



Journal of Applied Statistics >

Volume 38, 2011 - Issue 7

2,464 108

Views CrossRef citations to date Altmetric

Original Articles

# The corrected VIF (CVIF)

José Dias Curto & José Castro Pinto

Pages 1499-1507 | Received 09 Dec 2009, Accepted 24 Jun 2010, Published online: 30 Sep 2010

Cite this article <https://doi.org/10.1080/02664763.2010.505956>



Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

## Abstract

In this paper, we propose a new corrected variance inflation factor (VIF) measure to evaluate the impact of the correlation among the explanatory variables in the variance of the ordinary least squares estimators. We show that the real impact on variance can be overestimated by the traditional VIF when the explanatory variables contain no redundant information about the dependent variable and a corrected version of this multicollinearity indicator becomes necessary.

## Keywords:

corrected VIF

near-multicollinearity

## JEL classification :

C13

C52

## Acknowledgements

We would like to express our thanks to Aris Spanos, Ewa Petkova, the editor and referees for their valuable comments and suggestions.

## Notes

When  $n$  increases, assuming that  $\sigma^2$ ,  $TSS$  and  $TSS_e$  remain constant,  $R^2$  also increases.

The overall coefficient of determination, when all the explanatory variables are included in the model, is bigger than the sum of the coefficients of determination resulting from individual regressions between  $y$  and each one of the explanatory variables.

Thus, we also agree that 10 times higher is a substantial increase in the estimated variance of OLS estimators.

### Related Research Data

#### [The Advanced Theory of Statistics](#)

Source: Population

#### [A proposal for handling missing data](#)

Source: Psychometrika

#### [The problem of near-multicollinearity revisited: erratic vs systematic volatility](#)

Source: Journal of Econometrics

#### [A note on the use of the variance inflation factor for determining sample size in cluster randomized trials](#)

Source: Journal of the Royal Statistical Society Series D (The Statistician)

#### [VIF Regression: A Fast Regression Algorithm for Large Data](#)

Source: Journal of the American Statistical Association

#### [New Multicollinearity Indicators in Linear Regression Models](#)

Source: International Statistical Review

#### [Problems of Nonnormality and Multicollinearity for Forecasting Methods Based on Least Squares](#)



## Related research

People also read

Recommended articles

Cited by  
108

## Information for

Authors

R&D professionals

Editors

Librarians

Societies

## Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

## Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

## Help and information

Help and contact

Newsroom

All journals

Books

## Keep up to date

Register to receive personalised research and resources  
by email

 Sign me up

  

  

Copyright © 2026 Informa UK Limited Privacy policy Cookies Terms & conditions

Accessibility



Registered in England & Wales No. 01072954  
5 Howick Place | London | SW1P 1WG