Guidelines ECON3710/ECON4710 – spring 2015

Points/arguments that would be relevant to make

1. **Son preferences**

    a. In DHS surveys, women and men are asked to go back to the time before they had any children and imagine how many children they would have wanted if they could start over again. They are then asked whether they would have liked these children to be boys, girls, or either. Each partner's DSRB is 100 times the ratio between the desired number of boys plus half the children who can be of either gender, divided by the number of girls plus half the children who can be of either gender. The couple's DSRB is the average between the two. SRB is the ratio of the number of live-born boys to the ratio of live-born girls, based on recalls of reproductive histories of women aged 15-49. SRLB is the corresponding ratio of last-born children.

    b. Bongaarts (2013) theory is limited to populations that initially have strong son preferences. Pre- or early transition: High fertility, no contraception/abortions, high and stable son preferences. Mid-transition: Introduction of contraception combined with lower fertility desires cause lower fertility, no abortions. Stopping behaviour increases SRLB. Falling DSRB due to rising gender equality (female education and autonomy, urbanisation, increased media use). Countered by fertility squeeze, if they desire the same absolute number of sons. Late transition: Stopping behaviour + sex-selective abortions (if technology becomes available and morally accepted), SRB and SRLB rise and peak. Post-transition: All three trends fall. Falling son preferences, policy interventions, and increased awareness of consequences of high SRB.

2. **Family Planning Programmes, Fertility, and Maternal and Child Health**

    a. See Montgomery and Lloyd (1996) p. 144-145 for a complete list of channels. Should not expect detailed answer. Family planning programmes are likely to primarily affect regulatory costs, hence reducing unwanted fertility. This may have stronger effects on children's and women's health than reductions in wanted fertility (not explained very well in the ML paper).

    b. Family planning programmes were randomly introduced in some of the villages in 1977, whereas the other villages received only regular public health care. They compare women in treatment and control villages in 1982 and 1996, and also have pre-intervention data from 1974. A number of pre-determined individual and community factors are controlled for.

    c. The intervention lead to a decline in surviving children, and differences persisted 20 years later. In 1996, TFR was 0.5 children per woman lower in treatment areas. The effect was largest in the 45-50 age group (25-30 at time of intervention) where TFR was reduced by 1.5. There were significant spill-over effects on fertility in neighbouring, untreated villages. Age at first birth

was similar, but spacing remained larger due to treatment. The programme reduced under-5 mortality, and more so for boys. Women were less likely to be anemic, and had more antenatal check-ups. More children received vaccination.

d. The programmes were connected to efforts directly targeting women's and children's health. Spill-over effects on the control group would create a downward bias, as well as the fact that family planning was also encouraged in these villages in a context of sharp, nation-wide declines in fertility.

e. The programmes primarily target unwanted fertility and may not be as effective if fertility to a large extent is wanted. Bongaarts (2005) makes this point based on the experiences of 7 countries where fertility rates stalled during the 1990s. The stalls in these countries happened in spite of the fact that family planning programme efforts were rising. A likely cause of the stalls was a levelling off in fertility preferences. In six of the countries, fertility was lower than expected by their level of development, implying that fertility in these cases returned to levels determined by developmental factors over time. This is in stark contrast to the continued long-term impact observed in the Matlab case. A problem with Bongaarts' conclusions is that it based on only 7 cases and stalls over 4-year periods. Only very small declines are expected in such a short time span, and stalling is thus difficult to identify. It may also be the case that the programmes affect fertility desires through e.g. social interaction processes, in which case effects on fertility could multiply and persist.

When trying to reduce the unwanted fertility, many countries have faced problems different from those existing in Bangladesh. For example, Rutenberg and Watkins (1997) argued that social distance between providers and recipients was a hindrance to successful implementation in Kenya. Iran, by contrast, has succeeded (in a relatively well educated population) in making contraceptives much more available and acceptable to people, partly due to politico-religious acceptance and promotion.

3. Population growth and food production

He projects the production by keeping the area constant and extrapolating the yield linearly. This projected production is far from sufficient to meet even the current per capita consumption – which is well below the necessary on average – multiplied by the expected population size. This must be compensated for by import, which the region likely cannot afford (but the production capacity elsewhere may be good enough), or food aid.

4. a. Should mention: C&D took 192 (or "large number") of life tables of good quality, many from European countries. Grouped them into four different groups/families, according to regularities (deviations from average) in age patterns of mortality: West, East, North, South. West shows no systematic deviations. Regularities refer to infant mortality, child mortality, adult mortality, etc.

b. West comprises largest group, no systematic deviations from average.

5. Intrinsic growth rate = 0 → population is stationary. Column L_x represents age structure of a stationary population. 3969.85/80000 = 0.0496 = 4.96%.

6a. GRR-NRR = effect of mortality for women in childbearing years. Level 9 represents very high mortality → big difference.

b. Stationary population has CBR equal to $1/e_0$. Here 1/40 = 2.5%.