• Introduction:

The World Health Organization (2011) defined the imbalanced sex ratios at birth as "an unacceptable manifestation of gender discrimination against girls and women and a violation of their human rights". There is a vast literature on sex preferences for children in less developed countries (Bongaarts 2013, Sen 1990). Preferences for sons was mainly observed in East and South East Asia; resulting in imbalances in sex ratios at birth of children born as well as much higher parity progression rates in families with daughters and no sons (Arnold 1997). Son preferences are mainly found in societies with strong patri-local family systems where sons have a much greater life-cycle economic utility for their parents than daughters. In East Asian societies, gender preferences for children have been pervasive throughout history. Traditionally, a woman and her husband took full responsibility for caring for the husband's parents (Ma 2013); a woman's primary duty was to bear sons for her husband's lineage. Thus the incentive to have a son had driven couples to continue childbearing when the first child was a daughter (Ma forthcoming).

On the other hand, in the contemporary European context, a child is not seen as the same source of economic security, but valued mainly for social and psychological reasons (Hoffman and Hoffman 1973). However, a recent study by Bongaarts (2013) found evidence of a male sex preference exists in the former Soviet Union countries (e.g. Armenia, Azerbaijan, Georgia, Kazakhstan and Uzbekistan). In Moldova and Armenia, the sex of the child/children already born plays a strong role in determining preference for a second or third child (Billingsley 2011). Since the start of the 21st century evidence of sex imbalance has been found also in Albania and in the Balkans in general (UNFPA 2012). Nevertheless, evidence of sex preferences in childbearing behavior and its implications for fertility decisions have been a topic of research also for developed societies in the West. There are studies on this issue for North America (Pollard and Morgan, 2002), Denmark (Jacobsen et al. 1999), Germany (Hank and Kohler 2002) and Sweden (Andersson et al. 2006a, 2007). These studies have provided strong evidence of preference to have at least one child of each sex in most developed low-fertility countries, where parents with only daughters or only sons are more likely than others to have another child. In

addition, in-depth research based on large-scale register data of the Nordic countries revealed evidence of emerging daughter preferences in childbearing¹. This pattern holds for Denmark, Norway and Sweden, but was not found for Finland (Andersson et al. 2006a, 2007).

But, what happens when citizens from countries with strong son preferences immigrate to countries where preferences for a mixed sex composition of children prevail?

A few studies have been carried out on aspects of sex preferences for children of immigrant women with Asian background, indicating elevated sex ratios at birth especially for higher order births (Almond et al. 2013, Dubuc and Coleman 2007, Hwang et al. 1997, Singh et al. 2010). As far that we know, no studies have been conducted on sex preference of East European migrants. In our paper, we aim at extending this line of research by focusing on sex ratios at birth and parity progression rates by the sex composition of parents' previous children. We will study the extent to which immigrants in Sweden, a country that promote gender equality, may exhibit gender preferences in their fertility behavior and whether such preferences may change across time since migration. Sweden represents an interesting case. On the one hand, the "liberal" and "individualistic" context allows for individual choices. On the other hand, the environment facing immigrants in the host society may promote social norms that are conducive to gender equality and higher fertility. Finally, the focus on sex preference among both immigrant men and women introduces an additional novelty in the research field.

• Data and method:

Our data source is a collection of registers called "Sweden over Time: Activities and Relations" (STAR), which is organized by researchers at the Stockholm University Demography Unit (SUDA) and the Swedish Institute for Social Research (SOFI). Individuals enter the register by birth (within the country) or by immigration. Swedish population registers collect all demographic events (births, deaths, marriages, divorces, international migration, and internal mobility) by date of event. Children can be linked to their parents using a personal identification number, if the parents live in Sweden or did so at some point in the past. Consequently we can reconstruct the fertility history of the parents and maintain information of sex of their children.

¹ Parents of only sons were more likely than parents of only daughters to have another child.

We also have access to yearly information on educational level attained, income, labor-market attachment, and social-insurance benefits.

Synthetic demographic measures, such as sex ratios at birth, will be calculated when we focus on the sex preferences of different immigrant and non-immigrant groups. Event-history models will be estimated to study the transitions to second and higher order childbearing in Sweden controlling for sex of the previous child. We will control for, and consider as key dimensions, the time since migration to explore how the sex preferences of immigrants may develop across time since migration and run separate model for mothers and fathers

Aims and Hypotheses:

This paper will contribute to a much better understanding of the gendered nature of family behavior and immigrant integration in Sweden. The focus on gender preferences in childbearing behavior is pivotal: we extend our interest also to study the gender preference of men. This will produce much better theoretical insight into many issues of contemporary family demography and migration research.

In this paper, we will address two related but separate questions: first, we will estimate the sex ratios at birth (SRB) and see whether or not the sex ratio at birth is distorted among immigrants. Second, we will estimate the parity progression rates by the sex composition of existing children and see if there is a sign of cultural adaptation, given the time residing in Sweden extending.

We hypothesize that immigrants from East Asia may be especially likely to have more children if they have had only daughters due to strong cultural preferences acquired in their home country for having sons (Arnold 1997). We will study whether any evidence of boy preferences in childbearing behavior persists also when the time residing in Sweden increases. Any persistence of strong gender preferences can also result in more drastic outcomes such as sex-selective abortion and skewed gender ratios at birth. We believe that this paper could contribute to research on gender discrimination and will produce output of high policy relevance.

• First results:

Figure 1 shows the average of sex ratios at birth of foreign-born mothers between the years 2000 and 2012 (e.g., the number of boys born alive per girls born alive). It demonstrates that there is

strong heterogeneity among the groups, however we expect even more difference when we will look at different parities. Final results will be available in time for the EPC meeting



Figure 1: Sex ratios at birth of foreign-born mothers, Sweden- average 2000-2012

References:

Almond, D., Edlund, L. and Milligan, K. (2013) Son preference and the persistence of culture: Evidence from South and East Asian immigrants to Canada, *Population and Development Review* 39(1), 75-95.

Andersson, G., Hank, K., Rønsen, M., and Vikat, A. (2006a) Gendering family composition: Sex preferences for children and childbearing behavior in the Nordic countries. *Demography* 43 (2), 255-267.

Andersson, G, Hank, K., and Vikat, A. (2007) Understanding parental gender preferences in advanced societies: Lessons from Sweden and Finland. *Demographic Research* 17(6), 135-156.

Arnold, F. (1997) Gender Preferences for Children. *Demographic and Health Surveys* Comparative Studies No.23.

Bongaarts, J. (2013) Implementation of preferences for male offspring. *Population and Development Review* 39(2), 185–208.

Billingsley, S. (2011). Second and third births in Armenia and Moldova: An economic perspective recent behavior and current preferences. *European Journal of Population* 27 (2): 125-155.

Dubuc, S. and Coleman, D. (2007) An increase in the sex ratio of births to India-born mothers in England and Wales: Evidence for sex-selective abortion, *Population and Development Review* 33(2), 383-400.

Hank, K and Kohler, H.P. (2003) Sex preferences for children revisited: New evidence from Germany. *Population* 58 (1): 133-144.

Hoffman, L.W., Hoffman, M.L. (1973) The value of children to the parents. In: Fawcett, J.T. (Ed.). *Psychological Perspectives on Population*. New York: pp.19-76.

Hwang, S. S. and Saenz R. (1997) Fertility of Chinese immigrants in the U.S.: Testing a fertility emancipation. *Journal of Marriage and the Family* 59, 50-61.

Jacobsen, R., Moller, H., Engholm, G. (1999) Fertility rates in Denmark in relation to the sexes of preceding children in the family. *Human Reproduction* 14, 1127-1130.

Ma, L. (2013). Employment and motherhood entry in South Korea, 1978-2006. *Population* – E, 68 (3): 419-446.

Ma, L. (forthcoming) Female labor force participation and second birth rates in South Korea. *Journal of Population Research*, forthcoming.

Pollard, M.S. and Morgan, S.P. (2002) Emerging parental gender indifference? Sex composition of children and the third birth. *American Sociological Review* 67, 600-613.

Sen, A. (1990) More than 100 million women are missing. *New York Review of Books*, December, No. 20: 61–66.

Singh, N., Pripp, A. H., Brekke, T. and Stray-Pedersen, B. (2010). Different sex ratios of children born to Indian and Pakistan immigrants in Norway. *BMC Pregnancy and Childbirth* 10, 40.

UNFPA (2012) Sex imbalances at birth in Albania, Tiranë 2012

WHO (2011) Preventing gender-biased sex selection: An interagency statement. OHCHR, UNFPA, UNICEF, UN Women and WHO. WHO Library Cataloguing-in-Publication Data: ISBN 978 92 4 150146 0.