


```
. replace Correctjbstat = jbstat if Correctjbstat >= . & wave != 1
(228732 real changes made)
```

```
. * Now attach the value labels to the new jbstat variable
. * First, find out the name of the label
. describe jbstat
```

variable name	storage type	display format	value label	variable label
jbstat	byte	%8.0g	rjbstat	current economic activity

```
. label value Correctjbstat rjbstat
```

```
. * Alternatively:
. recode jbstat (5=6) (6=7) (7=8) (8=5) if wave == 1
(jbstat: 1809 changes made)
```

```
. tabulate Correctjbstat jbstat
```

RECODE of jbstat (current economic activity)	current economic activity					Total
	missing o	-7	refused	not answe	self-empl	
missing or wild	91	0	0	0	0	91
-7	0	352	0	0	0	352
refused	0	0	1	0	0	1
not answered	0	0	0	19	0	19
self-employed	0	0	0	0	16,671	16,671
employed	0	0	0	0	0	119,292
unemployed	0	0	0	0	0	9,080
retired	0	0	0	0	0	48,085
maternity leave	0	0	0	0	0	946
family care	0	0	0	0	0	18,238
ft studt, school	0	0	0	0	0	14,253
lt sick, disabld	0	0	0	0	0	10,351
gvt trng scheme	0	0	0	0	0	592
other	0	0	0	0	0	1,025
Total	91	352	1	19	16,671	238,996

RECODE of jbstat (current economic activity)	current economic activity					Total
	employed	unemploye	retired	maternity	family ca	
missing or wild	0	0	0	0	0	91
-7	0	0	0	0	0	352
refused	0	0	0	0	0	1
not answered	0	0	0	0	0	19
self-employed	0	0	0	0	0	16,671
employed	119,292	0	0	0	0	119,292
unemployed	0	9,080	0	0	0	9,080
retired	0	0	48,085	0	0	48,085
maternity leave	0	0	0	946	0	946
family care	0	0	0	0	18,238	18,238
ft studt, school	0	0	0	0	0	14,253
lt sick, disabld	0	0	0	0	0	10,351
gvt trng scheme	0	0	0	0	0	592
other	0	0	0	0	0	1,025
Total	119,292	9,080	48,085	946	18,238	238,996

RECODE of jbstat (current economic activity)	current economic activity				Total
	ft studt,	lt sick,	gvt trng	other	
missing or wild	0	0	0	0	91
-7	0	0	0	0	352
refused	0	0	0	0	1
not answered	0	0	0	0	19

self-employed	0	0	0	0	16,671
employed	0	0	0	0	119,292
unemployed	0	0	0	0	9,080
retired	0	0	0	0	48,085
maternity leave	0	0	0	0	946
family care	0	0	0	0	18,238
ft studt, school	14,253	0	0	0	14,253
lt sick, disabl	0	10,351	0	0	10,351
gvt trng scheme	0	0	592	0	592
other	0	0	0	1,025	1,025
Total	14,253	10,351	592	1,025	238,996

```
.
.
.
. * 4.5. Recoding variables and identifying the data as a panel
. *-----
```

```
. mvdecode _all, mv(-9/-1)
  sex: 2094 missing values generated
 jbstat: 463 missing values generated
 jbsoc: 106897 missing values generated
 jbsemp: 95040 missing values generated
 mastat: 54 missing values generated
  age: 9 missing values generated
 region: 1262 missing values generated
 qfachi: 13759 missing values generated
 jbft: 99090 missing values generated
 paygu: 118881 missing values generated
 cjsten: 15239 missing values generated
 jbbgy4: 119092 missing values generated
Correctjbs~t: 463 missing values generated
```

```
. save "$dirresults\DataFile", replace
file C:\My Documents\DataFile.dta saved
```

```
. * Save for use in later chapters
.
. describe
```

```
Contains data from C:\My Documents\DataFile.dta
  obs:      238,996
  vars:      16
  size:      8,125,864
                                30 Jul 2014 09:37
```

variable name	storage type	display format	value label	variable label
hid	long	%12.0g		household identification number
sex	byte	%8.0g	rsex	sex
jbstat	byte	%8.0g	rjbstat	current economic activity
jbsoc	int	%8.0g	rjbsoc	occupation (soc): current main job
jbsemp	byte	%8.0g	rjbsemp	employee or self-employed: current job
pid	long	%12.0g		cross-wave person identifier
mastat	byte	%8.0g	rmastat	marital status
age	int	%8.0g	rage	age at date of interview
region	byte	%8.0g	rregion	region / metropolitan area
qfachi	byte	%8.0g	rqfachi	highest academic qualification
jbft	byte	%8.0g	rjbft	employed full time
paygu	float	%9.0g	rpaygu	usual gross pay per month: current job
cjsten	long	%8.0g	rcjsten	length (days) current labour market sp.
jbbgy4	int	%8.0g	rjbbgy4	year started current job
wave	float	%9.0g		
Correctjbstat	byte	%23.0g	rjbstat	RECODE of jbstat (current economic activity)

```
Sorted by:
```

```
. sort pid wave
. compress
```

wave was float now byte
(716,988 bytes saved)

```
.
. tsset pid wave
    panel variable:  pid (unbalanced)
    time variable:  wave, 1 to 18, but with gaps
                  delta:  1 unit

. xtsum
```

Variable		Mean	Std. Dev.	Min	Max	Observations
hid	overall	1.08e+07	4940804	1000209	1.89e+07	N = 238996
	between		4317334	1000209	1.89e+07	n = 32380
	within		3760499	-1328915	2.31e+07	T-bar = 7.38098
sex	overall	1.538223	.4985379	1	2	N = 236902
	between		.4994418	1	2	n = 32336
	within		0	1.538223	1.538223	T-bar = 7.32626
jbstat	overall	3.299963	1.983959	1	10	N = 238533
	between		1.850063	1	10	n = 32290
	within		1.221509	-3.311148	11.77055	T-bar = 7.38721
jbsoc	overall	497.3981	250.9133	100	999	N = 132099
	between		219.094	101	999	n = 19746
	within		141.8367	-258.1019	1314.676	T-bar = 6.68991
jbsemp	overall	1.123934	.329507	1	2	N = 143956
	between		.2870082	1	2	n = 22446
	within		.1664814	.1794893	2.068378	T-bar = 6.41344
pid	overall	4.85e+07	4.39e+07	1.00e+07	1.89e+08	N = 238996
	between		4.83e+07	1.00e+07	1.89e+08	n = 32380
	within		0	4.85e+07	4.85e+07	T-bar = 7.38098
mastat	overall	2.539056	2.055286	0	98	N = 238942
	between		2.06646	0	21.33333	n = 32379
	within		.9152662	-12.79428	85.20572	T-bar = 7.37954
age	overall	45.27792	18.64392	15	101	N = 238987
	between		19.69943	15	97.33333	n = 32379
	within		3.860061	-7.903895	60.2191	T-bar = 7.38093
region	overall	11.0386	6.41263	1	19	N = 237734
	between		6.425193	1	19	n = 32341
	within		.9218502	-4.072513	26.87193	T-bar = 7.35085
qfachi	overall	5.017843	1.742446	1	7	N = 225237
	between		1.689611	1	7	n = 30946
	within		.342308	-.2321566	10.26784	T-bar = 7.27839
jbft	overall	1.231763	.4219598	1	2	N = 139906
	between		.3847776	1	2	n = 22084
	within		.255943	.2873183	2.176207	T-bar = 6.33517
paygu	overall	1335.755	1104.061	.0833333	72055.43	N = 120115
	between		868.1677	4.333333	14064	n = 20167
	within		641.6543	-8009.365	65521.23	T-bar = 5.95602
cjsten	overall	2826.88	3427.379	0	33416	N = 223757
	between		3231.031	0	28748	n = 31169
	within		1729.933	-15149.41	33775.06	T-bar = 7.17883
jbbgy4	overall	1995.927	7.694058	1941	2009	N = 119904
	between		7.403037	1944.333	2009	n = 20038
	within		4.259295	1958.07	2037.594	T-bar = 5.98383
wave	overall	10.43351	4.947756	1	18	N = 238996
	between		4.27356	1	18	n = 32380
	within		3.838481	-1.995066	22.86208	T-bar = 7.38098

```

Correc~t overall | 3.299963 1.983959 1 10 | N = 238533
between | 1.850063 1 10 | n = 32290
within | 1.221509 -3.311148 11.77055 | T-bar = 7.38721

```

```
. xtides
```

```

pid: 10002251, 10004491, ..., 1.893e+08 n = 32380
wave: 1, 2, ..., 18 T = 18
Delta(wave) = 1 unit
Span(wave) = 18 periods
(pid*wave uniquely identifies each observation)

```

```

Distribution of T_i: min 5% 25% 50% 75% 95% max
                    1 1 2 6 10 18 18

```

Freq.	Percent	Cum.	Pattern
4098	12.66	12.66	111111111111111111
2559	7.90	20.561111111111
1871	5.78	26.3411111111
1224	3.78	30.1211111.....
964	2.98	33.09	1.....
840	2.59	35.691.....
632	1.95	37.641.....
593	1.83	39.47	11.....
505	1.56	41.031
19094	58.97	100.00	(other patterns)
32380	100.00		XXXXXXXXXXXXXXXXXXXX

```
. iis
```

```
i() is pid
```

```
. tis
```

```
t() is wave
```

```
.
* 4.6. Computing changes over time
* -----
```

```
.
. recode paygu -9/-1 = .
(paygu: 0 changes made)
```

```
.
. generate paych = paygu - L.paygu
(145312 missing values generated)
```

```
. label var paych "Change in pay"
```

```
.
. tabulate sex, sum(paych)
```

sex	Summary of Change in pay		
	Mean	Std. Dev.	Freq.
male	103.65392	853.93596	44890
female	67.852064	600.48718	48794
Total	85.007024	733.16378	93684

```
.
. tabulate mastat
```

marital status	Freq.	Percent	Cum.
child under 16	523	0.22	0.22
married	127,836	53.50	53.72
living as couple	25,213	10.55	64.27
widowed	18,304	7.66	71.93
divorced	12,636	5.29	77.22
separated	4,042	1.69	78.91
never married	50,332	21.06	99.98
civil partnership	47	0.02	100.00
dissolved civil part	1	0.00	100.00

```

sep from civil part      |          2          0.00      100.00
survive from civ par     |          2          0.00      100.00
                        98 |          4          0.00      100.00
-----+-----
                        Total |      238,942      100.00

```

```

. recode mastat (0 98 = .) (1 2 7 = 1) (3/5 8/10 = 2) (6 = 3), gen(ma)
(111106 differences between mastat and ma)

```

```

. generate mach = (10*ma) + L.ma
(36870 missing values generated)

```

```

. tabulate mach

```

```

      mach |      Freq.      Percent      Cum.
-----+-----
      11 |    129,300      63.97      63.97
      12 |     1,302       0.64      64.61
      13 |     2,715       1.34      65.96
      21 |     2,442       1.21      67.17
      22 |    28,060     13.88      81.05
      23 |       158       0.08      81.13
      31 |     1,021       0.51      81.63
      32 |       138       0.07      81.70
      33 |    36,990     18.30     100.00
-----+-----
      Total |    202,126     100.00

```

```

.
. label var ma "marital status"

. label define malab 1 "married, living as couple"      ///
>      2 "widowed, divorced or separated"              ///
>      3 " never married"

```

```

. label value ma malab

```

```

.
. tabulate ma

```

```

      marital status |      Freq.      Percent      Cum.
-----+-----
      married, living as couple |    153,096      64.21      64.21
widowed, divorced or separated |     34,987     14.67      78.89
      never married |     50,332     21.11     100.00
-----+-----
                        Total |    238,415     100.00

```

```

. sort wave hid

```

```

. list ma in 1/20, sepby(hid)

```

```

+-----+
|          ma          |
+-----+
1. | never married |
+-----+
2. | never married |
3. | never married |
+-----+
4. | widowed, divorced or separated |
+-----+
5. | married, living as couple |
6. | married, living as couple |
+-----+
7. | married, living as couple |
8. | married, living as couple |
+-----+
9. | married, living as couple |
10. | married, living as couple |
+-----+
11. | never married |
+-----+

```

```

12. |           never married |
13. | widowed, divorced or separated |
14. | widowed, divorced or separated |
   |-----|
15. |           never married |
16. |           never married |
   |-----|
17. |           never married |
   |-----|
18. |           never married |
19. |           never married |
   |-----|
20. |           never married |
   |-----|

```

```

.
. xttrans ma

```

marital status	marital status			Total
	1	2	3	
1	97.23	1.97	0.81	100.00
2	4.51	94.99	0.50	100.00
3	7.15	0.41	92.44	100.00
Total	65.77	15.15	19.09	100.00

```

. table ma sex, contents(mean paych n paych) format(%9.2f)

```

marital status	sex	
	male	female
married, living as couple	98.09 32,856	59.06 34,546
widowed, divorced or separated	75.52 2,314	50.22 5,296
never married	129.21 9,717	112.26 8,948

```

.
.
. * 4.7. Graphically analysing panel data
. *-----
.
. set more on

.
. kdensity paygu, title(Distribution of Wages 1991-2008) scheme(s1manual)

. more

. kdensity paygu if wave == 15, title(Distribution of Wages 2005) scheme(s1manual)

. more

. histogram paygu, scheme(s1manual) ///
> by(wave, title(Distribution of Wages 1991-2008))

. more

.
. keep if jbstat == 2
(119704 observations deleted)

. drop if paygu == .
(7394 observations deleted)

.

```

```

. * Figure 4.8
. twoway (kdensity paygu if wave == 1, lcolor(black)) ///
>      (kdensity paygu if wave == 8, lcolor(gs4) lp(dash)) ///
>      (kdensity paygu if wave == 17, lcolor(gs10)), ///
>      scheme(s1manual) ///
>      ytitle(Density) xtitle(Wage) title(Distribution of Wages)

. more

.
. * Figure 4.9
. twoway (kdensity paygu if wave == 1, lcolor(black)) ///
>      (kdensity paygu if wave == 8, lcolor(gs4) lp(dash)) ///
>      (kdensity paygu if wave == 17, lcolor(gs10) lwidth(thick)) ///
>      if paygu <= 5000, ///
>      legend(label(1 "Wage 1991") label(2 "Wage 1998") ///
>              label(3 "Wage 2007")) ///
>      scheme(s1manual) ytitle(Density) xtitle(Wage) ///
>      title(Distribution of Wages)

. more

.
. * Figure 4.10
. twoway (kdensity paygu if wave == 1, lcolor(black)) ///
>      (kdensity paygu if wave == 8, lcolor(gs4) lp(dash)) ///
>      (kdensity paygu if wave == 17, lcolor(gs10) lwidth(thick)) ///
>      if paygu <= 5000, ///
>      legend(label(1 "Wage 1991") label(2 "Wage 1998") ///
>              label(3 "Wage 2007")) ///
>      scheme(s1manual) ytitle(Density) xtitle(Wage) ///
>      by(sex, title(Distribution of Wages))

.
. log close
      name: <unnamed>
      log: C:\My Documents\\Example_Chapter4.log
      log type: text
      closed on: 30 Jul 2014, 09:39:21
-----

```