系统工程理论与实践
Systems Engineering — Theory & Practice

首页 | 期刊介绍 | 编委会 | 投稿指南 | 期刊订阅 | 广告服务 | 相关链接 | 下载中心 | 联系我们 | 留言板

论文

海外油气项目风险–效益联动分析模型与应用

张宝生, 王庆, 王英君

中国石油大学(北京), 工商管理学院, 北京 102249

Model of risk-benefit co-analysis on oversea oil and gas projects and its applications

ZHANG Bao-sheng, WANG Qing, WANG Ying-jun

School of Business Administration, China University of Petroleum (Beijing), Beijing 102249, China

- 摘要
- 参考文献
- 相关文章

全文: PDF (1012 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) **背景资料**

摘要 由于资源国多变的政策法规、日趋苛刻的合同条款以及区块内难以确定的地质条件和作业环境等, 使得中国石油公司从事海外石油项目开发的风险越来越高. 该文首先从风险源的角度对海外油气勘探开发过程中的风险进行分类, 从三个层面阐述了风险因素的识别方法; 将项目NPV计算、蒙特卡洛模拟和风险-效益传递分析方法相结合, 建立了以经济效益为核心的风险-效益联动分析模型, 提出了基于预计最低收益的风险指数并给出了其计算方法; 收集整理了中亚地区实际石油区块数据资料, 通过模型计算, 给出了各区块的风险-效益分析; 分析结果表明, 哈萨克斯坦大部分油气区块位于低风险区域, 土库曼斯坦的油气项目多数属于高风险高收益, 投资者在乌兹别克斯坦投资石油项目往往面临高风险低收益.

关键词: 海外油气项目   风险-效益联动分析   风险指数   风险识别与评价

Abstract: The risks in the oversea oil business become more and more serious because of the changing polices, oppressive contracts provisions, ndetermined geological conditions and adverse operating circumstances in the resource countries. This paper classifies the risk types according to the possible risk-sources and demonstrates the risk recognition and analysis process from three different stages. By combining the NPV method, the Monte-Carlo simulation method and the method for analyzing the risk-benefit influencing process, the paper builds a new risk-enefit co-analysis model with the economic effect as the core consideration and, furthermore, puts forward a new kind of risk index in view of the necessary economic return. The risk index calculation method and process are given as well. Based on the collected data and information from the actual oil and gas resource blocks in the Central Asia countries, the risk-benefit co-analysis has been made by means of the developed model. The results show that, most oil and gas blocks in Kahcakstan belong to those with lower risks, the petroleum projects in Tukumanstan are mostly of higher benefits with higher risks, and the investment to the oil projects in Uzebekstan would often meet higher risks and lower benefits.

Key words: oversea oil and gas projects   risk-benefit co-analysis   risk index   risk recognition and analysis

作者简介: 张宝生(1958-), 吉林桦甸人, 博士, 教授, 博士生导师, 研究方向: 管理系统工程, 能源战略, 项目评价与风险分析, E-mail: zbs9211@sina.com; 王庆(1984-), 男, 河南新乡人, 博士研究生, 研究方向: 管理系统工程; 王英君(1970-), 女, 辽宁盘锦人, 博士研究生, 研究方向: 战略与创新管理.

引用本文:

. 海外油气项目风险-效益联动分析模型与应用[J]. 系统工程理论实践, 2012, 32(2): 246-256.

服务
- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器
- E-mail Alert
- RSS

作者相关文章

. Model of risk-benefit co-analysis on oversea oil and gas projects and its applications[J]. Systems Engineering - Theory & Practice, 2012, 32(2): 246-256.

[1] 袁磊, 张宝生, 王震. 中国成品油需求仿真系统及仿真模拟研究[J]. 系统工程理论与实践, 2010, 30(4): 654-666. Yuan L, Zhang B S, Wang Z. Dynamic simulation system of Chinese oil products demand and its simulation[J]. Systems Engineering — Theory & Practice, 2010, 30(4): 654-666.

[2] 唐旭, 张宝生, 邓红梅, 等. 基于系统动力学的中国石油产量预测分析[J]. 系统工程理论与实践, 2010, 30(2): 207-212. Tang X, Zhang B S, Deng H M, et al. Forecast and analysis of oil production in China based on system dynamics[J]. Systems Engineering — Theory & Practice, 2010, 30(2): 207-212.

[3] 杨宝君.国际油气勘探开发项目的风险管理研究[D].哈尔滨: 哈尔滨工程大学, 2003: 22-32. Yang B J. The research on the risk management of international exploration and development projects in oil and gas[D]. Harbin: Harbin Engineering University, 2003: 22-32.

[4] 赵振宇, 刘伊生, 杨华春.故障树法引入工程项目风险管理研究[J].现代电力, 2002, 19(2): 95-98. Zhao Z Y, Liu Y S, Yang H C. Application of fault tree analyzing method to risk management of a construction project[J]. Modern Electric Power, 2002, 19(2): 95-98.

[5] 郑帆.决策树图在概率分析和投标风险决策中的应用[J].天然气与石油, 1999, 17(4): 44-47. Zheng F. Applying decision tree graph to probability analysis and bidding risk decision[J]. Natural Gas and Oil, 1999, 17(4): 44-47.

[6] 沈金水, 黄蕾, 张志雄.以顾客满意度预测楼盘销售价格的定性分析方法---系统反馈因果结构模型法[J].企业经济, 2005, 293(1): 94-95. Shen J S, Huang L, Zhang Z X. An qualitative analysis method of forecasting real estate sales price based on customer satisfaction — The method of system feedback causal structure model[J]. Enterprise Economy, 2005, 293(1): 94-95. Mag Sci

[7] 倪蔚颖.蒙特卡洛模拟在项目成本风险分析中的应用[J].大众科技, 2008(7): 26-218. Ni W Y. Applying Monte Carlo simulation to risk analysis of project cost[J]. Popular Science & Technology, 2008(7): 26-218. cross ref

[8] 孙丽.我国企业对外投资风险的模糊综合评价方法研究[J].国际商务: 对外经贸大学学报, 2008(1): 76-80. Sun L. Methods study of fuzzy assessment method in China's FDI risk analysis[J]. International Business: Journal of University of International Business and Economics, 2008(1): 76-80. cross ref

[9] 魏冰, 张晨宇, 姚一甲.实物期权方法在风险投资中的应用[J].北京工商大学学报, 2007, 22(2): 32-34. Wei B, Zhang C Y, Yao Y J. The application of real option method in risk investment[J]. Journal of Beijing Technology and Business University: Social Science, 2007, 22(2): 32-34.

[10] 王树强, 陈立文.轻轨项目分项工程投资风险评价模型设计---基于BP神经网络的投资风险分析[J].计算机工程与应用, 2008, 44(1): 219-221. Wang S Q, Chen L W. Design of investment risk valuation model on subentry project of light track construction — Investment risk analysis based on BP neural net[J]. Computer Engineering and Applications, 2008, 44(1): 219-221. Mag Sci

[11] 刘国买, 孙凌宇.基于因子分析法的承包商风险研究[J].福建工程学院学报, 2007, 5(2): 116-120. Liu G M, Sun L Y. Study on the contractor risks of construction based on factor analysis approach[J]. Journal of Fujian University of Technology, 2007, 5(2): 116-120. Mag Sci

[12] Kahneman D, Tversky A. Prospect theory: An analysis of decision under risk[J]. Econometrica, 1979, 47(2): 15-17.

[13] Khoshgoftaar T M. Software Engineering with Computational Intelligence[M]. Holland: Kluwer Academic Publishers, 2003: 17-23. cross ref

[14] 乔盼, 赵延龙, 李伟.运用模糊数学和层次分析法对风险投资项目初期的综合评价[J].交通标准化, 2008(9): 83-86. Qiao P, Zhao Y L, Li W. Comprehensive evaluation of venture capital project's primary stage applying fuzzy mathematics and AHP[J]. Communications Standardization, 2008(9): 83-86. cross ref

[15] 刘光富, 陈晓莉.基于德尔菲法与层次分析法的项目风险评估[J].项目管理技术, 2008(1): 23-26. Liu G F, Chen X L. Project risk assessment based on the Delphi method and analytic hierarchy process method[J]. Project Management Technology, 2008(1): 23-26. cross ref

[16] Harbaugh J W, Doveton J H, Davis J C. Probability Methods in Oil Exploration[M]. New York: New York Wiley, 1997: 45-49.

[17] 廖鲁海, 谢霞.油气勘探开发投资风险分析的理论方法研究及应用[J].理论与方法研究, 1999(3): 56-58. Liao L H, Xie X. Research and application on the theory and method of risk analysis of oil and natural gas exploration investment[J]. Forecasting, 1999(3): 56-58. cross ref

[18] 王岩明.模拟技术在石油勘探决策风险分析中的应用[J].数字化工, 2004(9): 40-42. Wang Y M. Applying simulation to risk analysis of oil exploration decision[J]. Digital Petroleum & Chemical, 2004(9): 40-42. cross ref

[19] 罗英力, 陈军.蒙特卡洛模拟法在油气藏开发方案风险分析中的应用[J].内蒙古石油化工, 2008(8): 15-16. Luo Y L, Chen J. Applying Monte Carlo simulation to risk analysis of development plans of petroleum reservoirs[J]. Inner Mongolia Petrochemical Industry, 2008(8): 15-16. cross ref

[20] 张贵清.因子分析方法在国际石油勘探开发项目风险分析中的应用探讨[J].数字石油和化工, 2007(9): 58-61. Zhang G Q. Discussion on application of factor analysis method of risk analysis of international oil exploration project[J]. Digital Petroleum & Chemical, 2007(9): 58-61. cross ref

[21] Aven T, Vinnem J E. Risk Management — With Applications from the Offshore Petroleum Industry[M]. Germany: Springer, 2007: 67-68. cross ref

[22] 郭瑞. 国际石油勘探开发项目技术评价方法研究[D]. 北京: 中国地质大学(北京), 2007: 10-19. Guo R. The study on technology evaluation methods for international oil and natural gas exploration project[D]. Beijing: China University of Geosciences (Beijing), 2007: 10-19.

[23] 任培民, 赵树然. 基于复合实物期权的高新技术项目风险管理[J]. 工业工程与管理, 2008(3): 16-20. Ren P M, Zhao S R. Risk management of new-high technology project based on compound real option[J]. Industrial Engineering and Management, 2008(3): 16-20.

[24] 徐可达. 海外油气田开发经济评价研究[D]. 黑龙江: 大庆石油学院, 2005: 30-37. Xu K D. Research on evaluation method for overseas oil-gas field development[D]. Heilongjiang: Northeast Petroleum University, 2005: 30-37. cross ref

[25] 胡允栋. 基于不确定性分析的油气储量分类与评估方法[D]. 北京. 中国地质大学(北京), 2007: 46-50. Hu Y D. Oil and gas reserve classification and estimation on the basis of uncertainty analysis[D]. Beijing: China University of Geosciences (Beijing), 2007: 46-50.

[26] 杨宝君. 国际油气勘探开发项目的风险管理研究[D]. 哈尔滨: 哈尔滨工程大学, 2003: 45-47. Yang B J. The research on the risk management of international exploration and development projects in oil and gas[D]. Harbin: Harbin Engineering University, 2003: 45-47.

没有找到本文相关文献