

Description

`diagonal(A)` extracts the diagonal of A and returns it in a column vector.

Syntax

numeric colvector `diagonal(`*numeric matrix A*`)`

Remarks and examples

`diagonal()` may be used with nonsquare matrices.

Do not confuse `diagonal()` with its functional inverse, `diag()`; see [M-5] [diag\(\)](#). `diagonal()` extracts the diagonal of a matrix into a vector; `diag()` creates a diagonal matrix from a vector.

Conformability

`diagonal(A)`:

A: $r \times c$

result: $\min(r, c) \times 1$

Diagnostics

None.

Also see

[M-5] [blockdiag\(\)](#) — Block-diagonal matrix

[M-5] [diag\(\)](#) — Create diagonal matrix

[M-5] [isdiagonal\(\)](#) — Whether matrix is diagonal

[M-4] [Manipulation](#) — Matrix manipulation

Stata, Stata Press, Mata, NetCourse, and NetCourseNow are registered trademarks of StataCorp LLC. Stata and Stata Press are registered trademarks with the World Intellectual Property Organization of the United Nations. StataNow is a trademark of StataCorp LLC. Other brand and product names are registered trademarks or trademarks of their respective companies. Copyright © 1985–2025 StataCorp LLC, College Station, TX, USA. All rights reserved.



For suggested citations, see the FAQ on [citing Stata documentation](#).