Competitiveness in Moldova's meat value network
Technical memorandum No. 2

Analysis of meat consumption and demand in Moldova

June 2009

Table of contents

ANALYSIS OF MEAT CONSUMPTION AND DEMAND IN MOLDOVA i
June 2009 1
TABLE OF CONTENTS i
Analyzing the demand for meat 1
INTRODUCTION i
TOTAL CONSUMPTION i
MOLDOVA'S MEAT CONSUMPTION IN INTERNATIONAL COMPARISONS 2
PRICE EFFECTS 6
PRICES 6
Data sources 6
Price indices 7
Monthly price changes for meat items 7
Price comparisons 8
Retail mapping exercise 9
Selection of stores 9
Retail Case Allocation 9
Case allocation within categories 9
Country of origin 9
Pricing 10
Discussion 10
Selection of stores 10
Retail case allocation 10
Country of origin 13
Prices 13
Summary discussion on prices 14
The burden of high meat prices 15

Analyzing the demand for meat

Introduction

While trade barriers have come down through worldwide agreements under the WTO and bilateral or regional trade agreements, protectionist instincts often prevail. Like many other countries, Moldova is trying to use trade management to provide some protection to selected industries, including the meat sector. In effect, Moldova's Government Decision 1363/2006, which outlines the process for obtaining (non-autonomous) import licenses provides the regulatory backing for a trade policy that establishes import quotas.

Under WTO rules (Moldova is a member since 2001), import —as well as export—quotas are permissible only within tightly defined rules. For imports, WTO safeguard measures allow for temporary relief when increased imports harm or threaten a domestic industry. Technical Memorandum No. 4 of the report on competitiveness in Moldova's meat value network explores this issue in greater detail from the legal point of view.

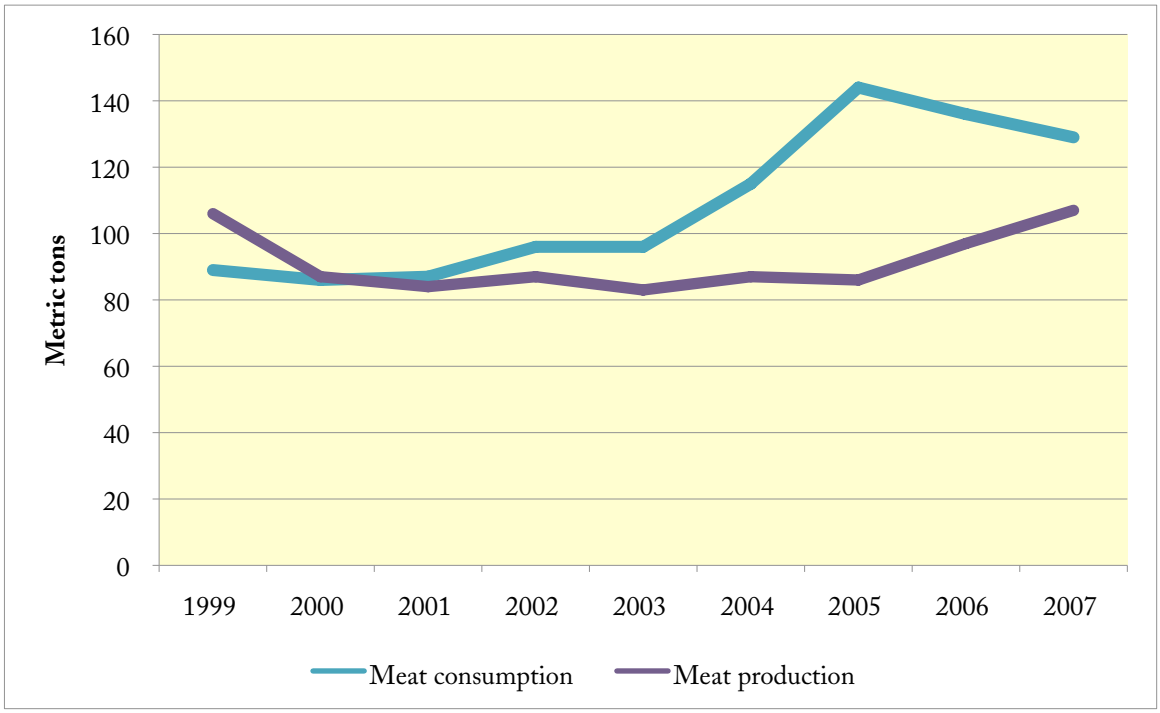
On of the requirements under WTO rules is that any quotas have to be set and published. For the meat industry—if one accepts the notion of any quota at all—the appropriate amount would be given by the discrepancy between projected consumption and projected domestic production. From a purely technical point of view, this requirement entails a good understanding of the determinants of meat demand, as well as of the factors that shape domestic meat production. Technical Memorandum No. 1 examines the performance of the domestic meat production and processing system. This Technical Memorandum No. 2 provides a little more detail on the consumption of meat and meat products in Moldova.

Total consumption

Meat represents an important part of the diet of the Moldovan population. In 1993, a Government Decision (No. 460 of July 27, 1993) actually established a physiological norm for the annual consumption of meat and meat products of 78 kg. However, where this figure comes from is unclear. In reality, the closest per capita consumption in Moldova ever came to this "physiological norm" was in 1991 at 58 kg, and meat consumption statistics tended to be unreliable at that point. Since the early 2000s, annual per capita meat consumption has varied between 24 and 40 kg.

As illustrated in Figure 1, total meat consumption increased slightly between 1999 and 2003, expanded significantly in 2004 and 2005, but dropped again in both 2006 and 2007 (the last year for which data are available). Domestic production increased in 2006 and 2007, as lack of animal feed drove increased slaughter of livestock, with a subsequent decline in 2008. In 2007, per capita and total consumption of meat and meat products in Moldova were approximately 36 kg and 129,000 MT, respectively. The gap between consumption and production was filled by imports, discussed in greater detail in Technical Memorandum No. 3.

Figure 1: Total meat consumption and domestic production



In principle, these numbers should provide some guidance in setting import quotas. However, the basis for determining prospective meat consumption appears shrouded in mystery. Representatives of the Ministry of Agriculture and Food Industry (MAFI) have stated at times that the total consumption of meat and meat products in the Republic of Moldova is—or should be—approximately 100,000 metric tons. It is unclear, however, how this figure was obtained. In recent years, total meat consumption has been well above the 100,000 MT figure; in 2007, the reported total was 129,000 metric tons, for example. Apparently, the projections are derived without reference to prices.

Moldova's meat consumption in international comparisons

Per capita meat consumption in Moldova lags behind that of other countries in the region, as illustrated in Figure 7 that shows annual averages for the period 2003-2005. Per capita consumption figures reported by the National Bureau of Statistics differ slightly from these international data reported by the US Food and Agriculture Organization (FAO), but they are close enough to confirm overall patterns. Moldova has the lowest per capita consumption of meat and meat products in the region, roughly half that of neighboring Romania. Only Ukraine and Croatia have per capita consumption figures close to those for Moldova, but they still are significantly higher.

Figure 2: Per capita meat consumption for selected countries

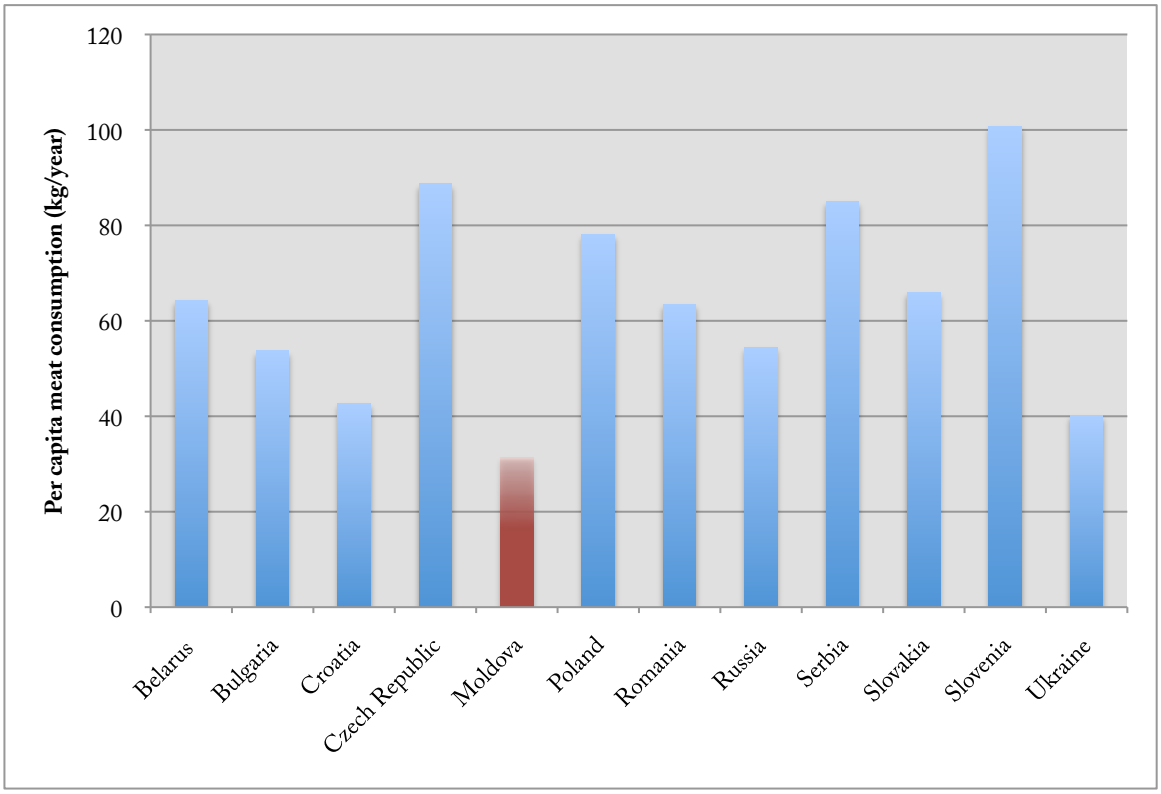
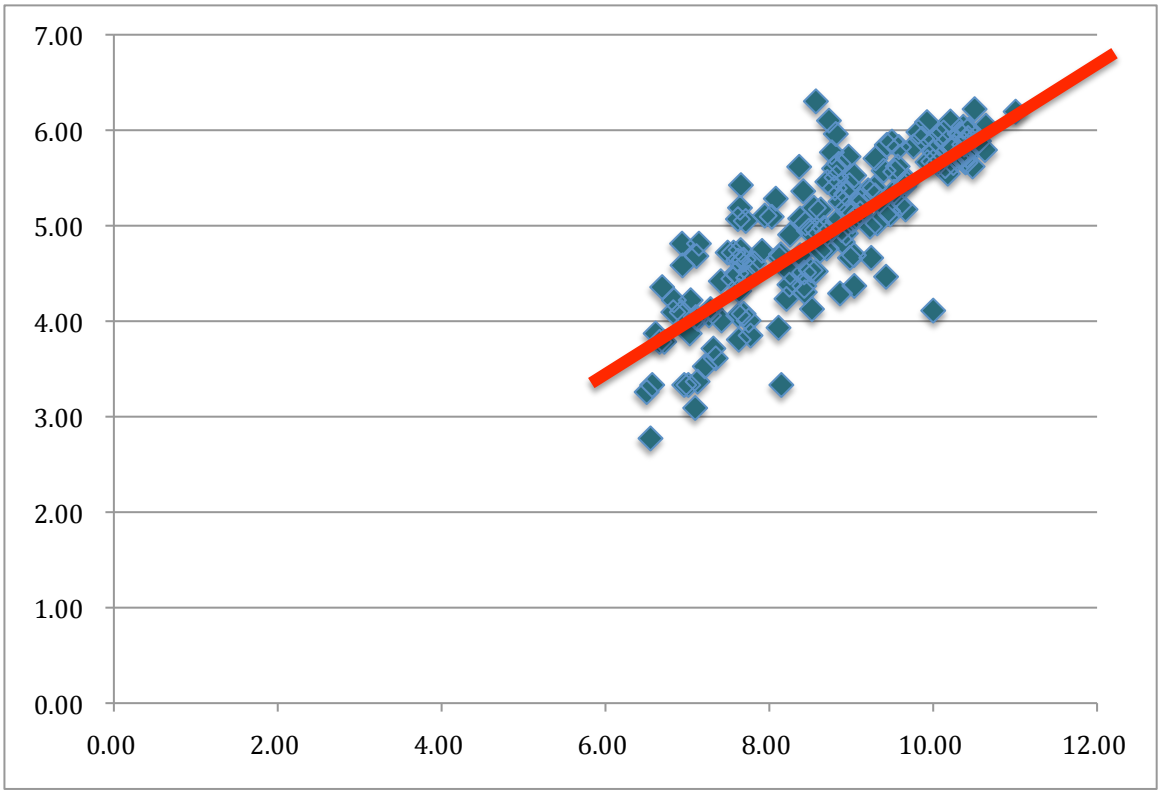


Figure 3: Relationship between GDP per capita and per capita consumption of animal protein

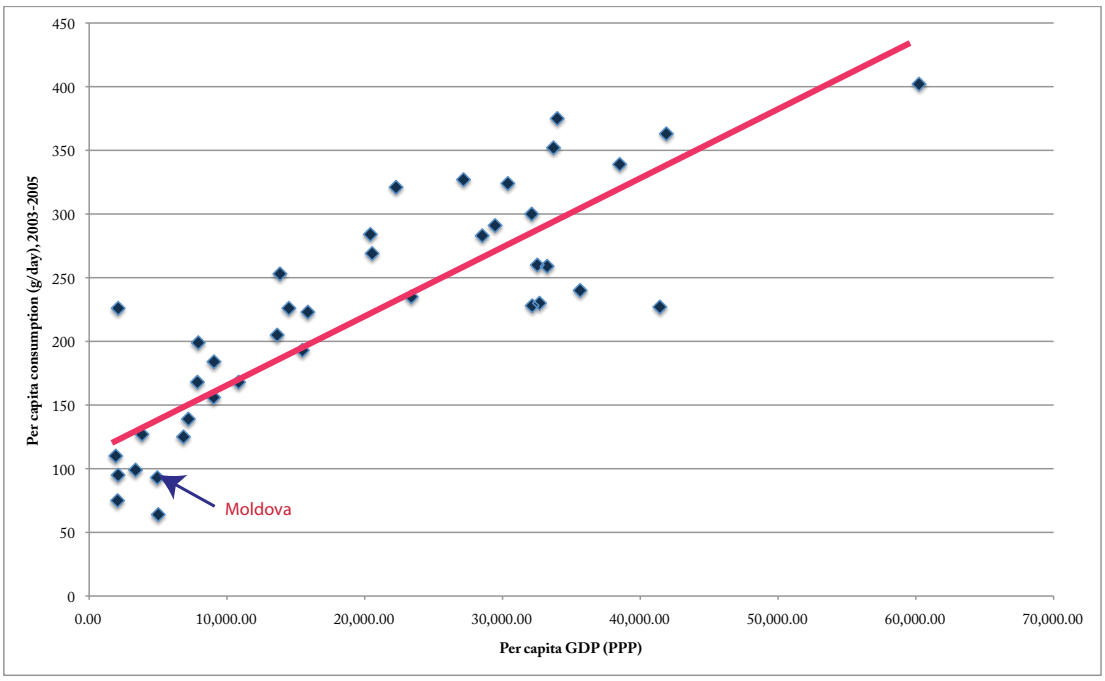


Since Moldova ranks among the poorest countries in Europe, the low meat consumption could of course be a direct result of low income levels. Across all countries, the consumption of protein from animal sources[1] rises with rising income. This relationship is illustrated in Figure 3. The red line indicates the regression of consumption of animal protein on GDP per capita (after taking the logs on both sides) for some 165 countries. The regression, ln(AP) = 0.179439 + 0.551211 * ln(GDP per capita), is significant with an R^2 of 0.666.

While the aggregate relationship is fairly strong, there is little or no relation between income and consumption of individual components of animal protein, such as beef or pork. In fact, the aggregate relationship conceals the cultural and locational preferences. For example, Muslim countries of course report zero consumption of pork. Island states, or states bordering major rivers, have a much higher proportion of fish in their animal protein diet. And other factors also play a role. Therefore, in looking at the impact of per capita incomes on meat consumption patterns, calls for some procedure to control for tastes.

To compare Moldova's meat consumption with international standards used data on average daily meat (and animal fat) consumption for selected European countries. The regression of per capita meat consumption on per capita income, adjusted for purchasing power parity shows a significant relationship. Figure 4 shows the data points and the linear regression (red line) between the two variables: 120.697 + 0.00521145 * GDP/capita (R^2 = 0.70). Applying this relationship suggests that Moldova is consuming below what would be expected for its level of income. Instead of the reported 95 g/day per capita, its consumption should be closer to 132 g/day, or 48 kg per year compared to the reported 35 kg. In other words, as long as one assumes consumer preferences corresponding to European standards, one would expect meat consumption to be roughly 38 percent higher than reported. Price differences may provide one possible explanation.

Figure 4 : Income and meat consumption for selected European countries



[1] Meat, fish, and invertebrates.

As far as could be determined, there are no demand studies for Moldovan households that link meat consumption to income levels. Appropriate models analyzing the demand for food take into account income and price (own and cross) elasticities. One of the most widely used approaches for analyzing household demand is the Almost Ideal Demand System (AIDS), typically in a "linear approximate" form (LA/AIDS).[2] To our knowledge, the necessary data for conducting that kind of analysis regarding the demand patterns for meat are simply not available for Moldova. However, such empirical assessments have been conducted for other countries, and the results provide some guidance for looking at the likely responses of meat demand and consumption in Moldova.

Studies using some version of the LA/AIDS model suggest that beef and veal are superior goods (their consumption is highly elastic with respect to income, that is, their expenditure elasticity exceeds unity). Some meat demand studies, such as a 2003 analysis for East and West Germany, have found that pork may be a superior good as well. In addition, an intern for the USAID-sponsored Support for Economic and Fiscal Reform (SEFR) in Ukraine, carried out an analysis of food demand.

Table 1: Expenditure/income elasticities of demand for meat and fish

Food item	Japan	West Germany	East Germany	Ukraine
Beef	1.289	1.457	1.268	0.806
Pork	0.893	1.085	1.572	0.994
Poultry	0.837	0.966	0.621	0.900
Fish	n/a	0.563	0.466	0.880

Sources: FAO, "Analysis of the food consumption behaviour of Japanese households," (www.fao.org/docrep/005/y4475e/y4475e09.htm; Susanne Wildner and Stephan von Cramon-Taubadel, "Health information and food demand in Eastern and Western Germany, in: Wen S. Chern, Kyrre Rickertsen (eds.), Health, nutrition and food demand. Wallingford, UK: CABI, 2003, pp. 105; Artem Myronowych, "Econometric analysis of demand for food in Ukraine," June 29, 2002.

Income elasticities vary considerably across countries. They are most consistent for the case of Ukraine, all just below unity, while they vary for other cases from highly elastic (beef is a superior good for Japan and Germany) to significant below unity, in particular for fish. If one assumes that Moldova's patterns are perhaps closest to Ukraine, meat consumption would increase slightly less than income increases, that is, income elasticity is below unity. By itself, this pattern does not explain why the country consumes less meat per capita than other countries in the region.

[2] See William A. Barnett and Apostolos Serletis, "Consumer preferences and demand systems," 22 April 2008, for an excellent summary of the theoretical framework for demand analysis; available on-lin at http://mpra.ub.uni-muenchen.de/8413.

Price effects

One explanation for the level of meat consumption below the "standard" for its level of per capita income is reaction to price. Table 2 presents the results for selected meats and fish for the same three studies cited in Table 1. One notion is that the estimated elasticities for Ukraine are on the whole significantly higher than for the other three countries.

Table 2: Own price elasticities of demand for meat and fish

Food item	Japan	West Germany	East Germany	Ukraine
Beef	-0.197	-0.484	-1.149	-4.267
Pork	-0.459	-0.813	-0.696	-1.593
Poultry	-0.568	-1.135	-0.966	-2.412
Fish	n/a	Not significant	-0.747	-1.366

Sources: See Table 1.

Again, if one assumes that Moldova's consumers have tastes or preferences closer to those of Ukraine, the projected reaction to price variations would be higher than elsewhere. Thus, as if prices for meat and meat products are higher than elsewhere, they would be likely to explain much of the observed "underconsumption."

Prices

Data sources

Data sources for pricing are limited to retail prices. While anecdotal evidence on wholesale and transfer prices exists, there is no systematic data collection of, say, the prices importers charge processors, or how prices are set for collection of meat at the level of household livestock operations. In fact, the absence of a transparent market for meat raw material represents one of the major drawbacks of the existing network.

To address the issue of meat prices, the team identified four sources:

(1) The National Bureau of Statistics (NBS) collects data on price indices, broken down by broad categories;

(2) the NBS also publishes the results of detailed price tracking efforts that show consumer (retail) prices for a range of meat products on a monthly basis; these data are available for the period 2006-2008;

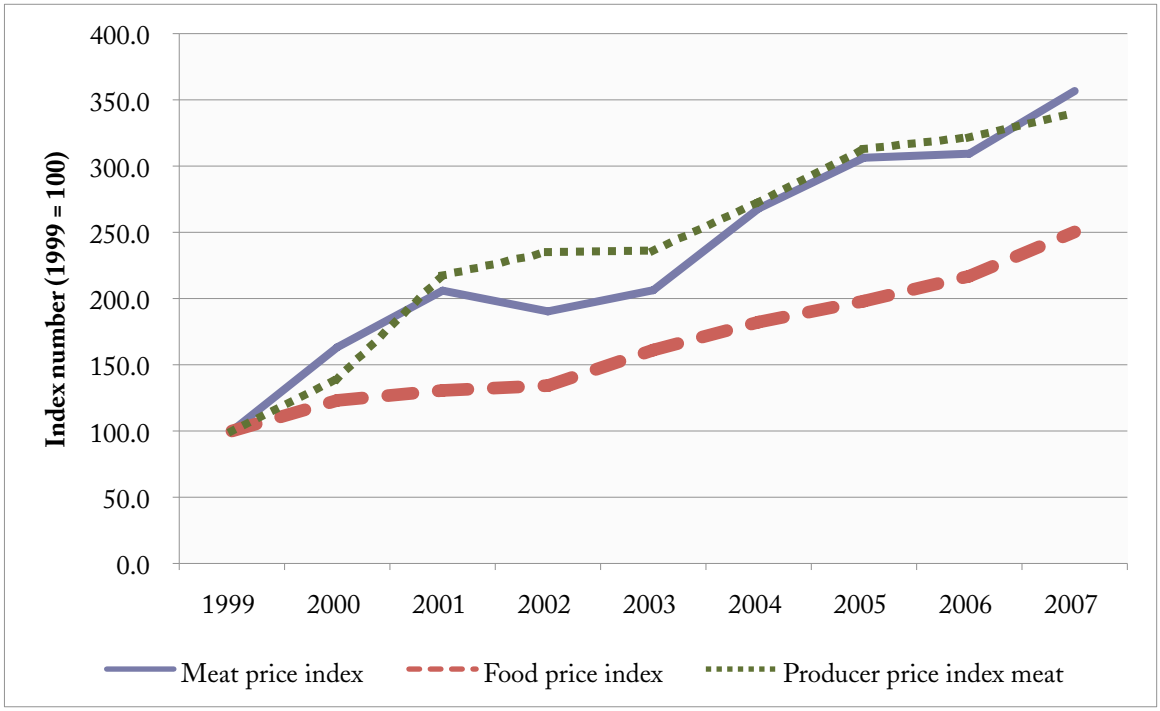
(3) as part of the investigation, the team conducted a non-scientific retail mapping exercise to gather data on a range of meat products in the Chisinau area;

(4) financial case studies of meat processors also touch on the role of prices.

Price indices

According to data provided by the NBS, average meat prices have been growing faster than the prices for all food products. Figure 5 shows the average food price index (the dotted red line) for the period 1999 to 2007, increasing on average by 12.2 percent per year. The meat price index, in contrast, grew at an average annual rate of 17.2 percent. There were two periods when the meat price index significantly outstripped the growth in the average food price index, 1999-2001, and 2003-2005. Figure 5 also shows the producer price index for the meat industry which broadly corresponds to the meat price index, except for 2002 and 2003 when it rose faster; the average annual rate of change for this index is 16.5 percent.

Figure 5: Development of major price indices (1999 = 100)

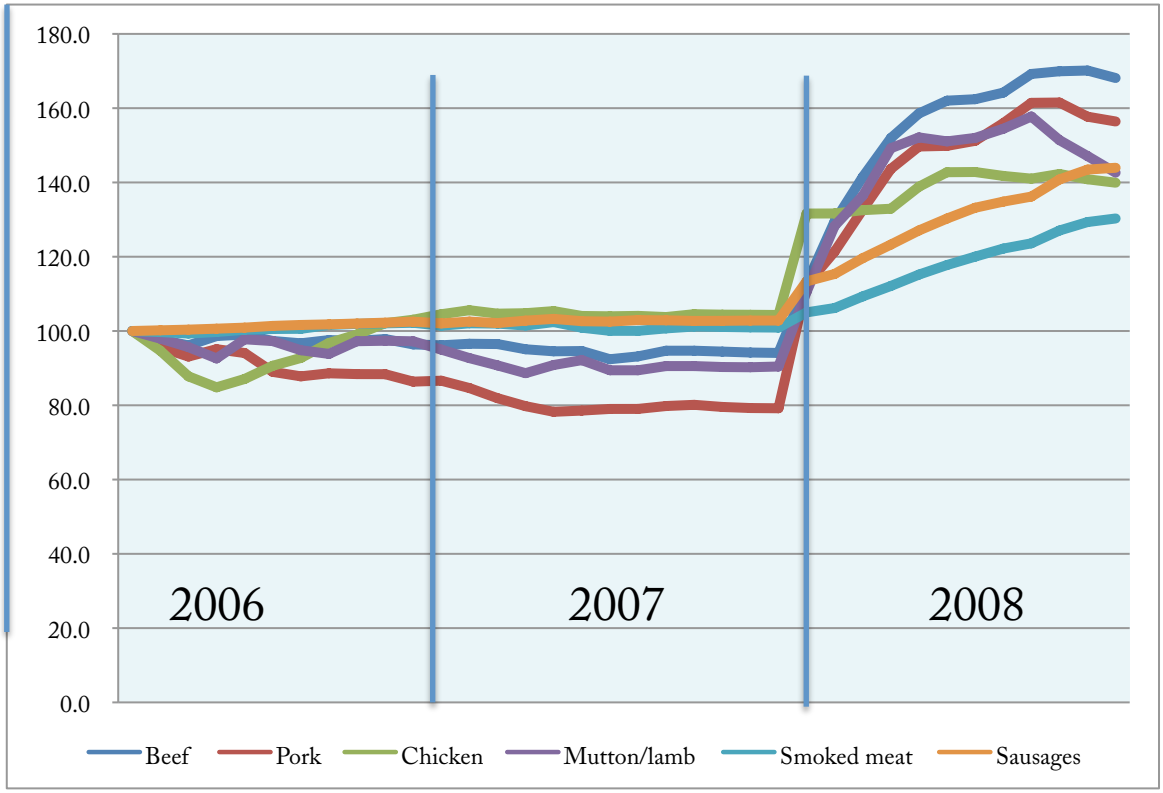


Monthly price changes for meat items

The analysis of month-to-month changes for a wide range of meat cuts and meat products also reported by the National Bureau of Statistics paints a slightly different picture. Figure 6 summarizes the changes over time in the form of index numbers, setting the prices for January 2006 to 100. These figures do not show any increases for the first two years of the period covered (2006 and 2007), in contrast to the overall meat price index shown in Figure 5. However, the monthly price data show a significant leap in January 2008 for virtually all meat products, with the exception of smoked meat products and sausages. On average, according to these data, consumers were facing a 20-percent price jump for meat in January 2008 over December 2007. It is hard to conjure up an explanation that market forces caused this jump. It looks more like a situation where

informal or formal price guidelines were lifted, causing a one-time adjustment. This interpretation is buttressed by the behavior of meat prices toward the end of 2008, when the government "suggested" that meat prices were too high, and the industry dutifully reduced prices, reportedly by 9 percent. The fact that this jump in meat prices followed the full implementation of the new 2007 import licensing system that in effect creates significant market control for importers who act *only as suppliers* of imported meat—not processors or distributors—may be a coincidence.

Figure 6: Monthly changes in meat in meat price indices



Price comparisons

To examine the often-heard argument that meat and meat products in Moldova are much more expensive than elsewhere in Eastern Europe, the analysis relied on three data sources:

- the monthly price data for meat items, shown in index form in Figure 6;
- the results of a retail mapping exercise conducted by the team in March 2009 in the Chisinau areas; and
- a compilation of reference prices for other countries, using web-based sources and personal store tours in other countries.

Retail mapping exercise

Selection of stores

The retail mapping exercise covered ten retail stores and a local farmers' market over a two-day period of time in March of 2009. Retail stores fell into three categories: major retail chain stores, local independent retail shops, and "company" stores. Company stores are small outlets exclusively selling meat products from a local meat processing company. In addition, the survey included a tour of the local farmers' market, where local fresh and processed meats items are sold at small independent stalls that are rented by companies or individuals.

Retail Case Allocation

Within the meat section of the retail store there are many different areas of emphasis. The primary distinction is between fresh meat and processed meat products.

Fresh meat products have not been further processed, do not contain any additives or preservatives, and have not been heat treated (cooked). Processed meats products have been further processed, may contain additional ingredients, and have been partially or fully cooked, and perhaps smoked.

Fresh and processed meat cuts are generally sold at either a full-service case, complete with a butcher to measure, cut and wrap the purchase, or a self-service case with pre-wrapped, labeled and weighed products for easy selection.

Case allocation within categories

Within the fresh and processed meat sections of the retail store the distribution of products within categories is important.

Fresh meat includes beef, pork, lamb and poultry meats, can be sold as whole muscle cuts, which are more valuable, or ground meat, which is less expensive and can contain lower value trim and end cuts.

Processed meats can be further segmented into sausage and smoked meat items. Sausages, sometimes called semi-finished or finished goods, are ground, mixed, spiced, and stuffed into casings. Some of these products are partially cooked, and must be cooked at home by the consumer, while others are fully cooked and "ready to eat." Smoked meat products are generally made from muscle cuts, such as loins, hams or shoulders of pork, and are fully cooked and perhaps smoked prior to sale.

Sausage products can be manufactured with a single raw material, such as all beef or all pork, or can contain a blend of lower value raw materials like poultry (predominantly chicken) and/or soy to reduce the quality and price of the products.

Country of origin

An attempt was made to determine the country of origin of meat for sale at the retail centers. While it would be impossible to determine the percent or presence of imported raw materials in processed meats at the retail case, an attempt to determine if any fresh meat was being sold from imported sources was made.

Pricing

A non-scientific evaluation of product pricing was conducted. Within each category and sub-category the lowest and highest price for retail goods was recorded, along with a blended average. The blended average is meant to indicate where the bulk of products are priced, rather than a true average. Attempts to determine the differences in prices for similar goods between types of retail stores were made.

Comparative pricing for similar products outside of Moldova was attempted, using industry contacts, web-based sources, and personal retail store tours.

Discussion

Appendix 1 contains a table with the non-scientific results of the retail mapping exercise, including data from the 10 stores visited and the farmer's market. When appropriate, averages between store types were calculated.

Selection of stores

Five (5) of the 10 stores were classified as major chain stores, with multiple outlets in Moldova. Some of these stores are quite large, and offer a multitude of services to consumers. One of the 5 chain stores is open 24 hours per day, while another is known for its bulk foods purchasing strategy and warehouse layout.

Three (3) of the 10 stores were small independent retail meat shops. These stores were located in larger shopping or consumer malls, as well as in neighborhoods near large apartment buildings.

Two (2) of the 10 stores were company stores, representing an exclusive assortment of processed meats items from a local meat processing company.

The farmer's market was a large collection of vendors offering a wide array of retail goods. The meat area of the market was a collection of buildings where stalls were for rent to individuals or companies. It should be noted that the market did not have the level of professionalism or sanitary controls as the retail markets visited, and for this reason the data is discussed separately and not averaged with the retail store data.

Retail case allocation

Fresh and Processed Meat: Table 3 shows the results of the retail case allocation survey. Major retail chains offer consumers a balance of fresh meat and processed meat items, with 65 percent of the meat section devoted to processed meats and 35 percent to fresh meats. This heavy allocation to processed meats could be attributed to a cultural preference for processed meats, as is commonly seen in Eastern block and Former Soviet Union (FSU) countries. However, the high utilization of processed meats, especially lower priced sausage, may be indicative of high meat prices and tough economic times.

Full-Service and Self-Service Meat Cases: Table 3 also indicates that major retail chain stores offer consumers more full-service options for purchasing meat, with 57% of the available meat case utilized as full-service, overall. It should be noted that one of the five major chains did not offer self-service meat cases, whereas the store utilizing the warehouse or bulk shopping concept offered very little full-service options. It should be further noted that full-service prices usually tend to be slightly higher than self-service, due to the necessary staffing to wait on customers.

Table 3: Retail case allocation

Fresh Meats	Processed Meats	Full-Service Case	Self-Service Case
35 percent	65 percent	57 percent	43 percent

Small independent retail chains and company stores did not feature self-service meat cases or offer fresh meat items, but instead offered a variety of processed meats items, including smoked meats and sausage through full-service cases. Along with the meat items the stores would stock a small selection of other convenience items, including other perishable goods like dairy products and fruit.

Company stores did not offer any fresh meat items, devoting all of their retail case space to company-produced processed meats items, although they may have a few non-perishable convenience items for sale. Meat sales were full-service, without self-service options available.

The mix of full-service retail stalls at the farmer's market was equally split between fresh meat vendors and vendors of processed meats items. Most of the stalls were located in a single meat area, although there were small vendor stalls of processed meat or frozen poultry (imported) scattered around the property.

Retail Case Allocation within the Fresh Meats Category: Within the fresh meat category, major retail chains devoted approximately 24.2 percent of the case space to fresh beef, 29.2 percent of the case to fresh pork, 1 percent of the case to fresh lamb, and 45.6 percent of the case to fresh poultry, as shown in table 4. It should be noted that only the major retail chains had fresh meat, and that data from other types of stores was not included in these averages.

Pork product placement was equal to or greater than that of beef in all cases, indicating a strong cultural preference to pork or a greater availability of pork meat at the retail level. The low percentage of beef available may be due to prices, which will be discussed later, or due to the longer generation time of raising beef cattle. The severe fluctuation of feedstuff availability and generation time to raise cattle seems to result in a periodic liquidation of livestock animals in Moldova, which may subsequently result in lower cattle numbers for local slaughter or an unwillingness of farmers to re-enter the cattle business.

Table 4: Allocation within fresh meats category

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Class	Percent allocation	Split muscle/ground (%)	
Beef	24.2	Muscle	60
		Ground	40
Pork	29.2	Muscle	85
		Ground	15
Lamb	1	Muscle	100
		Ground	0
Poultry	45.6	Muscle	100
		Ground	0

important to note that the percentage of case space allocated to poultry, specifically chicken, is startling. Almost 50 percent of the retail case space in the fresh meats area was devoted to poultry, indicating a significant attempt to offer consumers lower priced protein compared to beef and pork. One major retail chain was not even offering fresh beef to customers, opting for poultry and pork instead.

It is also important to note that only 1 of the 10 retail stores offered fresh lamb for sale, and that fresh lamb only accounted for approximately 5 percent of the total fresh meat case, indicating a limited popularity with consumers at these types of retail stores.

Within the fresh beef category, a moderate percentage (40%) of fresh meat was offered as ground beef. The percentages were somewhat lower for pork, with 15% of the fresh pork offered as ground meat. These numbers would seem to indicate that retailers are trying to provide customers with a lower value protein product in comparison with whole muscle cuts of higher value.

At the farmer's market the distribution of fresh meat was heavily favored towards pork meat, with about 50% of the stalls selling pork, and approximately 30, 5 and 15% of the remaining stalls selling beef, lamb and poultry, respectively. Ground meat items were not offered.

Retail Case Allocation within the Processed Meats Category: Within the processed meats category, major retail chains devoted approximately 73 percent of the case space to sausage products and almost 27 percent to smoked meats, as shown in table 5. This high percentage of case space for sausage products indicates a desire to offer consumers lower cost processed meats products.

Table 5: Allocation within processed meats category

Class	Overall	Beef	Pork	Poultry	Blended
Sausage	73.3	6.1	7.2	6.5	80.3
Smoked meats	26.7				

Within the sausage category, the bulk (over 80 percent) of the sausage products appeared to be made with a blend of raw material ingredients. It should be noted that the products at the full-service retail case were not labeled with raw material ingredients, however, similar products in the self-service case showed poultry and soy as the primary ingredients in addition to some beef and pork. Ingredients are listed, by law, in the descending order of use, and the price of the sausage seemed to reflect the use of beef, pork, poultry and soy as the ingredients, with cheaper sausages having a higher percentage of poultry and soy products.

The percent of "all beef" and "all pork" sausage was very low, approximately 6 and 7%, respectively, whereas the use of chicken or soy as a raw material ingredient seemed very prevalent. This would indicate a significant trend towards producing lower quality and lower cost sausage products for sale to consumers. It should be noted that a significant amount of the poultry raw material used in processing sausages is called "mechanically separated poultry", or MSP, and is a very low quality raw material similar to blended chicken meat.

Smoked meats were primarily of pork, and seemed to be of high quality in the major retail chain stores.

Country of origin

Efforts to determine the country of origin of fresh meat were ineffective. Products on display at all of the retail markets did not have any reference information pertaining to the country of origin, and questions asked of butchers and sales personnel at full-service cases did not provide useful information (they did not know the answer or were unwilling to say).

It should be noted that at the farmer's market there were several stall vendors selling imported frozen poultry (chicken) from the United States and Canada, with the frozen leg quarters being chopped and sold directly from the import boxes.

It should be further noted that imported processed meats were available at the major retail chains, but generally featured as high-quality and high-value imported products from Italy, France and Germany. The products did not appear to be in direct competition with locally produced processed meats products.

Prices

Major Retail Stores: Average prices for categories of meat products observed at the retail level are shown in table 6, alongside results from a recently published retail pricing trends survey from 2006 to 2008. The complete retail price summary can be located in Appendix 1.

While slightly higher when compared to 2008 data, the retail mapping numbers are very close to the reported retail price trends, perhaps indicating a slight increase of pricing through the first quarter of 2009.

Table 6: Comparison of retail prices

Category	Average 2008 retail price, in lei/kg, from the NBS 2006-2008 price surveys	Average 2009 retail price, in lei/kg, from the retail mapping exercise	Summary of comparison international prices, converted to lei/kg
Fresh Beef	85.89	96.00	50.00
Fresh Pork	88.09	89.00	61.00
Fresh Lamb	51.66	65.00	40.00
Fresh Poultry	44.34	49.00	41.00
Smoked Meats	123.00	129.00	95.00
Sausage	67.65	76.00	45.00

The major retail chain stores were all competitive with regard to pricing of fresh and processed meats items. Pricing strategy was similar in each, with the exception of the chain store that featured bulk pricing options similar to a warehouse store. Major retail chain stores were the lowest price options for consumers, with the exception of the farmer's market. Within the fresh meat category beef products were the most expensive, averaging 96 lei per kilogram (kg), followed by

pork at 89 lei/kg, lamb at 65 lei/kg, and poultry (chicken) at 49 lei/kg. Average prices for fresh beef and pork do not include the ground meat sections, which offered products for considerably less, around 55 lei/kg, making them more competitive with fresh chicken meat.

Smoked meat products were the highest priced products, on average, in the meat section, with an average price of 129 lei/kg. Some smoked meat items were offered at 180 lei/kg for locally produced products, whereas imported smoked meats from Italy and France were priced at over 300 lei/kg.

Sausage products exhibited the largest range of prices, with very low cost and low quality items offered as low as 27 lei/kg, and high price sausage as expensive as 150 lei/kg. The estimated average price for sausage was 76 lei/kg, making it moderately priced when compared to fresh beef and pork, but more expensive than fresh poultry.

Small Independent Retail Stores: The primary marketing strategy for the small independent retail stores is convenience. Located in larger shopping malls or in neighborhood areas, these stores offer a limited selection of items that can be purchased for convenience on the way home from work. The prices are not competitive with the major retail chains, nor are the variety or selection. Fresh meat items were not offered for sale, although processed meats, cheeses, dairy products and a limited selection of fruit and vegetables were available.

Smoked meats averaged 140 lei/kg, or about 10 lei/kg higher than the major retail centers. Processed sausage products averaged 92 lei/kg, with a smaller price range of products offered.

Company Stores: There are very few company stores in the metro area, and these stores are not conveniently located for most consumers. Larger companies may have a few outlets, but these are not the primary means of selling their production. These stores seem to be similar to outlet stores, with a good variety of the company's products at competitive prices due to factory-direct marketing. Prices for smoked meats were similar to the major retail chains, approximately 128 lei/kg, whereas prices for sausage items were slightly lower at 63 lei/kg.

Farmer's Market: Prices at the farmer's market were considerably lower than any other outlet visited during the retail mapping exercise. However, so was quality, packaging, sanitation and government oversight. The farmer's market was a bazaar of independent stalls offering a wide array of commercial and "home grown" meat products.

The fresh meat appeared to be from inspected slaughter facilities, although the only way to tell was by evidence of an inspection stamp, which was apparent on some items, but not all. Sanitary conditions were not good, and the products and area were not properly refrigerated to protect the product safety. Vendors sold their products on the barter system, and none of the fresh meat products were properly packaged or labeled. The average price for fresh beef was 60 lei/kg, with fresh pork, lamb and poultry priced at 50, 50 and 45 lei/kg, respectively.

Smoked meats were approximately 95 lei/kg, but appeared to be mostly of the home grown variety and of questionable quality. Sausage was priced at approximately 50 lei/kg, and contained a combination of home grown and commercial products for sale.

Summary discussion on prices

Competitive pricing for similar types of meat products outside of Moldova yet still in the same region is difficult to determine. However, through a combination of personal interviews with colleagues in the region, internet searches, and a tour of major retail chain stores in Serbia, the research team estimated average prices for similar types of meat products, as shown in table 6. On

the basis of this data collection, it appears that Moldovan meat products are much more expensive than similar products at retail stores in other nearby countries. A pooled summary of international meat prices for fresh beef, pork, lamb, poultry and processed meats, including sausage and smoked meats, indicated that similar products were significantly less expensive outside of Moldova.

Within the fresh meats category, fresh poultry was most comparable in price, whereas fresh beef and pork were much more expensive in Moldova when compared to other countries. This may be in part due to the inefficient production technologies and limited availability of feedstuffs, resulting in high priced raw materials for fresh meat.

Within the processed meats category, smoked meats were the closest in prices, whereas sausage items appeared to be much more expensive in Moldova. The impact of high price imported raw materials, which constitute a significant percentage of Moldovan finished products, estimated at between 70 and 90 percent, may be driving the finished price well above the norm.

The pricing of meat products at retail, compared with the low per capita consumption numbers reported for Moldovan consumers would seem to indicate that meat is either not available or not affordable to most consumers.

Discussion elsewhere in this document will address some of the issues of competitiveness that may be impacting the price of the local and imported raw materials used in processing, thereby resulting in finished goods prices, both of fresh and processed meat items that are seemingly too high for the quality of products being sold.

The burden of high meat prices

The pooled summary of international reference prices suggests that Moldovan households are paying more for meat and meat products than households in neighboring countries. The difference appears smallest for fresh poultry where the Moldova price is between 8 and 20 percent higher than the international reference price (for the 2008 and 2009 Moldova prices, respectively). Fresh beef and pork, however, are much more expensive in Moldova when compared to other countries, where Moldovan households pay between 72 to 92 percent more for beef, and between 44 and 46 percent more for pork. Within the processed meats category, smoked meats cost roughly 30 percent more in Moldova, while sausage items cost between 50 and 69 percent more (again with reference to the 2008 and 2009 prices). Overall, the unweighted average difference in price is 39 to 52 percent (for the 2008 and 2009 prices, respectively). Even under the assumption that the average own price elasticity is greater than unity in absolute terms, the difference in prices would explain the observed "underconsumption" found in the international comparison of meat consumption data.

In other words, Moldovans are paying somewhere between MDL 20 to 30 more per kg of meat and meat products. With a recent per capita consumption level of 36 kg, the additional price burden on every Moldovan therefore translates into roughly MDL 1,000 (36 * 28), or USD 100. With a per capita income of roughly USD 2,100, the additional meat price burden means a "tax" of 5 percent on every woman, man and child in Moldova as a result of the lack of competitiveness in the meat value network. Five percent of GDP is a high price to pay for institutional rigidities and uneven distribution of market power. While these figures are rough approximations, they underline the cost to the economy of poor market structures shaped primarily by government policy.