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Research Article

Investigation of Intermediary Margins in the Marketing of Beef and Lamb Meat in Ankara Province, Turkey

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Abstract

This research was conducted to determine intermediary margins in the marketing system of slaughtering animals and meat in Ankara Province of Turkey in the form of livestock-wholesale, wholesale-retail and livestock-retail. The material of the study consists of the records of sale transactions in the livestock and meat exchanges subject to Ankara Commodity Exchange. Intermediary margins (2008-2011) in marketing were calculated with current and fixed prices in percentages, making use of the producer price index (PPI) and consumer price index (CPI) of the Turkish Statistical Institute with 2003 set as the base year to rule out the effect of inflation. The study revealed that average livestock-wholesale marketing margins of beef were 18.96%, 19.94%, 16.69%, 11.25%, average wholesale-retail marketing margins of beef were 38.94%, 34.85%, 32.41%, 35.75%, and average livestock-retail marketing margins of beef were 47.71%, 45.34%, 40.99%, 39.48% respectively with fixed prices. The calculations based on monthly averages of livestock-retail intermediary margins showed that the share of producer in the retail beef price varied in a wide range, between 47.05% and 66.32%. On the other hand, a high level of correlation was found between retail beef prices and live cattle, wholesale beef prices, livestock-wholesale, wholesale-retail and livestock-retail marketing margins ($p<0.01$). In this study, average current livestock-wholesale margins were 18.41%, 26.99%, 18.55%, 20.08%, wholesale-retail margins were 27.72%, 27.89%, 29.70%, 28.50% and livestock-retail margins in lamb meat marketing were 38.23%, 45.12%, 39.83%, 40.13% respectively. In the same period, the share transferred to the producer through current retail sales prices of lamb meat was 59.17% as average. The correlation was found significantly as $r=+0.936$ and $r=+0.960$ ($P<0.01$) between fixed and current intermediary margins for livestock-retail and fixed and current retail lamb prices in marketing. As a result, due to the high level intermediary margins of beef and lamb meat marketing, red meat prices is increasing in Turkey. The possible reduction of the intermediary margins at each stage in marketing structure will provide to buy meat from the appropriate prices by the consumers and to contribute market regulation.

Keywords: *Marketing, Slaughtering animal, Beef and lamb meat, Price, Intermediary margin*

Türkiye'de Ankara İli Örneğinde Dana ve Kuzu Eti Pazarlamasında Oluşan Aracı Marjlarının Araştırılması

Özet

Bu araştırma, Türkiye'de Ankara ili örneğinde kasaplık dana ve kuzu ile dana ve kuzu eti pazarlama sistemi içerisinde oluşan aracı marjlarının canlı-toptan, toptan-perakende ve canlı-perakende olmak üzere belirlenmesi amacıyla yürütülmüştür. Araştırmanın materyalini Ankara Ticaret Borsasına bağlı canlı hayvan ve et borsalarında gerçekleştirilen satış işlemlerine ilişkin kayıtlar oluşturmuştur. Pazarlamadaki aracı marjları (2008-2011), enflasyon etkisini ortadan kaldırmak için Türkiye İstatistik Kurumu'nun üretici fiyat endeksi (ÜFE) ve tüketici fiyat endeksinden (TÜFE) faydalanılarak 2003 yılı baz alınarak cari ve sabit fiyatlarla ve yüzde olarakta hesaplanmıştır. Araştırmada sabit fiyatlarla ortalama dana eti canlı-toptan pazarlama marjı sırasıyla %18.96, %19.94, %16.69, %11.25, dana eti ortalama toptan-perakende pazarlama marjı %38.94, %34.85, %32.41, %35.75, dana eti ortalama canlı-perakende pazarlama marjı ise %47.71, %45.34, %40.99, %39.48 olarak hesaplanmıştır. Canlı-perakende aracı marjlarında aylık ortalamalar üzerinden yapılan değerlendirmede, tüketicilerin perakende dana eti için ödedikleri fiyattan üreticilerin eline geçen bölümün %47.05 ile %66.32 arasındaki geniş bir aralıkta değiştiği belirlenmiştir. Diğer taraftan yapılan analizde dana eti perakende fiyatları ile canlı hayvan ve karkas dana eti fiyatları, canlı-toptan, toptan-perakende ve canlı perakende aracı marjları arasında yüksek düzeyde korelasyon tespit edilmiştir ($P<0.01$). Çalışma kapsamında kasaplık kuzu ve kuzu eti pazarlamasında canlı-toptan aracı marjı sırasıyla %18.41; %26.99; %18.55, %20.08, toptan-perakende aracı marjı %27.72; %27.89; %29.70, %28.50 ve canlı-perakende cari marj ise sırasıyla %38.23; %45.12; %39.83, %40.13 olarak saptanmıştır. Aynı dönemde kuzu eti perakende cari satış fiyatları üzerinden üreticiye aktarılan pay ortalama olarak %59.17 olarak gerçekleşmiştir. Kuzu eti pazarlamasında canlı-perakende sabit ve cari aracı marjları ile perakende kuzu eti sabit ve cari fiyatları arasında önemli düzeyde korelasyon $r = +0.936$ ve $r = +0.960$ ($P<0.01$) bulunmuştur. Sonuç olarak, Türkiye'de dana ve kuzu eti pazarlamasında yüksek düzeyde bulunan aracı marjlarına bağlı olarak kırmızı et fiyatları artmaktadır. Pazarlama yapısı içindeki aracı marjlarının azalması tüketicinin daha uygun fiyat seviyesinden et satın alabilmesini sağlayacak ve piyasanın düzenlenmesine katkı sunacaktır.

Anahtar sözcükler: *Pazarlama, Kasaplık hayvan, Dana ve kuzu eti, Fiyat, Aracı marjı*

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INTRODUCTION

The main objectives of marketing is to maintain the existing market volume, to increase the effective demand, to enhance productivity and quality of products in conformity with today's changing and developing conditions and to increase the volume of marketing by acquiring new markets. In marketing, price is one of the most powerful factors, which is always effective, and reflects the consumer demand to producers. In the marketing system, price usually increases in the direction from producers to consumers.

In the process from production to consumption in marketing of meat and animals for slaughter, the reactions of supply, demand, price and cost factors on the basis of various times, places and forms need to be assessed [1,2].

Producers offering services to consumers, the meat processing industry, and retailers face additional costs to meet various demands of consumers. These additional costs make up the marketing service fee. Demand and supply factors, marketing costs, and competitive relationship between intermediaries in the marketing channel affect the marketing margins [3].

The passing of slaughtering animals and meat through the hands of numerous intermediaries to reach consumers via marketing channels and the increasing intermediary margins result in a decrease in the earnings of producers and an increase in the price paid by consumers for these products [4].

Balling [5], dealt with the concept of branding in the beef industry in Germany, assessed the factors affecting the amount of beef consumption and purchase of beef, and underlined the importance of improving the intermediary services in the marketing of beef as well as of formulating effective policies for production, distribution and pricing of beef.

In a study conducted by Kanlı [6], the producers' share in the price paid by consumers for 1 kg of beef in Izmir between 1980 and 1984 years was found to be 58.2% in 1980, 59.4% in 1981, 44.5% in 1982, 43.3% in 1983 and 28.9% in 1984. Another study conducted in Ankara between 2001 and 2004 years, the period averages of the livestock-retail, livestock-wholesale, and wholesale-retail marketing margins for slaughtering cattle and beef were found to be 55.36%, 39.81% and 25.25%, respectively [7].

Kuosmanen and Niemi [8], reported that with the development of supermarket chains particularly in food products and the retail sector intensified rapidly in Finland. The study notes that the butchers' and retailer companies' price margin for retail mincemeat, which was 45% in early 1980s, rose above 60% in early 2000s.

Tiffin and Dawson [9], emphasize that lamb prices has seasonality both at producer level and retail level, there is a long-term relationship between the two prices, and producers face different marketing margins depending on the price level forming at the retail phase. The study further notes that the lamb price is set in the retail market, and that producer margins have been increasingly declining, often due to imperfect price transitions and structural breaks.

The present study aims to determine and analyse in detail the intermediary margins for livestock-wholesale, wholesale-retail and livestock-retail in the beef and lamb meat marketing chain with respect to current and fixed prices in Ankara province of Turkey and to offer solutions to the structural problems in the marketing system.

MATERIAL and METHODS

This study, conducted on the beef and lamb meat marketing structure in Ankara and the recent intermediary margins in the marketing system, first deals with the issues that are important in livestock and meat marketing in Turkey, and then analyses the intermediary margins for livestock-wholesale, livestock-retail and wholesale-retail in the marketing of beef and lamb meat in light of the data and information obtained within the scope of the study, and finally addresses the problems faced in red meat marketing.

The material of the study consists of the records relating to the sale transactions carried out in livestock and meat exchanges affiliated with Ankara Commodity Exchange between 2008 and 2011. The study also uses the average retail sale prices for beef and lamb meat in Ankara given in official statistics for each month [10]. On the basis of the data entered into Microsoft Excel and SPSS 17.0 software package, the intermediary margins were calculated and analysed in tables.

In determining the livestock-wholesale and livestock-retail intermediary margins, the retail and wholesale prices were calculated assuming that carcass yield is 60% for beef and 55% for lamb and adding an offal premium of 20% of the live animal price for both. The values obtained were converted into meat price of 1 kg of LW (live weight). On the basis of the wholesale and retail meat prices determined at current and fixed prices, the margin between the meat prices and livestock prices was calculated as a percentage (%).

On the basis of the daily average price data obtained (livestock, wholesale and retail beef and lamb meat prices), the monthly average prices and current intermediary margins were determined. The intermediary margins in marketing were calculated as percentage on the basis of fixed prices, with 2003 being the base year, by using the producer price index (PPI) and consumer price index (CPI) issued by the Turkish Statistics Institute (TUIK) in order to eliminate the effect of inflation.

Besides, in the analysis conducted within the scope of the study, the correlation between slaughtering animals

and meat prices and livestock-wholesale, wholesale-retail and livestock-retail intermediary margins were examined.

RESULTS

The change in intermediary margins determined on the basis of current and fixed prices in the marketing of beef and lamb meat in Ankara for the period between 2008 and 2011 years is given below *(Table 1, 2, 3* and *4)*.

The correlations between current and fixed prices of slaughtering animals, wholesale and retail beef and lamb meat and intermediary margins for such products in Ankara for the period between 2008 and 2011 years are given in *Table 5* and *Table 6*.

In the study, the average livestock-wholesale marketing margins for beef at fixed prices for 2008, 2009, 2010 and 2011 were calculated to be 18.96%, 19.94%, 16.69% and 11.25%, respectively. The average wholesale-retail marketing margins for beef were calculated to be 38.94%, 34.85%, 32.41% and 35.75%, respectively. The average livestock-retail marketing margins for beef were calculated to be 47.71%, 45.34%, 40.99% and 39.48%, respectively. In an assessment based on the monthly averages of livestock-retail intermediary margins, the portion earned by producers from the price paid by consumers for retail beef was found to vary in a wide range from 47.05% to 66.32%.

A high level of correlation was found between the retail prices of beef and cattle and wholesale carcass prices, and livestock-wholesale, wholesale-retail and livestock-retail intermediary margins ($P<0.01$).

It was found that there was a significant relationship between wholesale and retail prices of beef carcass in the same direction on the basis of current and fixed prices. At fixed prices, carcass price and retail price of beef were found to be correlated at a level of $r = +0.957$, and at current prices, carcass price and retail price of beef were found to be correlated at a level of $r = +0.983$.

Table 1. *Current and fixed average prices of livestock, wholesale carcass and retail beef*
Tablo 1. *Canlı hayvan, toptan karkas ve perakende dana eti ortalama cari ve sabit fiyatları*

Years	Current Prices			Fixed Prices		
	Cattle-Livestock (TRY/Kg)	Wholesale Carcass Beef (TRY/Kg)	Retail Beef (TRY/Kg)	Cattle-Livestock (TRY/Kg)	Wholesale Carcass Beef (TRY/Kg)	Retail Beef (TL/Kg)
2008	5.62	9.79	15.60	3.54	6.16	10.08
2009	6.28	11.11	17.42	3.90	6.90	10.58
2010	9.28	15.62	23.61	5.31	8.94	13.23
2011	9.39	14.61	22.26	4.84	7.53	11.72
Average of the Period	7.64	12.78	19.72	4.40	7.38	11.40

** 2008 (1 USD=1.29 TRY), 2009 (1 USD=1.54 TRY), 2010 (1 USD=1.50 TRY, 2011 (1 USD=1.67 TRY)*

Table 2. *Changes in current and fixed livestock-wholesale, livestock-retail and wholesale-retail ıntermediary margins of beef marketing*
Tablo 2. *Dana eti pazarlamasında cari ve sabit olarak canlı-toptan, canlı-perakende ve toptan-perakende aracı marjlarındaki değişim*

Years	Cattle Livestock-Retail Beef Intermediary Margin with Current Prices (TRY/Kg)	Cattle Livestock-Wholesale Beef Intermediary Margin with Current Prices (TRY/Kg)	Wholesale-Retail Beef Intermediary Margin with Current Prices (TRY/Kg)	Cattle Livestock-Retail Beef Intermediary Margin with Fixed Prices (TRY/Kg)	Cattle Livestock-Wholesale Beef Intermediary Margin with Fixed Prices (TRY/Kg)	Wholesale-Retail Beef Intermediary Margin with Fixed Prices (TRY/Kg)
2008	4.87	1.38	5.81	3.23	0.87	3.93
2009	5.43	1.64	6.31	3.24	1.02	3.69
2010	6.75	1.95	7.99	3.69	1.12	4.29
2011	5.84	1.25	7.66	3.16	0.64	4.19
Average of the Period	5.72	1.56	6.94	3.33	0.91	4.03
Years	**Current Average Cattle Livestock-Retail Beef Intermediary Margin (%)**	**Current Average Cattle Livestock-Wholesale Beef Intermediary Margin (%)**	**Current Average Wholesale-Retail Beef Intermediary Margin (%)**	**Fixed Average Cattle Livestock-Retail Beef Intermediary Margin (%)**	**Fixed Average Cattle Livestock-Wholesale Beef Intermediary Margin (%)**	**Fixed Average Wholesale-Retail Beef Intermediary Margin (%)**
2008	46.42	19.72	37.24	47.71	18.96	38.94
2009	46.35	20.73	36.21	45.34	19.94	34.85
2010	42.10	17.38	33.84	40.99	16.69	32.41
2011	38.36	11.75	34.39	39.48	11.25	35.75
Average of the Period	43.31	17.40	35.42	43.38	16.71	35.49

Table 3. *Current and fixed average prices of livestock, wholesale carcass and retail lamb meat*
Tablo 3. *Canlı hayvan, toptan karkas ve perakende kuzu eti ortalama cari ve sabit fiyatları*

Years	Current Prices			Fixed Prices		
	Lamb-Livestock (TRY/Kg)	Wholesale Carcass Lamb (TRY/Kg)	Retail Lamb Meat (TRY/Kg)	Lamb-Livestock (TRY/Kg)	Wholesale Carcass Lamb (TRY/Kg)	Retail Lamb Meat (TRY/Kg)
2008	5.31	9.89	13.69	3.34	6.22	8.85
2009	6.45	13.71	19.02	4.01	8.52	11.57
2010	9.72	18.16	25.83	5.56	10.40	14.48
2011	10.48	20.02	28.01	5.40	10.32	14.74
Average of the Period	7.99	15.45	21.64	4.58	8.87	12.41

** 2008 (1 USD=1.29 TRY), 2009 (1 USD=1.54 TRY), 2010 (1 USD=1.50 TRY, 2011 (1 USD=1.67 TRY)*

Table 4. *Changes in current and fixed livestock-wholesale, livestock-retail and wholesale-retail ıntermediary margins of lamb meat marketing*
Tablo 4. *Kuzu eti pazarlamasında cari ve sabit olarak canlı-toptan, canlı-perakende ve toptan-perakende aracı marjlarındaki değişim*

Years	Lamb Livestock-Retail Intermediary Margin with Current Prices (TRY/Kg)	Lamb Livestock-Wholesale Intermediary Margin with Current Prices (TRY/Kg)	Lamb Wholesale-Retail Intermediary Margin with Current Prices (TRY/Kg)	Lamb Livestock-Retail Intermediary Margin with Fixed Prices (TRY/Kg)	Lamb Livestock-Wholesale Intermediary Margin with Fixed Prices (TRY/Kg)	Lamb Wholesale-Retail Intermediary Margin with Fixed Prices (TRY/Kg)
2008	3.28	1.20	3.80	2.20	0.92	2.63
2009	5.30	2.38	5.30	3.16	1.68	3.05
2010	6.43	2.21	7.67	3.51	1.55	4.08
2011	7.02	2.63	7.98	3.79	1.63	4.42
Average of the Period	5.51	2.11	6.19	3.16	1.44	3.54
Years	**Current Average Lamb Livestock-Retail Intermediary Margin (%)**	**Current Average Lamb Livestock-Wholesale Intermediary Margin (%)**	**Current Average Lamb Wholesale-Retail Intermediary Margin (%)**	**Fixed Average Lamb Livestock-Retail Intermediary Margin (%)**	**Fixed Average Lamb Livestock-Wholesale Intermediary Margin (%)**	**Fixed Average Lamb Wholesale-Retail Intermediary Margin (%)**
2008	38.23	18.41	27.72	39.70	17.69	29.67
2009	45.12	26.99	27.89	44.08	26.04	26.36
2010	39.83	18.55	29.70	38.68	17.82	28.17
2011	40.13	20.08	28.50	41.23	19.31	29.98
Average of the Period	40.83	21.01	28.45	40.92	20.21	28.55

Moreover, the current carcass prices and livestock-retail and wholesale-to-retail intermediary margins for beef were found to be highly and significantly correlated at a level of r = +0.809 and r = +0.806, respectively (P<0.01). Likewise, the retail prices of beef and livestock-retail and wholesale-retail intermediary margins for beef were found to be highly and significantly correlated at a level of r = +0.865 and r = +0.901, respectively (P<0.01).

The current livestock-retail intermediary margins in the marketing of slaughter lamb and lamb meat in Ankara from 2008 were found to be 38.23%, 45.12%, 39.83% and 40.13%, respectively. The livestock-wholesale intermediary margins for lamb were found to be 18.41%, 26.99%, 18.55% and 20.08%, respectively. Finally, the wholesale-retail intermediary margins for lamb were found to be 27.72%, 27.89%, 29.70% and 28.50%, respectively. The portion earned by producers from the current retail price of lamb meat paid by consumers in Ankara between 2008 and 2011 years was 59.17% in average.

Furthermore, the correlations between livestock-retail intermediary margins for lamb and current and fixed prices of slaughtering lamb in Ankara between 2008 and 2011 years were found to be r = +0.769 and r = +0.858, respectively (P<0.01).

On the basis of these results, it is clear that livestock-retail intermediary margins for lamb and fixed and current prices of slaughtering lamb are significantly related in the same direction. In other words, as the price of lamb increases, the livestock-retail margin increases as well, or as the price of lamb decreases, the livestock-retail margin decreases as well.

Similarly, the fixed and current livestock-retail intermediary margins in the marketing of lamb meat in Ankara between 2008 and 2011 years were found to be highly correlated with the fixed and current retail prices of lamb meat, at a level of r = +0.936 and r = +0.960, respectively (P<0.01). Accordingly, there seems to be a strong and

Table 5. *The correlations between prices of livestock, wholesale and retail beef and intermediary margins*
Tablo 5. *Canlı hayvan, toptan ve perakende dana eti fiyatları ve aracı marjları arasındaki korelâsyonlar*

Beef Cross-Correlation Table

Parameters		FLP	FCP	FRP	FLRM	FLWM	FWRM	CLP	CCP	CRP	CLRM	CLWM	CWRM
FLP	r	**1**	.919**	.901**	.320*	.073	.394**	.957**	.949**	.933**	.693**	.251	.767**
FCP			**1**	.957**	.575**	.459**	.356*	.829**	.931**	.907**	.838**	.606**	.723**
FRP				**1**	.700**	.392**	.612**	.839**	.926**	.947**	.917**	.553**	.865**
FLRM					**1**	.734**	.687**	.257	.460**	.532**	.860**	.793**	.627**
FLWM						**1**	.011	-.061	.219	.191	.558**	.970**	.100
FWRM							**1**	.444**	.444**	.578**	.671**	.130	.817**
CLP								**1**	.960**	.950**	.666**	.153	.795**
CCP									**1**	.983**	.809**	.423**	.806**
CRP										**1**	.865**	.395**	.901**
CLRM											**1**	.700**	.877**
CLWM												**1**	.272
CWRM													**1**

*** P<0.01, * p<0.05; **FLP:** Fixed Livestock Price, **FCP:** Fixed Carcass Price, **FRP:** Fixed Retail Price, **FLRM:** Fixed Livestock-Retail Intermediary Margin, **FLWM:** Fixed Livestock-Wholesale Intermediary Margin, **FWRM:** Fixed Wholesale-Retail Intermediary Margin, **CLP:** Current Livestock Price, **CCP:** Current Carcass Price, **CRP**: Current Retail Price, **CLRM:** Current Livestock-Retail Intermediary Margin, **CLWM:** Current Livestock-Wholesale Intermediary Margin, **CWRM:** Current Wholesale-Retail Intermediary Margin*

Table 6. *The correlations between prices of livestock, wholesale and retail lamb meat and intermediary margins*
Tablo 6. *Canlı hayvan, toptan ve perakende kuzu eti fiyatları ve aracı marjları arasındaki korelâsyonlar*

Lamb Cross-Correlation Table

Parameters		FLP	FCP	FRP	FLRM	FLWM	FWRM	CLP	CCP	CRP	CLRM	CLWM	CWRM
FLP	r	**1**	.922**	.945**	.769**	.481**	.839**	.975**	.932**	.947**	.844**	.530**	.890**
FCP			**1**	.978**	.917**	.782**	.768**	.899**	.970**	.955**	.945**	.811**	.830**
FRP				**1**	.936**	.696**	.884**	.938**	.976**	.988**	.970**	.740**	.923**
FLRM					**1**	.842**	.823**	.782**	.902**	.911**	.986**	.874**	.843**
FLWM						**1**	.388**	.466**	.698**	.640**	.784**	.984**	.449**
FWRM							**1**	.872**	.828**	.901**	.865**	.460**	.977**
CLP								**1**	.958**	.968**	.858**	.549**	.898**
CCP									**1**	.987**	.945**	.767**	.863**
CRP										**1**	.960**	.706**	.933**
CLRM											**1**	.828**	.902**
CLWM												**1**	.503**
CWRM													**1**

*** P<0.01; **FLP:** Fixed Livestock Price, **FCP:** Fixed Carcass Price, **FRP:** Fixed Retail Price, **FLRM:** Fixed Livestock-Retail Intermediary Margin, **FLWM:** Fixed Livestock-Wholesale Intermediary Margin, **FWRM:** Fixed Wholesale-Retail Intermediary Margin, **CLP:** Current Livestock Price, **CCP:** Current Carcass Price, **CRP:** Current Retail Price, **CLRM:** Current Livestock-Retail Intermediary Margin, **CLWM:** Current Livestock-Wholesale Intermediary Margin, **CWRM:** Current Wholesale-Retail Intermediary Margin*

significant relationship between retail prices of lamb meat and fixed and current livestock-retail intermediary margins in the same direction. In other words, as the retail price of lamb meat increases, the livestock-retail margin increases as well, or as the retail price of lamb meat decreases, the livestock-retail margin decreases as well.

Additionally, the fixed and current livestock-wholesale intermediary margins for lamb meat and fixed and current wholesale prices of lamb carcass were found to be highly and significantly correlated (r = +0.782 and r = +0.767, P<0.01).

DISCUSSION

Livestock breeding is performed in different ways depending on various factors such as the enterprise structure, genetic level of the breed, pasture conditions, methods of raising and feeding, market conditions, and livestock policies of the country. Profitability of breeding depends on the production of abundant amounts of high-quality meat within economically-optimal fattening time at low costs. As is the case in all economic enterprises, the purpose of cattle and lamb fattening enterprises

is to maximize profits.

In fattening enterprises, the live weight increases, feed consumption and feed conversion ratio of animals taken into fattening process as well as the interrelations between such factors are the factors that directly affect profitability [11].

In the analysis conducted on the basis of the sale prices in livestock and meat exchanges affiliated with Ankara Commodity Exchange between 2008 and 2011 years, the intermediary margins for beef and lamb meat were examined, and the average livestock-wholesale intermediary margins for beef at current prices were found to be 19.72% in 2008, 20.73% in 2009, 17.38% in 2010 and 11.75% in 2011. The average livestock-wholesale intermediary margins for lamb meat at current prices were found to be 18.41% in 2008, 26.99% in 2009, 18.55% in 2010 and 20.08% in 2011.

The average wholesale-retail intermediary margins for beef at current prices in the marketing were found to be 37.24% in 2008, 36.21% in 2009, 33.84% in 2010 and 34.39% in 2011. The current livestock-retail intermediary margins for beef in Ankara as from 2008 were found to be 46.42%, 46.35%, 42.10% and 38.36%, respectively.

The wholesale-retail intermediary margins for lamb meat at current prices for the period between 2008 and 2011 years were calculated to be 27.72%, 27.89%, 29.70% and 28.50%, respectively, and the livestock-retail intermediary margins for lamb meat were calculated to be 38.23%, 45.12%, 39.83% and 40.13%, respectively.

In a study conducted by Keskin et al.[12], it was shown that the lamb meat marketing margins between 1993 and 2007 years had varied between 15.93% and 20.82% in the wholesale-retail phase, that is approximately 1/5 of the price paid by consumers had been earned by intermediaries following the wholesale phase.

In the assessment on the basis of the research data, it was found that annual average live lamb prices in the lamb meat market between 2008 and 2011 years increased by 97.36% from TRY5.31/kg to TRY10.48/kg, that the price of lamb carcass increased by 102.83% from TRY9.89/kg to TRY20.02/kg, and that the retail price of lamb meat increased by 104.60% from TRY13.69/kg from TRY28.01/kg.

In a study conducted in Ankara between 1990 and 1994 years, the wholesale-retail intermediary margin for sheep was found to be 15% of sale price in 1990, 17% of sale price in 1991, 14% of sale price in 1992, 16% of sale price in 1993 and 17% of sale price in 1994. The study notes that the share of wholesaler margins in the sale price in the marketing of sheep decreased and the share of retailer margins in the sale price increased within the research period [1]. Another study conducted in Istanbul between 1996 and 1999 years, It was found that within this period the shares of wholesaler margins in retail price of mutton were 6.28%, 5.53%, 6.45% and 5.34% respectively, and the shares of retailer margins were 10.28%, 11.89%, 14.29% and 15.96% respectively [13].

According to Marsh and Brester [3], demand and supply, marketing costs, and competitiveness of intermediaries in the marketing channel constitute the major elements that affect marketing margins. Brester and Musick [14], found that the density of increasing lamb packagers in the slaughter and processing industry had relatively small but positive effects on the lamb marketing margins.

A study conducted in Spain by Kaabia and Gil [15], underlines that the main determinant factors playing a role in the change of marketing margins should be investigated, that market structures and degree of market-oriented integration as well as other meat sectors and products with different characteristics (branded products, processed products, long-life products, etc.) should be dealt with.

Ancelmo et al.[16], calculated the revenue generated from the sale of 1 kg of cold mutton carcass on the basis of cost-benefit ratios of the elements in the marketing chain. According to the study, producer earned $2.7 (47%) and intermediaries earned $3.1 (53%) from the sale of 1 kg of mutton in Mexico. In a study carried out in Pakistan, the shares received by intermediaries in return for marketing services in the marketing of mutton and goat meat were found to be 30% and 32%, respectively, with the remaining marketing margin earned by the producers [17].

In a study examining the relationship between supply and demand during fluctuations of the market price of lamb, Vere and Griffith [18], emphasised that the mutton market in New South Wales, Australia faced a significant decline in market competition due to beef not experiencing price break in the major export market. Research further noted that when increase in production reduces the prices, the immediate impacts should be determined expeditiously.

Bojnec [19], explained that even if the meat market is externally isolated and the market is internally regulated as the case in Slovenia in 1990s, the red meat market can act like a competitive market. It is also stated that advanced reforms, reconstructions and effective measurements relating to quality and price are needed to remedy the deficiencies in the beef and pork marketing chain in relation to raising, processing and marketing.

Dagdemir et al.[20], found that 70.99% of the final price paid by consumers in the marketing system for red meat obtained from ovine and caprine animals as of 1998 had been earned by farmers, and 29.01% had been earned by intermediaries. The study further noted that 74.59% of the price paid by consumers in the marketing system for red meat obtained from bovine animals as of 1998 had been earned by farmers, and 25.41% had been earned by intermediaries.

The degree of self-sufficiency of the red meat market

in Turkey in terms of production level, population and consumption needs to be revealed. Appropriate policies and practices should be formulated as soon as possible in order to handle the problems of the red meat sector in Turkey, including animal protein consumption deficit associated with insufficiency of production and the increasing prices in the red meat market.

It would be beneficial to examine in detail the existing system in Turkey for production of beef and lamb meat on the basis of socioeconomic status, structures and sizes of enterprises, production level, carcass yields, specialisation in production, recording and inspection in all stages from production to consumption, degree of organisation of producers, number of intermediaries and marketing efficiency, and to regulate the system in such a manner as to improve it.

Therefore, in a modern, effective and producer-oriented marketing system, it would be for the benefit of the sector to establish a market structure where the share of intermediary margins in the consumer price gradually declines and the portion of the price earned by producers rises.

In Turkey, the bargaining power of producers is low for reasons such as the insufficiency of organisation among producers and the high number of intermediaries involved in marketing. It is essential for increasing the revenues of producers by reducing the intermediary margins in the marketing system.

Measures taken for the beef and lamb meat production and the red meat sector in Turkey are incapable of increasing production at the desired level and providing producers with a certain level of welfare. In order to enhance the productivity of slaughter animals and ensure regular flow of raw materials into the industry, permanent and stable policies on livestock sector should be implemented by the government, aiming to solve structural problems in various areas such as animal breeding, care and feeding, sizes of enterprises, marketing, training and organisation.

In conclusion, optimal and rational use of resources in such a manner as to reduce the meat production costs and enhance productivity and quality in Turkey will be accompanied by favourable outcomes such as improvement in the sizes and level of specialisation of enterprises, establishment of an effective marketing system fulfilling the expectations of producers and consumers, regulation of the red meat market, ensuring of price stability, reduction in intermediary margins in marketing, increase in production, achievement of self-sufficiency, and gaining of a competitive position in foreign trade. As a result, due to the high level intermediary margins of beef and lamb meat marketing, red meat prices is increasing in Turkey. The possible reduction of the intermediary margins at each stage in marketing structure will provide to buy meat from the appropriate prices by the consumers and to contribute market regulation.

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