Assoc. Prof. Tadeusz Winkler-Drews

Department of International Economic Relations

Faculty of Management

Warsaw University

Evaluation report of Subhakar Valluri PhD dissertation
'Behavior of major investment products in commodity exchanges'

Prof. Włodzimierz Rembisz was the primary supervisor of the present dissertation written by Mr Subhakar Valluri, MA. It is 173 pages long and includes a list of figures, a list of tables, five chapters, a list of references, and an appendix.

1. Subject, objective, scope

The dissertation analyses the commodity market, including the behaviour of commodity products under different circumstances.

The literature review led to the conclusion that examining the causal relationships between the different commodity sectors would offer additional information on the functioning of commodity markets.

The causal relationships between the agriculture and the energy futures price indexes, the agriculture and the precious metals futures price indexes, and the energy and the precious metals futures price index, were analysed.

The return and risk of different commodities were comparatively analysed prior to the study, by defining the benchmarks for international commodity markets and juxtapose them to LIBOR rates.

The market concentration of different commodity markets served to determine their availability, which in return served to assess the analysed commodity markets.

The dissertation hypothesis, supposing there was no correlation between the analysed indexes, is presented on page 11. Therefore, it was supposed that there was no correlation between the agriculture and the energy indexes, the agriculture and the precious metal indexes, and the energy and the precious metal indexes.

The discussion follows a cognitive approach and introduces new elements to the world of finances. The analysis of the causal relationship between the indexes is very original. The topic of the dissertation is interesting and pluridimensional, and hence an excellent choice.

2. Body of the dissertation

The dissertation is divided into five chapters. Chapter 1 (28 pages) includes a presentation of the research objectives and the literature review. Chapter 2 (30 pages) introduces the collected data on commodity trading and details its principles. Chapter 3 (39 pages) describes the different segments of the commodity market and the characteristics of regional commodity markets. Chapter 4 (25 pages) follows a theoretical approach, i.e. it presents derivative pricing models. Chapter 5 (38 pages) follows an empirical approach, i.e. it details the methods used and analyses the results.

There are three sections in Chapter 1, each presenting crucial issues. Section one introduces the topic and discusses the dissertation and thesis objectives. There are no references to the content on pages 8-9. The subsequent section reviews the literature and discusses the current research results and although the idea seems pertinent, its executions is not fully transparent. The bibliography contains 74 references that seem not to follow any particular order, i.e. they are neither organised alphabetically nor chronologically. Neither are they grouped according to their content or purpose. Maybe Mr Valluri wanted to emphasise this way the narrative multiplicity and complexity. However, the impression it gives is quite the opposite – this 'disorganisation' of the bibliography seems chaotic and random and therefore suggests a non-systematic and somewhat ill-considered approach. The last section orders the research objectives.

Although chapter 2 has a helping function it remains complex – it is divided in six sections (each with subsections). It features basic information on: commodity trading, exchange specifics, derivative market players, and investments.

Chapter 3 has three sections and covers fundamental issues. Section one describes crucial commodity market segments, i.e. agriculture, metal, and energy. Section two presents the continental aspects of commodity markets. Section three details the structure of the analysed commodity indexes, including commodity channel index formulas, however the indexes for the assessed period are unfortunately missing.

Chapter 4 is dedicated to derivative pricing models and methods. Determining commodity value and indexes was not part of the research objectives. Therefore this content has little empirical value and further comments are not necessary.

Chapter 5 has three sections, each presenting a method and the research results.

Section one features the disproportions among different regional markets. Market concentration was assessed using HHI and regional data from the previous five years, including total contract volume.

The two analyses showed different concentrations. Region-wise the HHI index measured a high concentration. Exchange-wise is also measured a moderate market concentration. The analysis also suggested further research on the role of exchanges in the promotion of the growth of derivative markets would be interesting. Although the volume of exchanges had increased when compared to the number of regions, the concentration was moderate. The HHI index was increasing in both analyses, but their results differed. The concentration was higher from a region-wise point of view but it remained the same from an exchange point of view.

Section two compares the analysed commodity indexes with LIBOR rates. Moving averages were used to estimate the future trends of the analysed indexes.

However, the dissertation uses the Arima model, which has not been described.

The analyses established that LIBOR rates reflected a higher risk and low returns when compared with commodity indexes. From a historical perspective investing in commodities was more prolific when under unexpected adverse economic events.

Section three focuses on the causal relationship between the analysed indexes. The Toda-Yamamoto approach was used to establish that. It also took into account the impact of other variables and provided Wald's asymptotic confidence limits.

There was a one-sided correlation between the energy and the agriculture indexes; the precious metal index is not influenced by other indexes; the energy and the agriculture indexes reacted to the changes in the precious metal index.

The chapter focused on analysing the causal relationship between the agriculture, energy and precious metal indexes. The empirical analysis, using the Toda-Yamamoto approach (1995), of the energy and agriculture futures index prices established that there were unilateral correlations between the energy and agriculture sectors. The prices of precious metals varied independently, however there was a causal relationship between the energy and agriculture indexes and precious metal price fluctuations. Similarly, the agriculture index was also partially dependant, as it influenced precious metal price fluctuations and was correlated with energy price fluctuations. The energy index was correlated with agriculture and precious metal prices fluctuations.

The last section called Conclusions includes the discussion.

3. Dissertation evaluation

The dissertation meets all the required criteria and its causation analysis is very good. Although the whole is not perfect, Mr Subhakar Valluri's '*Behaviour of major investment products in commodity exchange*' dissertation is an interesting example of a pluridimensional analysis of a current financial situation.

4. Final motion

Mr Subhakar Valluri's '*Behaviour of major investment products in the commodity exchange*' is an original dissertation that is valuable to financial research. It also displays an autonomous approach to solve a complex research problem.

I therefore declare that the present PhD dissertation meets all the requirements of the Grade and Degree Act, and Mr Subhakar Valluri qualifies for the PhD oral examination.

Warsaw, the 31st of October 2017