Comparing Agricultural Total Factor Productivity Between | f9ecbfada60c2a674fca39360b3cd215

An Analysis of the X-Efficiency and Total Factor Productivity in the U.S. Farm Credit System Using Longitudinal Data

The Agricultural Sector Review aims to provide an up-to-date picture of the current socio-economic situation of the agricultural sector in Lebanon and to identify key challenges and evidence-based strategies for policy-making. The first part provides a detailed overview of Lebanon's agricultural and food systems, including a section focused on the governance of the overall policy framework and the specific policies currently governing the sector. The second part of this study consists of an identification of the challenges and issues that are currently affecting and constraining the development of the Lebanese agricultural sector to its full potential. Once identified these challenges, the study proposes several potential strategies and recommendations that could be applied at the policy-making level to drive the improvement of the sector. Finally, we provide a discussion towards a renewed national agricultural strategy; in which we reviewed some lessons learned from previous success stories in Lebanon and compile the strengths, weaknesses, opportunities and threats of the agricultural sector.

Agriculture accounts for 70 percent of employment, overwhelmingly on small farms; occupies half of all land area, and provides half of all exports and one-quarter of GDP in Uganda. It is considered a leading sector for future economic growth and economic inclusion in the current National Development Plan. Yet despite having very favorable natural resource and climate conditions for production of a wide variety of crops and livestock, average Total Factor Productivity (TFP) growth—the difference between aggregate output growth and the growth of all inputs and factors of production that produced it—in Ugandan agriculture has been negative for the last two decades. This suggests that on balance the country is now getting less for equal or greater effort. While drought and pest issues likely have played a harmful role, other plausible explanations are a combination of the following: weakening over time of the public institutional base for promoting agricultural productivity at the level of small farms, inefficiencies in agricultural public expenditures, inadequate agricultural regulation and policies, and a lack of collateralizable farm assets. National agricultural output has grown at only 2 percent per annum over the last five years, compared to agricultural output growth of 3 to 5 percent in other EAC members and 3.3 percent per annum growth in Uganda's population over the same period.

This study analyses and evaluates US agricultural policies, focusing on the Food, Conservation, and Energy Act of 2008, in the context of developments in agricultural policy that have taken place in the United States since 1985.

This book assesses the prospects for achieving the sustainable development goals, and the role of international organizations in achieving them, in light of recent economic, medical, and environmental developments.

This invaluable collection compares the relatively unsuccessful economic development of Subsaharan Africa with that of the successful Asian economies, especially the Asian 'tigers'. It covers three main areas of comparison: the lessons for Africa from the Asian experience; secondly, the comparisons of various aspects of economic development in Africa and Asia; and finally, convergence: how far the laggard economies are catching up with, or diverging away from, each other.

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the last five years, compared to agricultural output growth of 3 to 5 percent in other EAC members and 3.3 percent per annum growth in Uganda's population over the same period. Agriculture and the agro-processing sector in Brazil have shown impressive growth over the past two decades. This has largely been driven by productivity improvements and structural adjustment resulting from broad economic reforms, as well as new technologies developed by agricultural science.

This report reviews economic concepts of innovation, research and development (R&D), productivity and competitiveness, and their linkages in agriculture.

Agricultural Productivity: Measurement and Sources of Growth addresses measurement issues and techniques in agricultural productivity analysis, applying those techniques to recently published data sets for American agriculture. The data sets are used to estimate and explain state level productivity and efficiency differences, and to test different approaches to productivity measurement. The rise in agricultural productivity is the single most important source of economic growth in the U.S. farm sector, and the rate of productivity growth is estimated to be higher in agriculture than in the non-farm sector. It is important to understand productivity sources and to measure its growth properly, including the effects of environmental externalities. Both the methods and the data can be accessed by economists at the state level to conduct analyses for their own states. In a sense, although not explicitly, the book provides a guide to using the productivity data available on the website of the U.S. Department of Agriculture/Economic Research Service. It should be of interest to a broad spectrum of professionals in academia, the government, and the private sector.

The relative contribution of a sector to poverty reduction is shown to depend on its direct and indirect growth effects as well as its participation effect. The paper assesses how these effects compare between agriculture and non-agriculture by reviewing the literature and by analyzing cross-country national accounts and poverty data from household surveys. Special attention is given to Sub-Saharan Africa. While the direct growth effect of agriculture on poverty reduction is likely to be smaller than that of non-agriculture (though not because of inherently inferior productivity growth), the indirect growth effect of agriculture (through its linkages with nonagriculture) appears substantial and at least as large as the reverse feedback effect. The poor participate much more in growth in the agricultural sector, especially in low-income countries, resulting in much larger poverty reduction impact. Together, these findings support the overall premise that enhancing agricultural productivity is the critical entry-point in designing effective poverty reduction strategies, including in Sub-Saharan Africa. Yet, to maximize the poverty reducing effects, the right agricultural technology and investments must be pursued, underscoring the need for much more country specific analysis of the structure and institutional organization of the rural economy in designing poverty reduction strategies.

With the emergence of collectivization, the communal movement, and the food crisis, the development of agriculture in socialist countries has become a topic of great interest to economists. Focusing on productive efficiency, Dr. Wong estimates an agricultural metafrontier function for nine countries—China, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, Yugoslavia, and the Soviet Union—and computes both the partial productivities and total productivity in comparable units. Using the growth accounting procedure, the author performs a quantitative comparative analysis of the differences and the sources of differences in agricultural productivity among socialist countries. Methods of analyzing productivity measures are described, revealing the contribution of land, labor, education, and other factors in agricultural growth. Dr. Wong concludes by discussing the policy implications for development strategy and the effects on the world food market.

The growth of agricultural productivity is widely believed to be low. But this study finds the productivity rate in agriculture to be higher than that in manufacturing, both on average and for groups of countries at different stages of development. This suggests that a large agricultural sector need not be a disadvantage for growth performance, and may be an advantage.

First published in 1995. Based on a detailed adjustment for the quality of inputs and outputs, this study develops state-level measures for total factor productivity growth in US agriculture which are used to determine (i) the presence and determinants of convergence across states; (ii) the contribution of individual factors of production to productivity growth; (iii) the importance of spillovers across states; (iv) the economic effects of, returns to, and factor biases of research and extension. This title will be of great interest to students of economics and agriculture.

Agricultural productivity growth in Chinese provinces during the 1994-2005 period is examined using two alternative approaches: a parametric stochastic frontier and a non-parametric Malmquist index. These models are suitable to the Chinese situation due to the existence of procurement prices, quotas, and other interventions that have distorted prices. Results show that there is high but declining productivity growth rates in the mid 1990's with productivity growth decreasing in the late 1990's but with a reversal of the trend around 1998 when growth rates start accelerating. A stochastic frontier translog production function is estimated to obtain an alternative measure of total factor productivity growth. Results are compared across these two models. Although average growth in technical change is similar in the two models, the regional rates are dissimilar. A model that includes three variables hypothesized to explain the difference in performance across regions is also estimated. The three variables included in the model are irrigation ratio, illiterate ratio and agriculture expenditure level. These variables make allowance for the difference of land and labor quality and the effect of public inputs. The irrigation ratio and agriculture expenditure are found to positively relate to the technical efficiency change and the illiterate ratio is found to negatively relate to the technical efficiency change. The results are consistent with expectations.

Agriculture is the predominant sector in many of SSA (Sub-Saharan Africa) countries, capable of enhancing the economic development process while reducing poverty. However, the performance of this sector in SSA has been low compared to other developing countries, characterized by fluctuations over the decades. This study looks at the evolution of total factor productivity (TFP) growth rates, technical change and efficiency change in 41 countries in SSA, from 1960 to 2006. It also examines the potential role of institutions and
political variables, climatic factors and water scarcity, as well as CO2 emissions from deforestation. The first chapter examines the association between agricultural productivity rates and institutions. The results show an annual growth in TFP of 0.6% with technical change playing a major role in determining TFP. Variables such as colonial heritage and years of independence are shown to contribute in explaining the gap in countries performance. The second chapter provides a better understanding of the role of climatic factors (precipitation, irrigation, drought and temperature) on total agricultural productivity rates. The effect of water is explicitly incorporated in productivity measurements using an indicator of drought developed from the standard precipitation index. Results suggest that agricultural productivity is sensitive to climate variability; precipitation and temperature have a positive effect on agricultural production. Once drought and irrigation are accounted for, the gap in countries performance decreases and increases respectively. The third chapter is an attempt to 'correct' TFP measurement in SSA's agriculture for CO2 produced as a result of land clearing needed in agriculture. The results suggest that (i) when CO2 is a joint output of the sector using an output distance function, TFP growth rates are higher as the same amount of inputs are used to produce two outputs instead of one; (ii) When CO2 emissions due to land clearing are treated as an input using a production function, it is effectively treated as a 'bad' output, and punishes the sector with lower TFP growth rates.

Published in 1999, this text uses a number of approaches to measure the performance of firms in the transition economies of Central Eastern Europe during the early stages of reform. There is considerable controversy about the level of productivity in this period, as is evident by contradictory evidence quoted in the literature and a high degree of inconsistency in published national statistics. Indeed, the disagreement extends to the measurement approach and the results for this group of countries. Particularly difficult is any analysis at the firm level, as data is inconsistent, incomplete and based on now out-dated accounting systems. The information used in this book is a panel data set of 64 items collected from 1000 firms across 25 industry sectors in Hungary. Productive efficiency is measured and the reasons for poor performance are discussed. It was found that industrial sectors differ in their average performance levels and in the factors most likely to account for this. Finally, recommendations are developed to help to reverse the decline in productivity.

This report reviews economic concepts of innovation, research and development (R&D), productivity and competitiveness, and their linkages in agriculture.

Action is needed to fight poverty by sustaining the environment and the use of natural resources. Land Quality, Agricultural Productivity, and Food Security explores a range of factors driving food security. The book offers an assessment to link quality of the available land resources with productivity of land and the ability to ensure food security. It offers a mixture of broad-scale assessments across the globe, with detailed case studies, deepening our understanding of economics and decision-making mechanisms. It is recommended to researchers, as well as actors in the private and public domain, who are keen to improve their understanding of the appropriate actions that ensure food security in the decade to come. - Floor Brouwer, Agricultural Economics Research Institute (LEI), The Hague, The Netherlands Land quality and land degradation affect agricultural productivity and food security, but quantifying these relationships has been difficult. Data are extremely limited and outcomes are sensitive to the choices that farmers make. The contributors to this book - including soil scientists, geographers, and economists - analyse data on soils, climate, land cover, agricultural inputs and outputs, and a variety of socio-economic factors to provide new insights into three key issues: * the extent to which differences in land quality generate differences in agricultural productivity across countries * how farmers’ responses to differences or changes in land quality are influenced by economic, environmental, and institutional factors, and * whether land degradation over time threatens productivity growth and food security at local, regional, and global levels.

This paper argues that partial productivity measures are inappropriate and at times misleading for assessing the performance of agricultural production technologies and systems. This is especially true where substantial changes in resource stock and flows accompany the production process. Superlative-index based total factor productivity measures are a more appropriate technique to compare production efficiency and sustainability of alternative systems. Mathematical formulations of intertemporal and interspatial total factor productivity measures with and without considering changes in resource stock and flows are shown. The three case studies from sub-Saharan Africa in which this approach was applied are reviewed. These studies show that total factor productivity measures are biased if changes in resource stock and flows are not appropriately accounted for in intertemporal comparisons, and differences in input intensity are not accounted for in interspatial comparisons.

Analyses how various political and economic factors have interacted to prevent Japan achieving high agricultural productivity at the same time that it was experiencing remarkable growth in its industrial productivity.

While technological developments are evolving at a rapid pace, employee workplace skills are falling behind. This rate of change will continue to accelerate, and it is the responsibility of businesses to provide their employees with a solid foundation for keeping pace with the technology surrounding them. Technology-Driven Productivity Improvements and the Future of Work: Emerging Research and Opportunities provides a comprehensive discussion of the latest strategies and methods for creating harmony between the workplace and their technological environments. Featuring coverage on relevant topics such as STEM skills, economic complexities, and social programs, this is an informative resource for all business owners, professionals, practitioners, and researchers who are interested in discovering new methods that will enable humans and technology to work together.

The economic development literature has long recognized the role of sectoral changes in growth. In particular, the idea that factor reallocation contributes to total factor productivity growth - and thus to GDP growth - has often been emphasized (Syrquin, 1986). An early work by Robinson (1971) has put this idea into a formal set-up, constituting what he calls a model of structural change and growth. In this model, capital and labor reallocation have a positive effect on GDP growth due to the assumption that marginal factor productivity is higher in the non-agricultural sector compared to the agricultural. The empirical results in Robinson (1971), obtained for a sample of 39 developing countries over the period 1958-66, suggest that the contribution to growth of factor transfers is important for developing countries: it is higher than the estimated contributions of reallocation to growth in the United States and Western Europe.
Productivity growth in the Turkish agricultural sector is supported today by better technologies, crop varieties and animal breeds. Yet improvements have slowed since the late 2000s, and the productivity gap between agriculture and the rest of the economy remains large.

This study by Shenggen Fan makes three important and original contributions. It is the first study to report regional patterns of productivity growth in Chinese agriculture. There have been dramatic differences in output and productivity growth among Chinese regions. The second contribution is to measure the separate effects of technical change and institutional reform on productivity growth. Much of the rapid growth in agricultural production and in productivity since the late 1970s has been a consequence of an important series of institutional reforms. The third contribution is the first test of the induced innovation hypothesis against experience in a centrally planned economy. Regional patterns of productivity growth are consistent with the hypothesis that the path of technical change has been responsive to regional differences in resource endowments.

Whilst many books on the European economy have focused on the analysis of its industrial sectors, this book draws attention to the often ignored contribution made by the development of European agriculture over the past two centuries. In doing so, the authors adopt a revisionist perspective on the subject, addressing the lack of coherent study of the agricultural sector and reassessing old theories about the links between agricultural and economic development. In focusing on those countries which by 1870 still had a large agricultural sector, namely, France, Germany, Italy, Denmark, The Netherlands, Sweden, Spain, Portugal, Poland, Hungary, Greece and Turkey, this book determines the role of the agricultural sector in the economic development of Europe. These chapters demonstrate how the rate of development in the agricultural sector depended on specific industrial, political and market conditions; the diversity of ways and timings through which transformation was achieved is also considered.