# Title

stata.com

**mi import ice —** Import ice-format data into mi



## Description

`mi import ice` converts the data in memory to `mi` data, assuming the data in memory are in `ice` format. See Royston (2004, 2005a, 2005b, 2007, 2009) for a description of `ice`.

`mi import ice` converts the data to `mi` style flong. The data are `mi set`.

## Menu

Statistics > Multiple imputation

## Syntax

`mi import ice` [ , *options* ]

| *options* | Description |
|---|---|
| `automatic` | register variables automatically |
| `imputed(`*varlist*`)` | imputed variables to be registered |
| `passive(`*varlist*`)` | passive variables to be registered |
| `clear` | okay to replace unsaved data |

## Options

`automatic` determines the identity of the imputed variables automatically. Use of this option is recommended.

`imputed(`*varlist*`)` specifies the names of the imputed variables. This option may be used with `automatic`, in which case `automatic` is taken to mean automatically determine the identity of imputed variables in addition to the `imputed()` variables specified. It is difficult to imagine why one would want to do this.

`passive(`*varlist*`)` specifies the names of the passive variables. This option may be used with `automatic` and usefully so. `automatic` cannot distinguish imputed variables from passive variables, so it assumes all variables that vary are imputed. `passive()` allows you to specify the subset of varying variables that are passive.

*Concerning the above options*: If none are specified, all variables are left unregistered in the result. You can then use `mi varying` to determine the varying variables and use `mi register` to register them appropriately; see [MI] **mi varying** and [MI] **mi set**. If you follow this approach, remember to register imputed variables before registering passive variables.

`clear` specifies that it is okay to replace the data in memory even if they have changed since they were last saved to disk. Remember, `mi import ice` starts with `ice` data in memory and ends with `mi` data in memory.

## Remarks and examples

stata.com

The procedure to convert ice data to mi flong is

1. use the ice data.
2. Issue the mi import ice command, preferably with the automatic option and perhaps with the passive() option, too, although it really does not matter if passive variables are registered as imputed, so long as they are registered.
3. Perform the checks outlined in *Using mi import nhanes1, ice, flong, and flongsep* of [MI] **mi import**.
4. Use mi convert (see [MI] **mi convert**) to convert the data to a more convenient style such as wide or mlong.

For instance, you have the following ice data:

```
. use https://www.stata-press.com/data/r18/icedata
. list, separator(2)
```

| | _mj | _mi | a | b | c |
|---|---|---|---|---|---|
| 1. | 0 | 1 | 1 | 2 | 3 |
| 2. | 0 | 2 | 4 | . | . |
| 3. | 1 | 1 | 1 | 2 | 3 |
| 4. | 1 | 2 | 4 | 4.5 | 8.5 |
| 5. | 2 | 1 | 1 | 2 | 3 |
| 6. | 2 | 2 | 4 | 5.5 | 9.5 |

_mj and _mi are ice system variables. These data contain the original data and two imputations. Variable b is imputed, and variable c is passive and in fact equal to a + b. These are the same data discussed in [MI] **Styles** but in ice format.

The fact that these data are nicely sorted is irrelevant. To import these data, you type

```
. mi import ice, automatic
(1 m=0 obs now marked as incomplete)
```

although it would be even better if you typed

```
. use https://www.stata-press.com/data/r18/icedata
. mi import ice, automatic passive(c)
(1 m=0 obs now marked as incomplete)
```

With the first command, both b and c will be registered as imputed. With the second, c will instead be registered as passive. Whether c is registered as imputed or passive makes no difference statistically.

These data are short enough that we can list the result:

```
. list, separator(2)
```

| | a | b | c | _mi_m | _mi_id | _mi_miss |
|---|---|---|---|---|---|---|
| 1. | 1 | 2 | 3 | 0 | 1 | 0 |
| 2. | 4 | . | . | 0 | 2 | 1 |
| 3. | 1 | 2 | 3 | 1 | 1 | . |
| 4. | 4 | 4.5 | 8.5 | 1 | 2 | . |
| 5. | 1 | 2 | 3 | 2 | 1 | . |
| 6. | 4 | 5.5 | 9.5 | 2 | 2 | . |

We will now perform the checks outlined in *Using mi import nhanes1, ice, flong, and flongsep* of [MI] **mi import**, which are to run `mi describe` and `mi varying` to verify that variables are registered correctly:

```
. mi describe
Style: flong
       last mi update 23mar2023 17:15:24, 0 seconds ago
Observations:
   Complete            1
   Incomplete          1  (M = 2 imputations)
   ---------------------
   Total               2
Variables:
   Imputed: 1; b(1)
   Passive: 1; c(1)
   Regular: 0
   System:  3; _mi_m _mi_id _mi_miss
   (there is one unregistered variable; a)
. mi varying
            Possible problem   Variable names
------------------------------------------------------------------------------
         imputed nonvarying:  (none)
         passive nonvarying:  (none)
       unregistered varying:  (none)
 *unregistered super/varying:  (none)
  unregistered super varying:  (none)
------------------------------------------------------------------------------
  * super/varying means super varying but would be varying if registered as
    imputed; variables vary only where equal to soft missing in m=0.
```

We find that there are no remaining problems, so we convert our data to our preferred wide style:

```
. mi convert wide, clear
. list
```

| | a | b | c | _mi_miss | _1_b | _1_c | _2_b | _2_c |
|---|---|---|---|---|---|---|---|---|
| 1. | 1 | 2 | 3 | 0 | 2 | 3 | 2 | 3 |
| 2. | 4 | . | . | 1 | 4.5 | 8.5 | 5.5 | 9.5 |

# References

Royston, P. 2004. Multiple imputation of missing values. *Stata Journal* 4: 227–241.

——. 2005a. Multiple imputation of missing values: Update. *Stata Journal* 5: 188–201.

——. 2005b. Multiple imputation of missing values: Update of ice. *Stata Journal* 5: 527–536.

——. 2007. Multiple imputation of missing values: Further update of ice, with an emphasis on interval censoring. *Stata Journal* 7: 445–464.

——. 2009. Multiple imputation of missing values: Further update of ice, with an emphasis on categorical variables. *Stata Journal* 9: 466–477.

# Also see

[MI] **Intro** — Introduction to mi

[MI] **mi import** — Import data into mi