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New Directions

ALICIA WATSON

The Measurement of Total Factor Productivity, Technical Efficiency and Allocative Efficiency in Agriculture in the Indian Punjab (1972-1988).
International Monetary Fund
This paper investigates the efficiency of domestic and foreign banks in the Central American region during 2002-07. Using two main empirical approaches, Data Envelopment Analysis and Stochastic Frontier Analysis, the paper finds that foreign banks are not necessarily more efficient than their domestic counterparts. If anything, the regional banks that were acquired by global banks in a wave of acquisitions during 2005-07 can keep up with the local institutions. The efficiency of these acquired banks, however, is shown to have dropped during the acquisition year, recovering only slightly thereafter. Finally, it is important to account for the environment in which banks operate, as country-, sector- and firm-specific characteristics are found to have a considerable influence on bank efficiency.

Dynamics of Data Envelopment Analysis
Cambridge University Press
In this book the authors explore the state of the art on efficiency measurement in health systems and international experts offer insights into the pitfalls and potential associated with various measurement techniques. The authors show that: - The core idea of efficiency is easy to understand in principle - maximizing valued outputs relative to inputs, but is often difficult to make operational in real-life situations - There have been numerous advances in data collection and availability, as well as innovative methodological approaches that give valuable insights into how efficiently health care is delivered - Our simple analytical framework can facilitate the development and interpretation of efficiency indicators.

An Analysis of Technical and Allocative Efficiency in the Regulated Common Motor Carrier Industry
Benchmarking Economic Efficiency
What does economic efficiency mean?Economic efficiency consists of these three components. Allocative efficiency is measured using superiority or optimality. Optimal is that allocation where no person could be made better off without inflicting harm on another. Superior is that allocation where the benefit received by one person is more than the harm inflicted no another.Cost and benefit approach, technical efficiency is for a given level of output, minimizing costs of alternatively for a given level of costs maximizing output. Full employment efficiency is for a system to be economically efficient, then full employment is also required. When, it has relationship between

allocation resources and economic efficiency.In simplicity, allocation of resource imply that decisions must be made by choice. Every choice is costly, there is always the cost alternative to bring opportunity cost, it means the next best alternative that must be foregone as a result of an particular decision. Hence, product manufacturer needs to consider how to raise economic efficiency in order to achieve spending the least resource expenditure to earn the maximize output. For example, when one good manufacturer needs to decide to manufacture either beer or pizza, he /she must need to assume how much is current limited resources (production possibilities) to achieve the efficient manufacturing output, either beer or pizza . The production beer of pizza choice will follow these requirements to make decision: efficiency, fixed resources, fixed technology, beer and pizza both food manufacturing choice.So, opportunity cost will cause, either manufacturing more pizza and giving up large amount of beer manufacturing or either manufacturing more beer, and giving up large amount of pizza. Because food manufacturing resource and manufacturing technology and time efficiency and labor number factors and limited for this food manufacturing. So, he/she must need to make economic efficient decision to choose either pizza and beer is the most benefit maximization manufacturing food output decision finally. It is one ease for economic efficient food manufacturing example.

Technology, Efficiency, and Educational Production Springer Science & Business Media

This study focused on the economic efficiency of Kansas farms. The goal was to investigate factors and how they might affect farms and their economic and production performance. Kansas was selected as the region of study for its large agricultural production and distinctive type of multiple-operation farms. Farms in the sample could produce three outputs, crops, livestock and custom work. Inputs for the farms included measures of capital, labor, land and purchased inputs. Production outputs were measured in bushels and tons; input quantities were computed from input expenditures applying an input price index taken from the US Department of Agriculture in real US dollars. The dataset consisted of a 10-year (1998-2007) panel of 456 multi-output farms belonging to the Kansas Farm Management Association (KFMA). Data Envelopment Analysis (DEA) techniques were used to construct a non-parametric efficiency frontier and calculate technical efficiency (TE), allocative efficiency (AE), scale efficiency (SE), and overall or economic efficiency (OE) for each farm and each year. A discretionary input oriented DEA technique was used to assess the effect of capital availability as a farm input and its impact on farms' efficiencies. Efficiency scores in this problem were compared to the farms' scores when the level of debt was accounted for as a farm input. Panel data Tobit analysis was applied to the farms' inefficiency scores to investigate the causality of selected farm characteristics on technical, allocative, scale and overall inefficiencies. For the sampled farms and period, results confirmed that larger

farms were more efficient than smaller ones. Farms specializing in livestock products, such as dairy and beef, were reported to be slightly more overall efficient than crop or mixed farms. Some economies of scope were found between custom work operations and crops. Financial structure of the farms was measured using the ratio of total debt to total assets for each farm. According to the results, larger leverage ratios increased all farm efficiencies. The positive effect of debt or capital availability in Kansas farms efficiencies was confirmed. The results of the technical efficiency discretionary DEA model agreed with this finding.
Efficiency in the Public Sector World Scientific
In for-profit organizations, profit efficiency decomposition is considered important since estimates on profit drivers are of practical use to managers in their decision making. Profit efficiency is traditionally due to two sources - technical efficiency and allocative efficiency. The contribution of this paper is a novel decomposition of technical efficiency that could be more practical to use if the firm under evaluation really wants to achieve technical efficiency as soon as possible. For this purpose, we show how a new version of the Measure of Inefficiency Proportions (MIP), which seeks the minimization of the total technical effort by the assessed firm, is a lower bound of the value of technical inefficiency associated with the directional distance function. The targets provided by the new MIP could be beneficial for firms since it specifies how firms may become technically efficient simply by decreasing one input or increasing one output, suggesting that each firm should focus its effort on a specific dimension (input or output). This approach is operationalized in a data envelopment analysis framework and applied to a dataset of airlines.
Cornell International Agriculture Mimeograph
LAP Lambert Academic Publishing
Excerpt from Measurement of Relative Efficiency of Health Service Organizations With Data Envelopment Analysis: A Simulation Data Envelopment Analysis (DEA), a new methodology based on linear programming concepts, provides an approach to evaluate the relative technical efficiency of nonprofit organizations which have multiple inputs and outputs. This approach potentially will identify inefficient units and the magnitude of the inefficiency to provide a basis to select inefficient units for management review or efficiency audits and to help locate areas where operations might be improved. This is believed to be an improvement over existing approaches to evaluate efficiency of such organizations and is directed toward health service organizations in this study because of the potential value of such an approach in this sector. This paper investigates an application of DEA to an artificial data set reflecting the operations of a hospital department. The underlying technology is specified from which a set of efficient and inefficient hospital units are developed. Without knowledge of this technology, DEA accurately identifies the inefficient units when the inputs and outputs are properly specified. In contrast, the widely used single-output measures

applied to this data set are found to be less reliable in this multiple output environment. The strengths and limitations of DEA are further elaborated to anticipate issues that may arise in subsequent field applications of DEA to hospitals. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Private Property and Economic Efficiency Springer Science & Business Media

Softcover version of the second edition Hardcover. Incorporates a new author, Dr. Chris O'Donnell, who brings considerable expertise to the project in the area of performance measurement. Numerous topics are being added and more applications using real data, as well as exercises at the end of the chapters. Data sets, computer codes and software will be available for download from the web to accompany the volume.

Measurement of Relative Efficiency of Health Service Organizations With Data Envelopment Analysis Springer Science & Business Media

The study estimated profitability, technical, allocative and economic efficiencies;determined resource-use efficiency and the determinants of technical efficiency in rain-fed upland rice production in Osun and Oyo States of Nigeria.Data obtained were analyzed using descriptive statistics, gross margin analysis and the stochastic frontier production function analysis.Results showed that paddy growers in Osun State earned average gross margin/ha of N34,181.38 while their counterparts in Oyo State received N25,448.84 with average profit per grower being N41,132.74 and N44,476.8 respectively.Results of the stochastic frontier production function analysis showed that land was the most productive resource with elasticity of production of 0.961 and 0.314 for Osun and Oyo States respectively. Results of efficiency measurements showed an average of 90.1% in technical efficiency, 92.0% in allocative efficiency and 83.4.0% in economic efficiency for Osun State.On the other hand, Oyo State paddy producers recorded an average of 94.3%in technical efficiency,88.9%in allocative efficiency and 84.0%in economic efficiency.

Economic Efficiency of Maize Production Springer Science & Business Media

This paper investigates the determinants of efficiency and dynamic efficiency changes across Latin American banking industries during recent periods of financial liberalization. Allocative, technical, pure technical, and scale efficiency measures are calculated and analyzed for seven Latin American countries. Consistent with extant

literature, profit inefficiency is higher than cost inefficiency across our sample, suggesting that most of the profit inefficiency comes from the revenue side. The decomposition of revenue efficiency into revenue allocative efficiency and technical efficiency suggests that the source of inefficiency is regulatory (allocative) rather than managerial (technical). Moreover, consistent with what practitioners would expect, efficient banks have lower overhead costs relative to total income, use resources better, have higher quality portfolios, and have higher earnings (e.g., higher return on assets - ROA and return on equity - ROE) than inefficient ones. Furthermore, financial liberalization has brought productivity increases throughout Latin America; but this increase in productivity is a consequence of technological progress rather than enhanced technical efficiency.

Nonparametric Analysis of Production Efficiency GRIN Verlag Master's Thesis from the year 2016 in the subject Business economics - Supply, Production, Logistics, , course: Agricultural Economics, language: English, abstract: This study aimed to analyze the technical efficiency of sesame production in Humera area and to identify major factors that cause efficiency differentials of smallholder farmers. The objective of the study is to measure the technical efficiency of small holder farmers in sesame production. The study was conducted using a cross sectional data collected in 2015/2016-production year from a total sample of 110 households. Cobb-Douglas function was employed to estimate technical efficiency of smallholder farmers in sesame production. The finding of the study indicated that there is inefficiency in the production of sesame in the study area. The estimation of the frontier model with inefficiency variables shows that the mean technical efficiency of farmers is 0.69 (69%). This implies that production of sesame can be increased by 31 percent given the existing technological level. This indicates that the farmers did not using production inputs efficiently in such a way that they give their maximum potential. The estimated stochastic production frontier model together with the inefficiency parameters suggests that any attempt to strengthen technical efficiency of smallholder farmers in the study area must give due attention to the improvement of the principal causes for efficiency differentials such as education, age, extension contact, credit availability, off farm activities and proximity, which were found to be significant determinants of efficiency level. The negative coefficient of educational status, age, credit availability, extension contact and off farm activities means these factors are important in determining the existing efficiency of farmers positively and significantly. While the positive coefficients of proximity indicate that the increments in these factors increase inefficiency. Given the limited resources in the study area will enable the concerned parties engaged in efforts for improvement of the product and productivity of this part of the community to bring about the desired changes in a cost effective way than trying to inject an investment on the

production of sesame.

Sources of Technical Efficiency Springer Nature

The research focused on technical efficiency in small farm households in Chuong My District- Ha Tay Province in Vietnam. The goal was to find the technical efficiency, allocative efficiency, scale efficiency and scope efficiencies among farms, as well as to investigate how farm characteristics might affect farm efficiencies. Vietnam was selected as the region of study because there is not much study on technical efficiency in this area, especially there is none study about how added enterprises or level of diversification impacts farm efficiencies. The dataset is obtained from two surveys: one was conducted in 2010, and the other was the 2006 Vietnam household livelihood survey. The first survey has 75 respondents, and the second has 81 respondents. The data envelopment analysis (DEA) approach is used to measure technical efficiency, and Tobit regression is used to see how the level of diversification and other farm characteristics affect the farm's efficiency. The results show that 2010 farms have higher technical efficiency than 2006 farms. Farmers who get higher profit also have higher technical efficiency and other efficiencies. According to regression results, among farm characteristics, age, off-farm income, education, loan, land and added enterprises have the most effect on farm's efficiencies.

Dairy Farm Efficiency and the Analysis of Milk Production Growth Springer Science & Business Media

Regardless of where we live, the management of the public sector impacts on our lives. Hence, we all have an interest, one way or another, in the achievement of efficiency and productivity improvements in the activities of the public sector. For a government agency that provides a public service, striving for unreasonable benchmark targets for efficiency may lead to a deterioration of service quality, along with an increase in stress and job dissatisfaction for public sector employees. Slack performance targets may lead to gross inefficiency, poor quality of service, and low self-esteem for employees. In the case of regulation, inappropriate policies can lead to unprecedented disasters. Examples include the decimation of fish stocks through mismanagement of fisheries, and power blackouts through inappropriate restrictions on electricity generators and distributors. Efficient taxation policies minimise the tax bill for citizens. In all of these cases, efficient management is required, although it is often unclear how to assess this efficiency. In this volume, several authors consider various aspects and contexts of performance measurement. Hence, this volume represents a unique collection of advances in efficiency assessment for the public sector by leading researchers in the field. Efficiency in the Public Sector is divided into two sections. The first is titled "Issues in Public Sector Efficiency Evaluation" and comprises of chapters 1-4. The second section is titled "Efficiency Analysis in the Public Sector - Advances in Theory and Practice." This division is somewhat arbitrary, in the sense there are significant overlapping themes in both sections. However, it serves to separate chapters that can be characterised as dealing

with broader issues (Section I), from chapters that can be characterised as focusing on specific theoretical problems and empirical cases (Section II).

Efficiency Determinants and Dynamic Efficiency Changes in Latin American Banking Industries GRIN Verlag

Efficient utilization of resources is the basic principle of economics. In line with this for those who are engaged in production, should think about their efficiency to boost production and productivity. With this end, working on improving Technical and Allocative efficiency enables the business productive and profitable. Hence, good knowledge on this subject matter has a vital importance. By doing so, this book helps to understand the basic principles and applications of Technical and Allocative efficiency for any body who has interest on this area.

Frontier Economics LAP Lambert Academic Publishing

A major goal of agricultural policy in many developing nations is the improvement of farm management. Economists have treated aspects of this issue in the literature on technical and allocative efficiency, but much of the work has focused almost entirely on devising techniques for quantifying efficiency differentials. This paper takes the next logical step and attempts to identify sources of such differentials. A simple model is presented relating technical efficiency to general modernization and agricultural information. All three variables are measured among a sample of cotton farmers in Tanzania. Correlation analysis and estimates of modified Cobb-Douglas production functions seem to indicate that general modernization is the more important causal factor and that its impact is primarily labor-augmenting

Analysis of Economic Efficiency in Northern Pakistan Scholars World

This book extends the dynamic and stochastic analysis of economic efficiency by using the recent techniques of data envelopment analysis. New results and applications of these techniques in numerous areas of economics, finance and management are provided, including treatment of private sector industries, portfolio models in finance, quality control techniques in managerial performance, the role of market competition, policy applications in investment models in finance, risk aversion and efficiency, and technology and innovation. The most up-to-date tools of efficiency analysis developed here will be valuable for students and researchers in operations research, applied management science and applied microeconomics. Contents:New Efficiency TheoryEconomics of Efficiency MeasurementEfficiency DynamicsStochastic Efficiency AnalysisIndustrial ApplicationsEconomic Theory and DEA Readership: Students and researchers in applied mathematics, economics, finance, operations research, management and applied statistics. Keywords:Efficiency Measurement;Productivity Growth;Demand Fluctuations and Price Uncertainty;Nonparametric Theory;Data Envelopment AnalysisReviews:“... this book contains a lot of useful material and has the potential to be an effective resource for

researchers in DEA ..."Interfaces

Measurment of Technical efficiency of Ethiopian insurance companies.Technical efficiency Springer

This book grows from a conference on the state of the art and recent advances in Efficiency and Productivity. Papers were commissioned from leading researchers in the field, and include eight explorations into the analytical foundations of efficiency and productivity analysis. Chapters on modeling advances include reverse directional distance function, a new method for estimating technological production possibilities, a new distance function called a loss distance function, an analysis of productivity and price recovery indices, the relation of technical efficiency measures to productivity measures, the implications for benchmarking and target setting of imposing weight restrictions on DEA models, weight restrictions in a regulatory setting, and the Principle of Least Action. Chapters on empirical applications include a study of innovative firms that use innovation inputs to produce innovation outputs, a study of the impact of potential "coopetition" or cooperation among competitors on the financial performance of European automobile plants, using SFA to estimate the eco-efficiency of dairy farms in Spain, a DEA bankruptcy prediction model, a combined stochastic cost frontier analysis model/mixture hazard model, the evolution of energy intensity in nine Spanish manufacturing industries, and the productivity of US farmers as they age.

Technology and Relative Economic Efficiency Oxford University Press

The book "Economic Efficiency of Maize Production in Jammu Region of J & K State" provides an overview of the maize production in the state of Jammu and Kashmir in general and sampled districts of Jammu region in particular. The book is designed to throw some new light on the various aspects of status of maize production, Instability in Maize Crop Cultivation, Decomposition, Economics and Impact of Improved Maize Technology, Resource-use Efficiency, Allocative Efficiency, Technical Efficiency, Factors Affecting on Technical Efficiency, costs and returns of maize and Socio-economic Constraints faced by Farmers for growing the Maize crop. In addition, the book provides theory of Production Function and Economic Efficiency. As a case study of maize production in the Jammu region of J&K State, the book provides empirical information about economical analysis of maize crop and is based on the secondary data as well as primary data and factual position prevailing in the farmers field. The book will serve as useful reference to research scholars, students and teachers and will also act as a ready reference for various policy planners of the state and country. The book has considerable importance for the students of agricultural economics and scholars who are interested in this area. The future strategies regarding the efficiency of maize production has also been provided.

Aggregation, Efficiency, and Measurement Health Policy

When Harold Fried, et al. published The Measurement of Productive Efficiency:

Techniques and Applications with OUP in 1993, the book received a great deal of professional interest for its accessible treatment of the rapidly growing field of efficiency and productivity analysis. The first several chapters, providing the background, motivation, and theoretical foundations for this topic, were the most widely recognized. In this tight, direct update, these same editors have compiled over ten years of the most recent research in this changing field, and expanded on those seminal chapters. The book will guide readers from the basic models to the latest, cutting-edge extensions, and will be reinforced by references to classic and current theoretical and applied research. It is intended for professors and graduate students in a variety of fields, ranging from economics to agricultural economics, business administration, management science, and public administration. It should also appeal to public servants and policy makers engaged in business performance analysis or regulation.

The Measurement of Efficiency of Production

Springer Science & Business Media

Data envelopment analysis develops a set of nonparametric and semiparametric techniques for measuring economic efficiency among firms and nonprofit organizations. Over the past decade this technique has found most widespread applications in public sector organizations. However these applications have been mostly static. This monograph extends this static framework of efficiency analysis in several new directions. These include but are not limited to the following: (1) a dynamic view of the production and cost frontier, where capital inputs are treated differently from the current inputs, (2) a direct role of the technological progress and regress, which is so often stressed in total factor productivity discussion in modem growth theory in economics, (3) stochastic efficiency in a dynamic setting, where reliability improvement competes with technical efficiency, (4) flexible manufacturing systems, where flexibility of the production process and the economies of scope play an important role in efficiency analysis and (5) the role of economic factors such as externalities and input interdependences. Efficiency is viewed here in the framework of a general systems theory model. Such a view is intended to broaden the scope of applications of this promising new technique of data envelopment analysis. The monograph stresses the various applied aspects of the dynamic theory, so that it can be empirically implemented in different situations. As far as possible abstract mathematical treatments are avoided and emphasis placed on the statistical examples and empirical illustrations.

Decomposing Technical Inefficiency Using the Principle of Least Action

University of Nairobi Press

Thesis (M.A.) from the year 2012 in the subject Business economics - Investment and Finance, grade: MSc in Finance and Investment, Mekelle University (Business and economic college), language: English, abstract: This study was conducted in Ethiopian insurance companies in order to measure the technical efficiency using DEA input oriented approach under both constant and variable return versions and Malmquist index output

oriented approach in the period 2006-2010. In the first stage, the relative technical efficiency is estimated with data envelopment analysis (DEA) to establish benchmarking company, then, they are ranked according to their technical efficiency. Mann whiney- U test in the second stage was used to determine the factors affecting efficiency. The concept of efficiency concerns is an insurer's ability to produce a given set of outputs (such as premiums and investment income) via the use of inputs such as administrative and general expenses and financial capital. The insurance company is said to be technically efficient if it cannot reduce its input usage without some corresponding reduction in outputs, given the current state of production technology in the industry. The technical efficiency of Ethiopian insurance companies during the study period was 86.7%, 97.1% and 84.9% in technical efficiency, pure technical efficiency and scale efficiency, respectively. The productivity change shows Ethiopian insurance companies were quite well in efficiency change rather than technological change. It suggested that it is better to employ advanced technology to be efficient in competitive environment. So it is advisable Ethiopian insurance companies are better-off to follows the best practicing firms in the industry. The economic implications arising from findings were also considered.