



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	Ms_BJMCS_19002
Title of the Manuscript:	A Simulation Analysis of Distortion Operators Of Wang, NIG And Cauchy: A Comparative Approach.
Type of Article:	Original Research Article

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
The answers of the authors to my previous comment are not sufficient. The reviewers might have been set back by my previous review, but I must point out that their initial paper had _no_ (!) "Introduction" section. Probably this was an accident in the paper editing, but the authors should keep in mind that that's how I had to read the paper — w/o any introduction or context whatsoever. For the comments below, please respond to each one inline (not another list with 'dots'). <u>Comments that still need to be addressed from previous revision:</u> 1. Tables: yes, journal articles can have tables. But a) you need to explain them (each single one); and b) assuming that you can get a point across by printing 10 tables under each other is just a wrong premise. Please put this into a figure that brings the main points across and put the tables in an Appendix. 2. Formulas (especially in Section 2): why are the expressions for V, W, X, L, ... etc relevant in the main text? the conclusions of the paper could be stated similarly w/o pages and pages of unmotivated formulas. References No, not every equation needs a reference. Only those that are not proved by you, or are not simple basic algebra. Every (non-trivial) equation must have a reference or proof of it in the main text or appendix. And if you cite equations from the same paper/book, then please cite that reference in the beginning of the section and say "Details and derivations of results in this section can be found in XYZ (1990), Chapter 3&4" or wherever these equations/formulas are stated first (or summarized). Then you don't have to reference every equation. The same holds for statements/claims; several times in the paper you make statements/claims about distributions w/o any further reference. You need to provide the reference; for example, the statement "NIG is only one of the only two sub-bclassed being closed under convolution" is simply wrong; there are many distributions closed under convolution. And unless you say what sub-class you are looking at this is also of limited use. Missing references: 1. Black-scholes model (original article) 2. stylized facts of stock returns (Introduction): "It is known however is higher than that of the Normal distribution". please cite e.g., "Yan, J. (2005). Asymmetry, fat-tail, and autoregressive conditional density in financial return data with systems of frequency curves. Available at	1. We are the Authors and not reviewers as referred to in this context. We have taken note of it by adding introduction to the manuscript. 1.The explanations are there on each table. (b)We have done it. 2. The V, W, X, L are expressions from the notations of the four important moments of the Distribution namely; mean , variance, Skew and Kurtosis so that they will not look clumsy in the equations. The next comment is not clear enough to us . 1. That is an oversight, it's there see [4] 2. See [10] 3. See [10] 4. See [3] 5.Not ed. 6.See [14].



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<http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.76.2741> “ OR “Cont, R. (2001). Empirical properties of asset returns: Stylized facts and statistical issues. Quant. Finance 1 223–236” OR e.g., any relevant reference here <http://finance.martinsewell.com/stylized-facts/>

3. Remark 1: NIG is limiting case of the Normal. please provide a reference or prove it. Same for the Laplace transform (provide a book/paper that summarizes the NIG distribution).
4. Section 2.1: where do these formulas come from? are these statements by you? are they proved anywhere (reference)? ...
5. Some formulas still have missing closing parenthesis (e.g., (5) or (8) amongst others). please fix
6. Sectio 3: Cauchy. please see previous comment. The formula is just wrong. See e.g., <http://www.maths.uq.edu.au/~pkp/papers/ScaleRankCauchy.pdf> (if you define another Cauchy distribution, then thats fine, but you need to provide a reference).

Comments on the new version:

Section 1:

1. Thanks for the introduction section; that helps a lot. Although after 6th year the financial crisis — caused mostly by wrong usage of financial mathematical models — you start the paper with “Financial mathematics has recently enjoyed considerable prestige (sic !) [...] in the financial industry.” I strongly suggest to reword this.
2. Abstract: [...] the distortion function was defined [...]. You have not yet mentioned any distortion function or explained what it is in the sentence before. So please refer to it as “a distortion function”.
3. Last sentence in Introduction explains the use of the paper. However, after reading the paper there is one more question that still needs explained: why bother recovering/simulating the NIG results with a Cauchy distortion operator? why not use NIG distortion directly? Is NIG more time consuming to compute, are the results less stable, ...?

Section 2:

1. Eq (2) should have lower case nig(), since its the pdf, not cdf. Please provide a reference to this parametrization of the NIG distribution.
2. What is r? You define $r^2 = \alpha^2 - \beta^2$ right after equation (2), but its not used before or defined. Only then 4 formulas later the reader will see it in the Variance expression. please put the r definition right after/before the variance expression.
3. I think the CDF and survival function of NIG would better be defined in section 2.1; before that section it’s all about moments, not distributions.
4. Aftr remark 1: there is again a formula of $r_z^2 = \dots$ but r_Z is never mentioned anywhere.

Section 3:

1. See comment above on Cauchy definiition.
2. Please write in one sentence what you are trying to show in this section. Why does the reader have to read 2 pages of multiple line formulas? Why can’t you put this in an appendix? There are no explanations between the formulas, they are just stated as results. This should be in the appendix, as it apparently does not have any direct relevance in the text (otherwise you would tell the reader why you go from pdfs to ch.f. to expectations to skewness and kurtosis).
3. Figures: please put them all in one figure. If you want to show that the actual trajectories are very similar, then the right figure is a line chart with all lines in one figure -- so readers can actually see where they are similiar and where not. Putting them in 3 separate figures does not get your point across.

Section 4:

1. stable distributions: please cite your claim. Again, similar to the convolution claim earlier, this is wrong: e.g., the levy distribution is stable as well and has explicit pdf formulas (amongst others).
2. “consistent with behavior in markets”: please cite work that talks about stylized facts of Cauchy / Gaussian distributions in financial markets. In fact, most literature talks about non-Gaussian distributions, but definitely not Cauchy (where not even the mean does not exist -- which is not a

1. Ok.
2. It’s available in literature see [12],[10] just to mention but a few.

3. That is the essence of research. Good is nothing where best exists. The Cauchy distortion operator is another better model that can recuperate the results of NIG and the results of B-S, so it is a contribution to knowledge.

Section2.

1. We used a lower case but one of the reviewers insisted it must be upper case. However, it is noted for implementation.
2. It is not r but γ (gamma).

Section 3.

2. Is this statement in the authors guideline? Where is it obtainable in journal publication? Yes, they are results.
3. Ok
4. See note on (2).

Section4.

1. See [18],[5] and [6]
2. See [15],[6] and [16] etc.
3. Noted and implemented.
4. See my comments above on this, it’s very important.



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typical stylized fact).

3. "Hence (11) demonstrates ...": why 'hence'? and how exactly does (11) 'demonstrate' anything?

4. Coming back to my comment from Introduction: I do see that you can recover the results; but its not made clear why bother doing this? please explain why it is important to recover it if we can use NIG directly.