

## **Title: Profit Efficiency and Productivity of Vietnamese Banks: A New Index Approach**

### **Abstract:**

In this paper, we analyse the profit efficiency and productivity of the Vietnamese banking sector. The data envelopment analysis (DEA) method is employed to estimate directional distance as a measure of technical inefficiency for each bank's operation. Then, we introduce a novel approach to efficiency measurement and define technical efficiency, allocative efficiency, and profit efficiency scores in a ratio form. It contrasts with the available Nerlovian approach that measures inefficiency indicators as normalised loss in potential profit. The new approach avoids the problem of negative profits, which is inherent in the widely used approach of normalising with a profit level, and it also provides measures that are bounded between 0 and 1 in line with the traditional concept of efficiency indices. We also develop a profit-oriented Malmquist productivity index that is based on directional distances and decompose it into pure technical efficiency index, scale efficiency index, and technology change index. Our analysis reveals that there is little difference in technical efficiency across different types of banks but there exists a huge gap in allocative efficiency between large state-owned commercial banks and other banks. The paper also analyses the effects of the regulation on the equity capital to risk-weighted asset ratio and the effects of the regulation on foreign banks' deposit taking from Vietnamese nationals.