<div style="border:1px solid black; padding:10px;">

forecast identity — Add an identity to a forecast model

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Description

`forecast identity` adds an identity to the forecast model currently in memory. You must first create a new model using `forecast create` before you can add an identity with `forecast identity`. An identity is a nonstochastic equation that expresses an endogenous variable in the model as a function of other variables in the model. Identities often describe the behavior of endogenous variables that are based on accounting identities or adding-up conditions.

Quick start

Add an identity to the forecast that states that y3 is the sum of y1 and y2

```
forecast identity y3=y1+y2
```

Same as above, and create new variable newy before adding it to the forecast

```
forecast identity newy=y1+y2, generate
```

Menu

Statistics > Time series > Forecasting

Syntax

<u>fore</u>cast <u>id</u>entity *varname* = *exp* [, *options*]

options	Description
<u>generate</u>	create new variable *varname*
* <u>double</u>	store new variable as a `double` instead of as a `float`

varname is the name of an endogenous variable to be added to the forecast model.
* You can only specify `double` if you also specify `generate`.
`collect` is allowed; see **[U] 11.1.10 Prefix commands**.

Options

generate specifies that the new variable *varname* be created equal to *exp* for all observations in the current dataset.

double, for use in conjunction with the generate option, requests that the new variable be created as a double instead of as a float. See [D] **Data types**.

Remarks and examples

For an overview of the forecast commands, see [TS] **forecast**. This manual entry assumes you have already read that manual entry. forecast identity specifies a nonstochastic equation that determines the value of an endogenous variable in the model. When you type

```
. forecast identity varname = exp
```

forecast identity registers *varname* as an endogenous variable in your forecast model that is equal to *exp*, where *exp* is a valid Stata expression that is typically a function of other endogenous variables and exogenous variables in your model and perhaps lagged values of *varname* as well. forecast identity was used in all the examples in [TS] **forecast**.

▷ Example 1: Variables with constant growth rates

Some models contain variables that you are willing to assume will grow at a constant rate throughout the forecast horizon. For example, say we have a model using annual data and want to assume that our population variable pop grows at 0.75% per year. Then we can declare endogenous variable pop by using forecast identity:

```
. forecast identity pop = 1.0075*L.pop
```

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Typically, you use forecast identity to define the relationship that determines an endogenous variable that is already in your dataset. For example, in example 1 of [TS] **forecast**, we used forecast identity to define total wages as the sum of government and private-sector wages, and the total wage variable already existed in our dataset.

The generate option of forecast identity is useful when you wish to use a transformation of one or more endogenous variables as a right-hand-side variable in a stochastic equation that describes another endogenous variable. For example, say you want to use regress to model variable y as a function of the ratio of two endogenous variables, u and w, as well as other covariates. Without the generate option of forecast identity, you would have to define the variable $y = u/w$ twice: first, you would have to use the generate command to create the variable before fitting your regression model, and then you would have to use forecast identity to add an identity to your forecast model to define y in terms of u and w. Assuming you have already created your forecast model, the generate option allows you to define the ratio variable just once, before you fit the regression equation. In this example, the ratio variable is easy enough to specify twice, but it is very easy to forget to include identities that define regressors used in estimation results while building large forecast models. In other cases, an endogenous variable may be a more complicated function of other endogenous variables, so having to specify the function only once reduces the chance for error.

Stored results

forecast identity stores the following in r():

Macros
r(lhs)	left-hand-side (endogenous) variable
r(rhs)	right-hand side of identity
r(basenames)	base names of variables found on right-hand side
r(fullnames)	full names of variables found on right-hand side

Also see

[TS] **forecast** — Econometric model forecasting