ANALYSIS OF MAIZE PRODUCTION ECONOMIC EFFICIENCY AND ITS DETERMINANTS IN NIGERIA

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Abstract - The study analyzed maize production economic efficiency using cost minimizing Data Envelopment Analysis (DEA). Factors affecting economic efficiency were determined using Ordinary Least Squares (OLS) regression model. The study used secondary annual data from 1971 to 2010. The result revealed that the country registered 100% economic efficiency score at a frequency of 4 which accounted for a low level of economic efficiency of 10% of the total observations. Mean efficiency values are found to be 90.5%, 77% and 69.3% for technical, allocative and economic efficiencies, respectively. This implied that, the country can reduce inputs levels by 9.5% and still produce the same quantity of output at the given technology. Costs of inputs can also be reduced by 23% and still produce the same output level through better allocation of resources, at the given technology. The result revealed that from 1971 to 1975 on average the country's efficiency scores are 99.2%, 78.8% and 78.3% for technical, allocative and economic efficiencies, respectively. The result further indicated that, from 1991-1995 the country recorded full allocative efficiency score of 100%, while technical efficiency score represents 99.6%. From 2001-2005 on average the country has efficiency scores of 100% and 99.5% for technical and allocative efficiencies, respectively. From 2006-2010 the efficiency scores represent 99.5%, 94.1% and 93.7% for technical, allocative and economic efficiencies, respectively. For the determinants of economic efficiency, the result showed that, research and development spending; producer price and number of tractors in use had positive and significant impact on economic efficiency. Therefore, they should be the policy priorities for improving maize production economic efficiency in Nigeria.

Keywords - Allocative Efficiency, Economic Efficiency, Data Envelopment Analysis, Technical Efficiency, Ordinary Least Squares Model, Maize