Appendix B: SAS Software Program

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***  DECTOOL.SAS
***  Produces tables used in Wilde, 2000.
***  "Understanding the Food Stamp Benefit Formula"
***  Input data: qcfy1998.sd2
***  Parke Wilde
***  9/1/2000;

***  Define names of input data sets ***;
libname out 'e:/temp/ces/';
libname in 'e:/data/qc/qc98/';

options linesize=100;

***  Create data file DECOMP ***;
data out.decomp;
  set in.qcfy1998
  ( keep = fsndis fsnelder fsnkid fsngmom fsusize fywgt
           fsgrinc fsnetinc fstotded fstotde2
           fscsexp fsstdded fsernded fsdepded fsmedded
           fssltded shelcap benmax fsben
           fsminben netscrn state fssltexp
           urbrur tpov region);

  *** SHELTER SUB-COMPONENT EFFECTS ***;
  neldis=fsndis+fsnelder;
  if neldis ge 1 then d_diseld=1;
    else d_diseld=0;
  if d_diseld=0 then hstar=shelcap;
    else hstar=fssltexp;
  n1 = max(fsgrinc-(fsstdded+fsernded+fscsexp+fsmedded+fsdepded),0);
  e261 = 0.3*fssltexp;                  ** gross shelter;
  e262 = -0.3*min(0.5*n1,fssltexp);     ** half-income rule;
  e263 = min((0.3*hstar)-(e261+e262),0); ** shelter cap effect;
  e26 = e261+e262+e263;                 ** shelter ded effect;

  *** DEDUCTIONS EFFECTS ***;
  sumded = fsstdded+fsernded+fscsexp+fsmedded+fsdepded+(e26/0.3);
  e21 = 0.3*fsstdded;                   ** standard;
  e22 = 0.3*fsernded;                   ** earned income;
  e23 = 0.3*fsdepded;                   ** dependent care;
  e24 = 0.3*fsmedded;                   ** medical;
  e25 = 0.3*fscsexp;                    ** child support;
  e2 = e21+e22+e23+e24+e25+e26;         ** deductions effect;

  *** MAIN COMPONENT EFFECTS ***;
  e1 = -0.3*fsgrinc;                    ** income effect;
  e3 = -0.3*max(0,(sumded-fsgrinc));    ** max effect;
  e4 = max(0,10-(benmax-0.3*fsnetinc));  ** min effect;

  *** ALTERNATIVE DEFINITIONS FOR DOUBLE-CHECKING ***;
  alte26 = 0.3*fssltded;                ** alt shelt ded effect;
  alte2 = 0.3*fstotded;                 ** alt deductions effect;
  sumfsben = benmax+e1+e2+e3+e4;        ** total fs ben;

  ** INCOME CATEGORY ***;
  If tpov le 50 then inccat='1.below 50% pov';
  else if 50 < tpov le 100 then inccat='2.50-100% pov';
  else if 100 < tpov then inccat='3.above 100% pov';

  *** DEMOGRAPHIC CATEGORY ***;
  if d_diseld=1 and neldis ge fsusize then demcat='1.all_dis/eld';
  else if d_diseld=1 then demcat='2.some_dis/eld';
  else if fsngmom=1 then demcat='3.sngmom';
  else if fsnkid>0 then demcat='4.other_kids';
  else demcat='5.other_nokids';
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 *** DUMMY FOR RECEIPT OF MEDICAL ***;
 IF E24>0 then yesmed=1; else yesmed=0;

 *** Observations with benefits below 10 ***;
 if fsben < 10 then lowflag=1; else lowflag=0;
 if fsusize>2 then fsubig=1; else fsubig=0;

 *** PER/PERSON BASIS ***;
 * (put comments around this section for hh level analysis option) *;
 hh_max = benmax;
 hh_e1 = e1;
 hh_e2 = e2;
 hh_e3 = e3;
 hh_e4 = e4;
 hh_fsben = fsben;
 array effects benmax e1-e4 e21-e26 e261-e263 alte2 alte26 sumfsben fsben;
 do over effects;
   effects=effects/fsusize;
 end;

 *** Net income of zero ***;
 if n1 le 0 then netzero=1; else netzero=0;

 *** Missing shelter values ***;
 if (alte26 ne .) and (e261 ne .) and (alte2 ne .) and (e23 ne .);

 *** Non-continental US states and territories ***;
 if state=2 or state=15 or state=66 or state=72 or state=78 then outstate=1;
 else outstate=0;

 label
 e1 = '. income effect'
 e2 = '. deductions effect'
 e3 = '. max effect'
 e4 = '. min effect'
 e21 = '. standard deduction effect'
 e22 = '. earnings deduction effect'
 e23 = '. dependent care ded. effect'
 e24 = '. medical deduction effect'
 e25 = '. child support ded. effect'
 e26 = '. shelter deduction effect'
 e261 = '. gross shelter exp. effect'
 e262 = '. half-income rule effect'
 e263 = '. shelter cap effect'
 alte2 = 'DEDUCTION EFFECT (ALT.)'
 alte26 = 'SHELTER DEDUCTION EFFECT (ALT.)'
 sumfsben = 'COMPUTED FOOD STAMP BENEFITS (ALT.)'
 d_diseld = 'DISABLED/ELDERLY PRESENT';

 *** Missing values to aid in formatting output ***;
 array missing miss1-miss6;
 do over missing;  missing=.; end;

run;

*** COUNT UNITS WITH BENEFITS BELOW $10 ***;
proc freq;
  table lowflag*fsubig;
run;

*** REMOVE OBS THAT DON'T OBEY MINIMUM BENEFIT ***;
data out.decomp;
  set out.decomp;
  if lowflag=1 then delete;
run;

***  DESCRIPTIVE FREQUENCIES ***;
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proc freq data=out.decomp;
  weight fywgt;
  table fsngmom*d_diseld;
  table fsusize*demcat;
  table inccat*demcat;
  table region*demcat;
  table yesmed*demcat;
  table netzero;
run;

***  PRODUCE TABLE 1 ***;
proc means n sumwgt mean std data=out.decomp;
  where fsusize=2 and outstate=0;
  weight fywgt;
  var hh_max hh_e1 hh_e2 hh_e3 hh_e4 hh_fsben;
run;

*** ANALYSIS BY INCOME CATEGORY ***;
proc sort data=out.decomp;
  by inccat;
run;
proc means n sumwgt mean std data=out.decomp;
  weight fywgt;
  var benmax e1 e2 e3 e4 miss1 miss2
      e21 e22 e23 e24 e25 e26 miss3 miss4
      e261 e262 e263 miss5 miss6
      fsusize d_diseld alte2 alte26 sumfsben fsben;
run;
proc means n sumwgt mean std data=out.decomp;
  by inccat;
  weight fywgt;
  var benmax e1 e2 e3 e4 miss1 miss2
      e21 e22 e23 e24 e25 e26 miss3 miss4
      e261 e262 e263 miss5 miss6
      fsusize d_diseld alte2 alte26 sumfsben fsben;
run;

*** ANALYSIS BY DEMOGRAPHIC CATEGORY ***;
proc sort data=out.decomp;
  by demcat;
run;
proc means n sumwgt mean std data=out.decomp;
  weight fywgt;
  var fsusize fsnkid fsnelder fsndis;
run;
proc means n sumwgt mean std data=out.decomp;
  weight fywgt;
  by demcat;
  var fsusize fsnkid fsnelder fsndis;
run;
proc means n sumwgt mean std data=out.decomp;
  by demcat;
  weight fywgt;
  var benmax e1 e2 e3 e4 miss1 miss2
      e21 e22 e23 e24 e25 e26 miss3 miss4
      e261 e262 e263 miss5 miss6
      fsusize d_diseld alte2 alte26 sumfsben fsben;
run;

*** ANALYSIS BY HOUSEHOLD SIZE ***;
proc sort data=out.decomp;
  by fsusize;
run;
proc means n sumwgt mean std data=out.decomp;
  where fsusize le 6;
  by fsusize;
  weight fywgt;
  var benmax e1 e2 e3 e4 miss1 miss2
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```
      e21 e22 e23 e24 e25 e26 miss3 miss4
      e261 e262 e263 miss5 miss6
      fsusize d_diseld alte2 alte26 sumfsben fsben;
run;

*** ANALYSIS BY CENSUS REGION ***;
proc sort data=out.decomp;
  by region;
run;
proc means n sumwgt mean std data=out.decomp;
  by region;
  weight fywgt;
  var benmax e1 e2 e3 e4 miss1 miss2
      e21 e22 e23 e24 e25 e26 miss3 miss4
      e261 e262 e263 miss5 miss6
      fsusize d_diseld alte2 alte26 sumfsben fsben;
run;

*** ANALYSIS BY RECEIPT OF MEDICAL DEDUCTION ***;
proc sort data=out.decomp;
  by yesmed;
run;
proc means n sumwgt mean std data=out.decomp;
  by yesmed;
  weight fywgt;
  var benmax e1 e2 e3 e4 miss1 miss2
      e21 e22 e23 e24 e25 e26 miss3 miss4
      e261 e262 e263 miss5 miss6
      fsusize d_diseld alte2 alte26 sumfsben fsben;
run;
```