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KAZAKHSTAN MEAT INDUSTRY ANALYSIS: IMPORT SUBSTITUTION, DELIVERY AND STATISTICS

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Abstract. Effective management of food safety and product quality issues is critical for maintaining and enhancing the competitiveness of livestock production. Food safety and quality standards are now and will become increasingly important for the competitiveness of livestock products. For most producers and processors of livestock products, as well as for most livestock products, domestic demand remains the main, if not the only, driving mechanism for market improvements in food safety and quality. Better imports entering the market already indicate the need to raise standards, at least to maintain domestic market share, as well as to achieve import substitution or appeal to export markets. International experience shows that the implementation of quality standards should be stimulated by the private sector, but not by the government. However, the government plays an important role in improving the skills of veterinarians and providing advisory services to help livestock producers and processors meet the ISO (International Organization of Standardization) and the CCPHA (Critical Control Point of hazard analysis) standards. In other to create conditions for the prosperity of the livestock industry, the government needs to pay more attention to the following two key areas: reducing market costs and prudent management of food safety and quality of livestock products. With the transition to more dispersed cattle breeding, the cost of re-establishing links between scattered and small livestock producers and consumers, local or foreign, has increased. But such costs can be reduced. To ensure food safety, meet consumer requirements and increase the ability to compete with imports, domestic producers need to strengthen their capacity to achieve higher standards of safety and quality. Attention should be paid to such instruments of the import substitution strategy as an active industrial policy, trade protection and export promotion. The purpose of this study is to analyze the meat industry of Kazakhstan, to present the problems that the industry is facing at the present stage and direct their solutions and the tasks of the state in this mechanism. The

scientific novelty of the study lies in the development of measures to develop policies in the field of the meat industry in the context of import–substituting policies and the development of appropriate organizational and economic tools for their implementation

Keywords: competitiveness; meat production; innovation; import substitution strategy; state regulation

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JEL Classification: A10; A11; F13

1. Introduction

The meat processing industry has traditionally been one of the main agricultural industries in Kazakhstan. Its essence is the integrated processing of livestock. The industry unites many enterprises of various fields of activity: livestock raising and fattening, production of animal feed, slaughter and processing of conditioned animals, production of meat products, storage and sale of products, as well as service enterprises of the industry.

In recent years, the Republic of Kazakhstan has been actively using an import substitution policy in the field of beef and veal. There is a certain possibility of slowing down or changing the trend of imports of processed livestock products to the domestic market. The key point of import substitution in the future will be to increase the productivity and competitiveness of domestic producers and processors, as well as improve the quality and safety of food products to meet the standards of the corresponding imported processed products. The idea of import substitution, as well as its attendant problems and challenges, permanently arise and become relevant for national economies within the framework of national security concepts and socio–economic development strategies of different countries. The Republic of Kazakhstan is not an exception. The meat and meat products market, being the largest segment of the domestic food market, has a significant impact on the country's food supply. The presented study examines the features of meat industry development in the implementation of import substitution programs (Simachev & Kuzyk, Zudin, 2016)). The solution of import substitution problems is a complex of long–term measures, in the implementation of which both state bodies at all levels, business itself, and local governments should take part.

Contribution to science. Import substitution is a survival strategy. Shakarim University in Semey, contributes to the solution of the problem of import substitution. Thus, Kazakh specialists develop equipment and production technologies for the meat industry and other products that meet international standards. Specialists of regional universities and meat industry enterprises (Semipalatinsk meat processing plant, Kubley LLP, Rubikom Meat processing plant) make a huge contribution to science. All enterprises of the meat industry are focused on specific cases that contribute to solving problems that are strategically important for the regions and the country (Tvaronavičienė, Ślusarczyk, 2019), (Tvaronavičienė, Razminienė, 2017). One of these projects was the creation of world–class advanced technologies and equipment for the production of meat products in the framework of the import substitution program, carried out in cooperation with high–class specialists. The advantages of the equipment are obvious: when creating it, an integrated approach is used, taking into account literally everything, from the technological project to the final result – as a result, manufacturers offer a ready–made solution, a "turnkey" project. The equipment fully meets the highest international standards, while its price is significantly lower than for imported analogues. Kazakhstan's major producers and farmers, as well as from near and far abroad, showed interest in the new technology. Universities contribute to the solution of the important state task of filling the market with high–quality and useful domestic meat products. An important role in this is played by actively involved students, undergraduates, and doctoral students in the research and production process. Their

participation in production essentially outgrows the scope of career guidance, becoming a serious activity with the prospect of continuing after graduation.

Novel ideas.

In Kazakhstan, all the necessary conditions are available for the development of beef cattle breeding: large areas of natural forage land and deposits, empty livestock premises, livestock personnel, natural resources of large livestock, allowing to develop beef cattle breeding in various natural and climatic conditions. The country has real opportunities to occupy a worthy niche among the world's exporters of meat and processed products – extensive pasture lands that allow to reduce the cost of production as much as possible, the presence of a large Russian market in the neighborhood (which is located in the common customs space) and, finally, the existing national traditions of beef cattle breeding.

Increasing the economic efficiency of agriculture allows you to increase the production of agricultural products with the same resource potential and reduce labor and material costs per unit of production. As an assessment of certain activities carried out in agriculture, the criterion of economic efficiency is used. Economic efficiency of agricultural production is characterized by profitability, which is an economic category that reflects the profitability of the enterprise, industry. Analysis of world experience has shown that one of the important characteristics of any highly developed country is the presence of an effective livestock industry. It is developed animal husbandry that ensures the full nutrition of the population and its viability.

The increase in livestock will stimulate the growth of domestic trade, as well as encourage the country to export large volumes. For Kazakhstan, it will be quite easy to export at a sufficient level of livestock, due to the appropriate market conditions, namely, natural and climatic conditions, the availability of pastures, and the proximity of capacious markets.

2. Literature review

A review of literature showed that these measures have a positive effect on the development of import substitution of meat products in Kazakhstan. Many studies are devoted to the effectiveness of import substitution policies (Austin, 2010), (Bochko, 2015). (Bruton & Henry, 1989), (Kysil, Kolodka & Rosokhata, 2014), (Volchkova & Turdyeva, 2016), (Niyazbekova, Baigireyeva, Niyazbekova, Borisova & Ivanova 2019), (Lambert & Burduroglu, 2002), (Drexl & Kimms, 1997), (Mula, Peidro, Diaz–Madronero & Vicens, 2010), (Ozguven, Ozbakir & Yavuz, 2010), (Rodrigues, 2010), (Abenov, Kirdasinova, Tulaganov, Zhumataeva, Mutalyieva & Issayeva, 2019), (Bravo, Álvarez, 2012). (Beregova & Klipin, 2017),

There is a point of view whose supporters point to significant benefits from the developed policies and opportunities to accelerate the development of the economy through the use of various economic support mechanisms (Baynov, 2018), (Chen & Lee, 2008), (Chen, 2010), (Vatolkina & Gorbunova, 2016).

Among scientific approaches, the term “import substitution” is interpreted as the process of replacing imported goods with domestic ones in the market (Ioris, 2018). The term “import substitution” is interpreted as a way of the country's economy entering the world economy system (Zhudro, 2014); as well as for the economic development of regions (Bochko, 2015), (Nassyrova, Niyazbekova, Ilyas, Zhanabayeva, Khassenova & Tlessova, 2020).

3. Methodology

The methodological basis of study was the fundamental provisions in the field of meat industry in the conditions of sustainable development, scientific papers of scientists in the field of food security, reviews of meat industry performance of the Republic of Kazakhstan. In science, certain development methods have been developed in the field of import substitution of meat products in the conditions of sustainable development. However, to determine the directions of import substitution, various integrated approaches are needed. In the course of studying the issues of ensuring import substitution in the field of meat industry as part of the analysis of sustainable development, data for a number of years «Analysis of beef and veal imports», «Beef and veal supplies of the Republic of Kazakhstan» were carried out.

The current state of industry, the volume of its financial support were analyzed in the study. The state support of import substitution in an industry and its results are examined in detail. Based on current state data, the main problems of the industry development are identified, shown the dynamics of import substitution in it, recommendations on the effective development of the industry in the long term are made. The study revealed positive dynamics in the market of meat and meat offal.

4. Application functionality

In Kazakhstan, the production of meat and meat products has traditionally been considered one of the main priority areas in agriculture. The greatest results were achieved in 1980s, when annual meat production (in slaughter weight) exceeded the milestone of 1.5 million tons, and 95 kg were produced per capita. Accordingly, the processing enterprises in the form of meat–packing plants, cold–slaughter houses, numerous sausage shops and slaughterhouses have also received proper development. Today, despite stabilization and some growth in domestic production, there is a tendency to increase imports of poultry meat and sausages in the domestic market, while the share of imports of canned meat and meat and vegetable products is still high (52 %). There is a problem of the lag of meat processing enterprises of the Republic of Kazakhstan in the development of advanced technologies and technical equipment. The meat industry of the Republic of Kazakhstan has long been well–developed by livestock is the oldest industry and is in first place in terms of output.

Let’s consider the analysis of meat industry market for the past fifteen years. Import of beef and veal in Kazakhstan by years (table 1).

Table 1. Import of beef and veal in Kazakhstan for 2005 – 2019

Market Year	Imports	Unit of Measure Единица измерения	Growth Rate
2005	11	(1000 MT CWE)	37.50 %
2006	22	(1000 MT CWE)	100.00 %
2007	30	(1000 MT CWE)	36.36 %
2008	20	(1000 MT CWE)	–33.33 %
2009	11	(1000 MT CWE)	–45.00 %
2010	16	(1000 MT CWE)	45.45 %
2011	18	(1000 MT CWE)	12.50 %
2012	30	(1000 MT CWE)	66.67 %
2013	35	(1000 MT CWE)	16.67 %

2014	27	(1000 MT CWE)	-22.86 %
2015	26	(1000 MT CWE)	-3.70 %
2016	18	(1000 MT CWE)	-30.77 %
2017	29	(1000 MT CWE)	61.11 %
2018	26	(1000 MT CWE)	-10.34 %
2019	26	(1000 MT CWE)	0.00 %

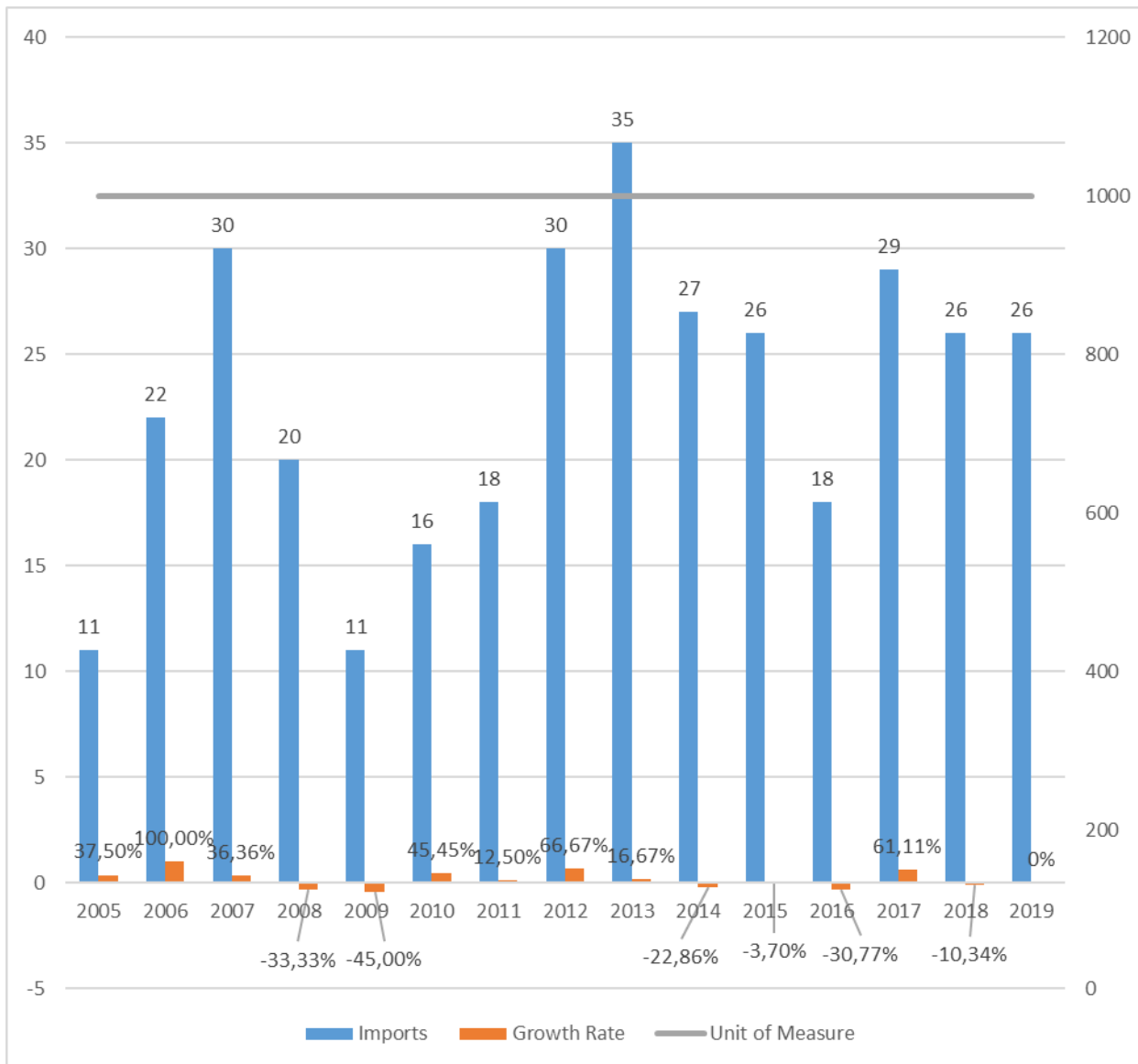


Figure 1. Import of beef and veal in Kazakhstan for 2005 – 2019

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=beginning-stocks>

The meat and meat products market is characterized by low supply, high import dependence, as well as the imperfection of the price system and the chain of goods movement. Beef and veal production in Kazakhstan by years (table 2).

Table 2. Beef and veal production in Kazakhstan for 2005 – 2019

Market Year	Production	Unit of Measure	Growth Rate
2005	345	(1000 MT CWE)	4.55 %
2006	370	(1000 MT CWE)	7.25 %
2007	384	(1000 MT CWE)	3.78 %
2008	400	(1000 MT CWE)	4.17 %
2009	400	(1000 MT CWE)	0.00 %
2010	407	(1000 MT CWE)	1.75 %
2011	393	(1000 MT CWE)	-3.44 %
2012	374	(1000 MT CWE)	-4.83 %
2013	384	(1000 MT CWE)	2.67 %
2014	406	(1000 MT CWE)	5.73 %
2015	416	(1000 MT CWE)	2.46 %
2016	425	(1000 MT CWE)	2.16 %
2017	451	(1000 MT CWE)	6.12 %
2018	477	(1000 MT CWE)	5.76 %
2019	480	(1000 MT CWE)	0.63 %

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=beginning-stocks>

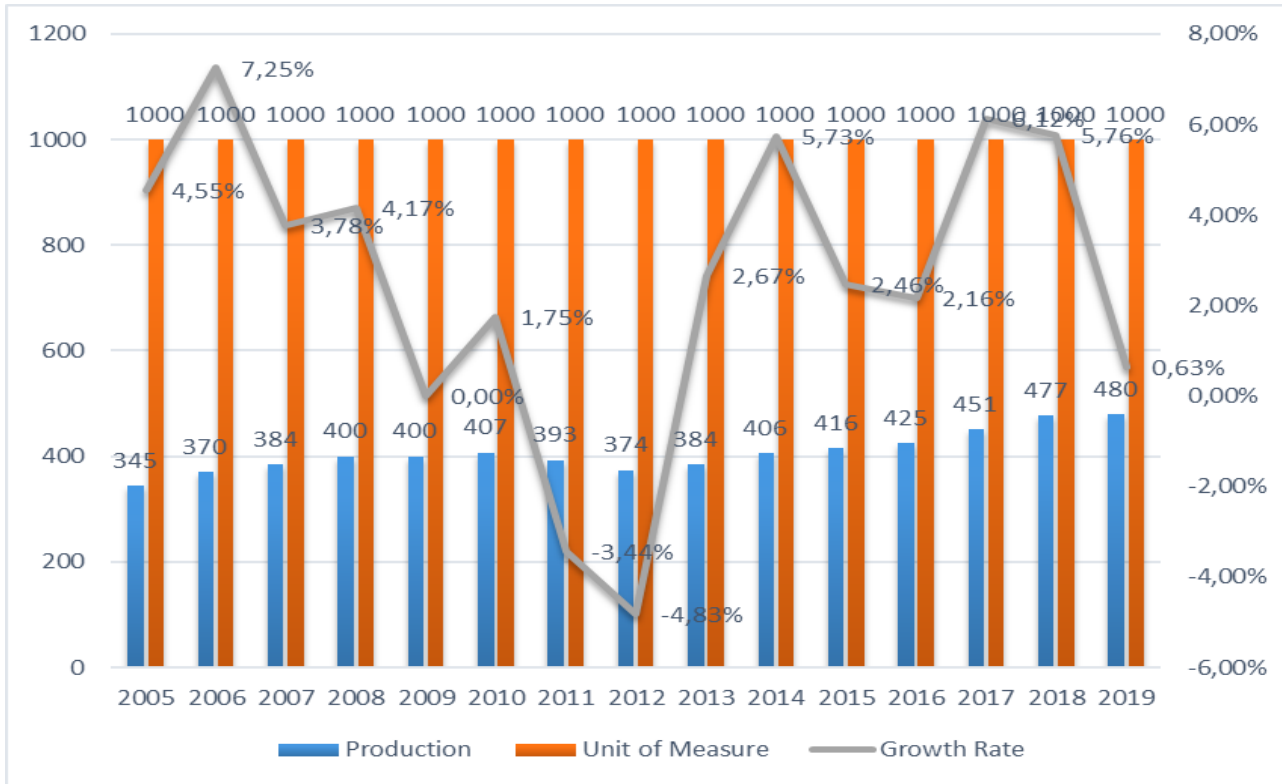


Figure 2. Beef and veal production in Kazakhstan for 2005 – 2019

Source: compiled by the authors according to the source Index Mundi

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<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=production>

The beef industry development is characterized by stable demand in the domestic market. Unfortunately, meat is more consumed in Kazakhstan than produced.

Domestic consumption of beef and veal in Kazakhstan by years (table 3).

Table 3. Domestic consumption of beef and veal in Kazakhstan for 2005 – 2019

Market Year	Domestic Consumption	Unit of Measure	Growth Rate
2005	356	(1000 MT CWE)	5.33 %
2006	392	(1000 MT CWE)	10.11 %
2007	414	(1000 MT CWE)	5.61 %
2008	419	(1000 MT CWE)	1.21 %
2009	411	(1000 MT CWE)	-1.91 %
2010	422	(1000 MT CWE)	2.68 %
2011	411	(1000 MT CWE)	-2.61 %
2012	403	(1000 MT CWE)	-1.95 %
2013	418	(1000 MT CWE)	3.72 %
2014	430	(1000 MT CWE)	2.87 %
2015	440	(1000 MT CWE)	2.33 %
2016	442	(1000 MT CWE)	0.45 %
2017	478	(1000 MT CWE)	8.14 %
2018	496	(1000 MT CWE)	3.77 %
2019	499	(1000 MT CWE)	0.60 %

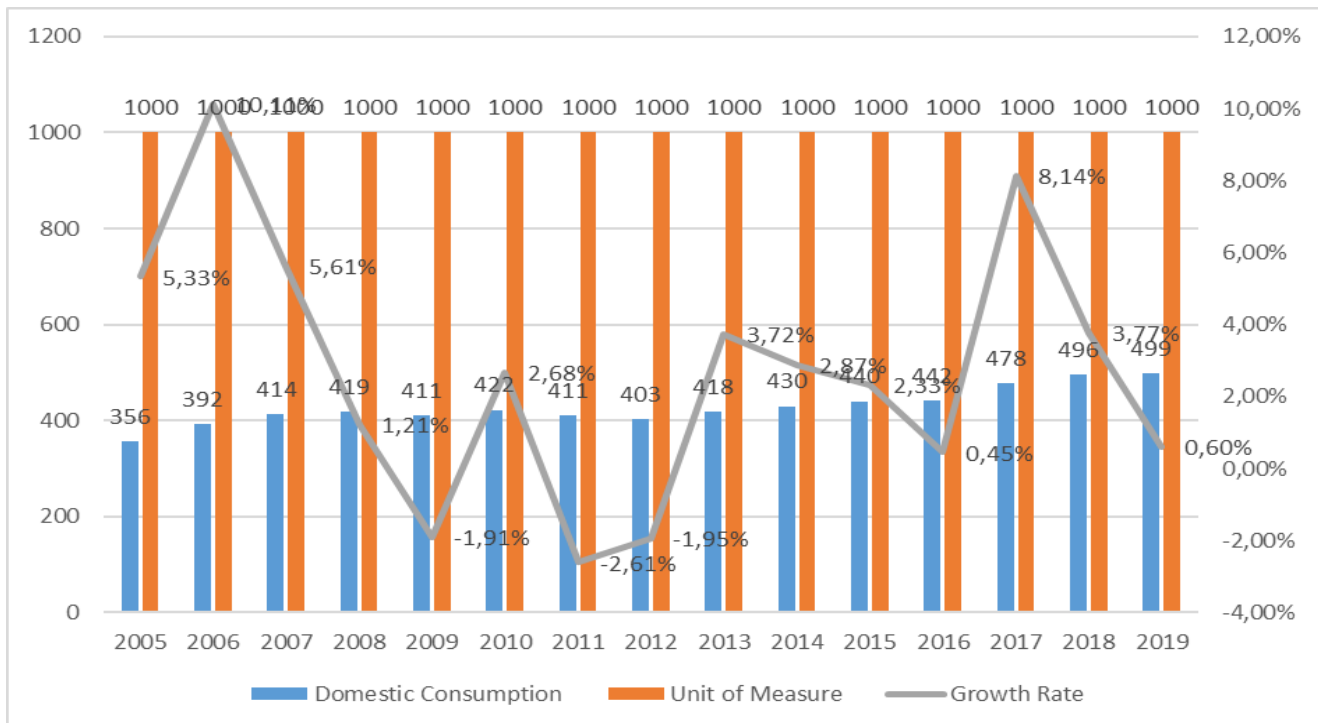


Figure 3. Domestic consumption of beef and veal in Kazakhstan for 2005–2019

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=beginning-stocks>

At the present stage, the issues of saturation of the market with meat products of domestic production, improving quality, increasing competitiveness, expanding the assortment are becoming increasingly important.

Stocks of beef and veal in Kazakhstan for 2005 – 2019 (table 4).

Table 4. Stocks of beef and veal in Kazakhstan for 2005 – 2019

Market Year	Ending Stocks	Unit of Measure	Growth Rate
2005	0	(1000 MT CWE)	NA
2006	0	(1000 MT CWE)	NA
2007	0	(1000 MT CWE)	NA
2008	0	(1000 MT CWE)	NA
2009	0	(1000 MT CWE)	NA
2010	0	(1000 MT CWE)	NA
2011	0	(1000 MT CWE)	NA
2012	0	(1000 MT CWE)	NA
2013	0	(1000 MT CWE)	NA
2014	0	(1000 MT CWE)	NA
2015	0	(1000 MT CWE)	NA
2016	0	(1000 MT CWE)	NA
2017	0	(1000 MT CWE)	NA
2018	0	(1000 MT CWE)	NA
2019	0	(1000 MT CWE)	NA

Source: compiled by the authors according to the source

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=ending-stocks>

Kazakhstan is a major producer and exporter of meat, especially beef and veal.

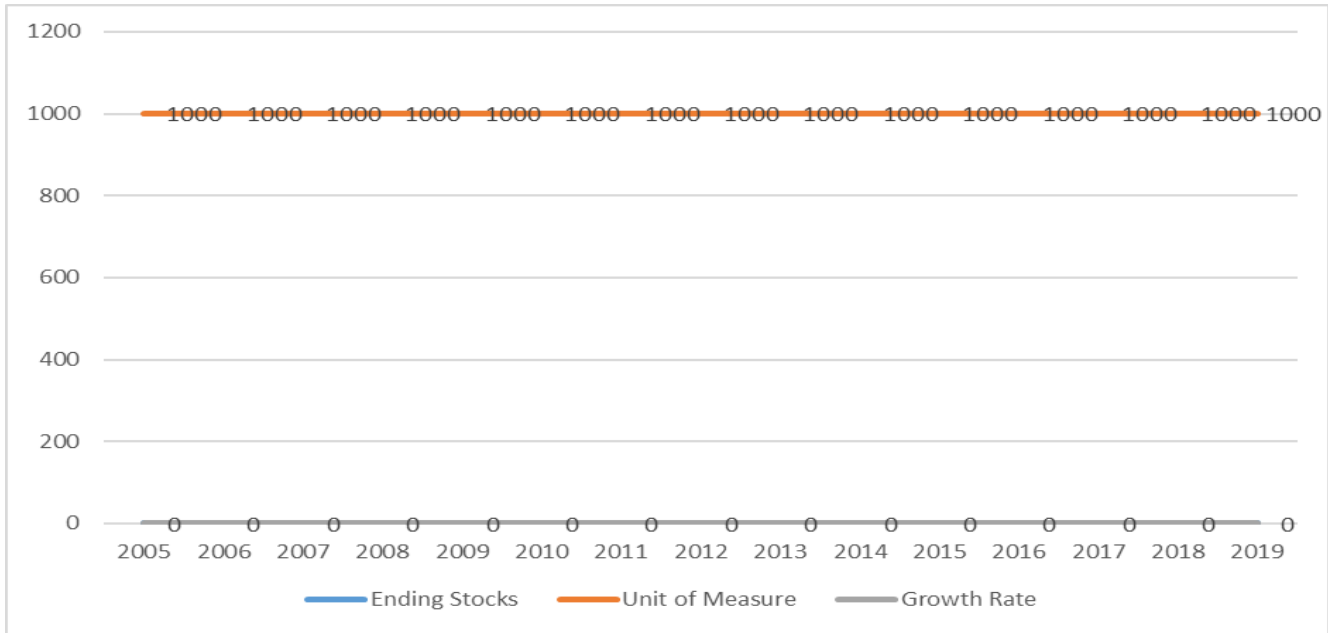


Figure 4. Stocks of beef and veal in Kazakhstan for 2005 – 2019

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=ending-stocks>

From Figure 4 we see that the stocks of beef and veal in the country were not practiced. The trend is negative. Export of beef and veal from Kazakhstan by years (table 5).

Table 5. Export of beef and veal from Kazakhstan in 2005 – 2019

Market Year	Exports	Unit of Measure	Growth Rate
2005	0	(1000 MT CWE)	NA
2006	0	(1000 MT CWE)	NA
2007	0	(1000 MT CWE)	NA
2008	1	(1000 MT CWE)	NA
2009	0	(1000 MT CWE)	-100.00 %
2010	1	(1000 MT CWE)	NA
2011	0	(1000 MT CWE)	-100.00 %
2012	1	(1000 MT CWE)	NA
2013	1	(1000 MT CWE)	0.00 %
2014	3	(1000 MT CWE)	200.00 %
2015	2	(1000 MT CWE)	-33.33 %
2016	1	(1000 MT CWE)	-50.00 %
2017	2	(1000 MT CWE)	100.00 %
2018	7	(1000 MT CWE)	250.00 %
2019	7	(1000 MT CWE)	0.00 %

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=ending-stocks>

According to the Eurasian Economic Union, Kazakhstan exported beef to China in 2016, almost 12 tons http://www.eurasiancommission.org/ru/act/prom_i_agroprom/dep_agroprom/sensitive_products/Documents/%D0%9E%D0%91%D0%97%D0%9E%D0%A0%20%D0%BF%D0%BE%20%D0%93%D0%9E%D0%92%D0%AF%D0%94%D0%98%D0%9D%D0%95.pdf.

Distribution of beef and veal in Kazakhstan by years (table 6).

Table 6. Distribution of beef and veal in Kazakhstan for 2005 – 2019

Market Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Distribution	356	392	414	420	411	423	411	404	419	433	442	443	480	503	506
Unit of Measure	(1000 MT CWE)														
Growth Rate (%)	5.33	10.1	5.61	1.45	2.14	2.92	2.84	1.70	3.71	3.34	2.08	0.23	8.35	4.79	0.60

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=total-distribution>

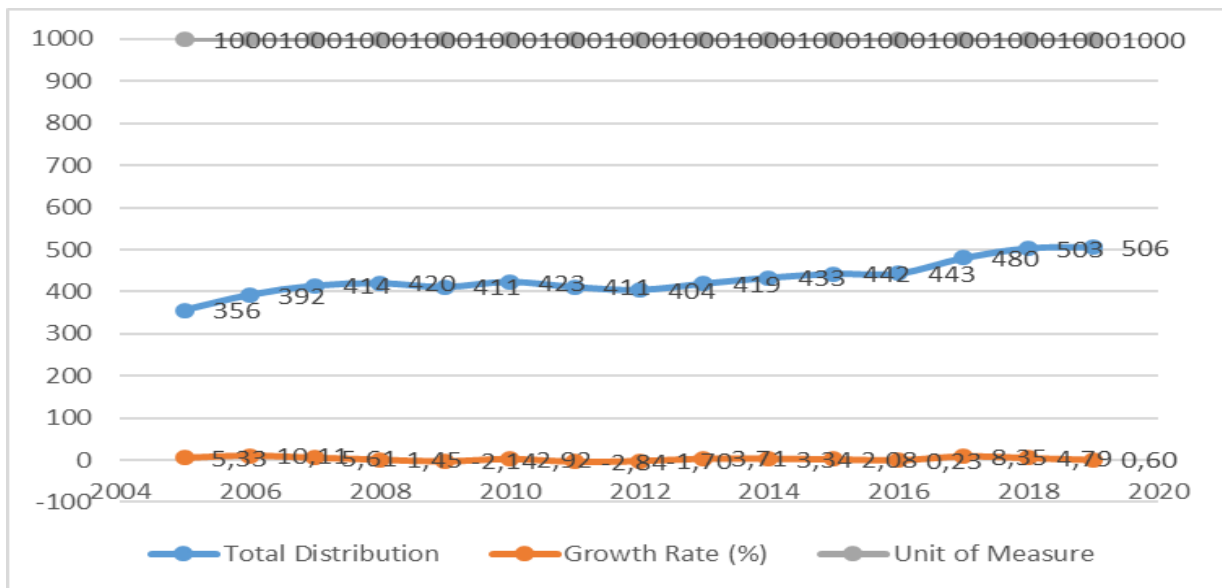


Figure 5. Distribution of beef and veal in Kazakhstan for 2005 – 2019

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=total-distribution>

Kazakhstan's supply of beef and veal by year is presented in table 7.

Table 7. Kazakhstan supplies of beef and veal for 2005–2019

Market Year	Total Supply	Unit of Measure	Growth Rate
2005	356	(1000 MT CWE)	5.33 %
2006	392	(1000 MT CWE)	10.11 %
2007	414	(1000 MT CWE)	5.61 %
2008	420	(1000 MT CWE)	1.45 %
2009	411	(1000 MT CWE)	-2.14 %
2010	423	(1000 MT CWE)	2.92 %
2011	411	(1000 MT CWE)	-2.84 %
2012	404	(1000 MT CWE)	-1.70 %
2013	419	(1000 MT CWE)	3.71 %
2014	433	(1000 MT CWE)	3.34 %
2015	442	(1000 MT CWE)	2.08 %
2016	443	(1000 MT CWE)	0.23 %
2017	480	(1000 MT CWE)	8.35 %
2018	503	(1000 MT CWE)	4.79 %
2019	506	(1000 MT CWE)	0.60 %

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=total-supply>

Table 7 shows that in recent years, the supply of beef and veal for 2005 – 2019 is increased. Compared with 2005, in 2019 it was increased by 156.

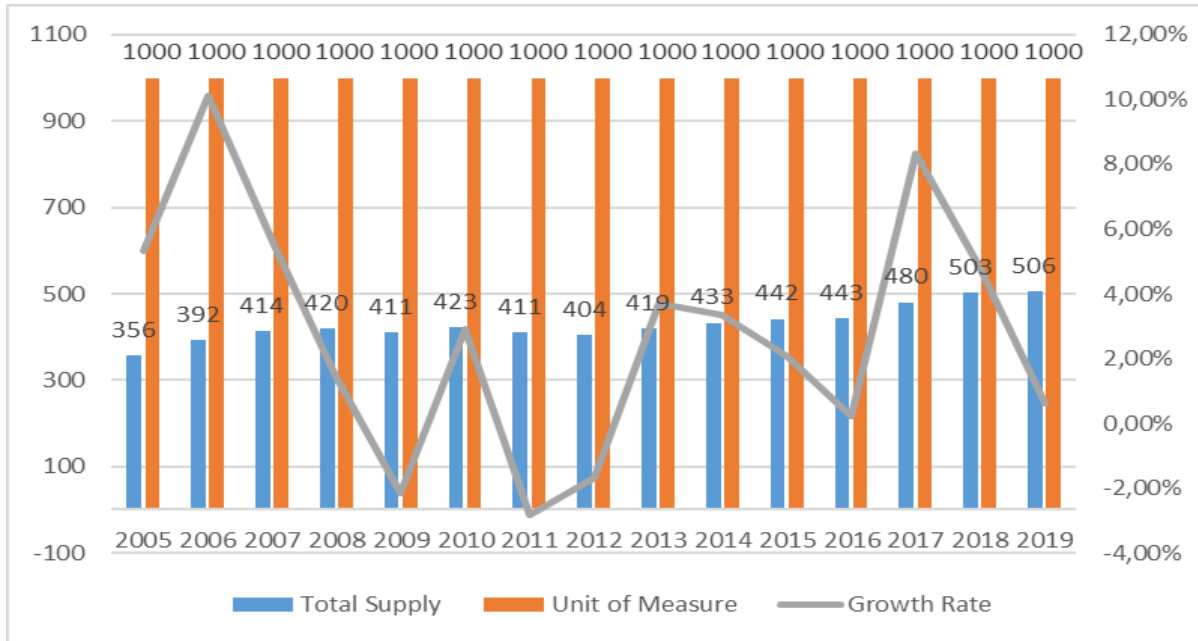


Figure 6. Kazakhstan supplies of beef and veal for 2005–2019

Source: compiled by the authors according to the source Index Mundi

<https://www.indexmundi.com/agriculture/?country=kz&commodity=beef-and-veal-meat&graph=ending-stocks>

Based on the above figures, the following points shall be considered as recommended solutions:

The import substitution of the Republic of Kazakhstan will be facilitated by the activities of the Eurasian Agricultural Technological Platform, where one of the areas is veterinary medicine (the creation of veterinary drugs using biotechnology). The goal of the Eurasian Agricultural Technology Platform is to carry out systematic work to accumulate advanced national and world achievements in scientific and technical development in the field of agriculture, mobilize the scientific potential of members–states to jointly solution of applied problems in agriculture, develop innovative products and implement them into agriculture.

From 1950 to 1990, Kazakhstan was a major exporter of meat and processed livestock products to Russia.

Consumption of beef and veal in Kazakhstan is growing with an increase in population.

In the Republic of Kazakhstan, the main number of cattle is concentrated in Almaty, South Kazakhstan and East Kazakhstan regions – 2,587 thousand heads, or 45 % of the total number of cattle as of the beginning of 2016.

In Kazakhstan, the number of cattle kept in private farms as of January 01, 2017 showed 65.4%, in peasant farms 27 % and less than 8% in agricultural organizations.

In the Republic of Kazakhstan, support for the meat industry included: state subsidies for the production of livestock products, the development of poultry and livestock breeding, the purchase of feed, the maintenance of the veterinary service and the development of insurance. Despite this, government support for the meat industry was insufficient and was one of the main causes of the crisis in the industry. For example, the size of state subsidies to beef producers from its retail price decreased from 230 % (1989) to 10 % (1993).

The weaknesses of meat industry compared with foreign manufacturers are:

- 1) undeveloped system of price regulation and pricing;
- 2) insufficient organization of the protection of enterprises` rights with state structures;
- 3) poor technical equipment of meat production;
- 4) low rate of implementation and application of innovative technologies, etc.

Conclusion

Thus, in the process of studying the research topic area, the following conclusions and recommendations are made:

1. There is an obvious reserve for reducing or changing the current trend of increasing import penetration into the domestic market of processed livestock products. Although it will be more difficult in doing that, the increase in oil/gas revenues will lead to further strengthening of the Tenge. The basis for import substitution was an increase in the productivity and competitiveness of domestic producers and processing industries, as well as an improvement in the quality and safety of food products, in accordance with the standards that imported processed products meet.

2. The Republic of Kazakhstan joined the World Trade Organization in July 2015 after 19 years of negotiations.

3. Demand in Kazakhstan for beef and veal is growing, and meat production is growing as well.

4. Kazakhstan has vast pastures, lands for irrigation, labor and a nomadic past, and this is an important success factor for the meat industry development.

5. Middle Eastern and Asian countries (China, Iran, Saudi Arabia, Vietnam, Russia) are very attractive export markets with stable growth rates for beef and mutton imports.

6. 100 thousand family farms with 100–200 heads of cattle/600 sheep will become a key element of the industry. An initial analysis reveals a significant economic advantage and strong economy for farmers. This will have significant advantages for the economy as government plans to create 500,000 new jobs by 2027. And the proceeds from the export of beef and mutton will amount to 2.5 billion USD (with a livestock balance of 5 billion USD), and this will help to develop human capital in rural areas, and increase welfare and labor productivity from 8000 USD per employee per year and many others.

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