

## GROWTH PERFORMANCE OF MEAT PRODUCTION AND EXPORT IN PAKISTAN: AN ANALYSIS

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### ABSTRACT

The study attempts to evaluate the growth performance of meat production from 1994-95 to 2016-17 as well as export during (1998-2017) in Pakistan. Annual meat production and export data were collected from secondary sources like; Economic Survey of Pakistan, Journals/year books published by Pakistan Bureau of Statistics as well as from research articles. Findings of the present research revealed considerable variations in meat type to type and year to year. The beef production exhibited negative growth in 1995-96. Mutton also shown negative growth rate in 1995-96 and 2005-06. Similarly, the result of poultry growth performance analysis indicated negative growth in 1997-98 while huge growth in sector is recorded during the following period up to year 2016-17. On the other hand, Pakistan's meat exports exhibited negative growth during 2000-02 and 2016-17. Although, over the time the growth rates of meat production and export has been good. Based on findings of the present work, it is strongly recommended for the cautious policy interventions, particularly regarding training of all sectors involved in meat production and export to ensure the handsome share in global Halal meat market.

**Key words:** Beef, Mutton, Poultry, Meat production, Meat export, Growth performance.

### INTRODUCTION

Livestock being important sub-sector of agriculture plays a pivotal role in the lives of farmers in developing countries like Pakistan. This sector not only ensures food security, increasing per capita income of small, landless and subsistence level of farmers, but also fueling the GDP of the country. Pakistan has a huge livestock population owing to its unique proximity. This is evident from the fact that the country has 4<sup>th</sup> largest animal herd in the world; 180 million animals growing at the rate of 4.2 percent annually. Since, the population of buffalo recorded a growth of 392 percent, cattle 219 percent, sheep 299 percent, and goat 650 percent from 1955-2000 (Afzal and Naqvi, 2004). Similarly, the cattle population has increased from 20.4 million to 44.4 million, Buffalo from 20.3 to 37.7 million, goat from 41.2 to 72.2 million and sheep 23.5 to 30.1 million from 1996 to 2017 (Anonymous, -PBS (1996-2006)/ Pakistan Economic Survey, 2016-17).

In Pakistan dairy, meat and poultry are considerable economic activities in livestock sub-sector. The demand for meat has drastically increased during last decade due to rapid urbanization, economic growth, industrialization, changing lifestyle and knowledge about balanced diet; this trend is likely to continue in upcoming years (OECD-FAO, 2017). Pakistani meat has unique taste due to its organic nature and has been exported mainly to gulf markets in large quantity. Country is also

generating revenue through the exports of live animals. The export of live animals and other livestock products earned a value of US\$ 303.468 million during 2015-16. Additionally, according to some reports about 7.8 million animals valuing Rs. 200 billion were traded on Eid-ul-Izha within a squeezed time span of just two weeks. Similarly, total meat (beef, mutton and poultry) production has increased from 3,873 to 4,061 million tons from 2015-16 to 2016-17 (Anonymous-Pakistan Economic Survey, 2016-17). Whereas, poultry sector alone contributes 31 percent in total meat production as well as about 40 percent of total domestic meat consumption. Moreover, Pakistan has ranked the 11th leading poultry producer in the world with the production of 1.02 billion broilers during 2015-16 (Anonymous, 2016).

Despite having large livestock population, the meat industry of Pakistan is unable to make its mark in global Halal meat market. Since, it is a well-established fact that the prevailing traditional meat production systems are incompetent. The meat production is primarily perceived as by-product of dairy industry. In addition, the demand supply gap for mutton is increasing due to low productivity per animal. Early age slaughtering of productive animals like young female sheep/goat has been done to fulfill the ever-increasing meat demand. The growing meat export has also reduced its availability for domestic consumers, this situation has directed to meat price increase during last decade and this inclination is constantly in progress (Ayyub *et al.*, 2011).

Indeed, Halal meat should be an important industry in country. However, Pakistan’s share in global meat trade is negligible 2.9% despite having huge prospects for export of Halal meat products. According to Halal Research Council (HRC) country only exports 3 percent of its total meat production. However, Pakistan Halal authority (PHA) has been recently established with the aim of development of export-based meat industry in country. On the other hand, the global Halal food trade is approximately reached to \$3 trillion, with the meat segment having a share of \$600 billion. According to Food and Agriculture Organization (FAO), From 2001 to 2009 the global beef meat trade increased with an average rate of 10.4 percent, and the demand for Halal beef imports in the Middle East and Southeast Asia single-handedly expanded by 18.2 percent and reached at \$1.5 billion in a year (FAO, 2017). Likewise, Poultry meat is the basic engine for total meat production because of its economic prospects like low cost of production and high profitability as compare to other meat types. However, poultry meat consumption is also predicted to reach at 18 Mt in the upcoming decade i.e. 2026 since it has become the meat of choice for both producer and consumer in developing countries. Similarly, the current growth rate of global meat market is 2.5 percent, mainly due to continuous increase in demand from China with the additional consumption of (29%), which shall be captured mainly by the United States and Brazil. Additionally, the projections regarding global meat production estimates 13% growth in 2026 based on (2014-16) showing an upturn of about 20% against the last decade. Whilst, the share of developing countries in global meat market is also estimated to be higher due to better use of related resources and value-added production. (OECD-FAO, 2017). Based on above situations, it is well established fact that, Pakistan can be a key player in global Halal meat market with the relevant huge animal population through developing basic infrastructure and related quality standards.

Previous available literature has mostly focused on assessment of livestock sub-sector as a whole (Iqbal and Ahmad, 1999; Chaudhry *et al.*, 1999; Nadeem *et al.*, 2012; Hasnain and Usmani, 2006; Rehman *et al.*, 2017). Similarly, there is little literature available on meat industry potential and trade prospectus in Pakistan (Qureshi *et al.* 2012; Sohaib and Jamil, 2017). However, these studies ignored the in-depth assessment of trends and growth in meat production and export in the Pakistan. Thus, the present study is carried out to evaluate the status and growth performance of Pakistan’s meat production and export fluctuations. Furthermore, the current study will be helpful to understand the prospects of Pakistan’s meat production and export. Finally, the importance of present study may lead national economy towards growth, development and improvement of the country’s balance of payment. Moreover, the remaining

paper is organized in three sections. Section 2 briefly explains the data description and structure of the model used for evaluating the growth performance. Results are described in Section 3 followed by Section 4 in which conclusion and policy alternatives are presented.

## MATERIALS AND METHODS

For this study annual meat production data from 1994-95 to 2016-17 have been collected from secondary sources<sup>1</sup>; like; Pakistan Economic surveys. While, meat export data from 1998-99 to 2016-17 have been derived from Journal/year books published by Pakistan bureau of Statistics, United Nation’s website and reports/news articles. For authenticity and reliability, the data were systematically revised to assess the growth performance of Beef, Mutton, Poultry and total meat production as well as export in Pakistan.

**Model specification:** The estimation of growth performance is mostly done by employing two common methods of growth rate; i.e. Linear Growth Rate and Compound Growth Rate (CGR). In view of available literature, several researches have been conducted through using this model to analyse the growth performance of the crops (Bastine and Palanisami, 1994; Bhatnagar and Nandal, 1994; Munidnamani *et al.*, 1995; Gupta and Saraswat, 1997). Thus, in order to estimate the annual and compound growth rates of Pakistan’s meat production and export per time period, the following formulas (eq. 1 & 2) were applied:

a. Annual Growth Rate:

$$g_x = \left( \frac{X_T - X_0}{X_0} \right) \dots\dots\dots\text{eq. (1)}$$

Where:  $g_x$  =growth rate (Annual),  
 $X_T$  = Current value of variable,  $X_0$  = Previous value of the variable.

b. Compound Annual Growth Rate (CAGR):

$$G_x = \left( \frac{X_T}{X_0} \right)^{\frac{1}{T}} - 1 \dots\dots\dots\text{eq. (2)}$$

Where:  
 $G_x$  = Average annual growth rate,  
 $X_0$ = Initial value of variable,  $X_T$  = Final value of variable,  
 $0$  = Base year,  $T$  = Final year.

<sup>1</sup>In fact, it was tried to access monthly or quarterly data, but we could not find the micro data, thus the annual data have been exploited in order to achieve the objectives of the study.

## RESULTS AND DISCUSSION

In this section the findings of the study are presented. Hence, the growth rates of beef, mutton, poultry, total meat production as well as the export are given below.

**Table 1. Annual production growth rates of meat (Beef, Mutton, and Poultry).**

Year	Growth rates			Total meat
	Beef	Mutton	Poultry	
1994-95	-	-	-	-
1995-96	-0.035	-0.329	0.153	-0.129
1996-97	0.023	0.026	0.090	0.036
1997-98	0.023	0.025	-0.266	-0.035
1998-99	0.024	0.026	0.092	0.035
1999-00	0.024	0.025	0.039	0.027
2000-01	0.024	0.026	0.053	0.030
2001-02	0.024	0.026	0.047	0.028
2002-03	0.025	0.028	0.042	0.029
2003-04	0.025	0.026	0.022	0.026
2004-05	0.026	0.026	0.016	0.038
2005-06	0.053	-0.250	0.333	0.107
2006-07	0.276	0.022	0.082	0.041
2007-08	0.034	0.021	0.085	0.042
2008-09	0.034	0.021	0.085	0.043
2009-10	0.034	0.022	0.084	0.043
2010-11	0.034	0.022	0.085	0.044
2011-12	0.034	0.021	0.087	0.044
2012-13	0.034	0.022	0.088	0.045
2013-14	0.032	0.022	0.088	0.045
2014-15	0.034	0.021	0.088	0.047
2015-16	0.034	0.022	0.089	0.048
2016-17	0.034	0.022	0.091	0.049
<i>Compound Growth Rate</i>	0.036	-0.010	0.064	0.029

\*Author's calculations, \*Data collected from Pakistan Economic survey

Pakistan's beef production performance analysis from 1994-95 to 2016-17 reveals negative annual growth rate of -0.035 in 1995-96 due to FMDV (Foot and Mouth Virus) in large ruminants. The disease was detected in country during 1954, 1963 and 1995 in the country (Jamal *et al.*, 2010). Later from 1996-97 to 2004-05 the annual growth rates remained low i.e. 0.023 to 0.026; due to reoccurrence of FMDV during 2002 to 2007, early age slaughtering of animals in view of poverty conditions as well as prevalence of most severe droughts at the national level occurred in 1998-2000 continued up to 2002,

resulted shortage of fodder and feed for livestock (Ahmad *et al.*, 2004). The hardest hit regions were Balochistan, Sindh and Punjab provinces in Pakistan. The drought started in 1998 resulted negative agricultural growth of 2.6 percent during 2000-2001. According to State Bank of Pakistan's report the drought resulted the aggregate loss of US\$ 927 million in the third quarter of 2001-02 (Anonymous, 2002). Contrary to that, beef shows improved annual growth rates of 0.053 and 0.276 in 2005-06 and 2006-07 respectively because of increase in total animal headcounts (Zia, 2009). Subsequently, from 2007-08 to 2016-17 the annual growth rates remained 0.032 to 0.034. Similarly, mutton production reveals negative annual growth rate of -0.329 in 1995-96 and -0.250 in 2005-06 mainly due to shortage of fodder and grazing for animals as meat production is mainly depends on supply of fodder and grazing (Chaudhry *et al.*, 1999). Moreover, the fodder accessibility/adult animal has dropped from 1.31 ton in 1986 to 0.80 ton in 2006 (Shah, 2009). Later, the mutton sector shows retrieval and growth rates remained 0.021 to 0.022 up to 2016-17. Additionally, increased demand for mutton in local and international market, the prices are continuously increasing in domestic market (Ayyub *et al.*, 2011).

Similarly, Pakistan's poultry growth performance analysis shows negative growth rate of -0.266 per annum in 1997-98 owing to restrictions on meals in marriages which declined the poultry products consumption by at least 40 percent. It has also witnessed from available literature that some four million birds died in Karachi due to incidence of poultry avian influenza virus in 1995 (Abbas, 2010). Later, in 2005-06 result exhibits a huge annual growth rate of 0.333. Then, following period up to year 2016-17 the sector grew at a quicker pace among all of meat types. The achievement of this extraordinary expansion was made possible due to adoption of the new techniques of environmentally controlled houses, resulted better production (Ayuub, *et al.*, 2011). Additionally, It is witnessed from studied literature that governmental measures in terms of provision of liberal financing and credit, income tax freedom, duty free import of high yielding parent flocks, machinery and poultry farm equipment, such as hatcheries, cages, brooders, feed ingredients such as soybean meal, sunflower and maize used in poultry feeds as well as increasing far-reaching demand and price hikes in international market increase its production to manifolds (Hussain *et al.*, 2015). Moreover, Poultry meat is preferred because it is inexpensive, easily available and variety products. Besides, it is also serves as a balancing force to keep check on the prices of mutton and beef. The gross investment in Poultry sector has crossed more than Rs. 700.00 billion (Anonymous, 2017).

**Table 2. Pakistan's Yearly Meat Export Growth Rates from (1998-99 to 2015-16).**

Year	Meat export (Million US\$)	Growth Rate
1998-99	1.8	-
1999-00	7	2.89
2000-01	5.2	-0.26
2001-02	3.59	-0.31
2002-03	4.7	0.31
2003-04	14	1.98
2004-05	15.4	0.10
2005-06	29	0.88
2006-07	33.7	1.19
2007-08	41.2	0.22
2008-09	59.8	0.45
2009-10	81.6	0.36
2010-11	123	0.51
2011-12	141.6	0.15
2012-13	177.6	0.25
2013-14	192.5	0.08
2014-15	230	0.19
2015-16	269.22	0.17
2016-17	212.4	-0.21
<i>Compound meat export growth rate</i>		<b>0.22</b>

\*Author's calculations, \*Data obtained from Pakistan Bureau of Statistics

Pakistan's meat export growth performance analysis shows fluctuations since the country started meat exports for the very first time to the gulf countries in 1998. Being a Muslim country Pakistani meat is predominantly perceived as halal and has been exported to world because of its organic nature and unique taste. Results of present research demonstrate an annual growth rate of 2.89 during 1998-99. Subsequently, meat exports declined with a negative growth rate of -0.257 in 2000-01, -0.310 in 2001-02 and -0.21 in 2016-17. Major factors responsible for low meat export were ban imposed by Saudi Arabia and UAE on reports of mad cow and foot and mouth (FMDV) disease in animals (Jamal *et al.*, 2010). Additionally, shortage of fodder and grazing for animals, as aftereffects of three consecutive drought years prevailed in country during (1998-2002), early age slaughtering of animals considering poverty conditions can also be attributed to low meat production during stated period.

Later, again during 2002-03 and 2003-04 meat export of Pakistan exhibits restoration with an annual growth rate of 0.309 and 1.97 respectively, as Saudi Arabia lifted ban on meat imports from Pakistan. In 2004, misery again started with the occurrence of Avian Influenza virus in poultry which knockout the South East Asia and Pakistan poultry industry hurt harshly only due to rumors (Naeem and Siddique, 2006). After that, meat export revealed growth and value stood at more than \$14

million during the 2003-04 against the \$9 million during 2002-03, indicated an increase of 54 percent in a year. This improvement could be recognized as enhanced meat production in country (Zia, 2009). Since, the livestock sub-sector's contribution to agriculture rose from 25.3 percent to 49.6 percent from 1996 to 2006 (Anonymous, 2006).

Later, in 2007-08 total meat export shown downfall with the annual growth rate of 0.22, due to restrictions on meat export from Pakistan for the second time on low hygiene and quality standards. Moreover, small ruminants (sheep and goats) which were traditionally raised for meat production, pattern shifted from meat production to more profitable milk sell business because of increased demand and market access for it, this might had put the pressure on total meat production and ultimately its exports in country. Additionally, Pakistan's meat export reached to \$ 269 million in Year 2015-16 from \$ 14 million in Year 2003 shown an overall growth of 27% (KCCI, 2016). Main reason behind that expansion was increase in total animal headcounts in country. Likewise, share of poultry in total meat export from country has been outstanding. Since, it is believed that poultry meat appears more in the people's diet throughout the world as a source of protein than the meat from any other source because it is cheap, contains low fats, accessibility and diversity of processed meat food (Sohaib and Jamil, 2017). Despite such amazing expansion, the meat industry in Pakistan is still underperforming and the country is not taking full advantage of the fastest growing global Halal meat market. Besides, Pakistan faces a significant smuggling issue, live animals being smuggled across the border into meat-starved Iran and Afghanistan. This creates substantial price hikes and supply issues for meat exporters. Another constraint for majority of exporters is the fact that they often deal with informal sector buyers in the Arabian markets, who do not use proper payment systems and buy on credit from the exporters.

**Summary and policy options:** From the present research it has been established that major factors behind low meat production were droughts prevailed during 1998-2002, incidence of diseases like foot and mouth (FMD) in animals, avian influenza and bird flu viruses in poultry, decline in fodder availability per animal, early age slaughtering of animals as well as overall poor performance of agrarian economy in Pakistan. On the other hand, meat export dropped during 2000-02 due to ban on meat exports imposed two times solely because of low hygiene and quality standards. The analysis also indicates that, gradual increase in meat production and export is the result of increase in total livestock population not production per animal in country.

Based on the comprehensive growth performance analysis of meat production and export, the

following policy guidelines are suggested for the development of meat production and export as well as livestock sector in Pakistan;

- The results show increasing trends in meat production and export with their increasing magnitude; thus, it is recommended that Halal meat processing zones should be established in livestock specialized areas in the country.
- The reviewed literature has suggested that with the relative quality standards, Pakistan can be a key player in global Halal meat market; thus, in order to increase the meat export volume, the government has to ensure the animal and poultry vaccination as well as the establishment of modern butcheries/slaughter houses across the country.
- Taking the advantage of China Pakistan economic corridor (CPEC), livestock business centers should be established along with the route. By doing so, the country can not only enter into huge Chinese market but also fulfil the ever-increasing domestic meat demand.

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