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Agriculture Sector in Pakistan (A Historic Analysis)

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Long-term, sustainable growth in output is the primary objective of development economics and macroeconomic strategy. Productivity must always rise to keep up with rising levels of life. TFP is a primary driver of agricultural productivity growth. Inputs are integrated into the expected output for both economic and technological efficiency. Pakistan's rising overall factor productivity, notably in agriculture, was the focus of the research. This study uses the growth accounting approach to calculate TFT. It was shown that the amount of total factor productivity rose till 2019. According to the findings, the average TFP growth rate in the agriculture sector was greater than that in 1980. This decade observed a significant increase in agricultural TFP. TFP in agriculture is lower than in other industries, according to the research. To boost agricultural total factor productivity growth, government actions are required. Farmers' educational attainment has a significant impact on the expansion of TFP. TFP growth in Pakistan should be boosted by increasing farmers' education spending.
Keywords; GDP, GNP, Productivity, Growth, and Development.

Introduction

Agriculture accounted for 26.9% of the GDP and employed over half of the working population. [1][2][3] Pakistan's economy has seen a decrease in agricultural productivity. Between 2015 and 2019, agriculture's GDP share dropped from 19% to approximately 44%. Even though this industry's share of output and employment has decreased, it remains an important one. The majority of Pakistanis depend on it for both food and income. In addition, it provides raw materials for the manufacturing industry[4][5].

Worker and capital productivity is an essential economic metric since it shows how efficiently a company can utilize these resources during the production process. Productivity growth rates are increasing, meaning more output can be generated with fewer or equal inputs. Resources are more effectively utilized thanks to technological advancements, in this context[6][7]. Consequently, it has promised to reduce expenses while also improving quality at the same time. While this is the most commonly used metric to measure productivity, it may be used for a wide range of inputs. Total factor productivity (TFP) is also computed using this method [4][8][9].

It is TFP growth that is the most important factor in GDP growth. Gross domestic product (GDP) is the most often used measure to describe the economic health of a country or region. Total factor productivity has a considerable impact on both the agriculture and service sectors. The overall factor of productivity improvement in agriculture has been calculated by researchers in this study. Pakistan's agricultural output cannot fall at this juncture in its development, especially given the country's fast-expanding population [10][11]. Farmers have seen a yearly growth in agriculture of 1.78 percent. According to the data, it decreased by -0.19 percent in the 2015-2016 fiscal year. The crop sector registered a negative 5.99 percent, while the major crops recorded 7.21 percent. Wheat is more essential in Pakistan than everywhere else since it is a staple meal. A total of 9 million hectares of cropped land and 65.9 percent of cereal land were devoted to wheat production in 2018. In 2012, the country produced around 26 million metric tonnes of wheat. Pakistan's wheat reserves are growing. Wheat reserves currently total 4.9 million tonnes. Pakistan cannot export its surplus wheat because of low global wheat prices and high production costs and support prices in Pakistan [12][13]. A single year's worth of wheat production could be affected by climate change, by adding or subtracting 2 to 3 million tonnes of wheat. [14][15].

Developing countries with large populations of the impoverished are particularly hard. About 805 million people in the world do not have enough to eat [16]. According to USAID [17], if demand for wheat and rice increases in developing nations, imports will account for the majority of the supply. It is predicted that imports of wheat and rice from emerging countries will rise by up to 97 percent by 2025.

The only alternative is to keep up with the rapid development of TFP. To ensure that the country's agricultural policies are sound, TFP research is essential [18][19].

Lifestyle improvement necessitates an increase in production. Countries that are grappling with a variety of financial difficulties are more likely to benefit from it. Nearly a third of Pakistan's population is considered poor by the United Nations' standards. Currently, only 6.2% of the working-age population is unemployed. The monetary deficit is enormous as a percentage of GDP. Any country's continued development is essential in light of the disadvantage above [20][21].

This economic indicator has gained widespread acceptance due to the impact of industrial technology on labor productivity. Because of advancements in technology, labor productivity has risen significantly. The total factor of productivity can be used to measure technological advancement. The production function The remaining GDP growth can be calculated by reducing real GDP by the input growth rate, weighted by the elasticity of production [22]. TFP refers to a portion of the output known as the Solow residual [23][24].

The neo-traditional structure grows due to increased. Most of the discussion has been dominated by TFP. The normal outcome is the best-case scenario under all circumstances. Pakistan's economy and agriculture sector's total factor productivity is the study's primary goal, and "multifaceted profitability" is used to characterize this goal[25].

Methods

Researchers often follow a methodology that outlines the instruments and methods employed in their study. To finish the analysis, goals must be identified first. By keeping your study goals in mind, you'll be better able to select the right method [26].In agriculture, the gain in total factor productivity is measured using the Solow growth model. To do this study, this method is required.

The Pakistan Bureau of Statistics, the Federal Bureau of Statistics, the Pakistan Economic Survey, the Pakistan Economic Handbook, the SBP, the Internet, and the World Development Indicator are all good sources for Pakistani economic statistics (WDI)
Secondary data is used in the analysis, which predicts an increase in all variables throughout the agriculture business. Governments worldwide have made increasing productivity a priority in their economic policymaking. Performing an evaluation is a precondition for accurately identifying and quantifying production. estimating total factor productivity by use of the growth accounting technique

He made a significant contribution to making growth accounting a standard method of measuring TFP[27]. This approach yields TFP as a byproduct. The TFP index is calculated by taking a small percentage of the country's GDP and multiplying it by 100. Methods like this one allow us to separate the effects of variables and technical change on production. the production function of the neoclassical type

Many ways to calculate TFP can be found in the growth literature. The two most widely used approaches for estimating TFP are Growth Accounting [28]. We've outlined these techniques in greater detail below. According to the neoclassical paradigm, economic development might come from two different directions. Productivity as a whole is the method by which money is amassed.

The effects on total output that aren't directly linked to inputs are included in total factor productivity. Solow (1957) and TW "Swan" and "technological transition" were both founded on the total factor efficiency residual, which has been the subject of a long-running debate. A variety of indicators, such as the residual or total factor productivity indicator, can determine the impact of input growth and residual technological change on growth.

The depreciation rate is another necessary estimate for calculating the capital stock sequence. The value of the non-constant depreciation rate can be computed.

Several studies calculate the total capital stock values. We get a time-varying depreciation rate from the preceding equation. This depreciation rate was utilized to calculate the capital stock in the current study. We estimate total factor productivity increase using this capital and labor.

What We've Learned So Far

The increase in total factor productivity was evaluated to study Pakistan's economy and agriculture sector. Total factor productivity is measured using growth accounting indices. Both labor and capital were required. It is possible to use the capital stock series in numerous ways. (PIM). Gross fixed capital formation serves as a proxy for actual investment. The worth of labor can be calculated in rupees by keeping track of the number employed[29]. Many econometric methodologies are available to identify the variables that impact total factor productivity through a thorough investigation of the entire economy

Private sector investment and a period of nationalization both contributed to strong growth rates [30]. Despite a dearth of legislative reforms, the industrial raw materials trade liberalized during this decade. GDP and total factor productivity growth were much lower

than in previous decades. The rising debt burden of the economy was a contributing factor to the drop in TFP, the implementation of trade liberalization. A lot of people had questions concerning import taxes and tax policies. There has been an increase in TFP as a result of increased GDP and TFP output. TFP growth follows GDP growth when the economy is expanding at an increasing pace. As a result, when GDP decreases, TFP also decreases.

The number of people employed, GDP, and TFP have all increased since 1970. The growth in total factor productivity was linked to an increase in GDP. Growth in GDP and TFP indicates the economy's fundamental flaws. " In spite of the fact that GDP and total factor productivity are growing faster than the economy itself (TFP). A decline in total factor productivity is a corollary of shrinking GDP. Our total factor productivity (TFP) grew at a lower rate than GDP.

GDP and total factor productivity (TFP) grew at the fastest rates. To date observing a trend that has been occurring for several decades. Agriculture generates a lesser share of GDP today than it did in the past. It is still a vital part of our economy, even as its share of GDP falls. People and industry alike benefit from the abundance of food and raw materials it provides[31]. The economy's reliance on agriculture is being eroded by a variety of abstract factors [32].

When agricultural GDP growth falls below 8%, overall factor productivity growth slows. Both GDP and (TFP) have expanded at a similar rate during the study period. Because of rural farmers' lack of education and the government's inadequate marketing and pricing methods, GDP growth in the agriculture sector has stalled.

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