Calculation of the DHS Wealth Index for the 2004-08 Peru Continuous DHS

The 2004 through 2008 Peru Continuous DHS Wealth Index is based on the Peru 2000 DHS. For each variable included in the index, first a z-score of the variable is calculated by subtracting the mean from each household's value and dividing by the standard deviation from the 2000 survey. Next this z-score is multiplied by the factor score coefficient from the 2000 survey. Then these products for each variable are summed to give the household's wealth score. The cutpoints for quintiles from the 2000 survey are used to determine each household's quintile of wealth. This procedure allows for direct comparison of wealth across the 2004 to 2008 cycles and with the 2000 survey and permits pooling the data together for sub-national estimation.

Below is the ISSA code for this calculation applied to the 2004-05 combined files. It is typical of all the 2004-2008 data files.

```
PROC CALCWLTH


 table   float(1) wlth1 quintile
    include(percents)
    title ("Check on       wealth index reconstruction--households");


 table   float(1) wlth2 quintile
    include(percents)
    title ("Check on       wealth index reconstruction-hh population");


 table   float(0) wlth3 hv206+hv207+hv208+hv209+hv210+hv211+hv212
 table   float(0) wlth4 hv213+hv214+hv215+hv221+hv226
PROC PEIR512
```

preproc

LEVEL 0

x=open(scores);

level 1

domestic=0;

ownland=0;

xscore=0;

{ if HV015 <> 1 then skip case endif; }

level 2

{If exists domestic in household}

if hv101(v003)=12 and (v705=6 or v717=6) then domestic=1;endif;

{If owns agricultural land}

if v707=0 or v707=1 or v740=0 or v740=1 then ownland=1;endif;

```
{ if V015 <> 1 then skip case endif; }


{Post stratification for 2004 cycle 1 by region      and area--whole            cycle}

box hv025 : shregion => adj04;

   1        :   1   =>  0.967849;

   1        :   2   =>  0.936536;

   1        :   3   =>  1.098138;

   1        :   4   =>  0.624733;

   1        :   5   =>  1.019644;

   2        :   1   =>  1;

   2        :   2   =>  0.880942;

   2        :   3   =>  1.126718;

   2        :   4   =>  1.02722;

   2        :   5   =>  0.965514;

endbox;

if hv007>=2005 then adj05=1.0;endif;



{Basadoen todo cyclo 2  (2005)}

{

box hv025 : shregion => adj05;

   1        :   1   =>  1.018905;

   1        :   2   =>  1.008040;

   1        :   3   =>  0.969800;
```

1 : 4 => 1.999488;

1 : 5 => 0.858270;

2 : 1 => 1;

2 : 2 => 0.961569;

2 : 3 => 0.967732;

2 : 4 => 0.950928;

2 : 5 => 1.303988;

endbox;

}

{Basadoen combinado cyclo 1 y cyclo 2}

box hv025 : shregion => adj45;

1 : 1 => 0.993602;

1 : 2 => 0.972207;

1 : 3 => 1.027786;

1 : 4 => 0.969539;

1 : 5 => 0.929260;

2 : 1 => 1;

2 : 2 => 0.920882;

2 : 3 => 1.038470;

2 : 4 => 0.986290;

2 : 5 => 1.115251;

endbox;

```
postproc
level 1
{Calcular puntajes del indice de riqueza}
xscore=0;
{Has electricity}
        if hv206=1 then xscore=xscore+0.068150 else xscore=xscore+(-0.109621);endif;
{Has radio}
        if hv207=1 then xscore=xscore+0.022261 else xscore=xscore+(-0.094985);endif;
{Has television}
        if hv208=1 then xscore=xscore+0.069644 else xscore=xscore+(-0.103850);endif;
{Has refrigerator}
        if hv209=1 then xscore=xscore+0.141114 else xscore=xscore+(-0.051854);endif;
{Has bicycle}
        if hv210=1 then xscore=xscore+0.040106 else xscore=xscore+(-0.010764);endif;
{Has motorcycle}
        if hv211=1 then xscore=xscore+0.089916 else xscore=xscore+(-0.003377);endif;
{Has car}
        if hv212=1 then xscore=xscore+0.152926 else xscore=xscore+(-0.012849);endif;
{Has telephone}
    if hv221=1 then xscore=xscore+0.170464 else xscore=xscore+(-0.032144);endif;
{Share toilet with other households}
        if hv225=1 then xscore=xscore+0.006026 else xscore=xscore+(-0.000491);endif;
{Computer}
        if sh25f=1 then  xscore=xscore+0.208735 else xscore=xscore+(-0.007979);endif;
```

{If piped drinking water in residence}

if hv201=11 then xscore=xscore+0.066846 else xscore=xscore+(-0.081552);endif;

{If uses water that is piped into the building}

if hv201=12 then xscore=xscore+(-0.004864) else xscore=xscore+0.000203;endif;

{If uses a public faucet (piped)}

if hv201=13 then xscore=xscore+(-0.062481) else xscore=xscore+0.005262;endif;

{If has a well in residence}

if hv201=21 then xscore=xscore+(-0.039297) else xscore=xscore+0.001438;endif;

{If uses a traditional public well}

if hv201=22 then xscore=xscore+(-0.073531) else xscore=xscore+0.003525;endif;

{If uses river, canal or surface water for drinking}

if hv201=41 or hv201=42 then xscore=xscore+(-0.121677) else xscore=xscore+0.032907;endif;

{If rain for drinking water}

if hv201=51 then xscore=xscore+(-0.114817) else xscore=xscore+0.000068;endif;

{If gets drinking water from tanker truck}

if hv201=61 then xscore=xscore+(0.008701) else xscore=xscore+(-0.000147);endif;

{Other source of drinking water}

if hv201=96 then xscore=xscore+(-0.051726) else xscore=xscore+0.001115;endif;

{If has dirt, sand, dung as principal floor in dwelling}

if hv213=11 then xscore=xscore+(-0.084957) else xscore=xscore+(0.084616);endif;

{If has wood, plank principal floor in dwelling}

if hv213=21 then xscore=xscore+(-0.035575) else xscore=xscore+(0.002951);endif;

{If has parquetor polished wood floors}

if hv213=31 then xscore=xscore+(0.198387) else xscore=xscore+(-0.004135);endif;

{If has vinyl or asphalt strips as flooring material}

if hv213=32 then xscore=xscore+(0.188728) else xscore=xscore+(-0.003661);endif;

{If has tiles for main flooring material}

if hv213=33 then xscore=xscore+(0.178761) else xscore=xscore+(-0.006308);endif;

{If has cement principal floor}

if hv213=34 then xscore=xscore+0.096352 else xscore=xscore+(-0.049186);endif;

{If has other type of flooring}

if hv213=96 then xscore=xscore+(-0.092356) else xscore=xscore+(0.001188);endif;

{If uses electricity as cooking fuel}

if hv226=1 then xscore=xscore+(0.165062) else xscore=xscore+(-0.001287);endif;

{If uses gas as cooking fuel}

if hv226=2 then xscore=xscore+(0.119757) else xscore=xscore+(-0.053292);endif;

{If uses kerosene as cooking fuel}

if hv226=4 then xscore=xscore+(0.050921) else xscore=xscore+(-0.009562);endif;

{If uses charcoal for cooking}

if hv226=6 then xscore=xscore+(-0.005834) else xscore=xscore+(0.000087);endif;

{If uses wood as cooking fuel}

if hv226=7 then xscore=xscore+(-0.093730) else xscore=xscore+(0.071189);endif;

{If uses dung, manure as cooking fuel}

if hv226=8 then xscore=xscore+(-0.098333) else xscore=xscore+(0.005296);endif;

{If does not cook}

if hv226=95 then xscore=xscore+(-0.000524) else xscore=xscore+(0.000011);endif;

{If uses other cooking fuel}

if hv226=96 then xscore=xscore+(-0.11515) else xscore=xscore+(0.000466);endif;

{If uses a flush toilet in residence/private}

if hv205=11 then xscore=xscore+0.123256 else xscore=xscore+(-0.067037);endif;

{If uses a flush toilet in residence/public}

if hv205=12 then xscore=xscore+0.063069 else xscore=xscore+(-0.001632);endif;

{If uses a flush toilet outside residence/private}

if hv205=13 then xscore=xscore+(-0.005326) else xscore=xscore+(0.000033);endif;

{If uses a flush toilet outside of residence/public}

if hv205=14 then xscore=xscore+0.021937 else xscore=xscore+(-0.000490);endif;

{If uses a private latrine}

if hv205=21 then xscore=xscore+(-0.050433) else xscore=xscore+0.018425;endif;

{If uses a public latrine}

if hv205=22 then xscore=xscore+(-0.057240) else xscore=xscore+0.001663;endif;

{If uses bush,field as latrine}

if hv205=30 or hv205=41 then xscore=xscore+(-0.102044) else xscore=xscore+0.043166;endif;

{If other type of latrine}

if hv205=96 then xscore=xscore+(-0.023905) else xscore=xscore+(0.000017);endif;

{Walls of stone with lime or cement}

if hv214=21 then xscore=xscore+(-0.016800) else xscore=xscore+(0.000187);endif;

{Walls from adobe (sun-dried brick)}

if hv214=22 then xscore=xscore+(-0.063856) else xscore=xscore+(0.055683);endif;

{Walls from bamboo with mud}

```
        if hv214=23 then xscore=xscore+(-0.040816) else          xscore=xscore+(0.001545);endif;
{If has   wood planks forwalls}
        if hv214=24 then xscore=xscore+(-0.066305) else          xscore=xscore+(0.008629);endif;
{Walls from stone with mud}
        if hv214=25 then xscore=xscore+(-0.128104) else          xscore=xscore+(0.001976);endif;
{Walls from plywood}
        if hv214=26 then xscore=xscore+(-0.003940) else          xscore=xscore+(0.000028);endif;
{Walls from rustic mats  }
        if hv214=27 then xscore=xscore+(-0.048509) else          xscore=xscore+(0.000440);endif;
{If walls from bare brick, cement blocks}
        if hv214=31 then xscore=xscore+(0.130327) else xscore=xscore+(-0.063800);endif;
{If has   other material for walls}
        if hv214=96 then xscore=xscore+(-0.119264) else          xscore=xscore+(0.001382);endif;

{If has   wood roof}
        if hv215=21 then xscore=xscore+(0.058310) else xscore=xscore+(-0.000653);endif;
{If has   calamine, cement fibre roof}
        if hv215=22 then xscore=xscore+(-0.021553) else          xscore=xscore+(0.014820);endif;
{If has   bamboo or rustic mat with mud for roof}
        if hv215=23 then xscore=xscore+(0.020308) else xscore=xscore+(-0.001729);endif;
{If roof from palm leaf, thatch}
        if hv215=24 then xscore=xscore+(-0.126655) else          xscore=xscore+(0.017891);endif;
{If roof from cement}
        if hv215=31 then xscore=xscore+(0.155875) else xscore=xscore+(-0.044098);endif;
{If has   ceramictiles for roof}
```

```
        if hv215=32 then xscore=xscore+(-0.07562) else xscore=xscore+(0.013250);endif;
{If has   other roofing}
        if hv215=96 then xscore=xscore+(-0.110563) else          xscore=xscore+(0.000903);endif;

{If HH has a domestic worker not related to head}
        if domestic=1 then xscore=xscore+(0.180580) else xscore=xscore+(-0.002522);endif;

{If household works own          or family's agric. land}
        if ownland=1 then xscore=xscore+(0.011122) else          xscore=xscore+(-0.029756);endif;


{x=display(11,xscore);}

{Members per sleeping room}
if hv012=0 then hv012=hv013;endif;
if sh26b=0 then memsleep=hv012;else  memsleep=int(hv012/sh26b);endif;
if memsleep>=98          then memsleep=98;endif;

mpsr=(memsleep-2.685085)/1.843129 * (-0.04465136);
if memsleep>=98          or special(memsleep) then mpsr=0;endif;
xscore=xscore+mpsr;


rooms=(sh26a-2.820967)/1.599413        *(0.063273145);
if special(sh26a) then rooms=0;endif;
```

```
xscore=xscore+rooms;

{x=display(11,xscore);}

hv271=xscore*100000;

if xscore<=-0.8691540289325 then quintile= 1;endif;
if xscore>-0.8691540289325 and xscore<=-0.168546191046 then quintile = 2;endif;
if xscore>-0.168546191046 and xscore<=0.7167125815917 then quintile = 3;endif;
if xscore>0.7167125815917 and xscore<=1.378203768497 then quintile = 4;endif;
if xscore>1.378203768497 then quintile=5;endif;

hv270=quintile;

{
  hweight = HV005;

 if hv007<2005 then
  hweight = hweight/adj04;
 endif;
 hweight=hweight*adj45;
 hv5adj=hweight; }
 hweight=hv5adj            / 1000000;

{
```

```
level 2
}
{
  rweight = V005;
 if hv007<2005 then
  rweight = rweight/adj04;
 endif;
 rweight=rweight*adj45;
 v5adj=rweight;  }
 rweight=v5adj / 1000000;

{
 v191=hv271;
 v190=hv270;
}

x=xtab(wlth1,hweight);

if hv015=1 then
i=1;while i<=soccurs(rech1) do
  if hv102(i)=1     then
    x=xtab(wlth2,hweight);
  endif;
i=i+1;enddo;
endif;
```

```
{
if wlthind5<> quintile then
  if wlthindf-xscore<(-0.05) then
  d=display(12,wlthindf,xscore,wlthindf-xscore);
  d=display(13,wlthind5,quintile);
  d=display(14,hv201,hv205,hv206,hv207,hv208,hv209,hv210,hv211,hv212);

  d=display(15,hv213,hv214,hv215,hv221,hv225,hv226,sh25f,sh26a);
  d=display(16,domestic,ownland,memsleep);
    x=xtab(wlth3,1);
    x=xtab(wlth4,1);
  endif
endif;
}

{x=display(11,xscore);}
whhid=hhid;wlthindf=hv271/100000;wlthind5=hv270;
x=writecase(scores,hhid);

level 0;
x=close(scores);
```