**DEMO2002 Practice MidTerms (Try 2)**

1. From calculations, we have:

TFR of USA = 1.76

TFR of Japan = 1.42

MAC of USA = 28.89

MAC of Japan = 30.87

To remind of the interpretation, based on the data available, we expect that a woman in the USA that is exposed to these age-specific fertility rates (supposedly based on a synthetic cohort) will have, on average, 1.76 children. On the other hand, the same scenario but for Japan’s age-specific fertility rates results in slightly less children on average, that is, 1.42. From comparing the MAC’s, Japan’s MAC is older than USA by approximately 2 years. This implies that the mean age at childbearing for a mother in Japan is expected to be around 31 years old on average, but younger at 29 years if we are observing mothers in USA.

1. TFR vs CCF
   1. Done. The trends of TFR and CCF40 move in approximate lockstep. Since they pertain to the same fertility observations that are in Sweden, they fundamentally show similar trends. As we can see, the largest TFR observed in the dataset occurs in the earliest records, with a TFR above 4 in 1891. Just observing the TFR, it remains high until Sweden experiences an extremely steep decline after 1900, eventually bottoming out around 1935 under TFR = 2. Then, we see a resurgence of TFR with somewhat high levels between 1940 and 1970, with erratic peaks and troughs in the after-period. However, we never see the same fertility levels as observed before 1920. The cohort fertility line shows the same trends: the highest fertility at the start of the 1900s, followed by a steep decline, and a recovery period from 1930 followed by a mostly gradual decline forwards.
   2. Advantages and disadvantages of TFR and CCF

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| TFR (total fertility rate) | CCF (cohort complete fertility) |
| Volatile when depicted over time | Exhibits more stability in a time series |
| Easier to obtain by recording age-specific fertility rates in the present period | “Outdated” in that one must wait for the cohort to conclude their childbearing years before obtaining complete fertility |
| Depicts a synthetic cohort | More accurate to the actual experiences of birth cohorts |
|  | (can’t think of much else, sad) |

The measures which I would have included to complement the information seen in the TFR and CCF are age-specific data. For example, although the data tell us of a decline in total fertility rates in recent decades, we might like to know more about the behaviour of the mothers. Might they be choosing to delay childbearing in favour of career prospects or other cultural reasons? The present data do not give insight for this. We may also like to inquire about the parity, or birth order of the children. (I think there should be more to say on birth order, but I’m not confident of it).

1. Mortality and life tables
   1. The gains we get from applying the life-table technique is an age-specific breakdown of mortality and interpretable results. Crude death rate and observed distribution of deaths are limited in terms of inference because they are affected by the age structure of the population, which can skew the interpretation of results.