

Role of Agriculture in Economic Growth of Pakistan

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Abstract

This research based on the role of agriculture in the economic growth of Pakistan. Secondary data has been collected from the year 1980-2010 from the government authentic websites. For this Purpose Simple regression applied to identify the significance relationship of Agricultural sub-sectors with GDP. Results suggested that there is the significance role of agriculture sub-sectors towards the economic growth only forestry showed insignificant relationship with GDP. Another objective is based on to know the contribution of each sub-sector over the aggregate agriculture amount. Result suggest that crops and livestock's total contribute 91% combined in the aggregate agriculture sector that represent significance contribution for the performance regarding in this sector while Fisheries and forestry have minimal contribution because of many reasons, major reasons involved low investment intensity in this sector , insufficient facilities , untrained and unskillful labor force engaged with it .

Keywords: Economic growth, Major crops, Minor crops, Livestock, Forestry, Fisheries
Gross Domestic Product (GDP)

1. Introduction

The Agriculture sector uninterrupted engages in recreation of Pakistanis economy since independence. In the early time period it considered a dominant sector but due to the declining its performance due to the political, social, environmental and climate conditions its production yield goes down gradually and now it is the second largest sector in Pakistan . It accounting for over 21 percent of GDP, 45 percent of total labor force engaged with this sector. Around 63 percent of country population live in rural areas is indirectly or directly linked with this sector for their livelihood. Agriculture sector have

strong linkage with the rest of the economy that is unnoticed in statistics. While on the Other hand, it is the primary supplier of raw materials to down stream industry, that contributing significantly to Pakistan's export; it is the largest market for industrial manufactured goods such as pesticides, fertilizers, tractors and agriculture equipments.

The object of Agriculture has changed form "self-reliance" to "Commercialization" and this is called Economic operation in Agriculture. Farming supplies is now being changed instead to individual benefits but as exchange commercial business. The aim of production converted into maximization the profitable level. Similarly the concept of self-sufficiency has become changed into profit maximization.

This research comprising the several variables having some predictors and self-sufficient. Gross Domestic product is one of the well-built indicator to measure the growth pattern of the economy. It notifies the Aggregate value of all final goods and services produced within a country over the specific time period. According to the World Bank the GDP of Pakistan was \$161.99 Billion or 5,475,716 Million in PKR in the year 2009.

Predictor variable comprises five sub-sectors include Major, Minor crops, livestock's, fisheries and forestry. Major crops consist of cotton, rice, wheat and sugarcane etc and contribute 6.5% solely to the GDP. Cotton is the main non-food crop that is used as a raw material for the textile industry. Pakistan is the forth largest producer of cotton. Rice and Wheat are the major food crop out of which rice is also one of the main export items of the country. Sugarcane is another important crop grown for sugar and sugar related products. Minor crops consist of oilseeds, vegetables, pulses, chilies and other small crops. Oil seed crops include cottonseeds, rapeseed/mustard, sunflower and canola etc.

Livestock sector includes cow, buffalos, goats, donkeys, horses and poultry and is an important sub-sector of agriculture. Its importance lies in the fact that many rural families depend on their livestock for their daily nutrition and income. Livestock also contributes around 11% to the national GDP. The Government has placed livestock on the national development agenda and has formulated the 'Livestock Development Policy' and 'Poultry Development Policy' aimed at the Private sector involvement in these sectors.

Pakistan has a large dairy sector and is, by current estimates, the fourth largest milk producer in the world, following India, China and USA. Current Production levels are around 35 billion liters and there are around 8 million farming households and a total herd size of 50 million animals. In monetary terms, the milk produced in Pakistan is worth Rs. 177 billion and the largest product in the entire agriculture sector. Currently only 3% of the total milk production is processed and marketed through the formal channels. Milk production is expected to grow an additional 3 billion liters in the next five years and the market for processed milk is growing at a steady rate of 20% per annum.

As far as fisheries sector, Pakistan has a costal line about 1,050-km and has been famous for fishing in the region. Pakistan sell abroad good quality seafood's to various countries namely, china, Thailand, UAE and other gulf countries. Fresh, chilled or frozen fish comprise around 69% and shrimps around 21% of total exports. Pakistan is endowed with vast aquatic resources; however the fisheries sector only constitutes 1% to the GDP. The government aims to increase this share as fisheries can play an important role in the growth of the state economy by helping to reduce poverty and increase food security.

This research is particularly beneficial for the economist, investors, policy makers, government officials, agricultural concerns, students and teachers to identify the actual performance of agriculture over the economic growth in sectarian basis. At last recommendation will be beneficial to cope up the lackness or problems that these sub-sectors facing in current situation.

2. Previous Research

Chebbi (2010) Researcher wants to evaluates the role of agriculture in economic growth with the dealings with other sectors. Johansen's multivariate approach has been used to study the cointegration

with the other sectors in its country economy and He deeply analyzed how to overcome the problems of spurious regression . He paid the extraordinary attention to investigate non-causality between agriculture and the other economic sector. Result showed that its all country economic sectors cointegrate and have a tendency to move together.

North (1959). The researcher identified two arguments based on agriculture contribution on economic growth .These involved , Industrialized activities depend upon the availability of the agriculture commodities on time to run the industrial activities in effectual manner some time the low diminishing return affected the industrial growth.The other argument suggests the process of economic growth is varying time by time, locational matrix such as industrial urban and industrial rural. The researcher more added that the successful agriculture based on the division of labor .The specialized labor force along with the divided responsibility may result the better production in this sector. Regional concentration should involve in the betterment of this sector as well as the global economy should engage in the country economic development. The researcher oppose toward export sector based only the single commodity ,He recommend that export official don't rely on the single export commodity they need to export the other commodities as well through the better management. The Investment should be involved in this sector to enhance the productivity .In the final words researcher suggest that regional ability is the important to integrate the large market through export resultant body of regional economy will definitely influence its ability to achieved sustainable growth and diversified economic activities.

Ohkawa & Rosovsky (1960) The researchers make a thorough discussion that follow attempts to complete these aim within certain clearly define boundaries. Micro-sectoral and sub-sectoral materials are introduced as observation for specific illustration. The researchers compare two rather long periods, where in period I involves Meiji Restoration to World-War I and In the period II, it involved the time period from World War I to World War II. The major economy changed sustainably in Japan due to the change in sectorial performance related to other sectors. In the world War I there is distinct structural change occurred between industries and agriculture. On the other way the post War discussion revolved around the recovery in economic. These topics deserve extensive and separate analysis.

Rosovsky (2011) A study of the role of agriculture in modern japanese economic development .This necessarily becomes a two-fold problem. Firstly , Main features outlines along with the significance role over the economy . Secondly evaluating the relationship between other sectors and the agriculture during the growth process.

Gollin et al (2002) The researcher argued in this research paper the model of structural transformation provides a useful theory of both the questions that includes, Why Industrialization occurs at different times and why it considered or proceed slowly. Researchers had shown in its model that low agriculture yield resulted the low operation in the industries side because industries are much dependent on the agricultural yield that helpful to grow an industry in effective manner. If the performance of the industries goes downward that resulted the negative growth in economy.

Chang (2011) The purpose of this paper is to focus on labor movement in the agriculture sector of taiwan to clarify the relationship between agricultural policy and the agricultural adjustment problems by estimating the labor movement function. The Methodology analyzed by modeling movement between the agricultural sector and the other sectors through empirical analysis of migration of labor functions that clearly shows these policy factors effects the incentives for labour migration, and obstruct for off-farm labor migration, price support policy factors, affect the incentives for labor migration and obstruct off-farm labor migration: The price support policy ; the incomplete farm land conversion regulation , which increases farmers farmland possession motive; and government agriculture expenditure , which includes direct transfer to the agriculture sector . farmland conversion regulations and increasing government agricultural payments, from the results of the simulation with the influence of the policy eliminated.

Gylfason et al (2000) The researcher reviews this paper with the some reasons. These reasons involves, why natural resource abundance and widespread agriculture appears to delay economic in the growth around the globe. This paper includes empirical, cross-sectional evidence of different aspects of this connection in the transition economies in Eastern and the Central Europe and Central Asia from since 1990. The heart of the argument is that heavy reliance on the natural resources and agriculture may outcome in rent seeking (like corruption) and policy failures (e.g. inflation) and may ,moreover, dispirit education, outside trade and genuine saving ,thereby retarding economic growth. Researcher concludes this paper with a brief discussion of the policy inference in the study.

3. Hypotheses

This research based on the following Hypothesis that clearly defines the research criterion.

H1: There is significant impact of Major Crops over GDP.

H2 : Minor Crops have significant impact on economic growth.

H3 : Livestock's have significant impact on GDP.

H4 : There is the positive impact of Fisheries on GDP.

H5: Forestry has significant impact on economic Growth.

4. Research Method

For the purpose of estimating the research models for hypothesis testing first, Agricultural sub-sectors data have been acquired form Statistical Appendix, Economic Survey of Pakistan for the time period 1980-2010. Time series data have conducted from agriculture statistics. This particular research is co-relational in nature.

4.1. Hypotheses Testing

(rrr) 4.1.1. Descriptive Statistics

Descriptive analysis describes the attribute of data and provides sample reviews & measures. It is also helpful to describe the statistical form in an appropriate manner. Below the Table 4.1 represent the descriptive Statistics for Major Crops with GDP, this statistics include Minimum and maximum amount of a Variable, standard deviation and mean .The total no. of observation also explain the sample size of variables.

Sample size comprises of 31 observations from the period of 1980-2010we can observe the Mean of the GDP obtain 3241601.29 as Mean value, its maximum value show 5817406, minimum value having 1346376 and 1360500 value show its Standard deviation. Major crops having its 402135 maximum value and 159380 its minimum value, It also contain 276470 as an average value in PKR Million with having 75578.84 its standard deviation. Minor crops have its 138887 maximum value and 53578.46 its minimum value also contain 99715 as an average value in PKR Million with having 27650 standard deviation. Livestock's have its 670743 maximum value and 1346376 its minimum value also contain 324863 as an average value in PKR Million with having 184893 standard deviation. Fisheries have its 22041 maximum value and 8335.46 its minimum value also contain 14543 as an average value in PKR Million with having 3781 standard deviation. Similarly Forestry has its 27150 maximum value and 3282 its minimum value also contain 10406 as an average value in PKR Million with having 8176 standard deviation.

Descriptive Statistics					
Variable	N	Mean	Std	Minimum	Maximum
Gross Domestic Product	31	3241601.3	1360500	1346376	5817406
Major Crops	31	276470.83	75578.8	159380.8	402135
Minor Crops	31	99715.41	27650.5	53578.46	138887.46
Livestock's	31	324863	184893	110187	670743
Fisheries	31	14543.39	3781.41	8335.46	22041
Forestry	31	10406	8176	3282	27150

(sss) **4.1.2. Result Summary**

The below Result Summary table shows that that the Constant value is 1743155.6 that is the autonomous Part of this model, the Coefficient of Major crops is 5.483155 that shows the influence of major crops over the Growth pattern. Probability showing the significance impact of major crops over GDP having 86% of model fitness. The relationship between minor crops with GDP shows the Constant value is 1544393.3 that is the autonomous Part of this model , the Coefficient of Minor crops is 20.276 that shows the influence of minor crops over the Growth pattern. Probability showing the significance impact of minor crops over GDP having 78% of model fitness. Relationship with Livestock's with GDP refers the Constant value is 20182385 that are the autonomous Part of this model, the Coefficient of Livestock's is 4.0093 that show the influence of Livestock's over the Growth pattern. Probability showing the significance impact of Livestock's over GDP having 97% of model fitness. Similarly The relationship GDP with Fisheries shows that that the Constant value is 2327791 that are the autonomous Part of this model, the Coefficient of Fisheries is 151.95 that show the influence of Fisheries over the Growth pattern. Probability showing the significance impact of Fisheries over GDP having 75% of model fitness and at last the relationship with GDP and forestry shows that that the Constant value is 4067022 that are the autonomous Part of this model, the Coefficient of Fisheries is 5.3313that show the influence of Fisheries over the Growth pattern. Probability showing the insignificance impact of Fisheries over GDP having 12% of model fitness.

Result Summary						
Variables	Beta	t-Stat	prob	Adj R-SQ	F-Stat	Prob
Constant	1,743,155.60	0.54	0.5919	0.87	145.94	(<.0001)
MC	5.486*	3.66	0.0003			
Constant	1,544,393.30	0.4	0.6886	0.79	70.83	(<.0001)
MIC	20.276*	2.67	0.0076			
Constant	2,018,238.50	0.63	0.5299	0.97	1,129.80	(<.0001)
L	4.009*	3.2	0.0014			
Constant	2,327,791.40	8.67	<.0001	0.76	95.77	(<.0001)
FSH	151.950*	10.68	<.0001			
Constant	4,067,022.50	2.12	0.0342	0.12	20.84	(<.0001)
FR	5.331	0.25	0.8019			

6. Summary and Concluding Remarks

This research concludes the both hypothesis stated "Agriculture contributes the significant impact over the economic growth of Pakistan is accepted" showing there is the positive relationship between the

GDP (DV) and the sub-sectors of Agriculture (IV). According to the theory that suggest agriculture have a significance role over the economy it is true and significance importance. Another hypothesis comprised the contribution of each sub-sector towards the aggregate agriculture share. Results suggests the major crops have around 31% share over aggregate agriculture share, Minor crops have less but not least 11% share, livestock's have huge portion of share around 55% share, similarly fisheries have 2% and remaining proportion comprises forestry that shows positive relation, which means forestry is not contributing as much as the other subsectors but it has still importance in the agriculture sector.

6.1. Recommendation

In the recent natural disasters (rain and flood) that occurred in the several cities in Southern region, that demolished the absolute crop yield which around occupied the 0.5 million acres of Land in different places of Sind. These disastrous resulting the huge damage in Onion, potatoes and Chilies Crops and the other food and fiber crops , This disastrous moments also resulted loss of Millions of death in cows, buffalos and goats etc livestock's sectors. This huge loss occupied the heavy loss in agriculture sector, but the thing is that how to cope up this situation , below have given some suggestions through the government can overcome the burden of recent challenge.

- Re-map the strategic Plan to promote the agriculture sector.
- Provide the interest free bearing loans to the farmers to re-build the cultivated areas.
- Make awareness programs to cope-up the challenges and un-certainties.
- Make Strategic collation between Private landowners and government agriculture sector concerns to reconcile the agri-sector for the benefit of the nation welfare.
- Governments have to take the serious concentration towards the development of agriculture sector. This sector comprising the back bone of the economy.
- Pakistan has enormous potential to significantly increase its agricultural produce but the grown is being hindered by insufficient and outdated farming and production techniques, ineffective use of land and water resources , poor hygiene and low food standards.
- However a lot can be achieved by improving productivity ,ensuring safety and efficiency in food processing ,efficient livestock's management and employing new post harvest technologies
- Developing skills and capabilities of human resources and capacity building of the academia to undertake research and development in the agriculture sector is essential for the long term growth of the sector.
- There are already few sophisticated agri-businesses involved in the dairy and food-processing sector, which serve as an example of the enormous potential in this sector.
- Government have to take a proper utilization of food commodities (Finished/Sami finished) to reduce the wastages and maintaining its food qualities for long time period.
- Forestry side is not performing better due to the lackness of Interest from government side, so if government takes a keen interest to develop the forestry sector then it will provide the sufficient value that will result the increase in growth pattern.

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