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| 論文中文摘要： | 石油產業，在這漸漸步向永續能源的現代社會中扮演著重要的腳色。全球經濟活動在接連經歷新冠肺炎、烏俄大戰與以哈戰爭的衝擊之下，全球景氣籠罩在一片低迷當中，影響到進出口，推動商品、能源價格上漲。本研究試圖彌補過去文獻較缺乏維度與準則間的考慮加性與非加性關係，納入加性的Best-worst method (BWM)和非加性的Fuzzy measures，並使用賽局理論(Game Theory)將兩者權重融合，建構複合多目標決策準則模型(Multi-Criteria Decision-Making)處理維度及準則間錯綜複雜的關係。實證顯示，除了中國石化指數、航運金融、原油指數與總體經濟風險的融合權重較考慮加性權重，全球石化公司股價則是較考慮加性與非加性權重，本研究利用賽局理論結果分析出投資布蘭特原油指數該考慮的加性與非加性石油相關指數權重，結論可供投資人、航運公司、銀行法人投資相關部門作為參考，提供相關投資決策與意涵。 |
| 論文外文摘要： | The petroleum industry plays a crucial role in our modern society, which is gradually transitioning towards sustainable energy. Global economic activity, already reeling from the impacts of COVID-19, the Russia-Ukraine war, and the Israel-Hamas conflict, remains sluggish, affecting imports and exports and driving up the prices of goods and energy. This study addresses the lack of consideration for additive and non-additive relationships between dimensions and criteria in previous literature. It incorporates the additive Best-Worst Method (BWM) and non-additive Fuzzy Measures, using Game Theory to integrate the weights from both methods. This approach constructs a composite Multi-Criteria Decision-Making (MCDM) model to handle the complex relationships between dimensions and criteria. Empirical results indicate that, except for the integrated weights of the China Petrochemical Index, Shipping Rates, Crude Oil Index, and Macroeconomic risks, which primarily consider additive weights, the Global Petrochemical Company Stock Prices consider both additive and non-additive weights. By analyzing the integrated results using Game Theory, this study identifies the relevant additive and non-additive weights of oil-related indices that should be considered when investing in the Brent crude oil index. The conclusions provide valuable insights for investors, shipping companies, and banking investment departments, offering relevant investment decisions and implications. |