Reproducible and automated reporting using Stata

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Stata's commands for report generation allow you to create complete documents that include formatted text, summary statistics, regression results, and graphs in any of the following formats:

- Word®
- Excel®
- PDF
- HTML

Stata's commands for creating reports come in two varieties:

1. Dynamic document commands–**dyntext** and **dyndoc**

   These commands create text files, HTML files, and Word documents that incorporate the full output from Stata commands. You can use the Markdown text-formatting language to customize the look of your report.

2. **put*** commands–**putdocx**, **putpdf**, and **putexcel**

   These commands create Word documents, PDFs, and Excel files that insert results from Stata commands into formatted text and tables in your document.

Whether you choose the dynamic document commands or the **put*** commands, you can create documents that are reproducible and dynamic.

Reproducible

- Reproducibility is at the core of Stata's design.
- Use the **version 16** command, and any commands you run today will produce the same results many years from now.
- Use the **datasignature** command, you can verify that your data have not changed.
- Incorporate these tools for reproducibility into the do-files or text files that create your reports, and those reports will also be reproducible. Rerun your commands at any time and re-create your report.

Dynamic

- Update reports as data changes.
- Say you need to run the same report monthly. Rerun the commands that created the report with the updated dataset.
- All Stata results in the report are updated automatically.

A whirlwind tour:

- Word documents with **putdocx**
- PDFs with **putpdf**
- Excel files with **putexcel**
- HTML documents with **dyndoc**
- Word documents with **dyndoc**
- Converting files from one type to another

Content for our report:

- We have fictional data on the long-term care choices of 151 patients.
- Each patient selected a nursing home, in-home care, or an assisted-living facility.
- We fit a conditional logistic regression model to model the choices using **cmclogit**.
- We include two case-specific covariates: marital status and a five-category health status rating.
- We also include two alternative-specific covariates: monthly cost and distance from nearest relative.

```
. use ltcare, clear
. cmset id carealt
                caseid variable:  id
           alternatives variable:  carealt
. cmtab, choice(chosen)
Tabulation of chosen alternatives (chosen = 1)
```

Long-term care alternatives	Freq.	Percent	Cum.
Nursing home	58	38.41	38.41
In-home care	63	41.72	80.13
Assisted living	30	19.87	100.00
Total	151	100.00	

```
. cmclogit chosen cost reldist, casevars(i.married i.hlthstat)
Iteration 0:   log likelihood = -119.36634
Iteration 1:   log likelihood = -87.257826
Iteration 2:   log likelihood = -80.030792
Iteration 3:   log likelihood = -79.791309
Iteration 4:   log likelihood = -79.790189
Iteration 5:   log likelihood = -79.790189

Conditional logit choice model                  Number of obs      =        453
Case ID variable: id                            Number of cases    =        151

Alternatives variable: carealt                  Alts per case: min =          3
                                                               avg =        3.0
                                                               max =          3

                                                Wald chi2(12)      =      52.13
Log likelihood = -79.790189                     Prob > chi2        =     0.0000
```

chosen	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
carealt						
cost	-.8927349	.1747136	-5.11	0.000	-1.235167	-.5503025
reldist	-.005768	.0036172	-1.59	0.111	-.0128575	.0013215

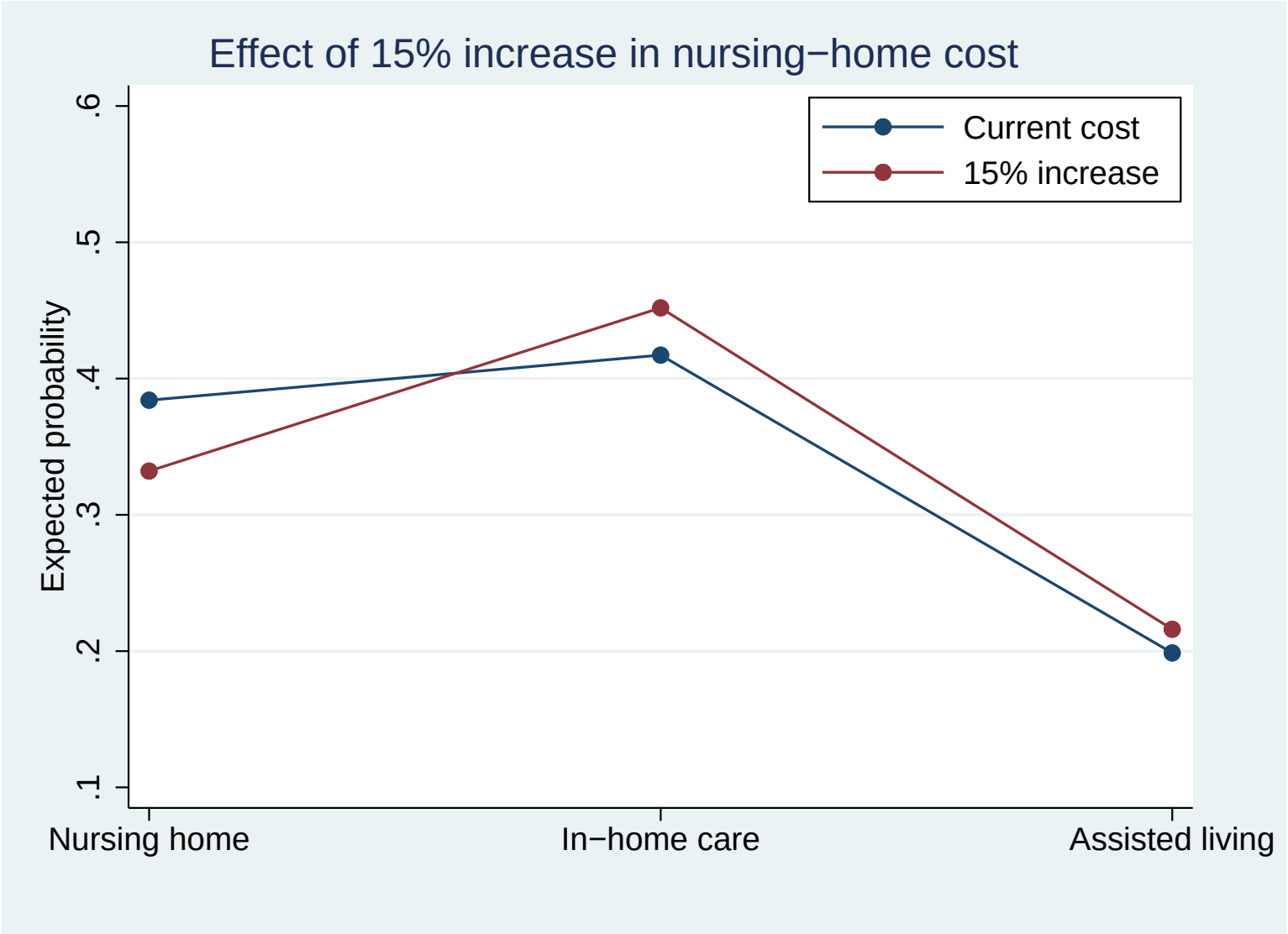
Nursing_home	(base alternative)					
In_home_care						
married						
Married	3.682328	.7946326	4.63	0.000	2.124877	5.23978
hlthstat						
Poor	.7347672	1.346105	0.55	0.585	-1.90355	3.373084
Fair	4.894007	1.462341	3.35	0.001	2.027871	7.760143
Average	6.52018	1.751774	3.72	0.000	3.086766	9.953594
Good	4.800188	1.780498	2.70	0.007	1.310477	8.289899
_cons	-3.44643	1.313259	-2.62	0.009	-6.020372	-.8724894
Assisted_living						
married						
Married	3.822477	.876701	4.36	0.000	2.104175	5.54078
hlthstat						
Poor	-1.573831	1.603339	-0.98	0.326	-4.716317	1.568655
Fair	4.180285	1.423912	2.94	0.003	1.389469	6.971101
Average	6.179002	1.707872	3.62	0.000	2.831634	9.526369
Good	4.689159	1.72597	2.72	0.007	1.306321	8.071998
_cons	-4.314829	1.298062	-3.32	0.001	-6.858984	-1.770674

- We want to evaluate what would happen if cost of care in nursing homes increases by 15%.
- We use **margins** to estimate changes in the expected proportions of individuals choosing each long-term care option.

```
. margins, alternative(1) at(cost=generate(cost)) at(cost=generate(cost*1.15))
Predictive margins                                Number of obs     =        453
Model VCE    : OIM
Expression   : Pr(carealt|1 selected), predict()
Alternative  : Nursing home
1._at        : cost            = cost
2._at        : cost            = cost*1.15
```

	Margin	Delta-method Std. Err.	z	P>|z|	[95% Conf.	Interval]
_outcome#_at						
Nursing home#1	.384106	.021637	17.75	0.000	.3416982	.4265137
Nursing home#2	.3320989	.0254219	13.06	0.000	.2822728	.381925
In-home care#1	.4172185	.030231	13.80	0.000	.3579668	.4764702
In-home care#2	.4518933	.0332705	13.58	0.000	.3866843	.5171024
Assisted living#1	.1986755	.0265481	7.48	0.000	.1466422	.2507088
Assisted living#2	.2160078	.0291166	7.42	0.000	.1589404	.2730752

```
. marginsplot, xdim(_outcome)                                          ///
> legend(order(1 "Current cost" 2 "15% increase") cols(1) ring(0) ///
> bplacement(neast)) ylabel(.1(.1).6)                                  ///
> title("Effect of 15% increase in nursing-home cost")                 ///
> ytitle(Expected probability) xtitle(" ") noci graphregion(margin(r=10))
  Variables that uniquely identify margins: _atopt _outcome
  Multiple at() options specified:
      _atoption=1: cost=generate(cost)
      _atoption=2: cost=generate(cost*1.15)

.
. graph export cost.png, replace
(file cost.png written in PNG format)
```


Effect of 15% increase in nursing−home cost
Current cost
15% increase
Expected probability
.1
.2
.3
.4
.5
.6
Nursing home
In−home care
Assisted living

```
. margins, alternative(1) at(cost=generate(cost)) at(cost=generate(cost*1.15)) ///
> contrast(at(r) nowald)
Contrasts of predictive margins                 Number of obs     =        453
Model VCE    : OIM
Expression   : Pr(carealt|1 selected), predict()
Alternative  : Nursing home
1._at        : cost            = cost
2._at        : cost            = cost*1.15
```

	Contrast	Delta-method Std. Err.	[95% Conf.	Interval]
_at@_outcome				
(2 vs 1) Nursing home	-.0520071	.0107312	-.0730398	-.0309743
(2 vs 1) In-home care	.0346748	.0075127	.0199501	.0493994
(2 vs 1) Assisted living	.0173323	.0067909	.0040223	.0306423

putdocx

Basic **putdocx** structure

```
putdocx begin
```

```
putdocx save myfile.docx
```

Basic **putdocx** structure

```
putdocx begin

putdocx paragraph
putdocx text = ("mytext")
```

```
putdocx save myfile.docx
```

Basic **putdocx** structure

```
putdocx begin

putdocx paragraph
putdocx text = ("mytext")

putdocx textblock begin
  mytext
putdocx textblock end
```

```
putdocx save myfile.docx
```

Basic **putdocx** structure

```
putdocx begin

putdocx paragraph
putdocx text = ("mytext")

putdocx textblock begin
  mytext
putdocx textblock end

putdocx paragraph
putdocx image myimage.png


putdocx save myfile.docx
```

Basic **putdocx** structure

```
putdocx begin

putdocx paragraph
putdocx text = ("mytext")

putdocx textblock begin
  mytext
putdocx textblock end

putdocx paragraph
putdocx image myimage.png

putdocx table tablename = etable

putdocx save myfile.docx
```

- We can start with this basic structure and add to it to create a report with the results from our choice model.
- We begin our document and add a header with the Stata logo. We also put page numbers in the footer.

```
version 16
putdocx begin, header(head1) footer(foot1)

putdocx paragraph, toheader(head1) halign(right)
putdocx image stata16logo.png, height(.2in)

putdocx paragraph, tofooter(foot1)
putdocx pagenumber
```

- We add a heading and an introduction to our report.

```
putdocx paragraph, style(Heading1)
putdocx text ("Introduction")

putdocx textblock begin
We are interested in studying the determinants of long-term care
choices.  We are also concerned that the cost of nursing home care
is likely to increase by approximately 15%, and we want to know the
expected impact of this change on the probability of individuals
selecting each type of long-term care available.
putdocx textblock end
```

- We add a description of our data.

```
use ltcare, clear
cmset id carealt
local ncase = r(n_cases)
total chosen, over(carealt)

putdocx textblock begin
In our sample of <<dd_docx_display: ‘ncase’>> patients,
<<dd_docx_display: _b[c.chosen@1bn.carealt]>>
selected a nursing home,
<<dd_docx_display: _b[c.chosen@2.carealt]>>
selected in-home care, and
<dd_docx_display: _b[c.chosen@3.carealt]>> selected an
assisted-living facility.
putdocx textblock end
```

- We describe our model and add a table of the results.

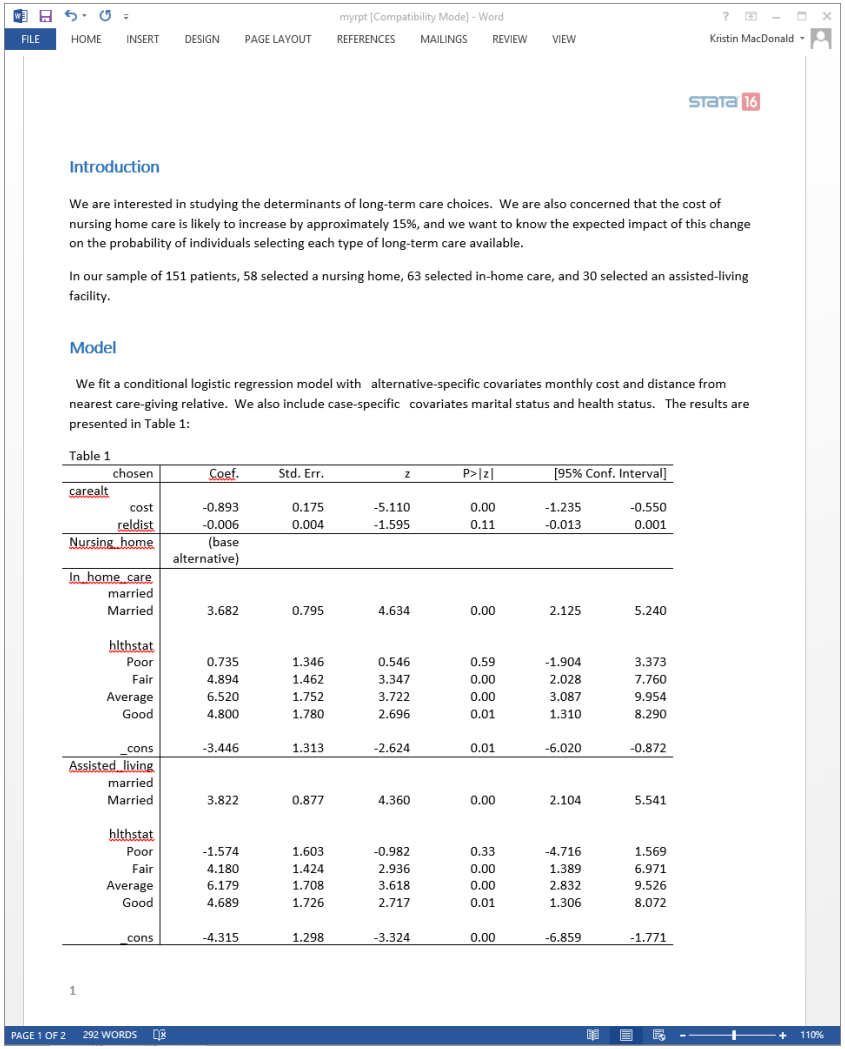
```
putdocx paragraph, style(Heading1)
putdocx text ("Model")

putdocx textblock begin
We fit a conditional logistic regression model with
alternative-specific covariates monthly cost and distance from
nearest care-giving relative.  We also include case-specific
covariates marital status and health status.

The results are presented in Table 1:
putdocx textblock end

cmclogit chosen cost reldist, casevars(i.married i.hlthstat)
cmclogit, cformat(%5.3f) pformat(%4.2f) sformat(%5.3f)
putdocx table cmcl = etable, title("Table 1")
```

- We present the results of our **margins** command graphically.

```
putdocx paragraph, style(Heading1)
putdocx text ("Effect of increasing cost of care in nursing homes")

margins, alternative(1) at(cost=generate(cost))        ///
  at(cost=generate(cost*1.15))

marginsplot, xdim(_outcome)                            ///
  legend(order(1 "Current cost" 2 "15% increase")      ///
  cols(1) ring(0) bplacement(neast)) ylabel(.1(.1).6)  ///
  title("Effect of 15% increase in nursing-home cost") ///
  ytitle(Expected probability) xtitle(" ") noci        ///
  graphregion(margin(r=10)))

graph export cost.png, replace

putdocx paragraph, halign(center)
putdocx image cost.png, height(3in)
```

- We summarize the expected changes in probabilities when for increased nursing-home prices.
- Finally, we save our document.

```
margins, alternative(1) at(cost=generate(cost)) ///
  at(cost=generate(cost*1.15))                  ///
  contrast(at(r) nowald)

putdocx textblock begin
If nursing home costs increase by 15%, we anticipate a
<<dd_docx_display: -‘:display %3.1f 100*r(b)[1,1]’>>
percentage point decrease in the number of individuals selecting
long-term care in nursing homes. In turn, we expect the number of
individuals selecting in-home care to increase by
<<dd_docx_display: ‘:display %3.1f 100*r(b)[1,2]’>> and the number
of individuals selecting assisted-living facilities to increase by
<<dd_docx_display: ‘:display %3.1f 100*r(b)[1,3]’>>
percentage points.
putdocx textblock end


putdocx save myrpt, replace
```



myrpt [Compatibility Mode] - Word

FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW

Kristin MacDonald

stata 16

Introduction

We are interested in studying the determinants of long-term care choices. We are also concerned that the cost of nursing home care is likely to increase by approximately 15%, and we want to know the expected impact of this change on the probability of individuals selecting each type of long-term care available.

In our sample of 151 patients, 58 selected a nursing home, 63 selected in-home care, and 30 selected an assisted-living facility.

Model

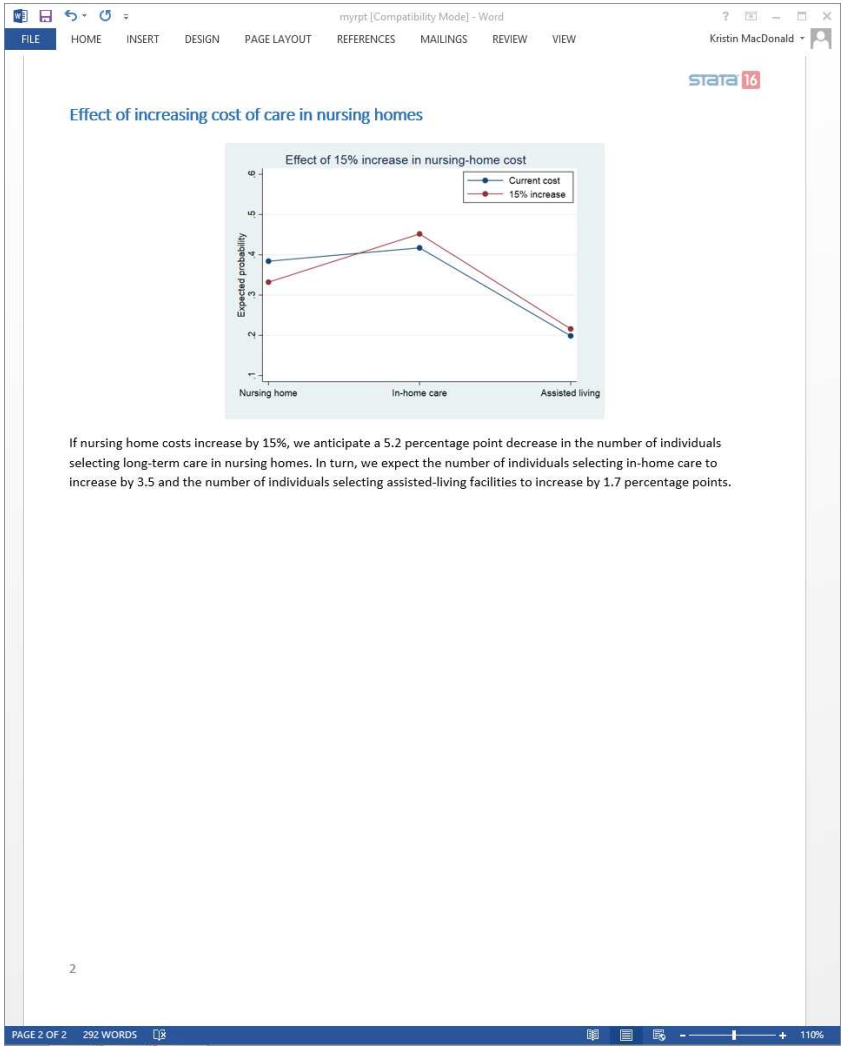
We fit a conditional logistic regression model with alternative-specific covariates monthly cost and distance from nearest care-giving relative. We also include case-specific covariates marital status and health status. The results are presented in Table 1:

Table 1

chosen	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
carealt						
cost	-0.893	0.175	-5.110	0.00	-1.235	-0.550
reldist	-0.006	0.004	-1.595	0.11	-0.013	0.001
Nursing_home	(base alternative)					
In_home_care						
married						
Married	3.682	0.795	4.634	0.00	2.125	5.240
hlthstat						
Poor	0.735	1.346	0.546	0.59	-1.904	3.373
Fair	4.894	1.462	3.347	0.00	2.028	7.760
Average	6.520	1.752	3.722	0.00	3.087	9.954
Good	4.800	1.780	2.696	0.01	1.310	8.290
_cons	-3.446	1.313	-2.624	0.01	-6.020	-0.872
Assisted_living						
married						
Married	3.822	0.877	4.360	0.00	2.104	5.541
hlthstat						
Poor	-1.574	1.603	-0.982	0.33	-4.716	1.569
Fair	4.180	1.424	2.936	0.00	1.389	6.971
Average	6.179	1.708	3.618	0.00	2.832	9.526
Good	4.689	1.726	2.717	0.01	1.306	8.072
_cons	-4.315	1.298	-3.324	0.00	-6.859	-1.771

1

PAGE 1 OF 2 292 WORDS 110%


myrpt [Compatibility Mode] - Word
FILE
HOME
INSERT
DESIGN
PAGE LAYOUT
REFERENCES
MAILINGS
REVIEW
VIEW
Kristin MacDonald
Effect of increasing cost of care in nursing homes
Effect of 15% increase in nursing-home cost
Current cost
15% increase
Expected probability
.1
.2
.3
.4
.5
.6
Nursing home
In-home care
Assisted living
If nursing home costs increase by 15%, we anticipate a 5.2 percentage point decrease in the number of individuals selecting long-term care in nursing homes. In turn, we expect the number of individuals selecting in-home care to increase by 3.5 and the number of individuals selecting assisted-living facilities to increase by 1.7 percentage points.
2
PAGE 2 OF 2
292 WORDS
110%

putpdf

Basic **putpdf** structure

```
putpdf begin
```

```
putpdf save myfile.pdf
```

Basic **putpdf** structure

```
putpdf begin

putpdf paragraph
putpdf text = ("mytext")




putpdf save myfile.pdf
```

Basic **putpdf** structure

```
putpdf begin

putpdf paragraph
putpdf text = ("mytext")

putpdf paragraph
putpdf image myimage.png


putpdf save myfile.pdf
```

Basic **putpdf** structure

```
putpdf begin

putpdf paragraph
putpdf text = ("mytext")

putpdf paragraph
putpdf image myimage.png

putpdf table tablename = etable

putpdf save myfile.pdf
```

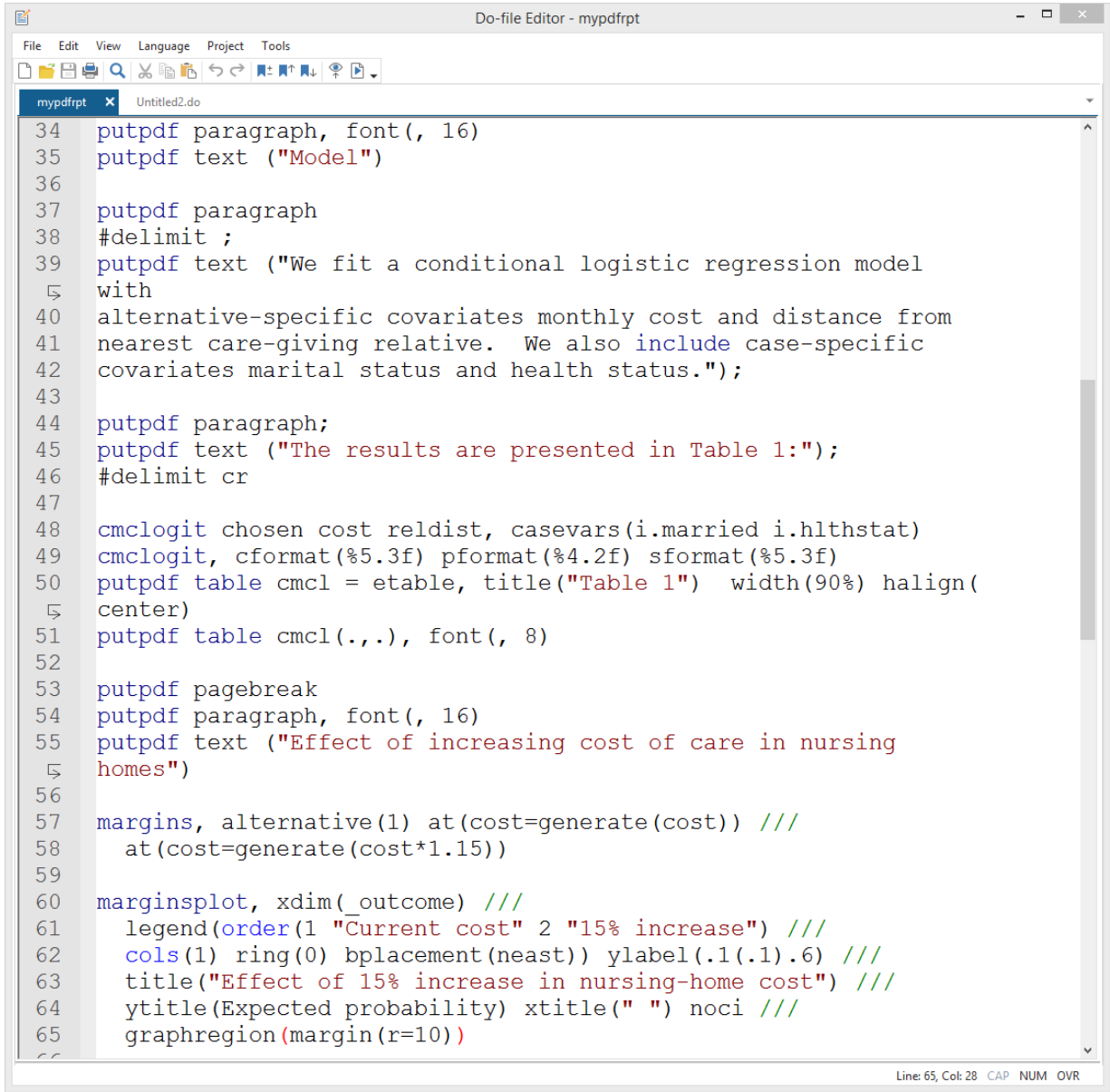
Do-file Editor - mypdfrpt

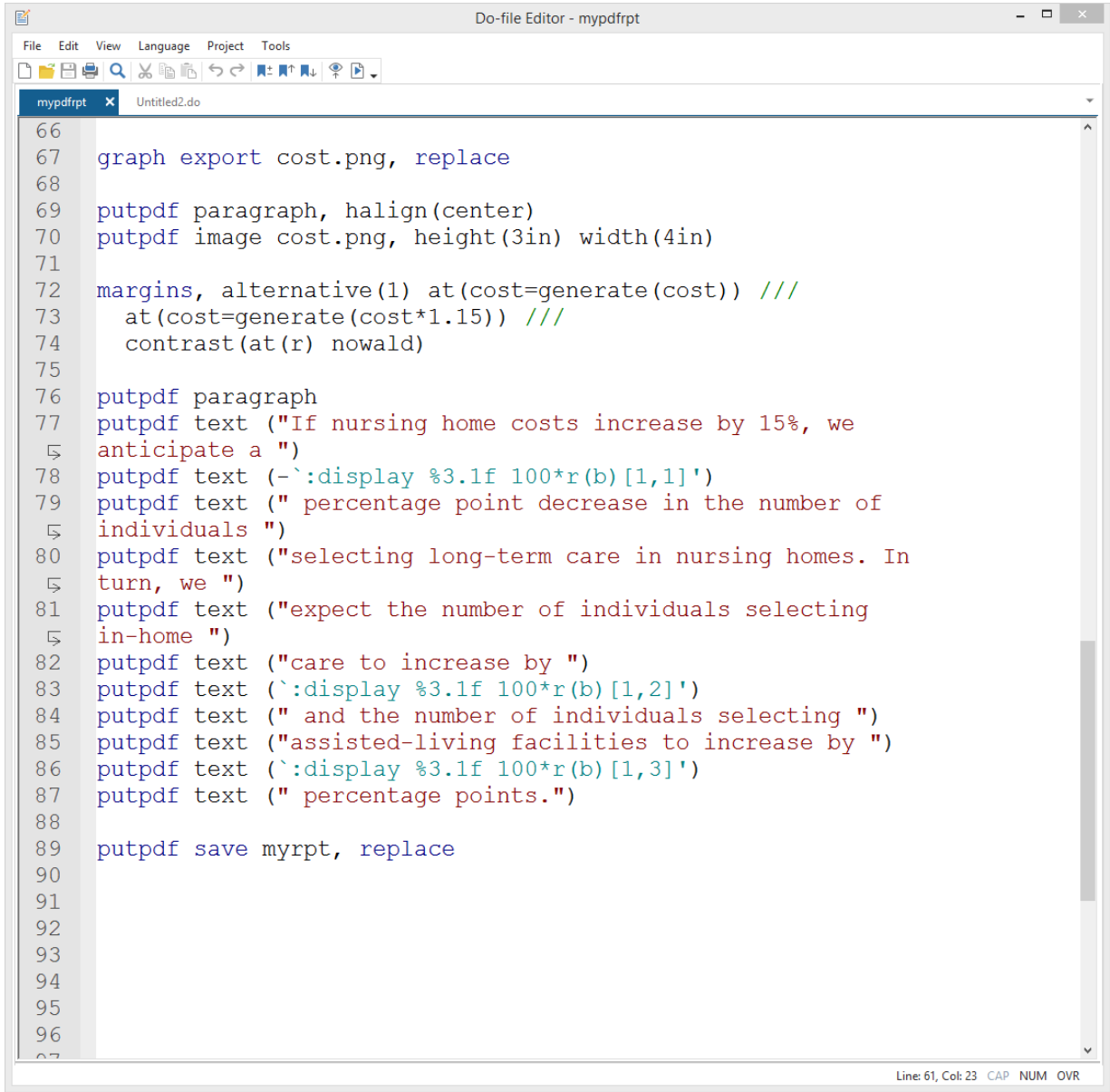
File Edit View Language Project Tools

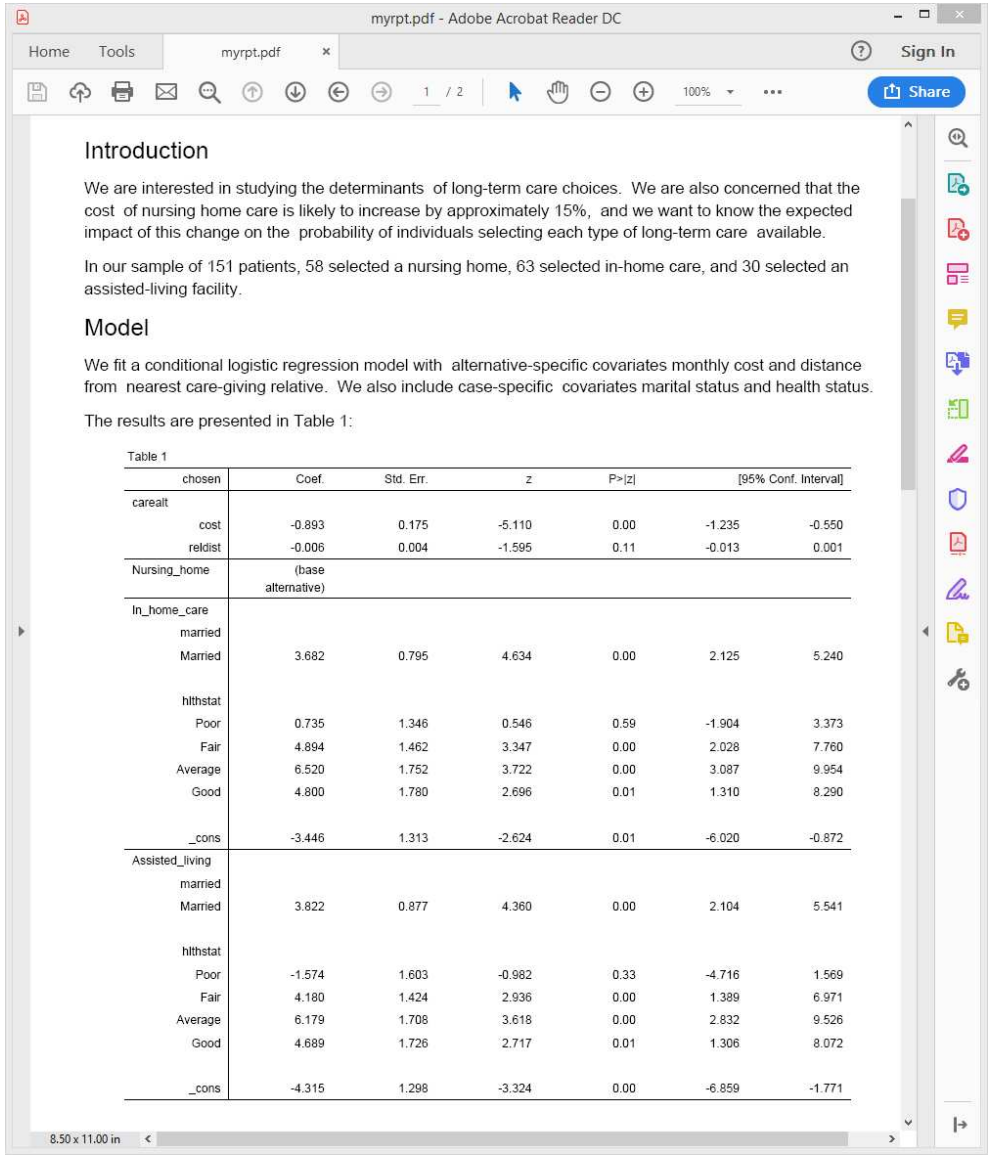
mypdfrpt Untitled2.do

```
1  version 16
2  putpdf clear
3  putpdf begin
4
5  putpdf paragraph, font(, 16)
6  putpdf text ("Introduction")
7
8  putpdf paragraph
9  #delimit ;
10 putpdf text ("We are interested in studying the determinants
11 of long-term care choices.  We are also concerned that the cost
12 of nursing home care is likely to increase by approximately 15%,
13 and we want to know the expected impact of this change on the
14 probability of individuals selecting each type of long-term care
15 available.");
16 #delimit cr
17
18 use ltcare, clear
19 cmset id carealt
20 local ncase = r(n_cases)
21 total chosen, over(carealt)
22
23 putpdf paragraph
24 putpdf text ("In our sample of ")
25 putpdf text (`ncase')
26 putpdf text (" patients, ")
27 putpdf text (_b[c.chosen@1bn.carealt])
28 putpdf text (" selected a nursing home, ")
29 putpdf text (_b[c.chosen@2.carealt])
30 putpdf text (" selected in-home care, and ")
31 putpdf text (_b[c.chosen@3.carealt])
32 putpdf text (" selected an assisted-living facility.")
33
```

Line: 34, Col: 22 CAP NUM OVR


Do-file Editor - mypdfrpt
File Edit View Language Project Tools
mypdfrpt
Untitled2.do
34 putpdf paragraph, font(, 16)
35 putpdf text ("Model")
36
37 putpdf paragraph
38 #delimit ;
39 putpdf text ("We fit a conditional logistic regression model
with
40 alternative-specific covariates monthly cost and distance from
41 nearest care-giving relative. We also include case-specific
42 covariates marital status and health status.");
43
44 putpdf paragraph;
45 putpdf text ("The results are presented in Table 1:");
46 #delimit cr
47
48 cmclogit chosen cost reldist, casevars(i.married i.hlthstat)
49 cmclogit, cformat(%5.3f) pformat(%4.2f) sformat(%5.3f)
50 putpdf table cmcl = etable, title("Table 1") width(90%) halign(
center)
51 putpdf table cmcl(.,.), font(, 8)
52
53 putpdf pagebreak
54 putpdf paragraph, font(, 16)
55 putpdf text ("Effect of increasing cost of care in nursing
homes")
56
57 margins, alternative(1) at(cost=generate(cost)) ///
58 at(cost=generate(cost*1.15))
59
60 marginsplot, xdim(_outcome) ///
61 legend(order(1 "Current cost" 2 "15% increase") ///
62 cols(1) ring(0) bplacement(neast)) ylabel(.1(.1).6) ///
63 title("Effect of 15% increase in nursing-home cost") ///
64 ytitle(Expected probability) xtitle(" ") noci ///
65 graphregion(margin(r=10))
Line: 65, Col: 28 CAP NUM OVR


Do-file Editor - mypdfrpt
File Edit View Language Project Tools
mypdfrpt
Untitled2.do
graph export cost.png, replace
putpdf paragraph, halign(center)
putpdf image cost.png, height(3in) width(4in)
margins, alternative(1) at(cost=generate(cost)) ///
at(cost=generate(cost*1.15)) ///
contrast(at(r) nowald)
putpdf paragraph
putpdf text ("If nursing home costs increase by 15%, we anticipate a ")
putpdf text (-`:display %3.1f 100*r(b)[1,1]')
putpdf text (" percentage point decrease in the number of individuals ")
putpdf text ("selecting long-term care in nursing homes. In turn, we ")
putpdf text ("expect the number of individuals selecting in-home ")
putpdf text ("care to increase by ")
putpdf text (`:display %3.1f 100*r(b)[1,2]')
putpdf text (" and the number of individuals selecting ")
putpdf text ("assisted-living facilities to increase by ")
putpdf text (`:display %3.1f 100*r(b)[1,3]')
putpdf text (" percentage points.")
putpdf save myrpt, replace
Line: 61, Col: 23 CAP NUM OVR



Introduction

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reldist	-0.006	0.004	-1.595	0.11	-0.013	0.001
Nursing_home	(base alternative)					
In_home_care						
married						
Married	3.682	0.795	4.634	0.00	2.125	5.240
hlthstat						
Poor	0.735	1.346	0.546	0.59	-1.904	3.373
Fair	4.894	1.462	3.347	0.00	2.028	7.760
Average	6.520	1.752	3.722	0.00	3.087	9.954
Good	4.800	1.780	2.696	0.01	1.310	8.290
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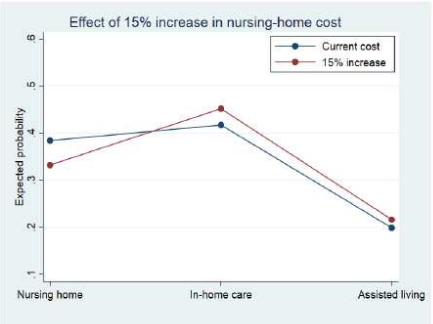
hlthstat						
Poor	-1.574	1.603	-0.982	0.33	-4.716	1.569
Fair	4.180	1.424	2.936	0.00	1.389	6.971
Average	6.179	1.708	3.618	0.00	2.832	9.526
Good	4.689	1.726	2.717	0.01	1.306	8.072
_cons	-4.315	1.298	-3.324	0.00	-6.859	-1.771

myrpt.pdf - Adobe Acrobat Reader DC

Home Tools myrpt.pdf Sign In

2 / 2 100% Share

Effect of increasing cost of care in nursing homes



If nursing home costs increase by 15%, we anticipate a 5.2 percentage point decrease in the number of individuals selecting long-term care in nursing homes. In turn, we expect the number of individuals selecting in-home care to increase by 3.5 and the number of individuals selecting assisted-living facilities to increase by 1.7 percentage points.

8.50 x 11.00 in

putexcel

Basic **putexcel** structure

```
putexcel set myfile.xlsx
```

Basic **putexcel** structure

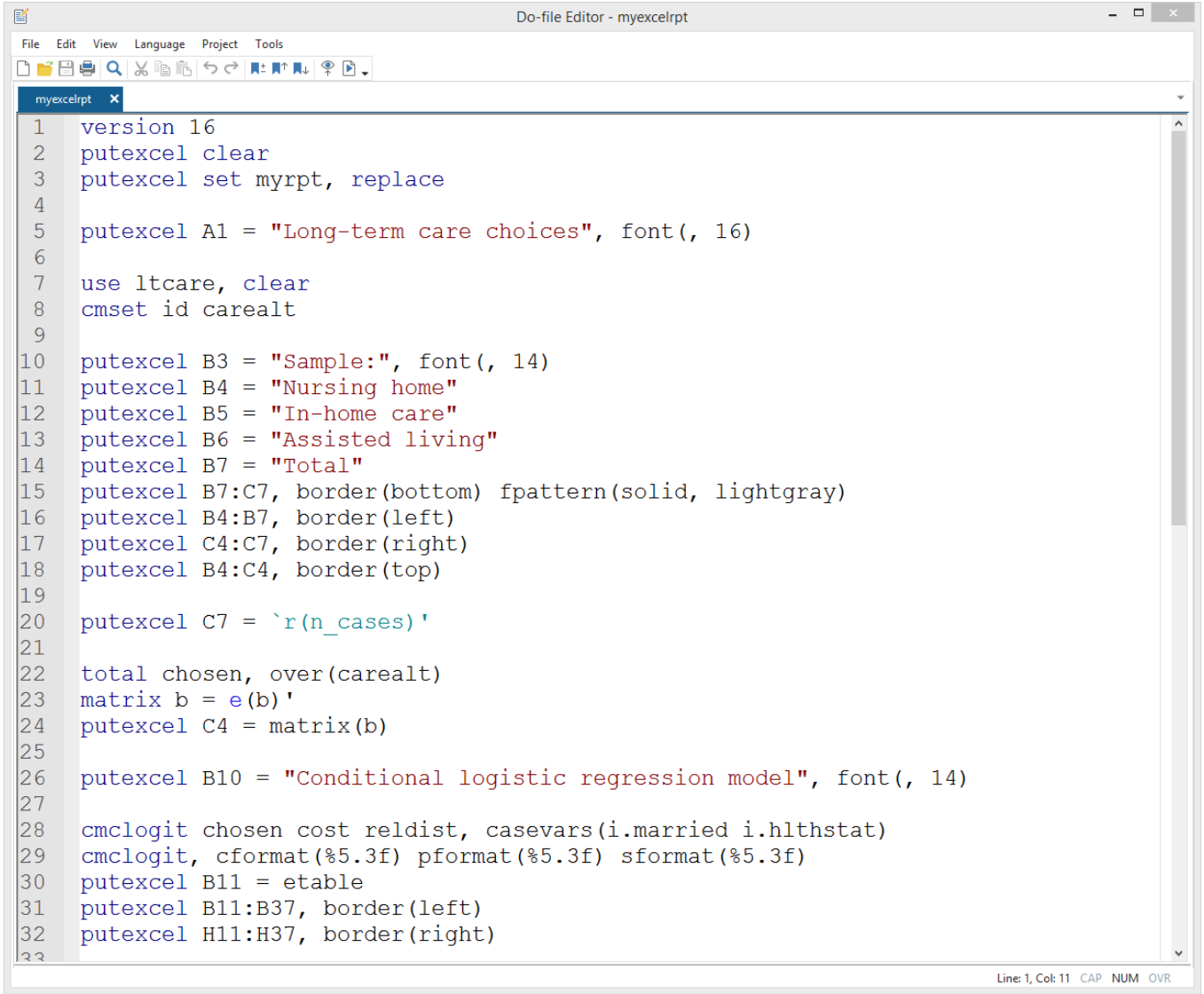
```
putexcel set myfile.xlsx

putexcel A1 = "mytext"
```

Basic **putexcel** structure

```
putexcel set myfile.xlsx

putexcel A1 = "mytext"

putexcel A2 = image(myimage.png)
```

Basic **putexcel** structure

```
putexcel set myfile.xlsx

putexcel A1 = "mytext"

putexcel A2 = image(myimage.png)

putexcel B10 = etable
```


Do-file Editor - myexcelrpt
File Edit View Language Project Tools
myexcelrpt
version 16
putexcel clear
putexcel set myrpt, replace
putexcel A1 = "Long-term care choices", font(, 16)
use ltcare, clear
cmset id carealt
putexcel B3 = "Sample:", font(, 14)
putexcel B4 = "Nursing home"
putexcel B5 = "In-home care"
putexcel B6 = "Assisted living"
putexcel B7 = "Total"
putexcel B7:C7, border(bottom) fpattern(solid, lightgray)
putexcel B4:B7, border(left)
putexcel C4:C7, border(right)
putexcel B4:C4, border(top)
putexcel C7 = `r(n_cases)'
total chosen, over(carealt)
matrix b = e(b)'
putexcel C4 = matrix(b)
putexcel B10 = "Conditional logistic regression model", font(, 14)
cmclogit chosen cost reldist, casevars(i.married i.hlthstat)
cmclogit, cformat(%5.3f) pformat(%5.3f) sformat(%5.3f)
putexcel B11 = etable
putexcel B11:B37, border(left)
putexcel H11:H37, border(right)
Line: 1, Col: 11 CAP NUM OVR

Do-file Editor - myexcelrpt

File Edit View Language Project Tools

myexcelrpt

```
33
34  putexcel J3 = "Effect of increasing cost of care in nursing homes", font(14)
35
36  margins, alternative(1) at(cost=generate(cost)) ///
37    at(cost=generate(cost*1.15))
38
39  marginsplot, xdim(_outcome) ///
40    legend(order(1 "Current cost" 2 "15% increase") ///
41    cols(1) ring(0) bplacement(neast)) ylabel(.1(.1).6) ///
42    title("Effect of 15% increase in nursing-home cost") ///
43    ytitle(Expected probability) xtitle(" ") noci ///
44    graphregion(margin(r=10))
45
46  graph export cost.png, replace height(300)
47
48  putexcel J5 = image(cost.png)
49
50  margins, alternative(1) at(cost=generate(cost)) ///
51    at(cost=generate(cost*1.15)) ///
52    contrast(at(r) nowald)
53
54  putexcel J22 = "Expected change in proportion of individuals selecting each"
55  putexcel J23 = "long-term care option when nursing-home costs increase 15%"
56
57  putexcel J25 = "Nursing home"
58  putexcel J26 = "In-home care"
59  putexcel J27 = "Assisted living"
60  putexcel K25 = `:display r(b)[1,1]', nformat(percent_d2)
61  putexcel K26 = `:display r(b)[1,2]', nformat(percent_d2)
62  putexcel K27 = `:display r(b)[1,3]', nformat(percent_d2)
63
64
```

Line: 1, Col: 11 CAP NUM OVR

myrpt - Excel

Kristin MacDonald

A1: Long-term care choices

Long-term care choices

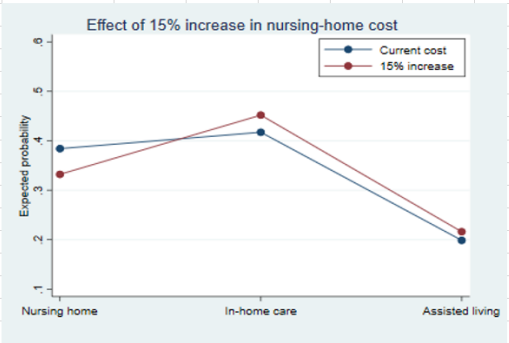
Sample:

Nursing home	58
In-home care	63
Assisted living	30
Total	151

Conditional logistic regression model

chosen	Coef.	Std. Err.	z	P>|z|	f. Interval]	
carealt						
cost	-0.893	0.175	-5.11	0	-1.235	-0.55
reldist	-0.006	0.004	-1.595	0.111	-0.013	0.001
Nursing_home	(base alternative)					
In_home_care						
married						
Married	3.682	0.795	4.634	0	2.125	5.24
hlthstat						
Poor	0.735	1.346	0.546	0.585	-1.904	3.373
Fair	4.894	1.462	3.347	0.001	2.028	7.76
Average	6.52	1.752	3.722	0	3.087	9.954
Good	4.8	1.78	2.696	0.007	1.31	8.29
_cons	-3.446	1.313	-2.624	0.009	-6.02	-0.872
Assisted_living						
married						
Married	3.822	0.877	4.36	0	2.104	5.541
hlthstat						
Poor	-1.574	1.603	-0.982	0.326	-4.716	1.569
Fair	4.18	1.424	2.936	0.003	1.389	6.971
Average	6.179	1.708	3.618	0	2.832	9.526
Good	4.689	1.726	2.717	0.007	1.306	8.072
_cons	-4.315	1.298	-3.324	0.001	-6.859	-1.771

Effect of increasing cost of care in nursing homes



Expected change in proportion of individuals selecting each long-term care option when nursing-home costs increase 15%

Nursing home	-5.20%
In-home care	3.47%
Assisted living	1.73%

Sheet1

READY

130%

dyndoc

Basic **dyndoc** structure

Markdown-formatted text

```
Title
=====
```

Basic **dyndoc** structure

Markdown-formatted text

```
Title
=====

##Subtitle
```

Basic **dyndoc** structure

Markdown-formatted text

```
Title
=====

##Subtitle

text with **bolding**
```

Basic **dyndoc** structure

Markdown-formatted text

```
Title
=====

##Subtitle

text with **bolding**

~~~
codeblock
~~~
```

Basic **dyndoc** structure

Dynamic tags

```
<<dd_do>>
  Stata commands
<</dd_do>>
```

Basic **dyndoc** structure

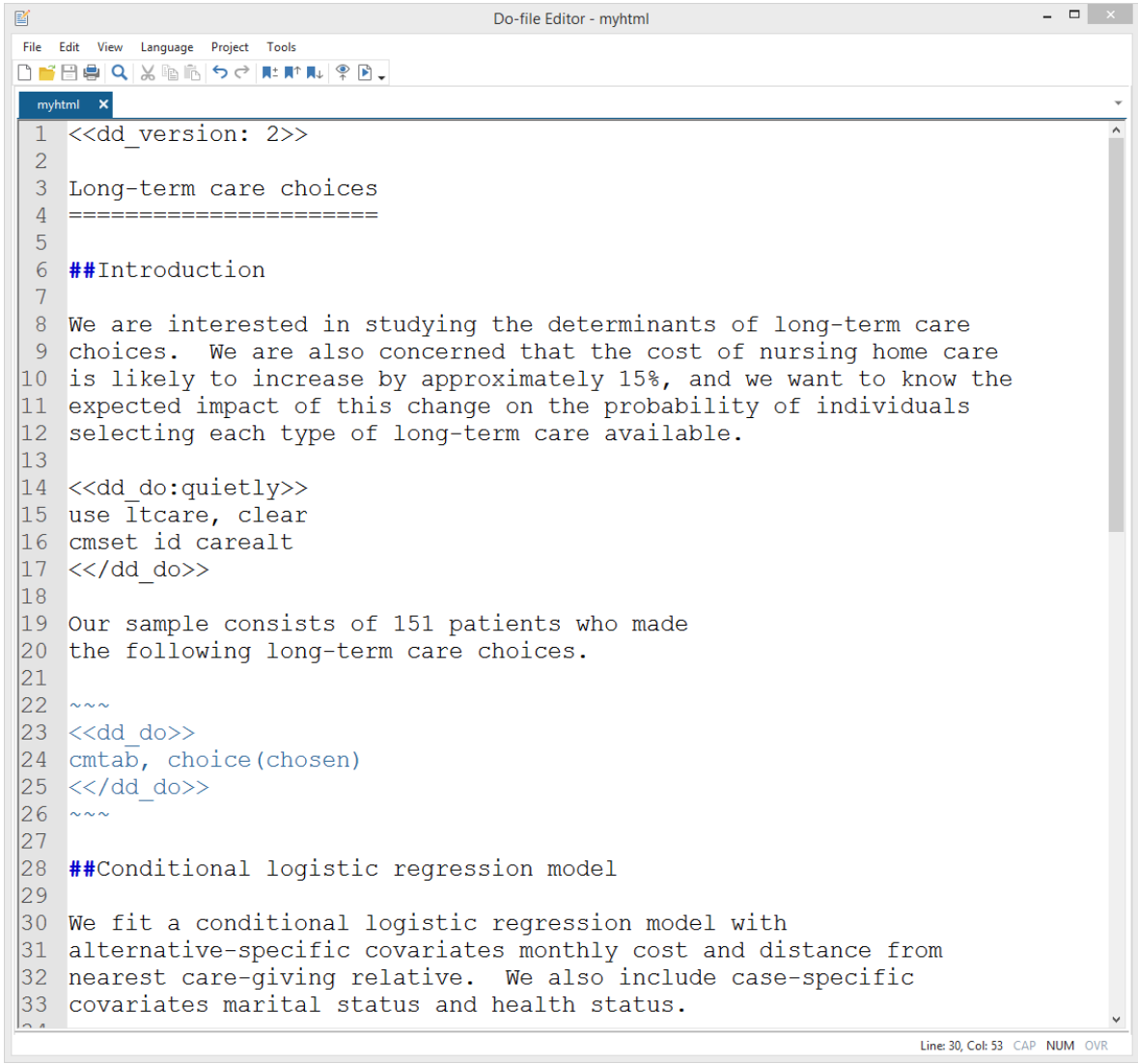
Dynamic tags

```
<<dd_do>>
  Stata commands
<</dd_do>>

<<dd_display: expression>>
```

Basic **dyndoc** structure

Dynamic tags

```
<<dd_do>>
  Stata commands
<</dd_do>>

<<dd_display: expression>>

<<dd_graph:saving(mygraph.png) graphname(mygraph)>>
```


Do-file Editor - myhtml
File Edit View Language Project Tools
myhtml
<<dd_version: 2>>
Long-term care choices
==========
##Introduction
We are interested in studying the determinants of long-term care
choices. We are also concerned that the cost of nursing home care
is likely to increase by approximately 15%, and we want to know the
expected impact of this change on the probability of individuals
selecting each type of long-term care available.
<<dd_do:quietly>>
use ltcare, clear
cmset id carealt
<</dd_do>>
Our sample consists of 151 patients who made
the following long-term care choices.
~~~
<<dd_do>>
cmtab, choice(chosen)
<</dd_do>>
~~~
##Conditional logistic regression model
We fit a conditional logistic regression model with
alternative-specific covariates monthly cost and distance from
nearest care-giving relative. We also include case-specific
covariates marital status and health status.
Line: 30, Col: 53 CAP NUM OVR

Do-file Editor - myhtml

File Edit View Language Project Tools

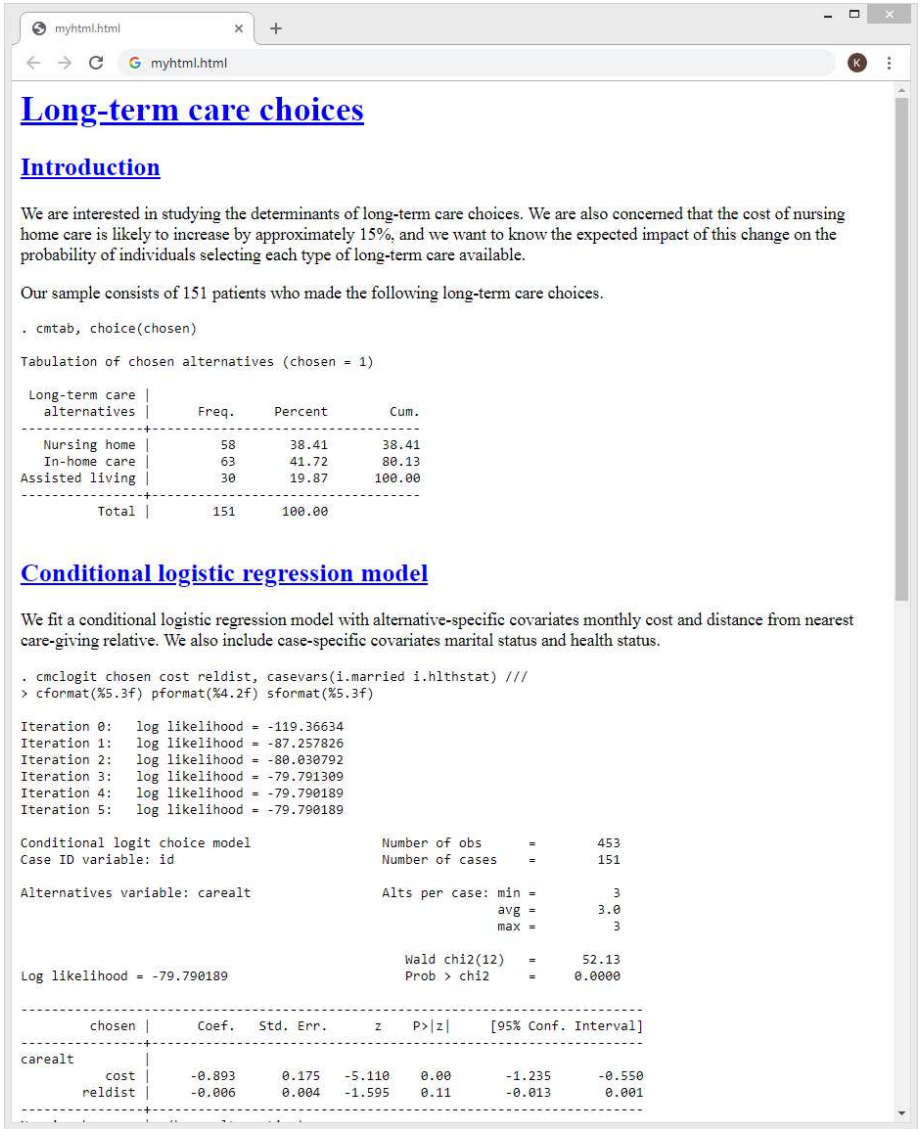
myhtml

```
35  ~~~
36  <<dd_do>>
37  cmclogit chosen cost reldist, casevars(i.married i.hlthstat) ///
38  cformat(%5.3f) pformat(%4.2f) sformat(%5.3f)
39  <</dd_do>>
40  ~~~
41
42  ##Effect of increasing cost of care in nursing homes
43
44  <<dd_do: quietly>>
45  margins, alternative(1) at(cost=generate(cost)) ///
46    at(cost=generate(cost*1.15))
47
48  marginsplot, xdim(_outcome) ///
49    legend(order(1 "Current cost" 2 "15% increase") ///
50    cols(1) ring(0) bplacement(neast)) ylabel(.1(.1).6) ///
51    title("Effect of 15% increase in nursing-home cost") ///
52    ytitle(Expected probability) xtitle(" ") noci ///
53    graphregion(margin(r=10))
54  <</dd_do>>
55
56  <<dd_graph: saving("interaction.png") replace height(400)>>
57
58  <<dd_do: quietly>>
59  margins, alternative(1) at(cost=generate(cost)) ///
60    at(cost=generate(cost*1.15)) ///
61    contrast(at(r) nowald)
62  <</dd_do>>
63
64  If nursing home costs increase by 15%, we anticipate a
65  <<dd_display: -`:display %3.1f 100*r(b)[1,1]'>>
66  percentage point decrease in the number of individuals selecting
67  long-term care in nursing homes. In turn, we expect the number of
68  individuals selecting in-home care to increase by
69  <<dd_display: `:display %3.1f 100*r(b)[1,2]'>> and the number
70  of individuals selecting assisted-living facilities to increase by
71  <<dd_display: `:display %3.1f 100*r(b)[1,3]'>>
72  percentage points.
73
```

Line: 30, Col: 53 CAP NUM OVR

Convert the **myhtml.md** Markdown document to HTML.

```
. dyndoc myhtml.md
```

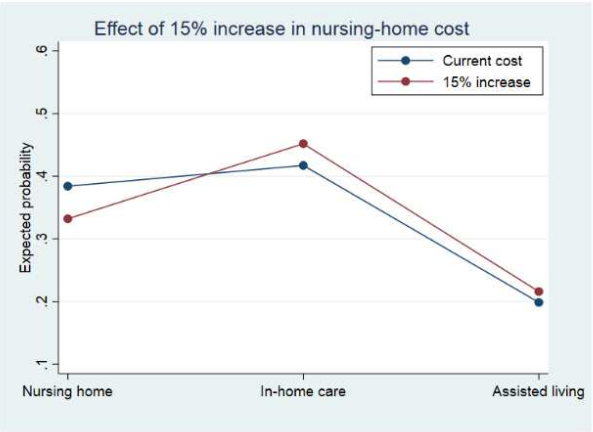

myhtml.html
myhtml.html
Long-term care choices
Introduction
We are interested in studying the determinants of long-term care choices. We are also concerned that the cost of nursing home care is likely to increase by approximately 15%, and we want to know the expected impact of this change on the probability of individuals selecting each type of long-term care available.
Our sample consists of 151 patients who made the following long-term care choices.
. cmtab, choice(chosen)
Tabulation of chosen alternatives (chosen = 1)
Long-term care alternatives | Freq. Percent Cum.
Nursing home | 58 38.41 38.41
In-home care | 63 41.72 80.13
Assisted living | 30 19.87 100.00
Total | 151 100.00
Conditional logistic regression model
We fit a conditional logistic regression model with alternative-specific covariates monthly cost and distance from nearest care-giving relative. We also include case-specific covariates marital status and health status.
. cmclogit chosen cost reldist, casevars(i.married i.hlthstat) ///
> cformat(%5.3f) pformat(%4.2f) sformat(%5.3f)
Iteration 0: log likelihood = -119.36634
Iteration 1: log likelihood = -87.257826
Iteration 2: log likelihood = -80.030792
Iteration 3: log likelihood = -79.791309
Iteration 4: log likelihood = -79.790189
Iteration 5: log likelihood = -79.790189
Conditional logit choice model Number of obs = 453
Case ID variable: id Number of cases = 151
Alternatives variable: carealt Alts per case: min = 3
avg = 3.0
max = 3
Wald chi2(12) = 52.13
Log likelihood = -79.790189 Prob > chi2 = 0.0000
chosen | Coef. Std. Err. z P>|z| [95% Conf. Interval]
carealt
cost | -0.893 0.175 -5.110 0.00 -1.235 -0.550
reldist | -0.006 0.004 -1.595 0.11 -0.013 0.001

myhtml.html

myhtml.html

Nursing_home	(base alternative)					
In_home_care						
married						
Married	3.682	0.795	4.634	0.00	2.125	5.240
hlthstat						
Poor	0.735	1.346	0.546	0.59	-1.904	3.373
Fair	4.894	1.462	3.347	0.00	2.028	7.760
Average	6.520	1.752	3.722	0.00	3.087	9.954
Good	4.800	1.780	2.696	0.01	1.310	8.290
_cons	-3.446	1.313	-2.624	0.01	-6.020	-0.872
Assisted_living						
married						
Married	3.822	0.877	4.360	0.00	2.104	5.541
hlthstat						
Poor	-1.574	1.603	-0.982	0.33	-4.716	1.569
Fair	4.180	1.424	2.936	0.00	1.389	6.971
Average	6.179	1.708	3.618	0.00	2.832	9.526
Good	4.689	1.726	2.717	0.01	1.306	8.072
_cons	-4.315	1.298	-3.324	0.00	-6.859	-1.771

Effect of increasing cost of care in nursing homes



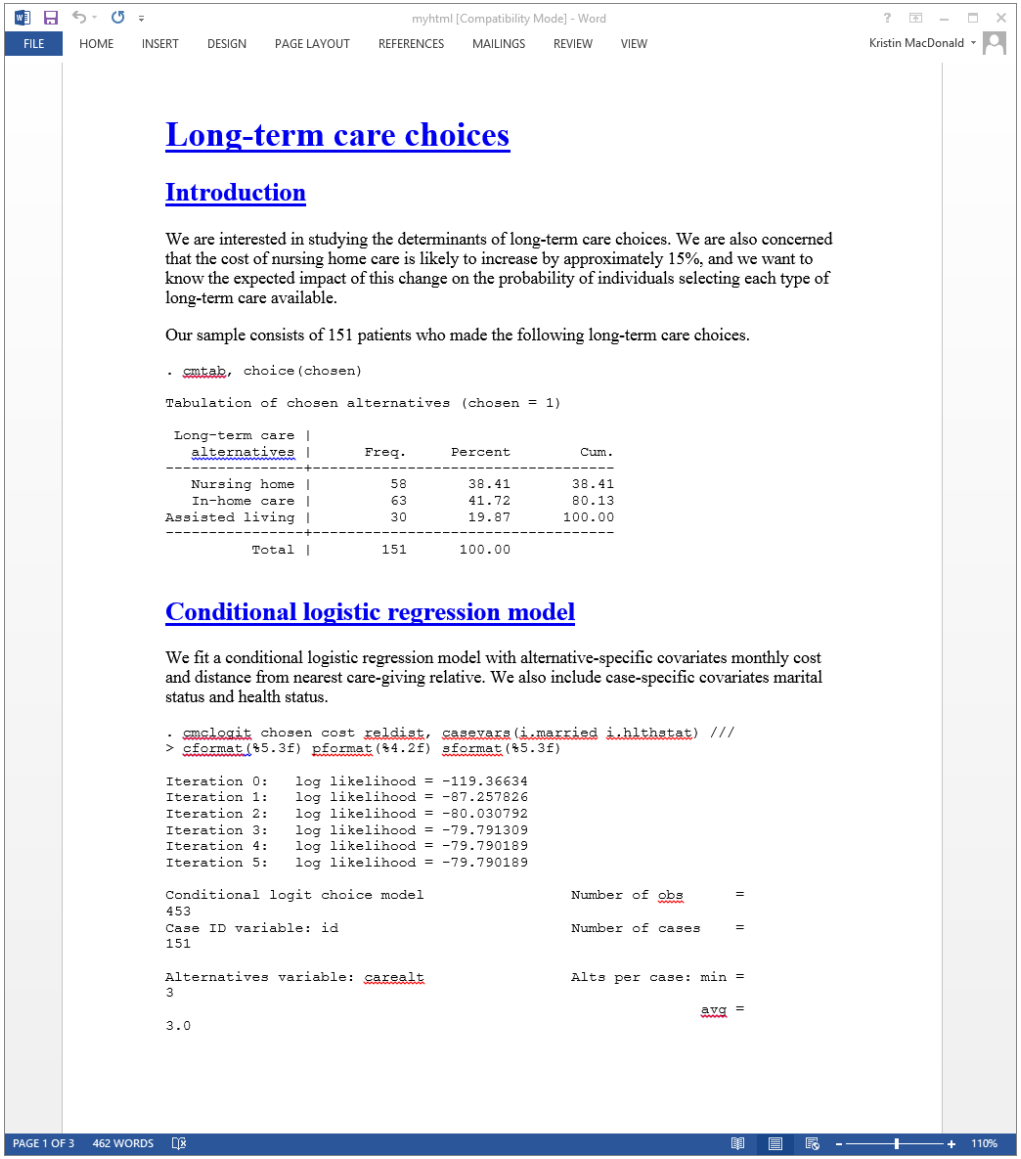
If nursing home costs increase by 15%, we anticipate a 5.2 percentage point decrease in the number of individuals selecting long-term care in nursing homes. In turn, we expect the number of individuals selecting in-home care to increase by 3.5 and the number of individuals selecting assisted-living facilities to increase by 1.7 percentage points.

Convert the **myhtml.md** Markdown document to a Word document.

```
. dyndoc myhtml.md, docx
```

Or convert the HTML document directly to a Word document.

```
. html2docx myhtml.html
```



myhtml [Compatibility Mode] - Word

FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW

Kristin MacDonald

Long-term care choices

Introduction

We are interested in studying the determinants of long-term care choices. We are also concerned that the cost of nursing home care is likely to increase by approximately 15%, and we want to know the expected impact of this change on the probability of individuals selecting each type of long-term care available.

Our sample consists of 151 patients who made the following long-term care choices.

```
. cmtab, choice(chosen)

Tabulation of chosen alternatives (chosen = 1)

 Long-term care |
   alternatives |      Freq.     Percent        Cum.
----------------+-----------------------------------
   Nursing home |         58       38.41       38.41
   In-home care |         63       41.72       80.13
Assisted living |         30       19.87      100.00
----------------+-----------------------------------
          Total |        151      100.00
```

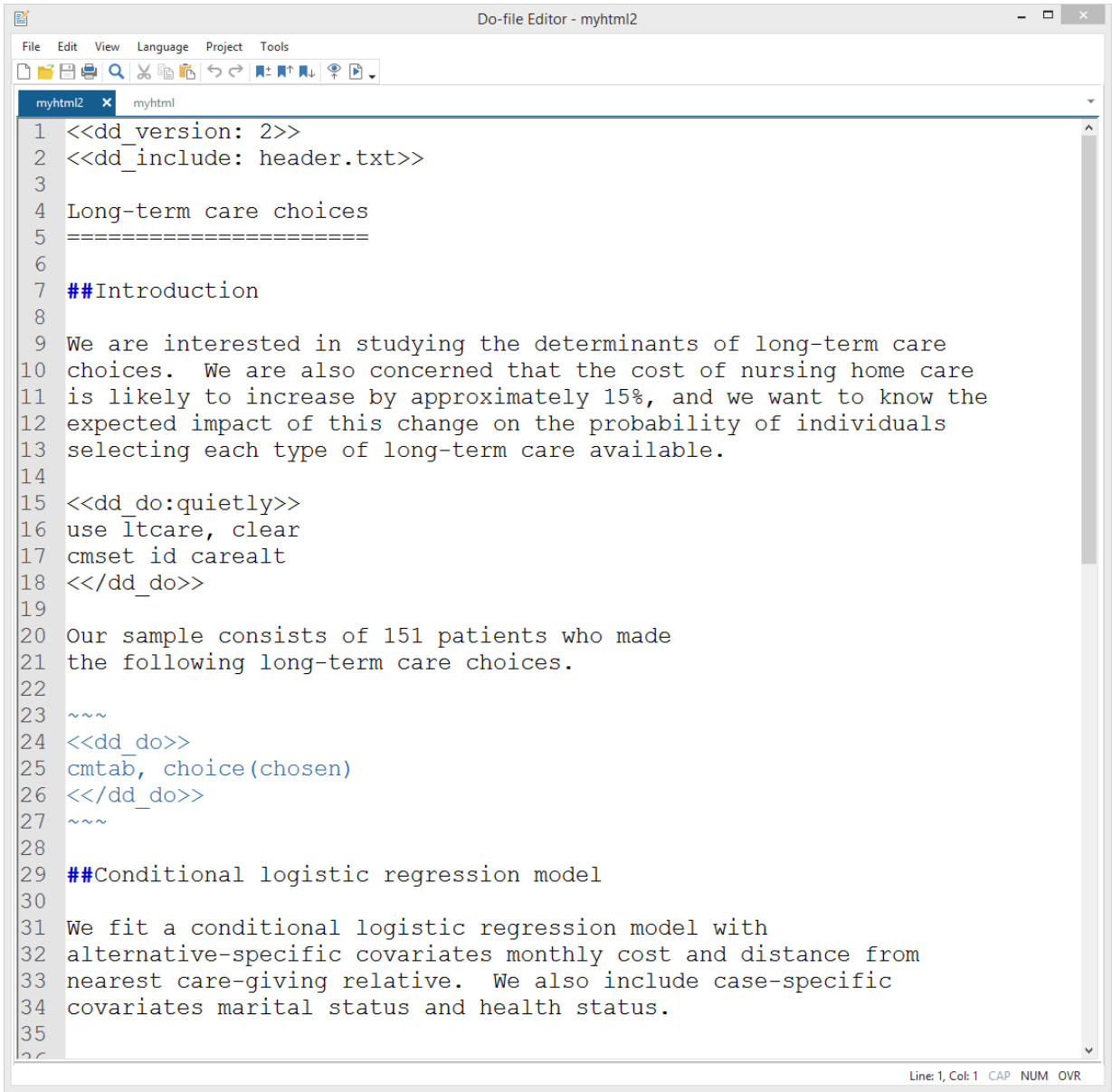
Conditional logistic regression model

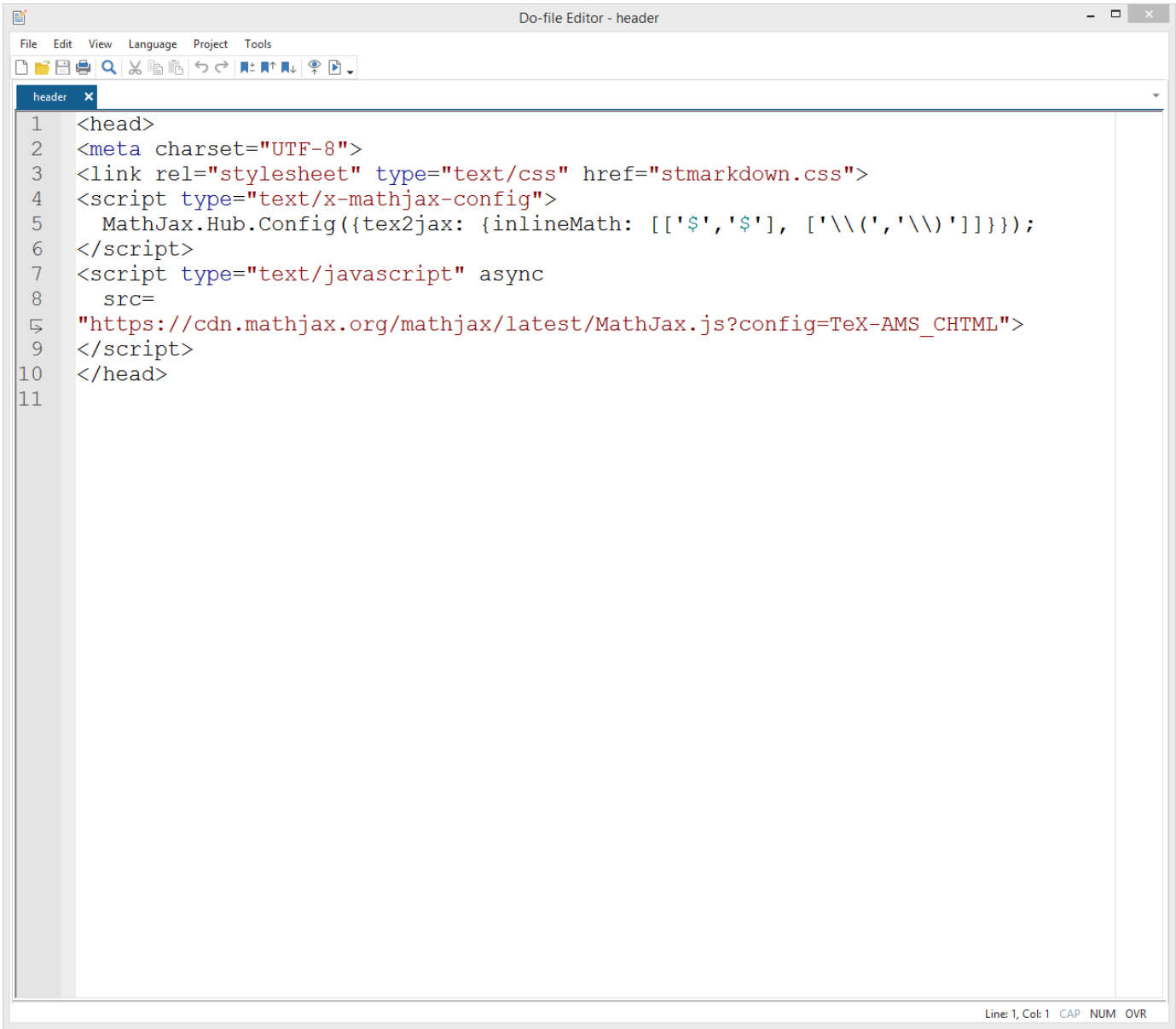
We fit a conditional logistic regression model with alternative-specific covariates monthly cost and distance from nearest care-giving relative. We also include case-specific covariates marital status and health status.

```
. cmclogit chosen cost reldist, casevars(i.married i.hlthstat) ///
> cformat(%5.3f) pformat(%4.2f) sformat(%5.3f)

Iteration 0:   log likelihood = -119.36634
Iteration 1:   log likelihood = -87.257826
Iteration 2:   log likelihood = -80.030792
Iteration 3:   log likelihood = -79.791309
Iteration 4:   log likelihood = -79.790189
Iteration 5:   log likelihood = -79.790189

Conditional logit choice model                  Number of obs      =
453
Case ID variable: id                            Number of cases    =
151

Alternatives variable: carealt                  Alts per case: min =
3
                                                               avg =
3.0
```

PAGE 1 OF 3 462 WORDS 110%

Incoroporate HTML code and style sheets to change the look of the document.

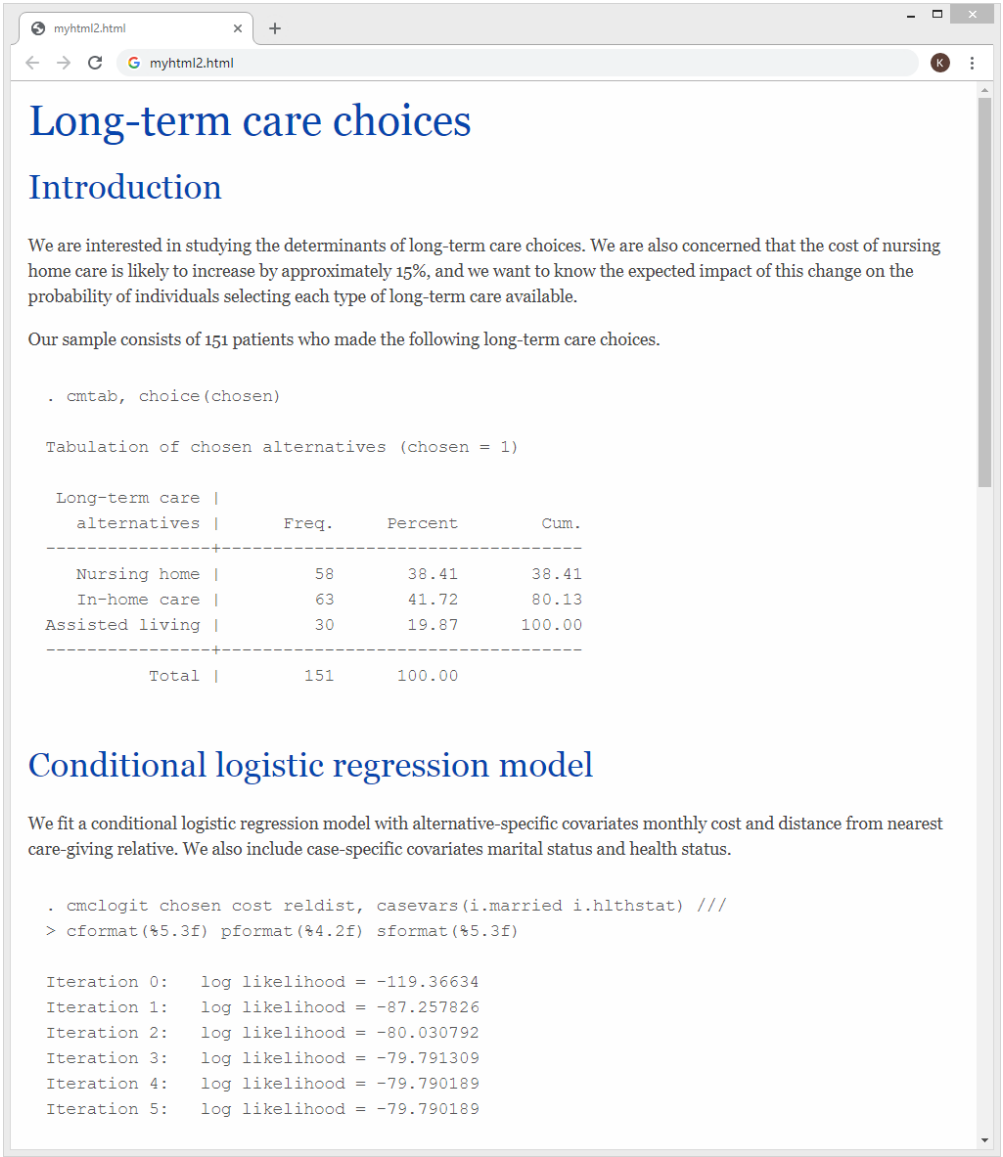

Do-file Editor - myhtml2
File Edit View Language Project Tools
myhtml2
myhtml
1 <<dd_version: 2>>
2 <<dd_include: header.txt>>
3
4 Long-term care choices
5 ======================
6
7 ##Introduction
8
9 We are interested in studying the determinants of long-term care
10 choices. We are also concerned that the cost of nursing home care
11 is likely to increase by approximately 15%, and we want to know the
12 expected impact of this change on the probability of individuals
13 selecting each type of long-term care available.
14
15 <<dd_do:quietly>>
16 use ltcare, clear
17 cmset id carealt
18 <</dd_do>>
19
20 Our sample consists of 151 patients who made
21 the following long-term care choices.
22
23 ~~~
24 <<dd_do>>
25 cmtab, choice(chosen)
26 <</dd_do>>
27 ~~~
28
29 ##Conditional logistic regression model
30
31 We fit a conditional logistic regression model with
32 alternative-specific covariates monthly cost and distance from
33 nearest care-giving relative. We also include case-specific
34 covariates marital status and health status.
35
Line: 1, Col: 1 CAP NUM OVR


Do-file Editor - header
File Edit View Language Project Tools
header
1 <head>
2 <meta charset="UTF-8">
3 <link rel="stylesheet" type="text/css" href="stmarkdown.css">
4 <script type="text/x-mathjax-config">
5 MathJax.Hub.Config({tex2jax: {inlineMath: [['$','$'], ['\\(','\\)']]}});
6 </script>
7 <script type="text/javascript" async
8 src=
"https://cdn.mathjax.org/mathjax/latest/MathJax.js?config=TeX-AMS_CHTML">
9 </script>
10 </head>
11
Line: 1, Col: 1 CAP NUM OVR

We save the Markdown file that includes the header file as the **myhtml2.md**. Then we can type

```
. dyndoc myhtml2.md
```

to convert it to an HTML file.


myhtml2.html
myhtml2.html
Long-term care choices
Introduction
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Long-term care | alternatives | Freq. Percent Cum.
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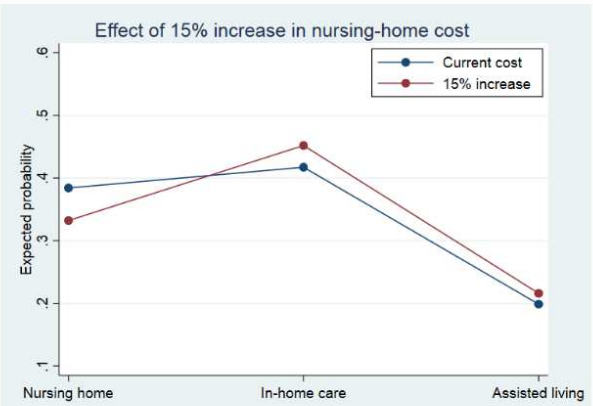
Assisted living | 30 19.87 100.00
Total | 151 100.00
Conditional logistic regression model
We fit a conditional logistic regression model with alternative-specific covariates monthly cost and distance from nearest care-giving relative. We also include case-specific covariates marital status and health status.
. cmclogit chosen cost reldist, casevars(i.married i.hlthstat) ///
> cformat(%5.3f) pformat(%4.2f) sformat(%5.3f)
Iteration 0: log likelihood = -119.36634
Iteration 1: log likelihood = -87.257826
Iteration 2: log likelihood = -80.030792
Iteration 3: log likelihood = -79.791309
Iteration 4: log likelihood = -79.790189
Iteration 5: log likelihood = -79.790189

myhtml2.html

myhtml2.html

```
----------------+----------------------------------------------------------------
Assisted_living |
        married |
        Married |      3.822      0.877     4.360    0.00        2.104       5.541
                |
        hlthstat |
           Poor |     -1.574      1.603    -0.982    0.33       -4.716       1.569
           Fair |      4.180      1.424     2.936    0.00        1.389       6.971
        Average |      6.179      1.708     3.618    0.00        2.832       9.526
           Good |      4.689      1.726     2.717    0.01        1.306       8.072
                |
          _cons |     -4.315      1.298    -3.324    0.00       -6.859      -1.771
----------------+----------------------------------------------------------------
```

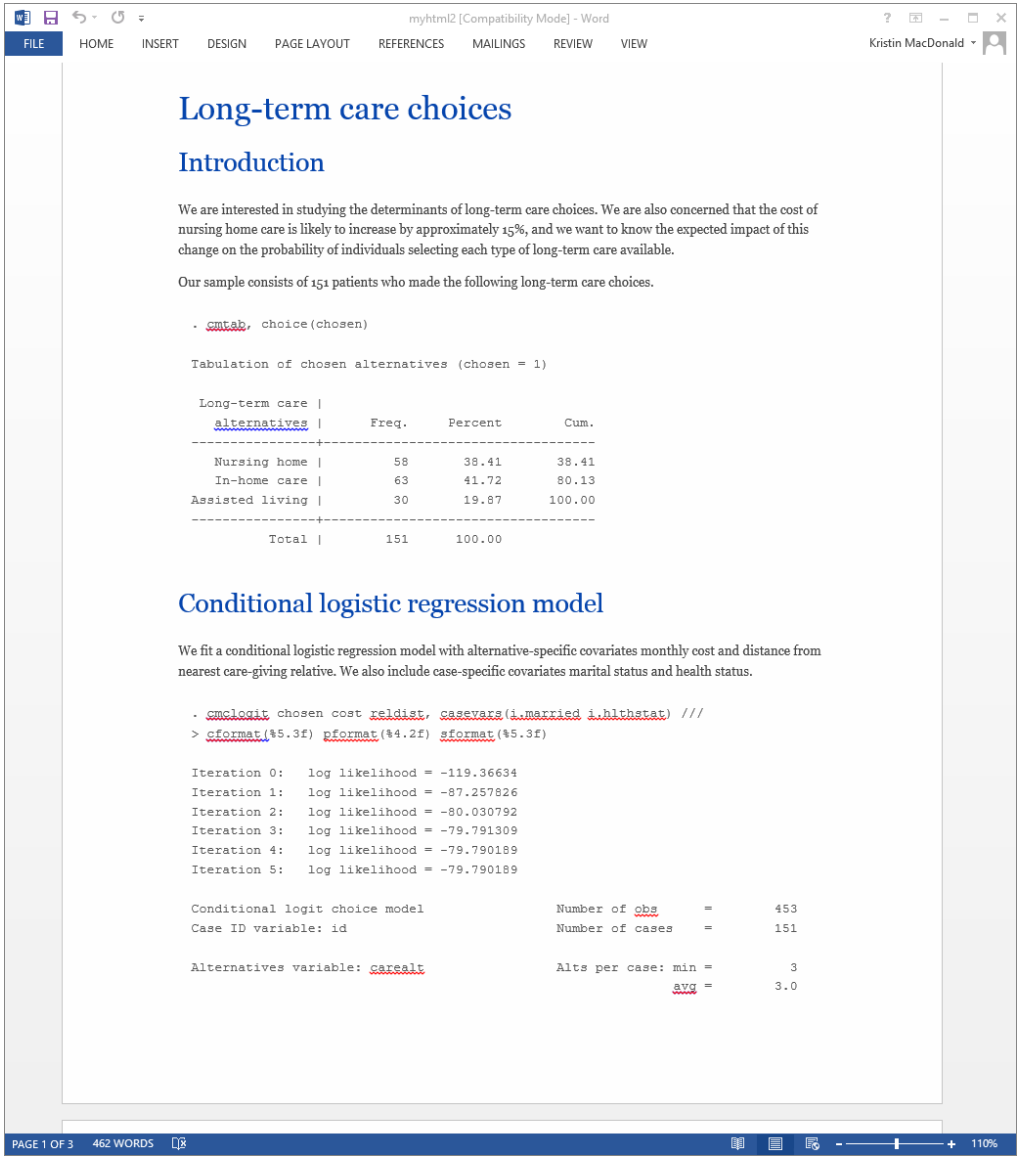
Effect of increasing cost of care in nursing homes



If nursing home costs increase by 15%, we anticipate a 5.2 percentage point decrease in the number of individuals selecting long-term care in nursing homes. In turn, we expect the number of individuals selecting in-home care to increase by 3.5 and the number of individuals selecting assisted-living facilities to increase by 1.7 percentage points.

The same style is applied to a the Word document that is created when we type

```
. dyndoc myhtml2.md, docx
```



myhtml2 [Compatibility Mode] - Word

FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW

Kristin MacDonald

Long-term care choices

Introduction

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```
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 Long-term care |
   alternatives |      Freq.     Percent        Cum.
----------------+-----------------------------------
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Assisted living |         30       19.87      100.00
----------------+-----------------------------------
          Total |        151      100.00
```

Conditional logistic regression model

We fit a conditional logistic regression model with alternative-specific covariates monthly cost and distance from nearest care-giving relative. We also include case-specific covariates marital status and health status.

```
. cmclogit chosen cost reldist, casevars(i.married i.hlthstat) ///
> cformat(%5.3f) pformat(%4.2f) sformat(%5.3f)

Iteration 0:   log likelihood = -119.36634
Iteration 1:   log likelihood = -87.257826
Iteration 2:   log likelihood = -80.030792
Iteration 3:   log likelihood = -79.791309
Iteration 4:   log likelihood = -79.790189
Iteration 5:   log likelihood = -79.790189

Conditional logit choice model                Number of obs      =        453
Case ID variable: id                          Number of cases    =        151

Alternatives variable: carealt                Alts per case: min =          3
                                                             avg =        3.0
```

PAGE 1 OF 3 462 WORDS 110%

A few edits make it easy to produce dynamic reports. For instance, change

```
<<dd_do:quietly>>
use ltcare, clear
cmset id carealt
<</dd_do>>
```

to

```
<<dd_do:quietly>>
use `1', clear
cmset id carealt
<</dd_do>>
```

Save the file with this update as **mythmld.md**, then type

```
. dyndoc mythmld.md ltcare_q3.dta
```

to create the same report using the **ltcare_q3.dta**

Add more flexibility by passing additional arguments. For instance, we can specify the percentage increase in nursing-home cost that we want to analyze as a second argument. We change each instance of

```
15%
```

within text to in our Markdown document to

```
<<dd_display:'2'>>
```

We also change the **margins** and **marginsplot** to respect the percentage specified in the second argument.

```
<<dd_do: quietly>>
margins, alternative(1) at(cost=generate(cost)) ///
  at(cost=generate(cost*1.‘2’))

marginsplot, xdim(_outcome) ///
  legend(order(1 "Current cost" 2 "‘2’% increase") ///
  cols(1) ring(0) bplacement(neast)) ylabel(.1(.1).6) ///
  title("Effect of ‘2’% increase in nursing-home cost") ///
  ytitle(Expected probability) xtitle(" ") noci ///
  graphregion(margin(r=10))
<</dd_do>>
```

After we save the modified file as **myhtmld.md**, we can type

```
. dyndoc myhtmld.md ltcare_q3.dta 20, saving(q3ptc20.html) replace
```

to evaluate the effect of a 20% increase in the cost nursing-home care and create the HTML file **q3pct20.html** that reports the results.

Whirlwind tour of reporting features?

Tornado?

Cyclone?

Try **putdocx**, **putpdf**, **putexcel**, or **dyndoc** the next time you need to automate a report in Word, HTML, Excel, or PDF format.