

Analysis of Supply and Demand of Broiler Chicken Meat in Bali Province

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Abstract— This study aims to analyze factors such as broiler chicken population, DOC prices, feed prices and drug prices on boiler chicken meat supply, and population, per capita income, boiler chicken meat prices, tourist visits and religious holidays to demand boiler chicken meat in Bali Province. The research method used is multiple linear regression analysis with the help of the SPSS program and trend analysis. Used 2 dependent variables and 9 independent variables. The data used in this study are primary data obtained from interviews with 100 respondents, while secondary data is obtained from annual data from 2009 to 2019. The results of the study concluded that the broiler chicken population, DOC prices, feed prices and drug prices had no effect on the supply of boiler chicken meat at the 95% confidence level and R² of 0.641. This is because most breeders have partnerships with companies. Meanwhile, partially the demand for boiler chicken meat is determined by the population with a coefficient of 0.045 at 95% confidence. This shows that the increase in population is directly proportional to the consumption of broiler chicken meat. While other variables do not affect the demand for broiler chicken in Bali Province.

Keywords— Supply, Demand, Broiler Chicken, Bali Province.

I. INTRODUCTION

Bali Province is an Indonesian region with numerous tourist visitors, driving the economic turnaround. The Bali Province's per capita income continues to rise, reaching 32 million per year in 2016, increasing to 34 million per year in 2017 and continuing to increase to 35 million per year in 2018. (BPS, 2019). Besides the rise in per capita income, the demand for animal protein in population is also growing.

One of the meat items as an animal protein that concerns the people of the Bali Province is broiler chicken. The supply and demand for broiler chicken in the Bali Province remains unstable. The population of broiler chickens in Bali Province reached 7,940,422 birds in 2018. This number is also comparatively low compared to the West Java Province, which hit 660,766,857 heads. Although the population of broiler chickens in the Bali Province is still low, the amount of public consumption is still very high in 2018, reaching 8.23 kg/kpt/year. (Kementan, 2019).

The demand for broiler chickens in the Bali Province continues to increase, along with an increase in population growth and an increase in migration and tourist visits. Broiler chicken is commonly used to fulfill the requirements of hotels, pubs, shops, the needs of Religious Holidays, the needs of the processed sector and the need for public consumption. According to Hadini (2011), the demand for broiler chicken is heavily affected by population, income, chicken broiler prices, beef prices, domestic chicken meat prices, egg prices, cooking oil prices and rice prices.

The high level of consumption of broiler chicken meat in Bali Province will be a special spirit for breeders. However, there are many problems faced by broiler breeders in their business, such as low production quality, unstable price of rice and fluctuations in the selling price of chickens in the market (Suparta, 2005). Bali Province has eight districts and one city with different production levels. Data from the Central Statistics Agency of Bali Province (2019) states, in 2018, the production of broiler chicken in Kab. Jembrana of 887.48 kg / year, Tabanan Regency 3,266.96 kg / year, Gianyar Regency 4,137.76 kg / year, Klungkung Regency 584.65 kg / year, Bangli Regency 1.682.72 kg / year, Karangasem Regency 921.46 kg / year, Badung Regency 774.36 kg / year, and Buleleng Regency 427.82 kg / year.

The demand for good quality foodstuffs is one supporter of achieving superior human resources. The increasing awareness of the people of Bali Province about the importance of the need for animal protein, especially broiler chicken, has shown a change for the better. However, the price of broiler chicken in Bali Province has not been stable. Differences in the growth of production and consumption of broiler chicken meat in Bali Province may cause an insufficient demand for broiler chicken meat in Bali Province in the future. Therefore, forecasting the production and consumption of broiler chickens and the variables that affect their supply and demand is important for research so that food security development can be planned strategically in the future.

The aim of this study is to determine the factors that affect the supply and demand conditions for broiler chicken meat in the Bali Province, to determine the elasticity of the observed factors in the supply and demand for broiler chicken meat, and to determine the supply, demand and price stability of broiler chicken in the Province. Bali for the next 10 years. The findings of the study are expected to illustrate the supply and demand for broiler chicken meat in the Bali Province.

II. RESEARCH METHODOLOGY

This research is descriptive quantitative research with explanatory research design and using the survey method. The research, which began in August to September 2020, was conducted in 4 districts / cities in Bali Province, particularly Tabanan Regency, Gianyar Regency, Badung Regency and Denpasar City. Broiler chicken breeders and RPA owners in the 4 districts became the study population. Then the sample was taken using the quota random sampling method and got 100 respondents with the sample group offering on boiler chicken breeders 40 respondents, sample requests for hotel consumption 20 respondents, restaurant consumption 20 respondents and personal consumption 20 respondents.

Primary data of the study were obtained through interview, observation and documentation methods. Meanwhile, secondary data were collected from various publication sources published by the Central Statistics Agency, the Ministry of Agriculture, the World Bank, and various other sources. The research instrument used was a questionnaire whose validity and reliability were tested and then measured using an interval scale that could produce data that had a range of values and meaning (Ferdinand, 2011). Supply and demand for broiler chicken meat is the dependent variable, while the independent variables of this study are DOC price, broiler chicken population, feed price, drug price, population increase, Bali Province per capita income, broiler chicken meat price, tourist visits and religious holidays..

The data collected will be tested for validity and reliability, then analyzed using quantitative descriptive analysis methods. And for the influence factor of the dependent variable (Y) and the independent variable (X) analyzed using SPSS with multiple linear regression analysis method, while for hypothesis testing is done by using the coefficient of determination (R^2), F test (simultaneous significant test) and T test (test individually significant).

III. RESULT AND DISCUSSION

Respondent Characteristics

The study shows that most respondents were >40-50 years of age, 19 or 47.5%. This shows that all the respondents are of a productive age. Fadilah (2006) claims that, in the adoption's context of agricultural technology innovation, a general focus at the productive age may be a resource opportunity that will promote the adoption of agricultural technology. According to Alamsyah's (2005) statement, age is linked to whether or not breeder implement technology quickly. This is consistent with Burhanudin (2011) who claimed that the need to fulfill the nutritional needs of the family is greater at 30-49 years.

From the educational background of the respondents, it was found that the average farmer had attended SMA / SMK education 17 people or 42.5%. This condition shows that the education level of respondents is sufficient to carry out animal husbandry activities either independently or in partnership. According to Sarwono (2001), a good educational background will make it easier to receive new information on good breeding techniques, besides giving positive responses to any progress in the farming business, it is also more mature to solve the problems it faces.

Characteristics of respondents seen from their primary job, 77.5% of respondents were broiler breeders. For restaurant respondents, all work as traders. Meanwhile, for private consumer respondents, 85% are housewives. From this situation, housewives are aware of the importance of the need

for animal protein, so they try to fulfill the needs of animal protein by consuming broiler chicken meat.

From the background of experience, it was found that 16 people or 40% had experience in raising broilers for over 8 years. The longer the experience of the breeder in raising broiler chickens, the better the skills and the easier it will be to receive new information and innovations. Alamsyah (2005) states that breeders who are more experienced will absorb technological innovations more quickly than breeder who are not or have less experience. The experience in working for restaurant owner respondents is that 16 people or 40% have been in business for 6-8 years. With a long-standing business, the restaurant owner has guaranteed a market, namely customers from the people of Bali Province and foreign tourists.

Factors Affecting Broiler Chicken Meat Supply in Bali Province

The population of broilers is one factor that can affect the availability of broiler chicken meat in Bali Province. The population of broiler chickens in Bali Province in the last 11 years (2009-2019) has fluctuated and increases. A very significant increase in the broiler population occurred in 2013 and 2018 with a growth percentage of 30.74%.

In the DOC price variable, 25 people or 62.5% of the respondents did not agree that the DOC price could affect the supply of Broiler chicken meat in Bali Province. Hapsah (1999) states that one of the driving factors for broiler breeders to make partnerships is the creation of new jobs, the existence of partnerships between companies or entrepreneurs who intend to partner to provide capital with several people as breeders, this can directly expand the scale of the farmer's business.

For the variable feed price, 26 people or 65% of breeders did not agree that the price of feed could affect the supply of broiler chicken meat in Bali Province. This is because most breeders have a partnership system with large companies, so that the price of feed has been determined by the core company and payments are made at the beginning or end of the harvest period. In the variable price of drugs, 19 respondents disagreed if the price of drugs affected the number of livestock raised because most breeders had over 8 years of experience and could be more careful in preventing, overcoming disease, and determining drug dosages during the maintenance period.

From the results of the analysis of factors affecting the supply of broiler chicken meat in Bali Province, it was found that the population of broilers, DOC prices, feed prices, and drug prices influenced the supply of broiler chicken meat in Bali Province.

TABLE 1. Results of Analysis of Factors Affecting Broiler Chicken Meat Supply in Bali Province

Model	Unstandardized Coefficients		St. Coeff	t	Sig.	Correlations		
	B	Std. Error				Beta	Zeroorder	Partial
(Constant)	61348.555	63029.842		.973	.368	61348.555		
Population of Chicken broiler	.002	.004	.192	.465	.658	.112	.186	.146
DOC price	-7154.613	9694.886	-.549	-.738	.488	-.522	-.288	-.231
Feed price	-2431.367	10944.264	-.183	-.222	.832	-.459	-.090	-.070
Drug price	4384.534	5751.426	.330	.762	.475	.059	.297	.239

The findings of the coefficient of determination (R^2) obtained the coefficient of determination (R Square) of 0.411, so the independent variable of the chicken broiler population (X1), the DOC price (X2), the feed price (X3) and the drug price (X4) can justify the supply. (Y1) of 41.10% and the remaining 58.90% was clarified by other variables not detailed in this report.

The effects of the F test (simultaneous) used to determine the influence of the independent variable (X1-X4) on the dependent variable (Y1) are shown in Table 2.

TABLE 2. F-Test Results of Broiler Chicken Meat Supply in Bali Province

Model	Sum of Square	df	Mean Square	F	Sig
Regression	.340	5	.068	1.045	.457
Residual	.551	5	.110		
Total	.891	10			

Factors Affecting Demand for Broiler Chicken in Bali Province

Based on data from the Bali Provincial Statistics Agency (2020), the population of Bali Province increases every year. This increase in population affects the level of food consumption. According to Suartha (2016), demographic determinants contribute to the population growth rate in Bali Province. With the population that continues to increase and most of the people of Bali Province are Hindus and often carry out religious ceremonies, it also impacts the amount of consumption of broiler chicken in Bali Province.

TABLE 3. Results of Analysis of Factors Affecting Demand for Broiler Chicken in Bali Province

Model	Unstandardized Coefficients		St. Coeff	t	Sig.	Correlations		
	B	Std. Error				Beta	Zeroorder	Partial
(Constant) 555	-12.049	6.683		-1.803	.131			
Total population	3.123	.000	.396	6.053	.045	.958	.676	.124
Income per capita	7.071	.000	.365	1.142	.305	.975	.455	.069
Price of chicken	.028	.000	.256	.995	.366	.948	.406	.060
Tourist visits	.022	.111	.014	.196	.853	.159	.087	.012
Religious holidays 534	.073	.164	.031	.448	.673	-.058	-.196	-.027

The results of the analysis of the coefficient of determination (R^2) obtained the coefficient of determination (R Square) of 0.991, so the independent variable is population (X5), per capita income (X6), price of boiler chicken (X7), tourist visits (X8) and religious holidays (X9) can explain the demand (Y2) of 99.10% and the remaining 0.9% is explained by other variables not determined in this study.

And the results of the F test (simultaneous) which are used to determine the effect of the independent variable (X5-X9) together on the dependent variable (Y2) are presented in Table 2.

TABLE 4. F-Test Results of Broiler Chicken Meat Demand in Bali Province

Model	Sum of Square	df	Mean Square	F	Sig
Regression	59.384	5	11.877	53.876	.000
Residual	1.102	5	.220		
Total	60.486	10			

Besides population, per capita income also affects the demand for broiler chicken meat because with the increase in per capita income, people will buy food at affordable prices but can meet nutritional needs, such as broiler chicken. The income per capita of Bali Province increases every year. In 2011 to 2013 the increase was very low, only 0.057% when compared to the growth from 2009 to 2010 which had reached 0.057%. The next factor is the price of broiler chicken. The price of broiler chicken in Bali Province has fluctuated and increases. This is because of the acceptance of broiler chicken and the awareness of the people of Bali Province about fulfill nutritional needs. With the condition of the need to fulfill nutrition, people will buy broiler chicken even though the price of chicken meat continues to increase.

Tourist visit is one factor showed to affect the level of consumption of broiler chicken in Bali Province. 18 people or 45% of restaurant / restaurant respondents agreed that a Tourist visit could affect the level of consumption of broiler chicken in their business. As with tourist visits, most respondents also agree (85%) if the amount of broiler chicken consumed increases during religious holidays such as Idul Fitri, Galungan, Kuningan, Ngaben and Imlek.

Analysis of factors affecting the demand for broiler chicken in Bali Province, it was found that an increase in population, per capita income, price of broiler chicken, tourist visits, and religious holidays influenced demand for broiler chicken in Bali Province.

Discussion

Elasticity of Factors Affecting Broiler Chicken Meat Supply in Bali Province

1. Broiler Chicken Population in Bali Province

The result shows that the value in the equation is (+0.02) with a significant value of 0.658 so it means that every 1% increase in the broiler population will increase the supply of broiler chicken meat by 0.02%. The results also showed that the T-count (0.465) was smaller than the T-table (1.94) with an error rate of 0.05, so it means that the broiler chicken population in Bali Province has no significant effect on broiler chicken meat supply in the Bali Province.

The insignificant influence of broiler chicken population factors is because of the aspect of the population composition of Bali Province and the potential for pigs. The results of the 2010 population census, 3,247,283 people (83.46%) embraced Hinduism, 529,244 people (13.37%) were Muslim, 64,454 people (1.66%) were Protestant Christians, 31,397 people

(0.81%) Catholic Christians, 21,156 people (0.54%) Buddhism, 427 people (0.01%) Confucianism and the remaining 282 people (0.01%) adhere to other faiths (BPS, 2019). When viewed from the population composition above, 86.63% are consumers who have the potential to consume pork, because based on their beliefs, they may consume pork. Based on data from the BPS of Bali Province (2019), the pig population in 2018 reached 762,409 heads, 526,159 beef cattle, and 55,769 goats. This condition is a sizeable share of the pork market in Bali Province (Budaarsa, 2014).

2. DOC price

Based on the analysis, the DOC price has a T-count value of (- 0.738) smaller than the T-table (1.94) at an error rate of 0.05 so that the DOC price has no significant effect on broiler chicken meat supply in Bali Province. The DOC price factor is inversely proportional to the supply of broiler chicken in Bali Province. The value of the DOC price equation can prove this (-7154.61) with a significant 0.488, so it means that every 1% increase in the price of DOC will reduce the supply of broiler chicken by 7,154.

In terms of supply theory, an increase in input prices (DOC prices) can lead to a decrease in the supply of broilers. An increase in input prices will cause production costs to increase, this increased production cost will cause a decrease in the level of production produced by breeder. Thus, their supply will also decrease. (Tomek & Robinson, 1972).

The results presented in Table 14, 62.5% of breeder run a partnership system with the company, so that the DOC price is determined by the core company. Breeder do not have bargaining power, and they are only recipients of the price set by the company. At certain times, the price of broiler carcasses in the market increases, especially during religious holidays such as Eid, Christmas, Easter, Chinese New Year, and also the month of Ramadan, because there is a lot of demand for meat by consumers. To meet consumer demand, many breeders have increased their production or even new breeders have emerged, which of course they need DOC and chicken feed in large quantities. This opportunity is used by companies producing these inputs to get bigger profits by increasing the selling price of DOCs (Hartono, 2008).

At the time of religious holidays, the sale price of broiler chicken meat will rise. This is a great opportunity for breeders to make a larger return. In order to decrease the population of broiler chickens that would be raised to reduce the cost of production and reduce the likelihood of crop failure as the central business increases the price of DOC. This is what triggers a rise in DOC prices that would limit the availability of broiler chicken.

3. Feed Price

The results show that the feed price has a T-value (-0.22) smaller than the T-table value (1.94) at an error rate of 0.05 and has a significant value of 0.832. We can interpret it that the price of feed has no significant effect on the supply of broiler chicken in Bali Province. This is indicated by the equation value of (-2431.36), so every 1% increase in feed prices will reduce the supply of broiler chicken by 2431 chickens.

The share of feed to the total cost of chicken meat production reaches 70% (Yusdja and Pasandaran, 1998). From the supply theory point of view, an increase in input prices (feed prices) causes a decrease in broiler supply. An increase in input prices will cause production costs to increase, this increased production cost will cause a decrease in the level of production produced by breeder, thus, their supply will also decrease. (Tomek & Robinson, 1972).

Most broiler breeders in Bali Province have a partnership system with companies that have mastered upstream to downstream production. So that the partnership system will benefit the core company because it can sell feed at an agreed price and the crops will be sold back to the core company. So that the increase in feed prices will cause breeders to reduce their population, which aims to reduce production costs and get a little profit at harvest. This is under the statement of Kariyasa and Sinaga (2007) which states that this phenomenon shows that the price of feed is determined unilaterally by the feed mill. The market structure of feed mills in selling feed is close to oligopoly, where the price level of feed is more determined based on agreement among large-scale feed mills. This phenomenon is reinforced by the condition of the broiler chicken farming industry in Indonesia, which is dominated by the PIR pattern, so that the determination of feed prices and other production inputs is predominantly determined by the feed mill.

4. Drug Price

T-count value of the drug price (0.762) was smaller than the T-table value (1.94) and a significant value of 0.475 at an error rate of 0.05 so it the drug price had no significant effect on broiler chickens supply in Bali Province. This is evidenced by the value of the drug price equation of 4384.53, where every 1% change in drug price will increase the supply of broiler chicken meat in Bali Province by 4384 tails.

An increase in the price of medicines will cause a decrease in supply and conversely a decrease in the price of medicines will increase the supply. The reverse direction between changes in broiler supply and changes in the price of these drugs is under the law of supply (Dahl and Hammond, 1977). These drugs are a very important input in broiler chicken farming. As it is known that broilers are very susceptible to various diseases and if a disease attacks a chicken, the chicken is likely to die. To minimize this risk, drug administration must be on time and dose.

In Tabanan Regency and Gianyar Regency, there is technical guidance that has been prepared by the core company to provide counseling on drug dosage to breeders. And farming experience is also one factor that can affect the skills of breeders in giving medicine to broilers. Based on the survey results, the average farming experience is over 8 years, so the farmer has good enough skills to prevent and handle diseases that commonly occur in broiler chickens. So that the increase in drug prices will not reduce the population of broiler chickens that are kept by breeders.

Elasticity of Factors Affecting Demand for Broiler Chicken in Bali Province

1. Total Population of Bali Province

From the analysis, the total population factor has a T-value (6.053) greater than the T-table value (5.05) with a significant (0.00) at an error rate of 0.05. This means that the population has a significant effect on the demand for broiler chicken meat in Bali Province. This is also evidenced by the elasticity value of the population of 3.123 so if the population increases by 1%, the demand for broiler chicken meat will increase by 3.123%. Because the higher the population will increase the demand for an item. This result is in line with the research of Hadini et al. (2011) in Kendari City, which states that the development of broiler chicken meat consumption increases along with the increase in population. This situation occurs because the higher the population, the higher the need for food to meet nutritional needs.

Confirmed by the findings of research conducted by Aryani and Jember (2019) which reported that the population's T-count value was 2,9332 with a T-table value of 1,753. Since the importance of T-count > T-table, H_0 is rejected, so the population partially has a positive and significant impact on the market for broiler chicken in the Bali Province.

2. Per Capita Income of Bali Province

Per capita income has a T-value (1.142) smaller than the T-table value (5.05) and a significant value of 0.305 at an error rate of 0.05. These results interpreted that the per capita income of Bali Province has no significant effect on the demand for broiler chicken in Bali Province. Per capita income is directly proportional to the demand for broiler chicken meat, the value of the per capita income coefficient of 7.071, so every 1% increase in income will increase the demand for broiler chicken meat by 7.071%.

The biggest effect of purchasing chicken meat is the income or income of the consumer itself. The greater the income, the more freely consumers can arrange and buy everything they need and the more someone wants to eat well. Changes in consumer income are not always accompanied by a change in attitude to buy more of the goods concerned. This depends on the type of item. In purchasing chicken meat, the increase in consumer income will increase the volume of purchasing chicken meat. According to Mohanty and Rejendran (2003), when income rises consumers allocate a larger proportion of their income to food compared to other needs.

Bali province has a very diverse community composition. Based on data from BPS (2019), in 2012 in Bali Province, 81.37% of the population was non-Muslim and 13.37% Muslim. This situation can affect the demand for broiler chicken meat because most Balinese are Hindus who have the potential to consume other protein sources such as pork, only 13.37% prohibit consuming pork. So that with the increase in per capita income in Bali Province and the diverse composition of the people in Bali Province, people consume not only broiler chicken meat but also consume other animal protein sources that have a large consumption potential such as pork.

3. Broiler Chicken Price

From the analysis, the T-count value of broiler chicken meat price (0.995) is smaller than the T-table value (5.05) with a significant value of 0.366 at an error rate of 0.05. Broiler chicken price in Bali Province has no significant impact on the demand for broiler chicken in Bali Province. The price of broiler chicken meat is directly proportional to the demand for broiler chicken, this is evidenced by the coefficient value of 0.028 which shows that a 1% increase in the price of broiler chicken meat will increase the demand for broiler chicken meat by 0.028%.

If the price increases, the demand for broiler chicken meat will also increase. This increase in demand could be because of the increasing need for food because of the increasing population in Bali Province. So, given the need for nutrition, the public will buy broiler chicken even though the price of chicken meat continues to increase. The composition of the people in Bali Province is diverse, almost throughout the year there are religious holidays both for non-Muslims and Muslims such as Galungan, Kuningan, Idul Fitri, Imlek, etc. which can also affect the demand for broiler chicken. The increase in prices ahead of religious holidays will not reduce consumer interest in consuming broiler chicken meat even though the price of broiler chicken is increasing.

4. Tourist Visits

Based on the analysis, tourist visits have a T-value (0.196) lower than the T-table (5.05) with a significant 0.853 at an error rate of 0.05. Tourist visits have no significant effect on demand for broiler chicken. Tourist visits are directly proportional to the demand for broiler chicken meat, this is also evidenced by the tourist visit coefficient value of 0.022 which shows that a 1% increase in tourist visits will increase broiler chicken meat consumption by 0.022%. Supported by the results of research which explained that 40% of restaurant owner / manager respondents agreed that tourist visits could affect the demand for broiler chicken in Bali Province.

The number of domestic tourists is greater than that of foreign tourists. In Indonesia, the existence of long holidays, collective leave and the New Year's Eve are always used for holidays and the most popular tourist destination for Indonesians is Bali Province. Where most tourists and residents of Indonesia are Muslim so that in belief, domestic tourists who visit Bali are Muslim, which requires them to consume foods that are legal for their religion. Therefore, processed broiler chicken is the most popular food for domestic tourists. Besides its affordable price, broiler chicken meat also contains nutrients that are good for the body and easy to get. Supported by the results of research by Hidayat (2013) which states that meat is widely consumed by the public because it has an excellent taste and high nutritional content. One of the most common sources of meat consumed by Indonesians is chicken. Chicken meat provides a very large contribution to fulfilling animal protein needs. About 62% of national meat consumption comes from chicken.

5. Religious Holidays

Religious holidays have a T-value (0.448) smaller than the T-table (5.05) with a significant value of 0.673 at an error rate

of 0.05. Religious holidays have no significant effect on demand for broiler chicken. Religious holidays are proportional to the demand for broiler chicken meat, this is evidenced by the coefficient value of 0.073 which shows that an increase in religious holidays of 1% will cause an increase in demand for chicken meat by 0.073%.

Broiler chicken demand on religious holidays is very high. The price increase does not affect consumer interest in consuming broiler chicken, the price of broiler chicken during holidays will increase approximately 1 week before holidays such as during the month of Ramadan, the demand for broiler chicken meat has increased. This is because the level of public consumption in the month of Ramadan is increasing because broiler chicken is commonly used as an iftar menu.

Broiler chicken meat is one of the main side dishes for Eid dishes and the one most in demand by most people, broiler chicken meat is always available at certain events, both small and large events. At Hindu religious ceremonies, not only use pork but some also use broiler chicken, this cause the high demand for broiler chicken during religious holidays, even though the price of broiler chicken is also increasing.

Projection of Supply, Demand, and Price Stability of Broiler Chicken in Bali Province in the Next 10 Years

Forecasting is the prediction of the values of a variable based on the known value of the variable or variables related to how to project past values (known values) to the future by using mathematical models or subjective predictions. There are few errors caused by limited human capabilities (Hapsah, 1999). To predict the supply and demand for broiler chicken meat in Bali Province, Trend analysis is used. Trend analysis is used to project the development of total supply and demand for broiler chicken over year, using data on production and consumption of broiler chicken in Bali Province from 2009 to 2019. The projection of supply and demand for broiler chicken in Bali Province in the next 10 years is depicted in graphs 1 and 2.

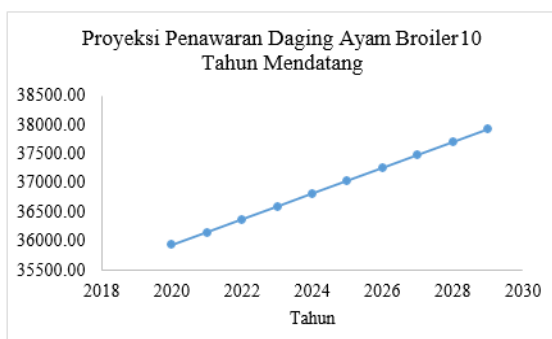


Fig. 1. Projection of Broiler Chicken Meat Supply in Bali Province in the Next 10 Years

Figure 1 and Figure 2 shows the supply and demand for broiler chicken will simultaneously increase. So the price of broiler chicken in the next 10 years will be stable, with different prices and levels of stability each year. It will happen when breeders and buyers want to make the maximum profit. When prices are high, breeders will increase the supply of broiler chicken and consumers will continue to buy broiler

chicken because it is driven by nutritional fulfillment factors and increased income per capita each year.



Fig. 2. Projection of Broiler Chicken Meat Demand in Bali Province in the Next 10 Years

IV. CONCLUSION

The population of chicken broilers, DOC prices, feed prices and drug prices have no significant effect on broiler meat supply because most broiler breeders have a partnership system with companies. Meanwhile, the population has a significant effect on the demand for broiler chicken. If the population increases, the demand for broiler chicken meat in Bali Province will also increase.

Broiler chicken population and drug prices have a positive elasticity to broiler chicken meat supply. If the population and drug prices increase, the supply of broiler chicken meat will also increase. Meanwhile, DOC price and feed price have negative elasticity towards broiler chicken meat supply. If DOC prices and feed prices increase, the broiler chicken meat supply will decrease. For demand, all variables have a positive elasticity value on the demand for broiler chicken meat in Bali Province. So that an increase in demand for broiler chicken will accompany the increase in per capita income, population, price of broiler chicken, tourist visits, and religious holidays. The supply, demand, and price of broiler chicken for the next 10 years are projected to continue to increase and be stable. The price stability of broiler chicken each year will be different according to the increase in per capita income of Bali Province.

We propose other factors for researchers who will perform research on factors impacting the supply and demand of broiler chicken meat in the Bali Province.

REFERENCES

- [1] Alamsyah, R. 2005. Pengolahan Pakan Ayam dan Ikan. Penebar Swadaya. Jakarta.
- [2] Aryani, G.A.D., I.Md. Jember. 2019. Analisis Faktor yang Mempengaruhi Permintaan Daging Ayam Broiler di Provinsi Bali. *E-Jurnal Ekonomi Pembangunan Universitas Udayana*. 8 (5): 1062-1092.
- [3] Badan Pusat Statistik Provinsi Bali. 2019. Provinsi Bali.
- [4] Budaarsa, K. 2014. Potensi ternak Babi dalam Menyumbangkan Daging di Bali. Seminar Nasional Ternak Babi. Fakultas Peternakan Udayana. Universitas Udayana. Denpasar.
- [5] Burhanudin, A. 2011. Analisis Pelikau Konsumen pada Pembelian Daging Ayam Ras di Pasar Tradisional dan Pasar Modern Kota Jember. Skripsi. Sosial Ekonomi Pertanian. Fakultas Pertanian. Universitas Jember. Jember.
- [6] Dahl Dc, Hammond JW. 1977. Market and Price Analysis The Agricultural Industry. Mc. Grawhill Book Company. New york.

- [7] Fadilah. 2006. Sukses Beternak Ayam Broiler. Agromedia Pustaka. Jakarta.
- [8] Ferdinand, A. 2011. Metode Penelitian manajemen. Edisi 3. Semarang: Universitas Diponegoro.
- [9] Hadini, H. Sudin, N. dan Endang, S. 2011. Analisis Permintaan dan Prediksi Konsumsi Serta Produksi Daging Broiler di Kota Kendari Propinsi Sulawesi Tenggara. *Buletin Peternakan Vol. 35 (3): 202-207*, Kendari.
- [10] Hapsah. 1999. Kemitraan Usaha, Konsepsi dan Strategi. Pustaka Sinar Harapan. Jakarta.
- [11] Hartono, G. 2008. Analisis Penawaran Ayam Pedaging (BROILER) di Tingkat Petani. *Majalah Ilmiah Peternakan Vol 10, No 3*, Fakultas Pertanian, Universitas Kristen Setya Wacana, Salatiga.
- [12] Hidayat, S. 2013. Analisis Tingkat Permintaan Konsumen Terhadap Ayam Ras di Kecamatan Kojja. Skripsi. Institut Pertanian Bogor. Bogor.
- [13] Kariyasa, K. dan B, M, Sinaga. 2007. Analisis Perilaku PasarPakan dan Daging Ayam Ras di Indonesia: Pendekatan Model Ekonometrika Simultan. *SOCA. Jurnal Sosial Ekonomi Pertanian. 7(2): 1-20*.
- [14] Kementerian Pertanian. 2019. Outlook Daging Ayam. Pusat Data dan Sistem Informasi Pertanian. Sekretariat Jenderal Peternakan. Kementerian Pertanian. Jakarta.
- [15] Mohanty, S and K. Rajendran. 2003. Vision for Indian Poultry Industry. *International Journal of Poultry Science. 2(3): 139-43*.
- [16] Sarwono, N. 2001. Perilaku Agribisnis dan Kebutuhan Penyuluhan Peternak Ayam Ras Pedaging. Disertasi. Program Pascasarjana Institut Pertanian Bogor, Bogor.
- [17] Suartha, N. 2016. Faktor-faktor yang Mempengaruhi Tingginya Laju Pertumbuhan dan Implementasi Kebijakan Pendudukdi Provinsi Bali. *Piramida. 12 (1): 1-7*.
- [18] Suparta, N. 2005. Pendekatan Holistik Membangun Agribisnis. Bali Media Adhikasa. Denpasar.
- [19] Tomek, W. G and K.L. Robinson. 1972. *Agricultural Product Prices*. Cornell University Press. Ithaca and London.
- [20] Yusdja, Y dan E. Pasandaran. 1998. Arah Restrukturisasi Industri Agribisnis Perunggasan di Indonesia. *Jurnal Agro Ekonomi. 16(2): 21-32*.