

Package ‘ForeComp’

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Type Package

Title Testing for equal predictive ability

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Description Collection of functions to preform a statistical for equal predictive ability.

License GPL-3

Encoding UTF-8

LazyData true

Depends R (>= 3.0.0),
stats

RoxygenNote 6.1.1

R topics documented:

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dm.test.bt	<i>Diebold-Mariano Test (Bartlett kernel, normal approximation)</i>
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Description

Diebold-Mariano Test (Bartlett kernel, normal approximation). This is a two-sided test.

Usage

```
dm.test.bt(d, M = NA, Mopt = NA, cl = 0.05)
```

Arguments

d	loss differential
M	truncation parameter for the Bartlett kernel (if M = NA, then Mopt = 2 by default)
Mopt	option for optimal bandwidth, 1 if Lazarus et al. (2018), 2 if Newey and West (1994)
cl	confidence level (default = 0.05, i.e., 5%)

Value

This function returns a class with the following elements

- rej is a T/F value. TRUE (reject), FALSE (accept)
- stat is a test statistic
- pval is an associated p-value

Author(s)

Minchul Shin

dm.test.bt.fb

Diebold-Mariano Test (Bartlett kernel, fixed-b approximation)

Description

Diebold-Mariano Test (Bartlett kernel, fixed-b approximation). This is a two-sided test.

Usage

```
dm.test.bt.fb(d, M = NA, Mopt = NA, cl = 0.05)
```

Arguments

d	loss differential
M	truncation parameter for the Bartlett kernel (if M = NA, then Mopt = 1 by default)
Mopt	option for optimal bandwidth, 1 if Lazarus et al. (2018), 2 if Newey and West (1994)
cl	confidence level (default = 0.05, i.e., 5%), Only 0.05 (5%) or 0.10 (10%) are allowed.

Value

This function returns a class with the following elements

- rej is a T/F value. TRUE (reject), FALSE (accept)
- stat is a test statistic
- pval is an associated p-value

Author(s)

Minchul Shin

dm.test.ewc.fb	<i>Diebold-Mariano Test (EWC, fixed-b approximation)</i>
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Description

Diebold-Mariano Test (EWC, fixed-b approximation). This is a two-sided test.

Usage

```
dm.test.ewc.fb(d, B = NA, Bopt = NA, cl = 0.05)
```

Arguments

d	loss differential
B	truncation parameter for the EWC long-run variance estimator (if B = NA, then Bopt = 1 by default)
Bopt	option for optimal bandwidth, 1 if Lazarus et al. (2018)' recommendation
cl	confidence level (default = 0.05, i.e., 5%)

Value

This function returns a class with the following elements

- rej is a T/F value. TRUE (reject), FALSE (accept)
- stat is a test statistic
- pval is an associated p-value

Author(s)

Minchul Shin

dm.test.r	<i>Diebold-Mariano Test (with an original recommendation)</i>
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Description

Diebold-Mariano Test (with an original recommendation). This is a two-sided test. Let d_t be a loss differential, $t = 1, 2, \dots, T$. Then, the DM test statistic is in the following form

$$d_t = \frac{\bar{d}}{\hat{\sigma}}$$

where \bar{d} is the sample average of d_t and $\hat{\sigma}^2$ is the long-run variance estimator.

Usage

```
dm.test.r(d, h = 1, cl = 0.05)
```

Arguments

d	loss differential
h	h-step-ahead forecast (default = 1, i.e., one-step-ahead forecasts)
cl	confidence level (default = 0.05, i.e., 5%)

Value

This function returns a class with the following elements

- `rej` is a T/F value. TRUE (reject), FALSE (accept)
- `stat` is a test statistic
- `pval` is an associated p-value

Author(s)

Minchul Shin

dm.test.r.m

Diebold-Mariano Test (Modified-DM)

Description

Diebold-Mariano Test (Modified-DM). Finite-sample modification to the original DM's test. This is a two-sided test.

Usage

```
dm.test.r.m(d, h = 1, cl = 0.05)
```

Arguments

d	loss differential
h	h-step-ahead forecast (default = 1, i.e., one-step-ahead forecasts)
cl	confidence level (default = 0.05, i.e., 5%)

Value

This function returns a class with the following elements

- `rej` is a T/F value. TRUE (reject), FALSE (accept)
- `stat` is a test statistic
- `pval` is an associated p-value

Author(s)

Minchul Shin

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