Reviewer's report

Title: Variables with time-varying effects and the Cox model: Some statistical concepts illustrated with a prognostic factor study in breast cancer

Version: 2 Date: 10 January 2010

Reviewer: Maja Pohar Perme

Reviewer's report:

The authors have addressed all the comments, nevertheless it is my feel that the revised version could be further improved. More work could be done on integrating the comments into the paper, rather than just adding them to the text. While the comments were meant as guidelines on what could be done, they were in some cases only pasted into the text (no. 6 and 8). In particular, it is my belief that a paper describing the methods to those who write in the medical journals should be presenting up-to-date methods.

While I agree that describing other kinds of residuals (that are more useful for checking other assumptions than PH) would be inappropriate, the more advanced methods (with better statistical properties than the basic ones) based on Schoenfeld residuals should be given their proper place and not relegated to a discussion paragraph.

An example of such a method is the test using cumulative residuals, which may not be best for visualising the data, but it certainly presents an important improvement to performing a trend test with linear regression.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'