```
                                                      ___  ____  ____  ____  ____(R)
                                                     /__    /   ____/   /   ____/
                                                    ___/   /   /___/   /   /___/
                                                      Statistics/Data Analysis

                                                         User: TianyuHW5_3

      ___  ____  ____  ____  ____ (R)
     /__    /   ____/   /   ____/
    ___/   /   /___/   /   /___/   15.0  Copyright 1985-2017 StataCorp LLC
      Statistics/Data Analysis            StataCorp
                                          4905 Lakeway Drive
          Special Edition                 College Station, Texas 77845 USA
                                          800-STATA-PC        http://www.stata.com
                                          979-696-4600        stata@stata.com
                                          979-696-4601 (fax)

    1150-user Stata network license expires 23 Jul 2019:
           Serial number:  401509213955
             Licensed to:  cuitianyu706599183@163.com
                           personal

    Notes:
          1.  Unicode is supported; see help unicode advice.
          2.  Maximum number of variables is set to 5000; see help set_maxvar.
          3.  New update available; type -update all-

 1 . doedit "C:\Users\cuiti\Master Study\Second Semester\econometrics\TIANYUCUI\ps5\ps3.do"

 2 . do "C:\Users\cuiti\AppData\Local\Temp\STD2cfc_000000.tmp"

 3 . clear all

 4 . set more off, perm
    (set more preference recorded)

 5 . set scrollbufsize 2000000
    (set scrollbufsize will take effect the next time you launch Stata)

 6 . *****set the working dictionary*******
 7 . cd "C:\Users\cuiti\Master Study\Second Semester\econometrics\TIANYUCUI\ps5"
    C:\Users\cuiti\Master Study\Second Semester\econometrics\TIANYUCUI\ps5

 8 . *****import the database*****
 9 . import excel "C:\Users\cuiti\Master Study\Second Semester\econometrics\TIANYUCUI\ps5\data1.xlsx
    > ("data1") firstrow clear

10 . drop A

11 . save "C:\Users\cuiti\Desktop\data1.dta",replace
    file C:\Users\cuiti\Desktop\data1.dta saved

12 .
13 . ******import the data2*****
14 . import excel "C:\Users\cuiti\Master Study\Second Semester\econometrics\TIANYUCUI\ps5\data2.xlsx
    > ("data2") firstrow clear

15 . drop A
```

```
16 . save "C:\Users\cuiti\Desktop\data2.dta",replace
file C:\Users\cuiti\Desktop\data2.dta saved

17 . ********merge the database*****
18 . merge 1:m hhid using "C:\Users\cuiti\Desktop\data1.dta"
```

Result	# of obs.	
not matched	0	
matched	4,470	(_merge==3)

```
19 .
20 . summarize PBB_Stk    PHse_Stk   PImp_Stk   PPk_Tub    PHse_Tub   PPk_Stk    PFl_Stk    PGen_Stk
> ub    PFl_Tub
```

Variable	Obs	Mean	Std. Dev.	Min	Max
PBB_Stk	4,470	.5432103	.1203319	.19	1.01
PHse_Stk	4,470	.4371477	.1188312	.19	.64
PImp_Stk	4,470	.7807785	.1146461	.33	2.3
PPk_Tub	4,470	1.077409	.0297261	.98	1.24
PHse_Tub	4,470	.5686734	.072455	.33	1.27
PPk_Stk	4,470	.5184362	.1505174	.19	.67
PFl_Stk	4,470	1.01502	.0428952	.95	1.16
PGen_Stk	4,470	.3452819	.0351661	.25	.55
PSS_Tub	4,470	.8250895	.0612116	.5	.98
PFl_Tub	4,470	1.189376	.0140545	.69	1.47

```
21 .
22 . tabulate choice
```

choice	Freq.	Percent	Cum.
1	1,766	39.51	39.51
2	699	15.64	55.15
3	243	5.44	60.58
4	593	13.27	73.85
5	315	7.05	80.89
6	74	1.66	82.55
7	319	7.14	89.69
8	203	4.54	94.23
9	225	5.03	99.26
10	33	0.74	100.00
Total	4,470	100.00	

```
23 . tabulate Income choice
```

	choice							
Income	1	2	3	4	5	6	7	To
2.5	19	4	0	2	6	0	16	
7.5	117	54	13	34	19	2	27	
12.5	196	106	41	44	23	9	40	
17.5	318	100	27	111	21	5	54	
22.5	292	123	34	154	123	2	41	
27.5	195	94	9	67	18	6	24	
32.5	209	84	28	64	54	4	49	
37.5	132	34	17	29	23	1	15	
42.5	125	33	33	23	6	20	27	
47.5	83	22	23	16	7	17	6	
55	47	30	11	32	7	3	12	
67.5	19	4	1	8	6	2	7	

87.5	**9**	**10**	**3**	**1**	**0**	**1**	**1**	
130	**5**	**1**	**3**	**8**	**2**	**2**	**0**	
Total	**1,766**	**699**	**243**	**593**	**315**	**74**	**319**	**4,**

Income	choice 8	9	10	Total
2.5	**1**	**2**	**0**	**50**
7.5	**6**	**22**	**1**	**295**
12.5	**8**	**25**	**3**	**495**
17.5	**19**	**20**	**2**	**677**
22.5	**36**	**30**	**8**	**843**
27.5	**25**	**34**	**4**	**476**
32.5	**19**	**33**	**5**	**549**
37.5	**14**	**9**	**5**	**279**
42.5	**21**	**14**	**1**	**303**
47.5	**9**	**2**	**3**	**188**
55	**42**	**17**	**0**	**201**
67.5	**3**	**0**	**1**	**51**
87.5	**0**	**12**	**0**	**37**
130	**0**	**5**	**0**	**26**
Total	**203**	**225**	**33**	**4,470**

```
24 .
25 .
26 . ******question2******
27 . **rename the product and price***
28 . drop hhid Fs3_4 Fs5 Fam_Size college whtcollar retired _merge

29 . gen n = 4410

30 . gen v1 = _n

31 . rename (PBB_Stk    PHse_Stk   PImp_Stk   PPk_Tub    PHse_Tub   PPk_Stk    PFl_Stk    PGen_Stk
>     PFl_Tub )(c1 c2 c3 c4 c5 c6 c7 c8 c9 c10)

32 . reshape long c,i(v1) j(price)
(note: j = 1 2 3 4 5 6 7 8 9 10)

Data                               wide   ->   long
-----------------------------------------------------------------------------
Number of obs.                     4470   ->   44700
Number of variables                  14   ->       6
j variable (10 values)                    ->   price
xij variables:
                          c1 c2 ... c10   ->   c
-----------------------------------------------------------------------------

33 . gen dum = cond(price == choice,1,0)
```

```
34 .
35 . asclogit dum c,case(v1) alternatives(price)

Iteration 0:   log likelihood = -8365.7143
Iteration 1:   log likelihood = -8276.8204
Iteration 2:   log likelihood = -8276.6717
Iteration 3:   log likelihood = -8276.6717

Alternative-specific conditional logit          Number of obs      =     44,700
Case variable: v1                               Number of cases    =       4470

Alternative variable: price                     Alts per case: min =         10
                                                               avg =       10.0
                                                               max =         10

                                                Wald chi2(1)       =      18.28
Log likelihood = -8276.6717                     Prob > chi2        =     0.0000
```

dum	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
price						
c	.8185517	.1914352	4.28	0.000	.4433457	1.193758
1	(base alternative)					
2						
_cons	-.8410392	.048923	-17.19	0.000	-.9369265	-.7451519
3						
_cons	-2.179654	.0826712	-26.37	0.000	-2.341687	-2.017622
4						
_cons	-1.528427	.1126834	-13.56	0.000	-1.749282	-1.307572
5						
_cons	-1.746435	.0614473	-28.42	0.000	-1.86687	-1.626001
6						
_cons	-3.157418	.1187018	-26.60	0.000	-3.390069	-2.924767
7						
_cons	-2.096739	.1086035	-19.31	0.000	-2.309598	-1.883881
8						
_cons	-2.000621	.0833897	-23.99	0.000	-2.164062	-1.83718
9						
_cons	-2.291235	.0890448	-25.73	0.000	-2.465759	-2.11671
10						
_cons	-4.508496	.2147651	-20.99	0.000	-4.929428	-4.087564

```
36 . est sto c_logit

37 . estat mfx
```

Pr(choice = 1|1 selected) = **.39522496**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
c							
1	.195652	.045785	4.27	0.000	.105914	.28539	.54321
2	-.050556	.011935	-4.24	0.000	-.073949	-.027163	.43715
3	-.017562	.004238	-4.14	0.000	-.025868	-.009256	.78078
4	-.042939	.010183	-4.22	0.000	-.062897	-.022981	1.0774
5	-.022768	.005452	-4.18	0.000	-.033454	-.012082	.56867
6	-.005329	.001379	-3.87	0.000	-.008032	-.002627	.51844
7	-.023113	.005558	-4.16	0.000	-.034006	-.01222	1.015
8	-.014707	.00359	-4.10	0.000	-.021743	-.00767	.34528
9	-.016288	.003955	-4.12	0.000	-.024039	-.008537	.82509
10	-.00239	.000696	-3.43	0.001	-.003755	-.001025	1.1894

Pr(choice = 2|1 selected) = **.15627201**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
c							
1	-.050556	.011935	-4.24	0.000	-.073949	-.027163	.54321
2	.107927	.025399	4.25	0.000	.058145	.157708	.43715
3	-.006944	.001685	-4.12	0.000	-.010247	-.003642	.78078
4	-.016978	.00405	-4.19	0.000	-.024915	-.009041	1.0774
5	-.009002	.002168	-4.15	0.000	-.013252	-.004753	.56867
6	-.002107	.000548	-3.85	0.000	-.003181	-.001034	.51844
7	-.009139	.00221	-4.14	0.000	-.01347	-.004808	1.015
8	-.005815	.001427	-4.07	0.000	-.008612	-.003018	.34528
9	-.00644	.001572	-4.10	0.000	-.009522	-.003359	.82509
10	-.000945	.000276	-3.42	0.001	-.001487	-.000403	1.1894

Pr(choice = 3|1 selected) = **.05428579**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
c							
1	-.017562	.004238	-4.14	0.000	-.025868	-.009256	.54321
2	-.006944	.001685	-4.12	0.000	-.010247	-.003642	.43715
3	.042023	.010107	4.16	0.000	.022215	.061832	.78078
4	-.005898	.001437	-4.10	0.000	-.008715	-.003081	1.0774
5	-.003127	.000769	-4.07	0.000	-.004635	-.00162	.56867
6	-.000732	.000194	-3.78	0.000	-.001112	-.000352	.51844
7	-.003175	.000784	-4.05	0.000	-.004711	-.001638	1.015
8	-.00202	.000506	-3.99	0.000	-.003012	-.001028	.34528
9	-.002237	.000557	-4.01	0.000	-.00333	-.001145	.82509
10	-.000328	.000097	-3.37	0.001	-.000519	-.000137	1.1894

Pr(choice = 4|1 selected) = **.13272745**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
c							
1	-.042939	.010183	-4.22	0.000	-.062897	-.022981	.54321
2	-.016978	.00405	-4.19	0.000	-.024915	-.009041	.43715
3	-.005898	.001437	-4.10	0.000	-.008715	-.003081	.78078
4	.094224	.022265	4.23	0.000	.050585	.137864	1.0774
5	-.007646	.001849	-4.13	0.000	-.011271	-.004021	.56867
6	-.00179	.000467	-3.83	0.000	-.002705	-.000874	.51844
7	-.007762	.001885	-4.12	0.000	-.011457	-.004067	1.015
8	-.004939	.001217	-4.06	0.000	-.007325	-.002553	.34528
9	-.00547	.001341	-4.08	0.000	-.008098	-.002842	.82509
10	-.000803	.000235	-3.41	0.001	-.001264	-.000341	1.1894

Pr(choice = 5|1 selected) = **.07037674**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
c							
1	-.022768	.005452	-4.18	0.000	-.033454	-.012082	.54321
2	-.009002	.002168	-4.15	0.000	-.013252	-.004753	.43715
3	-.003127	.000769	-4.07	0.000	-.004635	-.00162	.78078
4	-.007646	.001849	-4.13	0.000	-.011271	-.004021	1.0774
5	.053553	.012782	4.19	0.000	.028501	.078604	.56867
6	-.000949	.00025	-3.80	0.000	-.001438	-.00046	.51844
7	-.004116	.001009	-4.08	0.000	-.006093	-.002138	1.015
8	-.002619	.000651	-4.02	0.000	-.003895	-.001342	.34528
9	-.0029	.000718	-4.04	0.000	-.004307	-.001494	.82509
10	-.000426	.000126	-3.39	0.001	-.000672	-.000179	1.1894

Pr(choice = 6|1 selected) = **.01647359**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
c							
1	-.005329	.001379	-3.87	0.000	-.008032	-.002627	.54321
2	-.002107	.000548	-3.85	0.000	-.003181	-.001034	.43715
3	-.000732	.000194	-3.78	0.000	-.001112	-.000352	.78078
4	-.00179	.000467	-3.83	0.000	-.002705	-.000874	1.0774
5	-.000949	.00025	-3.80	0.000	-.001438	-.00046	.56867
6	.013262	.003421	3.88	0.000	.006557	.019967	.51844
7	-.000963	.000254	-3.79	0.000	-.001462	-.000465	1.015
8	-.000613	.000164	-3.74	0.000	-.000934	-.000292	.34528
9	-.000679	.000181	-3.76	0.000	-.001033	-.000325	.82509
10	-.0001	.000031	-3.21	0.001	-.00016	-.000039	1.1894

Pr(choice = 7|1 selected) = **.07144417**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
c							
1	-.023113	.005558	-4.16	0.000	-.034006	-.01222	.54321
2	-.009139	.00221	-4.14	0.000	-.01347	-.004808	.43715
3	-.003175	.000784	-4.05	0.000	-.004711	-.001638	.78078
4	-.007762	.001885	-4.12	0.000	-.011457	-.004067	1.0774
5	-.004116	.001009	-4.08	0.000	-.006093	-.002138	.56867
6	-.000963	.000254	-3.79	0.000	-.001462	-.000465	.51844
7	.054303	.01301	4.17	0.000	.028803	.079803	1.015
8	-.002658	.000664	-4.01	0.000	-.003959	-.001358	.34528
9	-.002944	.000731	-4.03	0.000	-.004378	-.001511	.82509

10	**-.000432**	**.000128**	**-3.38**	**0.001**	**-.000683**	**-.000181**	**1.1894**

Pr(choice = 8|1 selected) = **.0454594**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.	]	X
c							
1	**-.014707**	**.00359**	**-4.10**	**0.000**	**-.021743**	**-.00767**	**.54321**
2	**-.005815**	**.001427**	**-4.07**	**0.000**	**-.008612**	**-.003018**	**.43715**
3	**-.00202**	**.000506**	**-3.99**	**0.000**	**-.003012**	**-.001028**	**.78078**
4	**-.004939**	**.001217**	**-4.06**	**0.000**	**-.007325**	**-.002553**	**1.0774**
5	**-.002619**	**.000651**	**-4.02**	**0.000**	**-.003895**	**-.001342**	**.56867**
6	**-.000613**	**.000164**	**-3.74**	**0.000**	**-.000934**	**-.000292**	**.51844**
7	**-.002658**	**.000664**	**-4.01**	**0.000**	**-.003959**	**-.001358**	**1.015**
8	**.035519**	**.00864**	**4.11**	**0.000**	**.018585**	**.052454**	**.34528**
9	**-.001873**	**.000472**	**-3.97**	**0.000**	**-.002798**	**-.000949**	**.82509**
10	**-.000275**	**.000082**	**-3.34**	**0.001**	**-.000436**	**-.000114**	**1.1894**

Pr(choice = 9|1 selected) = **.05034771**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.	]	X
c							
1	**-.016288**	**.003955**	**-4.12**	**0.000**	**-.024039**	**-.008537**	**.54321**
2	**-.00644**	**.001572**	**-4.10**	**0.000**	**-.009522**	**-.003359**	**.43715**
3	**-.002237**	**.000557**	**-4.01**	**0.000**	**-.00333**	**-.001145**	**.78078**
4	**-.00547**	**.001341**	**-4.08**	**0.000**	**-.008098**	**-.002842**	**1.0774**
5	**-.0029**	**.000718**	**-4.04**	**0.000**	**-.004307**	**-.001494**	**.56867**
6	**-.000679**	**.000181**	**-3.76**	**0.000**	**-.001033**	**-.000325**	**.51844**
7	**-.002944**	**.000731**	**-4.03**	**0.000**	**-.004378**	**-.001511**	**1.015**
8	**-.001873**	**.000472**	**-3.97**	**0.000**	**-.002798**	**-.000949**	**.34528**
9	**.039137**	**.009469**	**4.13**	**0.000**	**.020578**	**.057696**	**.82509**
10	**-.000304**	**.000091**	**-3.36**	**0.001**	**-.000482**	**-.000127**	**1.1894**

Pr(choice = 10|1 selected) = **.00738816**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.	]	X
c							
1	**-.00239**	**.000696**	**-3.43**	**0.001**	**-.003755**	**-.001025**	**.54321**
2	**-.000945**	**.000276**	**-3.42**	**0.001**	**-.001487**	**-.000403**	**.43715**
3	**-.000328**	**.000097**	**-3.37**	**0.001**	**-.000519**	**-.000137**	**.78078**
4	**-.000803**	**.000235**	**-3.41**	**0.001**	**-.001264**	**-.000341**	**1.0774**
5	**-.000426**	**.000126**	**-3.39**	**0.001**	**-.000672**	**-.000179**	**.56867**
6	**-.0001**	**.000031**	**-3.21**	**0.001**	**-.00016**	**-.000039**	**.51844**
7	**-.000432**	**.000128**	**-3.38**	**0.001**	**-.000683**	**-.000181**	**1.015**
8	**-.000275**	**.000082**	**-3.34**	**0.001**	**-.000436**	**-.000114**	**.34528**
9	**-.000304**	**.000091**	**-3.36**	**0.001**	**-.000482**	**-.000127**	**.82509**
10	**.006003**	**.001745**	**3.44**	**0.001**	**.002583**	**.009423**	**1.1894**

```
38 .
39 . asclogit dum, case(v1) alternatives(price) casevar(Income)

Iteration 0:   log likelihood = -8328.1129
Iteration 1:   log likelihood = -8236.9407
Iteration 2:   log likelihood =  -8236.757
Iteration 3:   log likelihood =  -8236.757

Alternative-specific conditional logit          Number of obs      =     44,700
Case variable: v1                               Number of cases    =       4470

Alternative variable: price                     Alts per case: min =         10
                                                               avg =       10.0
                                                               max =         10

                                                Wald chi2(9)       =     101.55
Log likelihood =  -8236.757                     Prob > chi2        =     0.0000
```

dum	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1	(base alternative)					
2						
Income	-.0030887	.003114	-0.99	0.321	-.009192	.0030145
_cons	-.8453241	.0931354	-9.08	0.000	-1.027866	-.662782
3						
Income	.0145862	.0038255	3.81	0.000	.0070885	.022084
_cons	-2.399858	.1335802	-17.97	0.000	-2.66167	-2.138045
4						
Income	.0040504	.0030926	1.31	0.190	-.0020109	.0101118
_cons	-1.201326	.0971021	-12.37	0.000	-1.391643	-1.01101
5						
Income	-.0012536	.0042024	-0.30	0.765	-.0094901	.0069829
_cons	-1.690582	.1269952	-13.31	0.000	-1.939488	-1.441676
6						
Income	.030612	.004674	6.55	0.000	.0214512	.0397729
_cons	-4.139767	.210989	-19.62	0.000	-4.553298	-3.726236
7						
Income	-.0069326	.0044161	-1.57	0.116	-.015588	.0017228
_cons	-1.531042	.1280434	-11.96	0.000	-1.782002	-1.280081
8						
Income	.0228862	.0036217	6.32	0.000	.0157878	.0299845
_cons	-2.848352	.1393848	-20.44	0.000	-3.121541	-2.575163
9						
Income	.017743	.0037623	4.72	0.000	.010369	.0251169
_cons	-2.575597	.13614	-18.92	0.000	-2.842427	-2.308768
10						
Income	.0107909	.01013	1.07	0.287	-.0090636	.0306454
_cons	-4.28227	.345792	-12.38	0.000	-4.96001	-3.60453

```
40 . est sto m_logit

41 . estat mfx
```

Pr(choice = 1|1 selected) = **.39801714**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.001062**	**.000487**	**-2.18**	**0.029**	**-.002016**	**-.000108**	**27.664**

Pr(choice = 2|1 selected) = **.15691816**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.000904**	**.000378**	**-2.39**	**0.017**	**-.001645**	**-.000162**	**27.664**

Pr(choice = 3|1 selected) = **.05406295**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000644**	**.000183**	**3.53**	**0.000**	**.000286**	**.001002**	**27.664**

Pr(choice = 4|1 selected) = **.13391688**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000185**	**.000329**	**0.56**	**0.574**	**-.00046**	**.00083**	**27.664**

Pr(choice = 5|1 selected) = **.07089742**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.000278**	**.000264**	**-1.06**	**0.291**	**-.000795**	**.000238**	**27.664**

Pr(choice = 6|1 selected) = **.01478443**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000413**	**.000066**	**6.22**	**0.000**	**.000283**	**.000543**	**27.664**

Pr(choice = 7|1 selected) = **.07107045**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.000682**	**.000277**	**-2.47**	**0.014**	**-.001224**	**-.00014**	**27.664**

Pr(choice = 8|1 selected) = **.04343487**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000878**	**.000138**	**6.38**	**0.000**	**.000608**	**.001148**	**27.664**

Pr(choice = 9|1 selected) = **.04948833**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000746**	**.000164**	**4.55**	**0.000**	**.000425**	**.001067**	**27.664**

Pr(choice = 10|1 selected) = **.00740936**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.00006**	**.000074**	**0.82**	**0.413**	**-.000084**	**.000204**	**27.664**

```
42 .
43 . ******question3******
44 . asclogit dum, case(v1) alternatives(price) casevar(Income)
```

Iteration 0: log likelihood = **-8328.1129**
Iteration 1: log likelihood = **-8236.9407**
Iteration 2: log likelihood = **-8236.757**
Iteration 3: log likelihood = **-8236.757**

Alternative-specific conditional logit — Number of obs = **44,700**
Case variable: v1 — Number of cases = **4470**

Alternative variable: price — Alts per case: min = **10**
avg = **10.0**
max = **10**

Wald chi2(**9**) = **101.55**
Log likelihood = **-8236.757** — Prob > chi2 = **0.0000**

dum	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1	(base alternative)					
2						
Income	**-.0030887**	**.003114**	**-0.99**	**0.321**	**-.009192**	**.0030145**
_cons	**-.8453241**	**.0931354**	**-9.08**	**0.000**	**-1.027866**	**-.662782**
3						
Income	**.0145862**	**.0038255**	**3.81**	**0.000**	**.0070885**	**.022084**
_cons	**-2.399858**	**.1335802**	**-17.97**	**0.000**	**-2.66167**	**-2.138045**
4						
Income	**.0040504**	**.0030926**	**1.31**	**0.190**	**-.0020109**	**.0101118**
_cons	**-1.201326**	**.0971021**	**-12.37**	**0.000**	**-1.391643**	**-1.01101**
5						
Income	**-.0012536**	**.0042024**	**-0.30**	**0.765**	**-.0094901**	**.0069829**
_cons	**-1.690582**	**.1269952**	**-13.31**	**0.000**	**-1.939488**	**-1.441676**
6						

Income	.030612	.004674	6.55	0.000	.0214512	.0397729
_cons	-4.139767	.210989	-19.62	0.000	-4.553298	-3.726236
7						
Income	-.0069326	.0044161	-1.57	0.116	-.015588	.0017228
_cons	-1.531042	.1280434	-11.96	0.000	-1.782002	-1.280081
8						
Income	.0228862	.0036217	6.32	0.000	.0157878	.0299845
_cons	-2.848352	.1393848	-20.44	0.000	-3.121541	-2.575163
9						
Income	.017743	.0037623	4.72	0.000	.010369	.0251169
_cons	-2.575597	.13614	-18.92	0.000	-2.842427	-2.308768
10						
Income	.0107909	.01013	1.07	0.287	-.0090636	.0306454
_cons	-4.28227	.345792	-12.38	0.000	-4.96001	-3.60453

```
45 . est sto m_logit

46 . estat mfx
```

Pr(choice = 1|1 selected) = **.39801714**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	-.001062	.000487	-2.18	0.029	-.002016	-.000108	27.664

Pr(choice = 2|1 selected) = **.15691816**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	-.000904	.000378	-2.39	0.017	-.001645	-.000162	27.664

Pr(choice = 3|1 selected) = **.05406295**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	.000644	.000183	3.53	0.000	.000286	.001002	27.664

Pr(choice = 4|1 selected) = **.13391688**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	.000185	.000329	0.56	0.574	-.00046	.00083	27.664

Pr(choice = 5|1 selected) = **.07089742**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	-.000278	.000264	-1.06	0.291	-.000795	.000238	27.664

Pr(choice = 6|1 selected) = **.01478443**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000413**	**.000066**	**6.22**	**0.000**	**.000283**	**.000543**	**27.664**

Pr(choice = 7|1 selected) = **.07107045**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.000682**	**.000277**	**-2.47**	**0.014**	**-.001224**	**-.00014**	**27.664**

Pr(choice = 8|1 selected) = **.04343487**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000878**	**.000138**	**6.38**	**0.000**	**.000608**	**.001148**	**27.664**

Pr(choice = 9|1 selected) = **.04948833**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000746**	**.000164**	**4.55**	**0.000**	**.000425**	**.001067**	**27.664**

Pr(choice = 10|1 selected) = **.00740936**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.00006**	**.000074**	**0.82**	**0.413**	**-.000084**	**.000204**	**27.664**

```
47 .  ****question4-clogit*****
48 . asclogit dum, case(v1) alternatives(price) casevar(Income)

Iteration 0:   log likelihood = -8328.1129
Iteration 1:   log likelihood = -8236.9407
Iteration 2:   log likelihood =  -8236.757
Iteration 3:   log likelihood =  -8236.757

Alternative-specific conditional logit          Number of obs      =     44,700
Case variable: v1                               Number of cases    =       4470

Alternative variable: price                     Alts per case: min =         10
                                                               avg =       10.0
                                                               max =         10

                                                Wald chi2(9)       =     101.55
Log likelihood =  -8236.757                     Prob > chi2        =     0.0000
```

dum	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1	(base alternative)					
2						
Income	**-.0030887**	**.003114**	**-0.99**	**0.321**	**-.009192**	**.0030145**
_cons	**-.8453241**	**.0931354**	**-9.08**	**0.000**	**-1.027866**	**-.662782**
3						
Income	**.0145862**	**.0038255**	**3.81**	**0.000**	**.0070885**	**.022084**
_cons	**-2.399858**	**.1335802**	**-17.97**	**0.000**	**-2.66167**	**-2.138045**
4						
Income	**.0040504**	**.0030926**	**1.31**	**0.190**	**-.0020109**	**.0101118**
_cons	**-1.201326**	**.0971021**	**-12.37**	**0.000**	**-1.391643**	**-1.01101**
5						
Income	**-.0012536**	**.0042024**	**-0.30**	**0.765**	**-.0094901**	**.0069829**
_cons	**-1.690582**	**.1269952**	**-13.31**	**0.000**	**-1.939488**	**-1.441676**
6						
Income	**.030612**	**.004674**	**6.55**	**0.000**	**.0214512**	**.0397729**
_cons	**-4.139767**	**.210989**	**-19.62**	**0.000**	**-4.553298**	**-3.726236**
7						
Income	**-.0069326**	**.0044161**	**-1.57**	**0.116**	**-.015588**	**.0017228**
_cons	**-1.531042**	**.1280434**	**-11.96**	**0.000**	**-1.782002**	**-1.280081**
8						
Income	**.0228862**	**.0036217**	**6.32**	**0.000**	**.0157878**	**.0299845**
_cons	**-2.848352**	**.1393848**	**-20.44**	**0.000**	**-3.121541**	**-2.575163**
9						
Income	**.017743**	**.0037623**	**4.72**	**0.000**	**.010369**	**.0251169**
_cons	**-2.575597**	**.13614**	**-18.92**	**0.000**	**-2.842427**	**-2.308768**
10						
Income	**.0107909**	**.01013**	**1.07**	**0.287**	**-.0090636**	**.0306454**
_cons	**-4.28227**	**.345792**	**-12.38**	**0.000**	**-4.96001**	**-3.60453**

```
49 . est sto m_logit

50 . estat mfx
```

Pr(choice = 1|1 selected) = **.39801714**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.001062**	**.000487**	**-2.18**	**0.029**	**-.002016**	**-.000108**	**27.664**

Pr(choice = 2|1 selected) = **.15691816**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.000904**	**.000378**	**-2.39**	**0.017**	**-.001645**	**-.000162**	**27.664**

Pr(choice = 3|1 selected) = **.05406295**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000644**	**.000183**	**3.53**	**0.000**	**.000286**	**.001002**	**27.664**

Pr(choice = 4|1 selected) = **.13391688**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000185**	**.000329**	**0.56**	**0.574**	**-.00046**	**.00083**	**27.664**

Pr(choice = 5|1 selected) = **.07089742**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.000278**	**.000264**	**-1.06**	**0.291**	**-.000795**	**.000238**	**27.664**

Pr(choice = 6|1 selected) = **.01478443**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000413**	**.000066**	**6.22**	**0.000**	**.000283**	**.000543**	**27.664**

Pr(choice = 7|1 selected) = **.07107045**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**-.000682**	**.000277**	**-2.47**	**0.014**	**-.001224**	**-.00014**	**27.664**

Pr(choice = 8|1 selected) = **.04343487**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000878**	**.000138**	**6.38**	**0.000**	**.000608**	**.001148**	**27.664**

Pr(choice = 9|1 selected) = **.04948833**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.000746**	**.000164**	**4.55**	**0.000**	**.000425**	**.001067**	**27.664**

Pr(choice = 10|1 selected) = **.00740936**

variable	dp/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
casevars							
Income	**.00006**	**.000074**	**0.82**	**0.413**	**-.000084**	**.000204**	**27.664**

```
51 . *****question4-mlogit*****
52 . ********question5*****
53 . asmixlogit dum, case(v1)  alternatives(price)casevar(Income)

Fitting fixed parameter model:

Fitting full model:

Iteration 0:   log likelihood =  -8236.757
Iteration 1:   log likelihood =  -8236.757

Alternative-specific mixed logit                Number of obs      =     44,700
Case variable: v1                               Number of cases    =      4,470

Alternative variable: price                     Alts per case: min =         10
                                                               avg =       10.0
                                                               max =         10

Integration points:              0              Wald chi2(9)       =     101.55
Log likelihood =         -8236.757              Prob > chi2        =     0.0000
```

dum		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1		(base alternative)					
2							
	Income	-.0030887	.003114	-0.99	0.321	-.009192	.0030145
	_cons	-.8453241	.0931354	-9.08	0.000	-1.027866	-.662782
3							
	Income	.0145862	.0038255	3.81	0.000	.0070885	.022084
	_cons	-2.399858	.1335802	-17.97	0.000	-2.66167	-2.138045
4							
	Income	.0040504	.0030926	1.31	0.190	-.0020109	.0101118
	_cons	-1.201326	.0971021	-12.37	0.000	-1.391643	-1.01101
5							
	Income	-.0012536	.0042024	-0.30	0.765	-.0094901	.0069829
	_cons	-1.690582	.1269952	-13.31	0.000	-1.939488	-1.441676
6							
	Income	.030612	.004674	6.55	0.000	.0214512	.0397729
	_cons	-4.139767	.210989	-19.62	0.000	-4.553298	-3.726236
7							
	Income	-.0069326	.0044161	-1.57	0.116	-.015588	.0017228
	_cons	-1.531042	.1280434	-11.96	0.000	-1.782002	-1.280081
8							
	Income	.0228862	.0036217	6.32	0.000	.0157878	.0299845
	_cons	-2.848352	.1393848	-20.44	0.000	-3.121542	-2.575163
9							
	Income	.017743	.0037623	4.72	0.000	.010369	.0251169
	_cons	-2.575597	.13614	-18.92	0.000	-2.842427	-2.308768
10							
	Income	.0107909	.01013	1.07	0.287	-.0090636	.0306454
	_cons	-4.28227	.345792	-12.38	0.000	-4.96001	-3.60453

```
54 . estimate store mixlogit

55 . drop if choice == 10
(330 observations deleted)

56 . drop if price == 10
(4,437 observations deleted)

57 . asmixlogit dum,  casevar(Income) alternative(price) case(v1)

Fitting fixed parameter model:

Fitting full model:

Iteration 0:   log likelihood =  -8042.323
Iteration 1:   log likelihood =  -8042.323

Alternative-specific mixed logit                Number of obs      =     39,933
Case variable: v1                               Number of cases    =      4,437

Alternative variable: price                     Alts per case: min =          9
                                                               avg =        9.0
                                                               max =          9

Integration points:              0              Wald chi2(8)       =     100.80
Log likelihood =         -8042.323              Prob > chi2        =     0.0000
```

dum		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1		(base alternative)					
2							
	Income	-.0030751	.0031072	-0.99	0.322	-.0091651	.0030149
	_cons	-.8456842	.0929792	-9.10	0.000	-1.02792	-.6634482
3							
	Income	.0145158	.0038165	3.80	0.000	.0070355	.021996
	_cons	-2.397844	.1333487	-17.98	0.000	-2.659203	-2.136485
4							
	Income	.0040315	.0030853	1.31	0.191	-.0020155	.0100786
	_cons	-1.200813	.0969282	-12.39	0.000	-1.390789	-1.010837
5							
	Income	-.001248	.004193	-0.30	0.766	-.0094661	.0069702
	_cons	-1.690731	.1267778	-13.34	0.000	-1.939211	-1.442251
6							
	Income	.0304769	.0046664	6.53	0.000	.0213309	.039623
	_cons	-4.135554	.2107624	-19.62	0.000	-4.548641	-3.722468
7							
	Income	-.006903	.0044072	-1.57	0.117	-.0155409	.0017349
	_cons	-1.531811	.1278428	-11.98	0.000	-1.782378	-1.281244
8							
	Income	.0227784	.0036143	6.30	0.000	.0156944	.0298623
	_cons	-2.845132	.1391818	-20.44	0.000	-3.117924	-2.572341
9							
	Income	.0176576	.0037539	4.70	0.000	.0103001	.025015
	_cons	-2.573117	.1359163	-18.93	0.000	-2.839508	-2.306726

```
58 . estimate store mixlogitpartial

59 . hausman mixlogitpartial mixlogit, alleqs constant

Note: the rank of the differenced variance matrix (10) does not equal the number of coefficients
      tested (16); be sure this is what you expect, or there may be problems computing the test
      Examine the output of your estimators for anything unexpected and possibly consider scali
      variables so that the coefficients are on a similar scale.
```

	——— Coefficients ———			
	(b) mixlogitpa~l	(B) mixlogit	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
2				
Income	**-.0030751**	**-.0030887**	**.0000136**	.
_cons	**-.8456842**	**-.8453241**	**-.00036**	.
3				
Income	**.0145158**	**.0145862**	**-.0000705**	.
_cons	**-2.397844**	**-2.399858**	**.0020135**	.
4				
Income	**.0040315**	**.0040504**	**-.0000189**	.
_cons	**-1.200813**	**-1.201326**	**.0005133**	.
5				
Income	**-.001248**	**-.0012536**	**5.62e-06**	.
_cons	**-1.690731**	**-1.690582**	**-.0001495**	.
6				
Income	**.0304769**	**.030612**	**-.0001351**	.
_cons	**-4.135554**	**-4.139767**	**.0042128**	.
7				
Income	**-.006903**	**-.0069326**	**.0000296**	.
_cons	**-1.531811**	**-1.531042**	**-.0007692**	.
8				
Income	**.0227784**	**.0228862**	**-.0001078**	.
_cons	**-2.845132**	**-2.848352**	**.0032198**	.
9				
Income	**.0176576**	**.017743**	**-.0000854**	.
_cons	**-2.573117**	**-2.575597**	**.0024806**	.

```
                b = consistent under Ho and Ha; obtained from asmixlogit
     B = inconsistent under Ha, efficient under Ho; obtained from asmixlogit

  Test:  Ho:  difference in coefficients not systematic

              chi2(10) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                       =    -2.50    chi2<0 ==> model fitted on these
                                     data fails to meet the asymptotic
                                     assumptions of the Hausman test;
                                     see suest for a generalized test

60 .
end of do-file

61 .
```