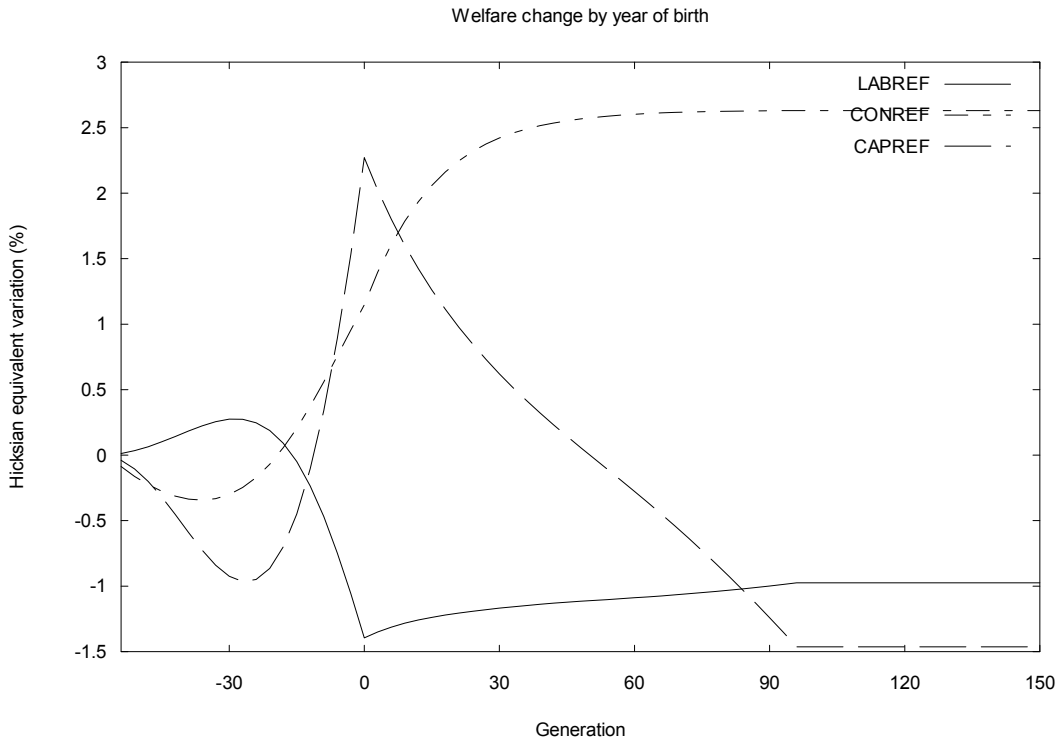
Hi Tom

Finally, I get the results from Auerbach and Kotlikoff (Chapter 5, Figure 5.4). The difference between the results produced in your model and AK are due to the definition of the equivalent variations. AK use the "equivalent percentage increase in **full** lifetime resources (assets plus the present value of earnings based on working full time) needed in the original income tax regime to produce each cohort's realized level of utility under the specified alternative tax regimes."[1] In your calculations of the EV you use the remaining **lifetime** income. I ran the model using a 3-year period using pathold, GAMS20.4. There is only one small difference in the capital tax reform scenario, where the level of the changes is higher/lower than in the original simulations. I think that's due to the SOE-assumption I use.

Figure 1: Model results for the AK-Datal, scenarios according to AK, utility according to AK (lifetime income)



[1] AK, Chapter 5, p.74

Figure 2: Original results from the AK-Model (p. 75)

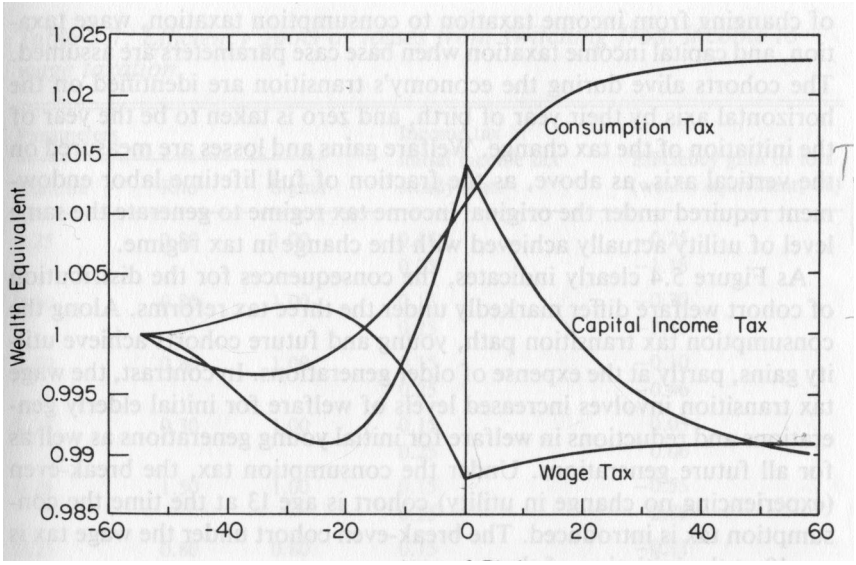
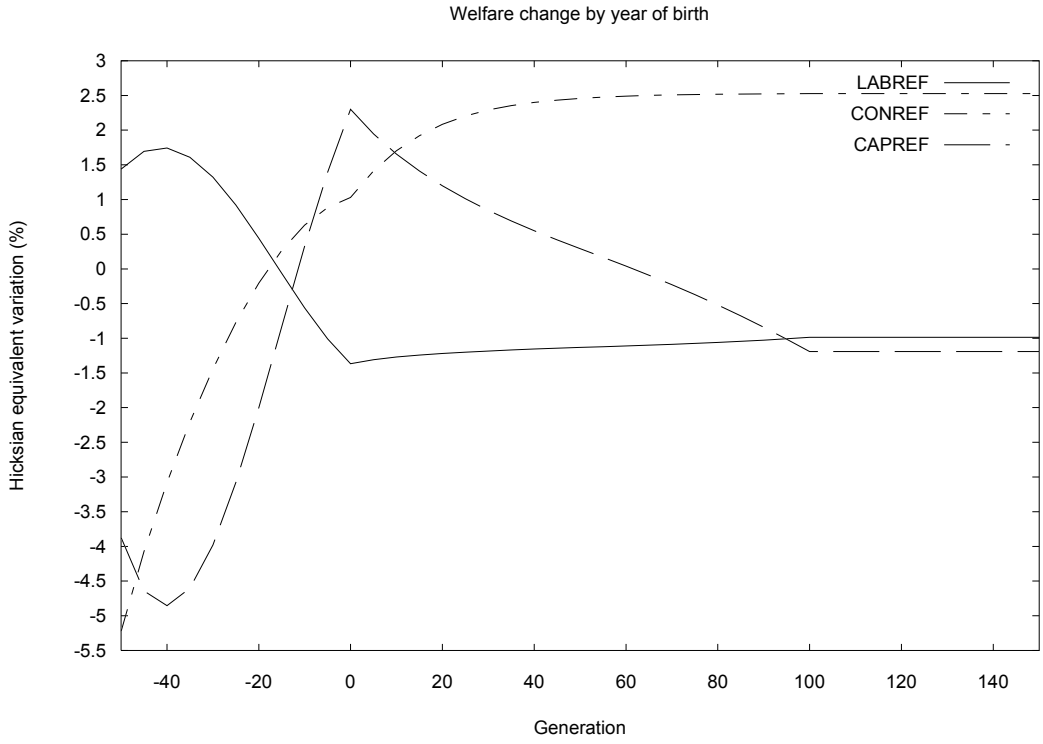


Figure 3: Model results for the AK-Data, scenarios according to AK, utility as in Tom's model (remaining lifetime resources)



I calculated the changes in welfare according to AK assuming that including the additional income doesn't influence the decisions of the older generations and therefore it is not necessary to change the model-code. I used the calibrated share form of the utility function.

The Gams code:

```
PARAMETER
        WCHANGE_AK(G,H,SCENARIO)      Utility change as calculated by AK
        MREFA(G,H)        Baseline present value of consumption AK
        UTILITY_AK(G,H)       Utility level AK
        WCHANGE_AK(G,H,SCENARIO)      Utility change as calculated by AK
        ;

        MREFA(G,H)
        = MREF(G,H) + SUM(GG, ZREF_0(G,H,GG)*PZREF_0(G,H,GG));

        UTILITY_AK(G,H)
        = SUM(T$ZREF(G,H,T),(ZREF(G,H,T)*PZREF(G,H,T)/MREFA(G,H))*(QZ.L(G,H,T))
        **(1-theta));

        UTILITY_AK(G,H)
        = UTILITY_AK(G,H) + SUM(A$ZREF_T(G,H,A),
        ZREF_T(G,H,A)*PZREF_T(G,H,A)/MREFA(G,H)*(ZT.L(G,H,A)) **(1-theta));

        UTILITY_AK(G,H)
        = UTILITY_AK(G,H) + SUM(GG$ZREF_0(G,H,GG),
        ZREF_0(G,H,GG)*PZREF_0(G,H,GG)/MREFA(G,H));

        UTILITY_AK(G,H)
        = UTILITY_AK(G,H)**(1/(1-theta));

        WCHANGE_AK(G,H,SC)  = 100 *(UTILITY_AK(G,H) - 1);
```

My not-theoretically based intuition is that the AK-Utility is the one to be used, because we compare generations. The utility of the older generations alive before the year “0” should be part of the comparison. That this part doesn’t appear in your model is only due to the fact that we start the model in the year 0 and don’t look back. But, the choice of the starting year is arbitrary and for empirical applications only depends on the available data. If I have data for the year “-5”, I would use this data, start the scenarios in the actual year “0”, and keep in mind that the generations alive before the year “0” can’t change their consumption plans for the years before “0”. This would lead to different values for the equivalent variations depending on the starting year. If one uses the AK-utility this would not happen.

This would of course also lead to different results for the scenarios you introduced in the paper:

Figure 4: Original results Tom/Tobias paper, (Figure 6)

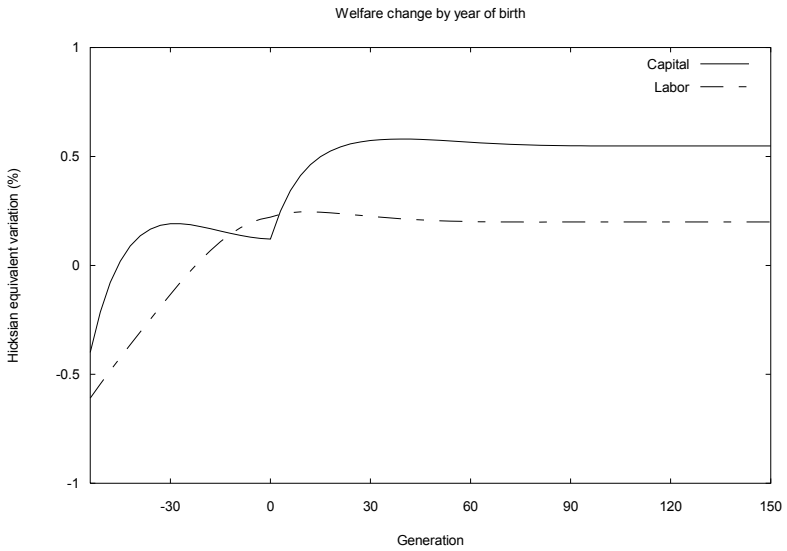
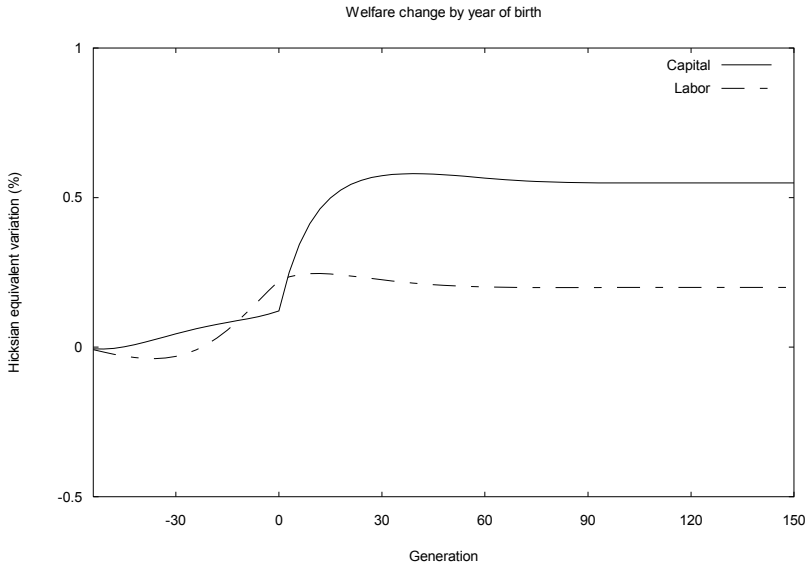


Figure 5: AK-welfare changes Tom/Tobias paper, (Figure 6)



Renger