

**stfill** — Fill in by carrying forward values of covariates

[Description](#)  
[Options](#)[Quick start](#)  
[Remarks and examples](#)[Menu](#)  
[Also see](#)[Syntax](#)

## Description

`stfill` is intended for use with multiple-record `st` data for which `id()` has been `stset`. `stfill` may be used with single-record data, but it does nothing. That is, `stfill` can be used with multiple-record or single- or multiple-failure `st` data.

`stfill`, `baseline` changes variables to contain the value at the earliest time each subject was observed, making the variable constant over time. `stfill`, `baseline` changes all subsequent values of the specified variables to equal the first value, whether they originally contained missing or not.

`stfill`, `forward` fills in missing values of each variable with that of the most recent time at which the variable was last observed. `stfill`, `forward` changes only missing values.

You must specify either the `baseline` or the `forward` option.

`if exp` and `in range` operate slightly differently from their usual definitions to work as you would expect. `if` and `in` restrict where changes can be made to the data, but no matter what, all `stset` observations are used to provide the values to be carried forward.

## Quick start

Replace values of `x1` with the value of `x1` at the earliest time the subject was observed using multiple-record `stset` data

```
stfill x1, baseline
```

Replace missing values in `x1` and `x2` with the most recently observed value of the variable for the subject

```
stfill x1 x2, forward
```

## Menu

Statistics > Survival analysis > Setup and utilities > Fill forward with values of covariates

## Syntax

```
stfill varlist [if] [in], { baseline | forward } [options]
```

<i>options</i>	Description
----------------	-------------

Main

* <u>b</u> aseline	replace with values at baseline
* <u>f</u> orward	carry forward values
<u>n</u> oshow	do not show st setting information

\* Either `baseline` or `forward` is required.

You must `stset` your data before using `stfill`; see [ST] `stset`.

`fweights`, `iweights`, and `pweights` may be specified using `stset`; see [ST] `stset`.

## Options

Main

`baseline` specifies that values be replaced with the values at baseline, the earliest time at which the subject was observed. All values of the specified variables are replaced, missing and nonmissing.

`forward` specifies that values be carried forward and that previously observed, nonmissing values be used to fill in later values that are missing in the specified variables.

`noshow` prevents `stfill` from showing the key `st` variables. This option is seldom used because most people type `stset`, `show` or `stset`, `noshow` to set whether they want to see these variables mentioned at the top of the output of every `st` command; see [ST] `stset`.

## Remarks and examples

[stata.com](http://www.stata.com)

`stfill` assists in fixing data errors and makes baseline analyses easier.

### ► Example 1

Let's begin by repairing broken data.

You have a multiple-record `st` dataset that, because of how it was constructed, has a problem with the `gender` variable:

```
. use https://www.stata-press.com/data/r17/mrecord
. stvary sex
      Failure _d: myopic
      Analysis time _t: t
      ID variable: id

      Subjects for whom the variable is
      Variable | constant   varying          never      always sometimes
                |           |           |      missing |      missing |      missing
-----|-----|-----|-----|-----|-----
      sex     |       131 |         1 |         22 |         0 |        110
```

For 110 subjects, `sex` is sometimes missing, and for one more subject, the value of `sex` changes over time! The sex change is an error, but the missing values occurred because sometimes the subject's sex was not filled in on the revisit forms. We will assume that you have checked the changing-sex subject and determined that the baseline record is correct in that case, too.

```
. stfill sex, baseline
      Failure _d: myopic
      Analysis time _t: t
      ID variable: id
Replacing all values with value at earliest observed time:
      sex: 221 real changes made
```

```
. stvary sex
      Failure _d: myopic
      Analysis time _t: t
      ID variable: id
      Subjects for whom the variable is
```

Variable	constant	varying	never	always	sometimes
			missing	missing	missing
sex	132	0	132	0	0

The sex variable is now completely filled in.

In this same dataset, there is another variable—bp, blood pressure—that is not always filled in because readings were not always taken.

```
. stvary bp
      Failure _d: myopic
      Analysis time _t: t
      ID variable: id
      Subjects for whom the variable is
```

Variable	constant	varying	never	always	sometimes
			missing	missing	missing
bp	18	114	9	0	123

(bp is constant for 18 patients because it was taken only once—at baseline.) Anyway, you decide that it will be good enough when bp is missing to use the previous value of bp:

```
. stfill bp, forward noshow
Replacing missing values with previously observed values:
      bp: 263 real changes made
```

```
. stvary bp, noshow
      Subjects for whom the variable is
```

Variable	constant	varying	never	always	sometimes
			missing	missing	missing
bp	18	114	132	0	0

So much for data repair and fabrication.

## ▷ Example 2

Much later, deep in analysis, you are concerned about the `bp` variable and decide to compare results with a model that simply includes blood pressure at baseline. You are undecided on the issue and want to have both variables in your data:

```
. stset, noshow
. gen bp0 = bp
. stfill bp0, baseline
```

Replacing all values with value at earliest observed time:

```
      bp0: 406 real changes made
```

```
. stvary bp bp0
```

Subjects for whom the variable is

Variable	constant	varying	never missing	always missing	sometimes missing
bp	18	114	132	0	0
bp0	132	0	132	0	0

◀

**Also see**

[ST] **stbase** — Form baseline dataset

[ST] **stgen** — Generate variables reflecting entire histories

[ST] **stset** — Declare data to be survival-time data

[ST] **stvary** — Report variables that vary over time