

Browse and cite Stata manuals easily: the `wwwhelp` command

Yongli Chen

Antai College of Economics and Management
Shanghai Jiao Tong University
Shanghai, China
yongli_chan@163.com

Yujun Lian

Lingnan College
Sun Yat-Sen University
Guangzhou, China
arlionn@163.com

Abstract. In this article, we describe a new command, `wwwhelp`, that facilitates direct access to online HTML or PDF versions of Stata’s official help files. Addressing the challenges associated with storing, citing, and sharing help files, `wwwhelp` complements the `help` command by enabling access to help files outside of the Stata environment. In addition to fully utilizing the abundant resources available on the Stata’s website, `wwwhelp` enhances the convenience of citing Stata commands in articles and blog posts, thereby promoting the utilization and dissemination of Stata commands.

Keywords: st0001, `wwwhelp`, online, cite, help, Stata Manuals

1 Introduction

How to retrieve Stata’s learning materials is crucial to the proficiency of Stata users and the continued development of the software. Users can browse help files offline and click links to a more detailed PDF manual with the `help` command. However, the offline help files can only be read and used within Stata, and the PDF manual,¹ which can be accessed outside of Stata, is too big to pinpoint and disseminate specific commands quickly and accurately within. Fortunately, alternative versions of help files for each official command are provided on Stata’s website, including an online HTML (`htmlV` hereafter) and a corresponding PDF (`pdfV` hereafter), which is easier to navigate and share. Among them, `htmlV` offers a brief overview of the official commands, while `pdfV` provides more detailed explanations, such as “remarks and examples”.² Here is what the links to these pages look like.

`htmlV`: <https://www.stata.com/help.cgi?regress>

`pdfV`: <https://www.stata.com/manuals/rregress.pdf>

We develop a convenience tool, `wwwhelp`, which enables the more convenient access

1. Users are often amazed at the first sight of `pdfV`, which can explain complex models and backgrounds concisely. However, these help files are underutilized: our survey of over 2,000 Chinese Stata users revealed that less than 20% had read the `pdfV`, and many were unaware of the 13,000+ page electronic manual on Stata’s website.
2. The “Remarks and Examples” section provides readable and easy-to-understand examples of the commands, which is useful for intensive study and for commands engaging complicated background or complex mathematics.

to these resources outside of the Stata's environment. In addition, by attaching options such as `texfull` or `markdown`, `wwhelp` command can display citations and links of online help files in Stata's Results window, which can be easily copied to the clipboard or documents in various formats such as `.tex` or `.md`. For advanced users aimed at sharing Stata knowledge in articles or blog posts, `wwhelp` is particularly convenient for referencing Stata commands and providing links to relevant pages for the readers' convenience, which enables readers without Stata software installed or a computer at hand to understand the detailed functions of Stata commands. For example, Gould (2010) wrote,

You can read the online help or the manual about the Mata function `luinv()`. I chose it because I needed a matrix inverter that could handle nonsymmetric matrices.

Users can use `wwhelp mata luinv, texfull` command to get the link and citation pasted into clipboard automatically as

```
\href{https://www.stata.com/manuals/m-5mata_luinv.pdf}{\bfseries{[\MakeUppercase{m-5}]
mata luinv}}
```

which turns out to be the following readable text after being pasted into a `.tex` file and compiled.

You can read the online help or the manual about the Mata function [M-5] `mata luinv`. I chose it because I needed a matrix inverter that could handle nonsymmetric matrices.

For more detailed information, refer to Section 2.2 Citing with various formats.

The remainder of the article is organized as follows. Section 2 introduces the usage. Section 3 concludes. For more details of the conceptual framework and programming challenges, please refer to the appendix.

2 Syntax and Usage

2.1 Syntax

```
wwhelp command [ , web markdown txt ms texfull latex format(##)
      clipoff ]
```

2.2 Common use

`wwhelp` is used to open the online help files of Stata's official commands. Specifically, the documents that can be opened directly using `help cmd` command, can also be opened online using `wwhelp cmd`, including both detailed PDF versions and simple HTML versions. By default, `wwhelp` opens the PDF version, which contains detailed descriptions and explanations of a specific command. When further specifying the `web` option, the HTML version will be opened for users to take a quick look at the basic information of commands. For example, one can type the following command.

```
. wwwhelp xtreg
```

It will open a 32-page PDF version of help file that details how to use the `xtreg` command. The document is opened through browser, and can be easily downloaded, cited and shared.

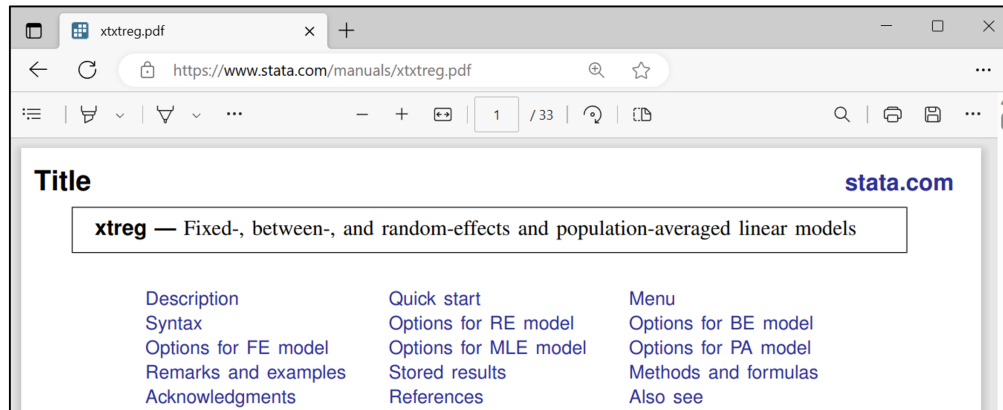


Figure 1: Open PDF help file via `wwwhelp`

Now, we add the `web` option.

```
. wwwhelp xtreg, web
```

This command will open a simple online version of help file that concisely describes the syntax of `xtreg`, and offers a brief introduction of uses and functions of the command. The `htmlV` is a small-sized and useful supplement to the `pdfV`, facilitating dissemination and reference. Furthermore, we have written `hhelp`, a simpler command based on `wwwhelp`. This allows faster access to the HTML version without any options. So `wwwhelp xtreg, web` is equivalent with `hhelp xtreg`.



Figure 2: Open HTML help file via `wwwhelp` with option `web` or `hhelp`

2.3 Citing with various formats

To enhance the convenience of citation, the `wwwhelp` command has incorporated various formatting options, including `markdown`, `txt`, `ms`, `latex`, `texfull`, and `format(#)`, and has enabled users to access web links to the online help files in their desired format. Notably, the text will be automatically copied to the clipboard, and users can disable this automatic copying function by utilizing the `clipoff` option. For more information, refer to the online appendix. In this section, we will introduce the referencing feature of `wwwhelp` through specific scenarios and provide a detailed explanation of formatting options.

In practice, there are numerous scenarios in which Stata command might be referenced. For example, references in the *Stata Blog* are frequently seen but seldom hyperlinked to online help files, as shown in the following excerpt from Balov (2022).

Quarterly observations on real GDP, measured in billions of dollars, are obtained from the Federal Reserve Economic Data repository using the `import fred` command. I consider observations only between the first quarter of 1947 and second quarter of 2021. A quarterly date variable, `dateq`, is generated and used with `tsset` to set up the time series.

References in the *Stata Journal* also lack hyperlinks to online help files, as shown in the following excerpt from Cox (2022).

One more step in technique yields many useful results. The step is to use `generate` and `egen` (see [D] `generate` and [D] `egen`) as workhorses within a framework provided by the `by` (see [D] `by`) prefix. The perspective is now that new variables are needed, so that we can graph, table, and further analyze our results most easily.

In other resources, such as Stata manuals, and textbooks, referencing Stata commands are also necessary. However, lacking hyperlinks prevents users from accessing related information independent of Stata.

With `wwwhelp`, Stata commands can be hyperlinked to the corresponding online help files, which allows users to obtain detailed information about the commands by simply clicking on the links, instead of switching to Stata and seeking in the Command Window. The `wwwhelp` command provides a range of hyperlinks' formatting options designed to accommodate the different syntax requirements of various editors. For example, the `texfull` option generates text link that is suitable for LaTeX syntax, while the `markdown` option produces link text that is appropriate for Markdown syntax. In the following sections, we will provide a detailed introduction to the usage of the `markdown`, `txt`, `ms`, `latex`, `texfull`, and `format(#)` formatting options. In addition, every option has a corresponding abbreviation, such as `m` for `markdown`. For details, see `help wwwhelp`.

`markdown` displays the web link in Markdown format, for example,

```
. wwwhelp regress, markdown
[**[R]** regress] (https://www.stata.com/manuals/rregress.pdf)
Text is on clipboard. Press 'Ctrl+V' to paste
```

The text is automatically copied to the clipboard and appears as a clickable link when pasted into Markdown. `[R] regress`. Notably, on MacOS system, the notes will

be “... Press ‘Command+V’ to paste”, while on Windows system, it will be “... Press ‘Ctrl+V’ to paste”.

`txt` displays the web link as text (command: URL), for example,

```
. wwwhelp regress, txt
[R] regress: https://www.stata.com/manuals/rregress.pdf
Text is on clipboard. Press 'Ctrl+V' to paste
```

It can be copied to the dialog box of Facebook or WeChat for Chinese users.

`ms` sends a rich text punctuated with links to the clipboard, which can be pasted easily to the Microsoft Word. For example,

```
. wwwhelp xtreg, ms
[XT]xtreg
Text is on clipboard. Press 'Ctrl+V' to paste
```

When pressing ‘Command+V’ in the Microsoft Word, the text will appear as a clickable link. **[R] regress**. However, this option has some limitations. It requires Stata16 or newer versions of Stata to be installed as well as Python, because the commands call the Windows API through Stata’s interaction with Python; and it is currently only available for Windows systems. Otherwise, it will automatically switch to the `txt` option, which displays a plain text with links. (command:URL)

`texfull` displays the web link as full Tex text, for example,

```
. wwwhelp regress, texfull
\href{https://www.stata.com/manuals/rregress.pdf}{\bfseries{[\MakeUppercase{r}] regress}}
Text is on clipboard. Press 'Ctrl+V' to paste
```

It can be inserted into a `.tex` document, which will appear as a clickable link in the PDF file when compiled using a TeX editor. **[R] regress**.

`latex` displays the web link in LaTeX form, for example,

```
. wwwhelp regress, latex
\stwwwhelp[r]{regress}
Text is on clipboard. Press 'Ctrl+V' to paste
```

It can be inserted into a `.tex` document, which will appear as a clickable link in the PDF file when compiled using a TeX editor. **[R] regress**.

Note that since `\stwwwhelp` is a new user-defined command in the `.tex` document, it needs to be defined by adding the following to the introductory section of the `.tex` file.

```
\newcommand{\stwwwhelp}[2][r]{
\href{https://www.stata.com/manuals/#1#2.pdf}{\bfseries{[\MakeUppercase{#1}] #2}}
}
```

`format(#)` displays the web link in three supporting Markdown preset formats.

```
format(1) is rendered in Markdown as [R] regress
format(2) is rendered in Markdown as regress
format(3) is rendered in Markdown as help regress
```

For example,

```
. wwwhelp regress, format(1)
[**[R]** regress](https://www.stata.com/manuals/rregress.pdf)
Text is on clipboard. Press 'Ctrl+V' to paste
. wwwhelp regress, format(2)
[regress](https://www.stata.com/manuals/rregress.pdf)
Text is on clipboard. Press 'Ctrl+V' to paste
. wwwhelp regress, format(3)
[help regress](https://www.stata.com/manuals/rregress.pdf)
Text is on clipboard. Press 'Ctrl+V' to paste
```

All of the above are web links to PDF help files. `wwwhelp` can also provide web links to the HTML help files by setting the `web` option, for example,

```
. wwwhelp regress, markdown web
[**[R]** regress](https://www.stata.com/help.cgi?regress)
Text is on clipboard. Press 'Command+V' to paste
```

2.4 Special cases

There are some special cases in using `wwwhelp` command, including:

Multiple keywords. Some help files require multiple keywords to be uniquely identified. The basic syntax structure is `category + keyword`, such as the Graph class (`wwwhelp graph export`), the Mata class (`wwwhelp mata intro`), and the Function class (`wwwhelp math function`, `wwwhelp string function`). For more complicated cases, it is recommended that we can use the `help` command to find out the correct keywords at the first step, and then use the `wwwhelp` command to get their online help files. More specifically, we can find the target document by searching some keywords with `help` command and clicking the relevant hint links, then copy the complete command (e.g. `help datetime functions`) from the address bar of *Viewer Window*, and paste it into the Stata *Command Window*. By adding the prefix `www` to the retrieved command, the resulting `wwwhelp datetime functions` command can be executed to access the online version.

Sections. For long documents, users can usually locate a particular section in the document using the command `help command##Section`, where `Section` refers to the specific subsection of interest and the `##` symbol serves as a locator. For example, `help regress postestimation##estatvif` will open the help file for the `regress postestimation` command and automatically navigate to the location of `estatvif`. However, since the naming of the subsection bookmarks in the PDF manual is not systematic, subsection positioning through `wwwhelp` might not be exact. For example, when a user enters `wwwhelp regress postestimation##estatvif`, Stata will open the online help file for `regress postestimation`, but will not locate the `estatvif` section accurately.

Command abbreviations. `wwwhelp` also supports command abbreviations. For uniquely identified command abbreviations, `wwwhelp` will open the corresponding online

help file directly. For example, `wwwhelp reg` is equivalent to `wwwhelp regress`, which will open an online PDF version of help file for the `regress` command. If a command abbreviation does not uniquely identify the official command, `wwwhelp` will provide advices and list several similar commands using the abbreviation as *keyword* for users to choose from. For example,

```
. wwwhelp tw_lf
Please input the full name of the command to make the link to help file accurate and
unique. See help tw_lf
Find 2 similar commands:
  twoway_lfit | twoway_lfitci
```

3 Conclusions

This article introduces `wwwhelp`, a new command that enables direct access to Stata's online help files, including both detailed PDF versions and simple HTML versions. It also incorporates various formatting options, enabling users to access web links to the online help files in a desired format, which will be automatically copied to the clipboard. In brief, just add a “www” before “help”, and we can enjoy Stata's powerful and desirable help.

`wwwhelp` can only access online help files. We hope that the future research can further employ other online resources, such as Stata Journal and StataCorp website, so that users can easily retrieve and browse all Stata resources online.

4 References

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About the authors

Yongli Chen is a PhD candidate at the Shanghai Jiao Tong University in Shanghai, China.

Yujun Lian is a associate professor of finance at the Sun Yat-Sen University in Guangzhou, China. (corresponding author)

Appendix for “Browse and Cite Stata Manuals Easily”

This appendix outlines the development process and challenges encountered in creating `wwwhelp.ado`. The first part discusses the method of constructing the URL for online help file, the second part explains the approach to handling command abbreviations, and the third part describes the implementation of automatic copying to clipboard.

1 the URL

We will first post some URLs of the online help files as examples, and then describe how to establish the association between the official commands and the URLs of the corresponding online help file, including the URLs of the `htmlV` (hereinafter referred to as `htmlURL`) and those of the `pdfV` (hereinafter referred to as `pdfURL`). These efforts are made possible by Stata’s well-established help system.

The following are the `htmlURL` for several official commands:

- (1) **regress**: <https://www.stata.com/help.cgi?regress>
- (2) **graph**: <https://www.stata.com/help.cgi?graph>
- (3) **string functions**: https://www.stata.com/help.cgi?string_functions

The corresponding `pdfURL` are as follows:

- (1) **regress**: <https://www.stata.com/manuals/rregress.pdf>
- (2) **graph**: <https://www.stata.com/manuals/g-2graph.pdf>
- (3) **string functions**: <https://www.stata.com/manuals/fnstringfunctions.pdf>

The URL of an online help file can roughly consist of `[prefix] + [kws] + [suffix]`, where the `htmlURL` is composed of `https://www.stata.com/help.cgi? + [kws]` and the `pdfURL` is composed of `https://www.stata.com/manuals/ + [kws] + .pdf`.

For `htmlURLs`, `[kws]` is relatively easy to determine and can be converted from the official command by replacing spaces in the command with underscores. For example, the `[kws]` of the `regress` command is `regress`, and the `[kws]` of `string functions` is `string_functions`. Unfortunately, the `[kws]` of `pdfURLs` cannot be obtained directly in this way because it contains the shorthand notation of the Stata manual corresponding to the official command. We require support from the index of the offline PDF version in the `.sthlp` suffixed help file, which displays in the first line when opening via `help command`. For example, the index content in the `regress.sthlp` file looks like

```
[R] regress - Linear regression (View complete PDF manual entry)
```

and in the `progress.sthlp` appears

```
[FN] String functions (View complete PDF manual entry)
```

These index literals can be easily combined to obtain `[kws]`, such as `rregress` for `regress` command and `fnstringfunctions` for `string functions`.

Once the `[kws]` is determined, the association between the official command and the corresponding URL is established by adding prefixes and suffixes (if any) according as the online help file is HTML or PDF. For example, the `htmlURL` for `string functions` command is structured as follows,


```
[prefix]: https://www.stata.com/help.cgi?
[kws]: string_functions
```

which can come together as `https://www.stata.com/help.cgi?string_functions`. The pdfURL for `string_functions` command is structured as follows,

```
[prefix]: https://www.stata.com/manuals/
[kws]: fnstringfunctions
[suffix]: .pdf
```

which can come together as `https://www.stata.com/manuals/fnstringfunctions.pdf`.

2 Command abbreviation

Stata has a well-developed help system that can effectively handle command abbreviations. Non-stata users will find it amazing to type `reg y x` instead of `regress y x`, and `ge x = 3` instead of `generate x = 3`. One may wonder how it works. In fact, it is owe to the `chelp_alias.maint` index files.

There are 27 such index files, starting with a letter or an underscore (i.e. a-z and _) and named in the format of `?help_alias.maint`, such as `ahelp_alias.maint`. The file `help_alias.maint` is located in the `base` folder under the `ado` directory in the Stata installation path and can be viewed with the command `viewsource ?help_alias.maint`. The file contains two columns, the first of which lists all abbreviated commands, while the second lists the corresponding full names. For example, the abbreviated commands `reg`, `regr`, `regre` and `regres` all correspond to the full name `regress`.

The index file provides the correspondence between the full name of the command and all its abbreviations, with which we solve the abbreviation problem encountered by `wwhelp`. Then it is possible to use `wwhelp reg` instead of `wwhelp regress`. The specific operations are: (1) determine the abbreviated command index file (e.g. `rhelp_alias.maint`) corresponding to the abbreviated command (e.g. `reg`) based on first letter, (2) find the full name (e.g. `regress`) in the index file for the abbreviated command (e.g. `reg`), (3) construct `htmlURL` or `pdfURL` from the full name.

On top of this, we have also added the `similar commands` feature, which lists all similar commands for an abbreviation on the Stata *Results Window* when the abbreviation does not uniquely identify the full name of the command.

3 Clipboard

`wwhelp` supports outputting the linked text in various formats by setting options such as `markdown`, `txt` and `texfull`. For the convenience of users, we have incorporated a feature in `wwhelp` that enables automatic copying the formatted text to the clipboard. Once the `wwhelp` command is executed, users can paste the output directly into the editing interface of various software such as `TexLive` and `Markdown` (`Ctrl+V` or `Command+V`) without performing the `select text` → `copy` operation. For example,

On Windows system:

```
. wwwhelp xtreg, texfull
\href{https://www.stata.com/manuals/xtxtreg.pdf}{\bfseries{[\MakeUppercase{xt}] xtreg}}
Text is on clipboard. Press `Ctrl+V` to paste
```

Then, users can paste the resulting content using the `Ctrl+V` shortcut into desired text editor, without manually selecting and copying the text.

On MacOS system, the corresponding shortcut is `Command+V`, as noticed as following.

```
. wwwhelp xtreg, texfull
\href{https://www.stata.com/manuals/xtxtreg.pdf}{\bfseries{[\MakeUppercase{xt}] xtreg}}
Text is on clipboard. Press `Command+V` to paste
```

This capability primarily relies on the interaction between Stata and the Operating System (e.g., Windows, macOS). Stata provides the `shell` command (see [D] `shell`) which allows for interaction with the operating system, enabling users to execute operating system commands directly within Stata. For instance, the clipboard functionality of the operating system enables users to copy data to the clipboard and quickly paste it between different applications. On Windows system, the `clip` command can copy the output or specified text content to the clipboard. On MacOS system, the same operation can be done with the `pbcopy` command. The specific commands are as follows.

```
On Windows system: shell echo "text" | clip
On Mac system: shell echo text | pbcopy
```

The following setting is better as it will not add a newline.

```
On Windows system: shell echo | set /p=text| clip
On Mac system: shell echo -n text| pbcopy
```

The functionality is an embedded feature of `wwwhelp`, which by default automatically copies the text content to the clipboard without any additional operations. To disable this feature, one can add the `clipoff` option, as follows.

```
. wwwhelp xtreg, texfull clipoff
\href{https://www.stata.com/manuals/xtxtreg.pdf}{\bfseries{[\MakeUppercase{xt}] xtreg}}
```