

## **Review: Cartel in the Indian Cement Industry- An Attempt to Identify It**

### **Style:**

The writing style of this paper is difficult; sentences are either too long or structured in a way that requires reading multiple times to understand the point it's trying to deliver. Author should consider breaking up sentences into more meaningful points, and limit the use of parentheses. Also the use of bullets is very inconsistent. The titles of sections are also inaccurate. Second title includes methodology but the section includes no stated method only criteria for a method to be chosen. Moreover what is the difference between Empirical Analysis and Empirical Research? Author should also consider separating the last section to into its two subsections. Also a careful thorough read is required to remove typos.

### **Introduction:**

What does NEIO stand for?

Consider removing first footnote.

Some review of the different markers in the literature and how a regime switching model improves on this is required.

Why is higher frequency data required? Wouldn't this pick up more noise?

### **Research Objective and Methodology:**

Again in the first paragraph I don't see the motivation behind higher frequency data and how this compares to previous studies with lower frequency. This has not been mentioned in the comparative analysis section.

The arguments for model selection criteria are very generic and do not require mentioning as they apply to any econometric method. Additionally why should it be 'a method of initial and quick verification of a hypothesis' if it's not used for prediction. From what I understand it a post-mortem investigation.

The assumption in bold about switching variance should be mentioned after stating the theoretical motivation or literature supporting it.

### **Theoretical Motivation of the method:**

It would be of great value here to present a simple theoretical model explaining why the variance switches when there is collusive behaviour, to make it easier for the reader to understand the motivation behind the method.

Furthermore a more thorough review of the literature if available would help in supporting the assumption, as it is the main assumption of the paper.

### **Econometric Instrument: (consider a different title)**

If you are not going to present a proper comparison between the MS and wavelet methods consider not mentioning the later, or put it at the end of the paper were you recommend it for further research.

### **Characteristics of the Cement Industry:**

I don't see the point behind the first paragraph.

Consider presenting a table comparing industry characteristics (number of players, market share, regulation...etc) across countries.

Again I don't see the point behind the last paragraph.

### **Statistical Data: (consider renaming)**

Is the index in nominal or real terms? I would strongly encourage the use of a deflator if it's nominal. Any explanation for the outliers, not just a description, but a reason for the price jumps.

### **Empirical research:**

ARCH/GARCH effects or volatility clustering is not obvious from figure 2 (compared to conventional GARCH series). Make the claim after the formal test for ARCH.

Use periods instead of commas for decimal units.

Was the price series tested for unit roots as well? This should be mentioned.

The series should have been filtered from the beginning before the unit root tests.

How was an AR(3) determined? Which method was used? Were the roots checked for stationarity, the coefficients look suspicious.

How was the MS(2)AR(3)ARCH(2) model reached? Which criteria were used?

Did you try an MS without ARCH? Usually the MS model alone is sufficient to remove the ARCH if you allow for switching variances.

In table 4 where are the standard errors and p-values for the transitional probabilities?

The diagnostic for MS models are not standard and the usual tests do not have the standard distribution. This paper I guess is applying the generalized residual based tests which maybe the least credible diagnostics for MS models. I think this area needs to be expanded upon and, since the author is not burdened by any computer intensive computations, more advanced diagnostics test should be considered.

See for example: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1147887](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1147887)

### **Research Summary and Comparative Analysis:**

There is too much variability in the smoothed probability to support the proposed phases of collusive behaviour and its breakdowns. It may be picking up other sources for variability other than collusion. I think the claims of the paper are overstated. Also the duration of the regimes should be discussed more as it is not obvious if these findings are economically justifiable within the collusion literature. Furthermore there is no mention of how using higher frequency data improved upon the use of lower frequency data. Overall I think this part should be completely rewritten.