligan, Almond and Edlund 2009). One child policy may have exacerbated this tradition.

We expect that in more developed societies where children are not as essential for old-age insurance and where intermarriage and cultural assimilation may dilute ancestral traditions, fertility behavior of migrants arriving from areas with strong son-preference should slowly resemble that of natives.

Previous literature has focused mostly on the likelihood of having another child and that the new child is a son conditional on the gender of the previous siblings. We are interested in analyzing the timing dimension of fertility as an expression of son preference.

The Canadian census provides large samples and diversity countries of origin among migrants and facilitates the analysis of these questions.

2. **Dat**a:

To understand the speed of those changes we explore the fertility transitions of both first and second generation Canadian immigrants using the 20% sample of the Canadian Census of Population for the years 1991, 1996, 2001 and 2006. To reduce computing time to reasonable length, from each Census, we select all immigrant observations plus a 20% random sample of native-born individuals. We weight observations accordingly. The four censuses are then pooled together resulting in approximately 1,800,000 observations. The 2001 and 2006 census provides information on parental place of birth which allows distinguishing immigrants by first, second, and second and a half generation. Using women 16 to 45 years of age, we study the relevance of ethnic and religious background in explaining the differential speed of transitioning to either a second or a third birth conditional on the gender composition of the previous births.

In addition to the detailed data on migrants, Canada offers and interesting case because since a 1988 Supreme court decision that Section 251 violated Canadian Charter of Rights and Freedoms, there have been failed attempts to replace law and currently no legal barrier to abortion, no matter gestational age (see more detail in Milligan, Almond and Edlund 2009). In addition there is universal health care coverage that includes abortions.

3. **Analysis**:

Women make fertility choices (1) under a set of constraints (e.g. economic, educational and/or institutional)(2) under given social attitudes towards fertility, contraceptives, gender preferences, out of wedlock childbearing etc. ..linked to social norms and expectations of different societies

The speed at which newcomers adapt to the fertility of the destination country may be endogenous to all of those (Anderson (2004), in Sweden; Georgiadis and Manning (2009) in UK; Kahn (1994) and Parrado and Morgan (2008) in US; Adsera and Ferrer (2010) in Canada).

We conduct two types of analysis to study the following (1) the timing to a birth conditional on the gender of the previous children (across generational status, age at migration,

educational groups, countries of origin and religious groups); 2) the likelihood of having a son depending on the time that has elapsed from the previous birth to see whether some selective abortion may be at play. We also analyze differences in gender ratios depending on the months elapsed from previous births

The timing of the first three births is estimated separately using Cox proportional hazard models. The dependent variable in all estimates is duration (measured in years) to a birth from either the previous birth or from age 15 in the case of the first birth. For each woman i, and census year y who enters a state (e.g. first birth) at time t=0, the (instantaneous) hazard ratio function at t>0 is assumed to take the proportional hazards form:

$$\lambda_{it} = \lambda_0(t) \; exp \; (\text{immig backg}_{it}' \; \theta + \text{gender previous}_{it}' \; \mu + X'_{it} \; \beta)$$
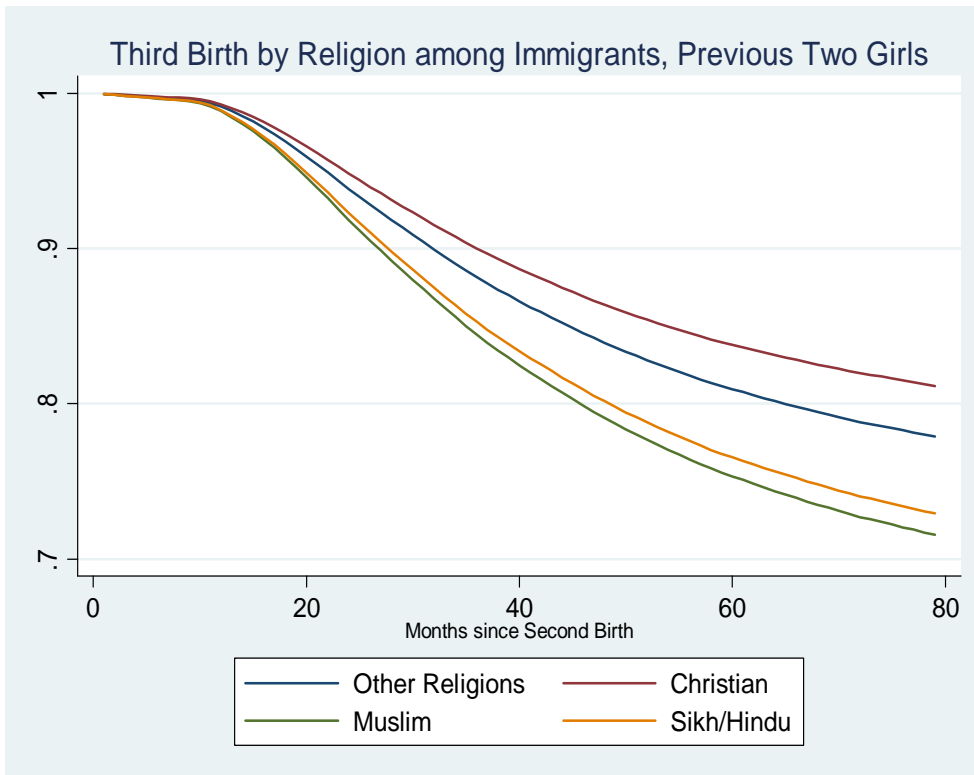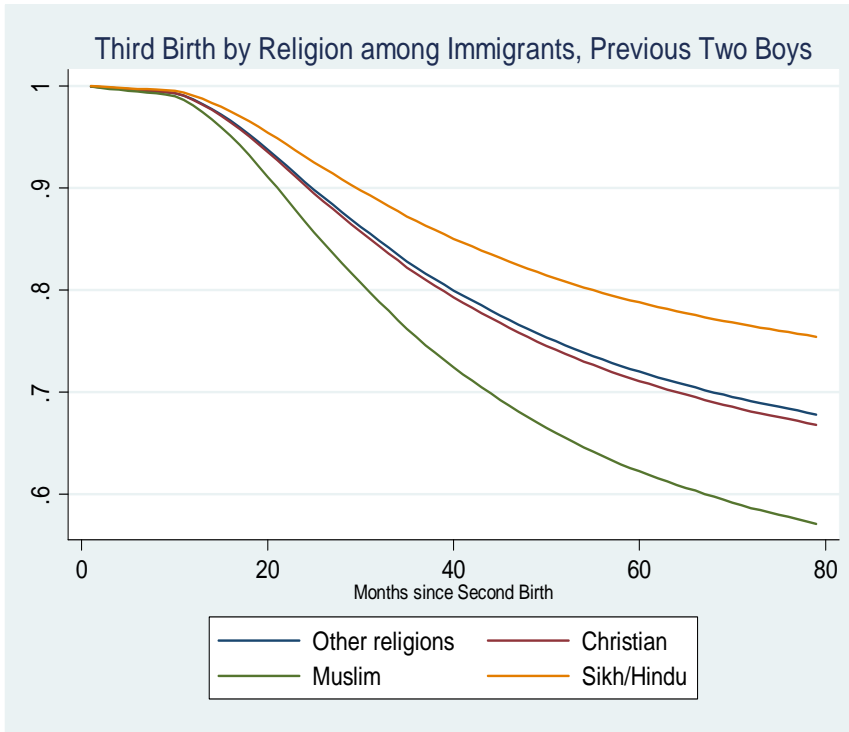
Where $\lambda_0(t)$ is the baseline hazard; X_{it} is a vector of covariates of differences between individuals (education, province, religion, age at migration, age at previous births .etc.). Using these models we look at second and third births and study differences across: (1) Age at migration (younger more likely to attend school and to understand the rules/institutions). (2) Birthplace of mother (focus on China, Other Asian and south Asian relative to all natives & immigrants) (3) Religion of mother (Christian, Muslim, Hindu, Sikh relative no religion)

In a second set of analysis we look at the probability of delivering a son conditional on the gender of previous children.

4. Preliminary Results:

Preliminary results show that on average first generation migrants space children more separately than native-Canadian if the first born is a son. Interestingly, in the transition to the third child, transitions among native-Canadian are the fastest if the first two children are boys but among first generation migrants a third birth occurs sooner if the first two born are girls. Across religious groups, Hindis and Sikhs differentially speed up the second birth after a first-born girl. This gap increases even more in the transition to third birth. Both first generation migrants from Asia and those of Asian descent have substantially faster transitions after the birth of a girl than any other group. Nonetheless the younger migrants are when arriving into Canada, the most their fertility behavior resembles those of natives. We will also analyze this behavior among second generation migrants. A couple of preliminary illustrative results on timing to births and on sex ratios both conditional on gender of previous children are included below.

Transitions to Third Birth

Third Birth by Religion among Immigrants, Previous Two Boys

Other religions — Christian
Muslim — Sikh/Hindu

Third Birth by Religion among Immigrants, Previous Two Girls

Other Religions — Christian
Muslim — Sikh/Hindu

Probability <u>second child </u>is a BOY and Mother's Birthplace

Sample	Native & Immigrants			Immigrants	
Constant	0.506	0.505	0.506	0.507	0.513
	(90.89)	(91.03)	(91.17)	(42.32)	(42.69)
Birthplace:					
Immigrant	-0.001				
	(0.47)				
China group		0.008	-0.005	0.018	0.001
		(1.56)	(-0.71)	(2.99)	(0.14)
China *Girl 1st			0.027		0.035
			(2.66)		(3.21)
Other Asia		0.009	0.003	0.015	0.005
		(1.7)	(0.35)	(2.53)	(0.68)
Other Asia*Girl 1st			0.013		0.019
			(1.24)		(1.7)
South Asia		0.023	-0.002	0.026	-0.003
		(3.37)	(-0.29)	(3.68)	(-0.37)
South Asia*Girl 1st			0.053		0.061
			(5.66)		(5.94)
N.Obs	444,410	444,410	444,410	84,136	84,136

Note: OLS. Controls for education levels, age groups, age at first birth, Girl 1st, religion are also included.

China group=China, HK, Korea, Taiwan, Japan, Macao and Mongolia

Other Asia= Cambodia, Indonesia, Laos, Malaysia, Singapore, Thailand, Vietnam, Bhutan, Nepal, Maldives, Brunei, Philippines and other.

South Asia= India, Pakistan, Bangladesh, Sri-Lanka

Difference in Probability that Second child is a Son and Place of Birth (re: All Natives & Immigrants)