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Feasibility Studies on Future Exchange of Agricultural Commodities in Kosovo

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Abbreviations

SPAN - Standard Portfolio Analysis of Risk

ICE - Intercontinental Exchange.

FMC – Forward Market Commission

IACE - Iran Agricultural Commodity Exchange

TGE – Tokyo Grain Exchange

CBOT – Chicago Board of Trade

CME - Chicago Mercantile Exchange

S_T – Spot price

K - Strike price

Abstract

The agriculture sector in Kosovo is a sector that has great potential to contribute to the economic development of Kosovo. Being a developing country, with a high trade imbalance, Kosovo's focus is to increase country's export and try to meet 100% of the local demand with local products. The aim of this paper is to investigate the possibility of creating a regulatory office in Kosovo that would initiate the agriculture commodities futures exchange. The main purpose is to study the possibility of Kosovo to develop such market based on its economic indicators and market features. Three main categories of agricultural commodities are going to be discussed throughout the paper: cereals, fruits, and vegetables, with a special focus on the development of futures contract for potatoes. Kosovo fulfills 60% of local demand for potatoes, and it also exports them to regional countries. Kosovo has export experience already in the case of potatoes, so the initiation of futures contracts would be less difficult. The biggest advantage for Kosovo is that it will be the first country that offers potato futures contracts, since there is no such contract currently traded in the world futures exchange.

The paper follows qualitative research method, focusing primarily in literature review. Since it is the first time for Kosovo to develop such market, other developing countries that have already developed such market or are in the process of development were studied and then compared with Kosovo possibility to do so. Furthermore, Kosovo's macroeconomic indicators are presented in order to have a better understanding of Kosovo's market conditions to develop futures contracts.

Based on the analysis and data collection, it is concluded that Kosovo has potential to develop agricultural futures contracts. In order for the futures exchange to be successful, special focus should be given to the settlement of regulation and organization, and continuous support of Kosovo government and financial institutions. Kosovo needs to start this process in order not to lack behind other countries and to use potential economic benefits that futures contracts bring,

such as: increase in exports, liquidity, price discovery, price risk management, and better reputation for Kosovo products in the international market.

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Problem Statement

The aim of this paper is to study the possibility of Kosovo to develop an agricultural futures market. The paper will analyze three main agricultural products: cereals (wheat, corn, and maize), fruits (pears and apples), and vegetables (potatoes), with the main focus on vegetables, respectively potatoes. Those three main categories were chosen because based on economic data, Kosovo has comparative advantage on producing those goods. Furthermore, Kosovo exports potatoes, which means that it already has some experience on trading such commodities.

The main role of futures contracts is to contribute toward the economic development of Kosovo. The main countries Kosovo exports potatoes are Western Balkan countries, with Albania being the leading country. Based on historical prices, Kosovo exports potatoes at 20-25 cents per kilogram (Statistical Agency of Kosovo). In March 2009, as a mean to protect their local producers of potatoes, Albania introduced an import tariff of 20% in the imported potatoes from Kosovo. This 20% import tariff was put on the estimated price of 50 cents per kilogram. Albanian government determined the estimated price of potatoes to be 50 cents, based on their local demand for potatoes. However, this price did not present the real market price of potatoes. It meant that Kosovar producers needed to pay 20% import tariff in a price of 50 cents, adding 11 cents for transportation and carrying costs. In other words, costs for Kosovo potatoes doubled, driving Kosovar producers out of the Albanian market. Potatoes that were meant to be exported in Albania ended up in Kosovo market. With huge supplies of potatoes in Kosovar market, the price per kilogram of potatoes decreased, causing huge losses to potato producer in Kosovo.

The case of potato exports in Albania is only one example how Kosovar producer can encounter unexpected losses. If futures contracts were existent in Kosovo at that time, Kosovar producers would agree in advance for the amount of potatoes that would be sold and the selling

price. Futures contract would have everything specified, the delivery price[1], amount[2], delivery month[3], margin accounts[4], transportation costs, and barriers[5]. So when time would come, the exchange would happen as specified in the contract, avoiding unexpected losses at the end. As Kosovo has favorable conditions to develop agricultural products, the paper will focus on developing futures contracts for agricultural products, which is also the most protected sector from countries around the world.

Historical Background and Information about Futures Market

Forwards contracts were the first contracts used on the trade of commodities. Forwards exchange happened between individuals who might have known each other, while futures exchange was more broad and entailed trade between people who never meet each other. The evolution of futures contract can be divided into five basic milestones:

- The early history of futures trading (17th and 18th century).

Futures exchange markets of those times were organized in the old-fashion sense. A basic form of futures started in Amsterdam at the end of the 17th century, by 1665, where intermittent futures exchange was happening. The modern futures exchange started in Dojima in the mid-18th century, by 1730, in Osaka, Japan, which is also credited with the birth of futures trading. Contracts were centrally cleared. They were considered more modern because of the existence of margin requirements and settlement price called fuse cord price, a name that announced the next session's opening price; however, these markets represented only local demand and supply information and were also cleared by government (History of CFTC).

- Mid-19th century, 1840

[1] It is the price for which parties engaged in agricultural futures exchange agree in the beginning to buy or sell the underlying commodity.
[2] It is the amount of underlying commodity that one party agreed to deliver at a future time and the other party agreed to receive
[3] The month when the delivery of the underlying product will actually happen
[4] An account set as collateral in case of default.
[5] Trade barriers, such as imports tariffs, quotas etc.

By mid of 19th century, information started to be exchanged faster than commodities. The invention of steamship and telegraph were highly important on the development of communication flow. Telegraph enabled the interconnection of Buffalo and New York, which was followed by flour, corn, wheat, and eggs trading between those countries. The steamship reduced the time needed to cross the Atlantic. “To arrive” or “in transit” ships for things being traded in one and a half month later in Liverpool were introduced by this time (History of CFTC).

- Globalization of commodity exchange: the transatlantic cable.

First successful transatlantic cable was installed in 1864. The positive effect of this cable was noticed by the end of 1880, when five cotton futures exchanges were connected by cable (New York, New Orleans, Alexandria, Havre, and Liverpool). Those were the largest futures exchange centers of that time.

- The downfall of commodity exchanges – post war II

This period was characterized with the collapse of commodity markets. Government intervention disrupted the flow of futures market. The central planning policies toward futures market discouraged the functioning of these markets. The common agricultural policy shut down completely futures contracts. International agreements reached by that time did not longer exist, and many organizations abandoned the market (Hull p.7).

- The rebirth, 1972

Since government intervention contributed to the failure of futures market, the collapse of this intervention, called the Breton wood structure, brought the rebirth of the market. Commodity agreements that were established in 1960 were estimated to have negative impact; therefore, they were not implemented. Fixed exchange rates were substituted with fluctuating exchange rates, which in turn created new markets such as gold and crude oil market. The end of this period was characterized by the creation of commodity futures trading commission (History of CFTC).

Those five periods of agriculture commodities were followed by the new reality, which lasted five to ten years and were oriented more in the minerals and energy futures contracts.[6]

Forward and Futures Contracts

Forward contracts were the first contract used on the trade of commodities. A forward contract is an agreement to sell or buy an item for a certain price at a future time. A futures contract is a contract to buy or sell an asset at a price in a future time, with the only difference from forwards, the standardization of the contract (Hull, p.6). Whereas forwards use usually one date when the commodity must be delivered to the buyer, futures have many delivery dates, meaning commodities can be delivered based on buyer and seller agreement. The losses and gains from forward contract are collateralized at the end of the contract, while for futures they are calculated on daily basis. Futures contracts are usually closed before the contracted day of expiration. Because futures contracts are exchange traded they have margins, which protects the buyer/seller from other party default; however, forward contracts are private contracts, therefore, they contain some default risk. Main differences between forwards and futures contracts are summarized in the table below:

Forwards	Futures
Private contract between two parties	Exchange traded
Non-standard contract	Standard contract
Usually 1 specified delivery date	Range of delivery dates
Settled at the end of contract	Settled daily
Delivery of final cash settlement usually occurs	Contract usually closed out prior to maturity
Some credit risk	Virtually no credit risk

Table 1: Comparison between futures and forwards contract. Source: Hull, John C. Options, Futures, and Other Derivatives

[6] The focus of this paper will be to address only agricultural futures contracts. Energy and minerals futures contract may be a topic of future development.

Futures Fundamentals: Strategies

Going Long

When an individual or entity goes long, it means that he/she has entered in an agreement to buy agriculture commodities with a specific price at a specific time. This means that the buyer is anticipating that there is going to be a price increase of that commodity, so that they can sell the commodity with a higher price than initially agreed to buy it.

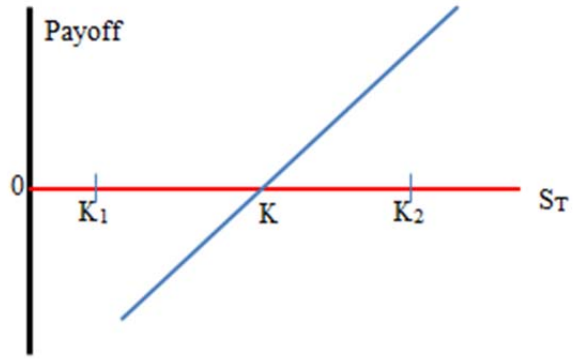


Figure 1: Long Position in Futures Contract

When an individual goes long, it means that the price agreed for purchase of commodity is at K price for a specific time in the future. If at the end of the contract the commodity price is at K_1 the buyer is going to lose by the difference between K and K_1. If the price is going to be exactly K, then the buyer is going to break even. The buyer is going to gain only if the price is more than K; meaning if the price is at K_2 the buyer is going to gain by the difference between K_2 and K. Thus, the payoff for a long position is S_T-K.

Going Short

When an individual or entity goes short, it means that they have entered in an agreement to sell agriculture commodities with a specific price in a specific time. This means that the seller is anticipating that there is going to be a price decrease on that commodity, so that the commodity can be sold at a higher price than that of the market.

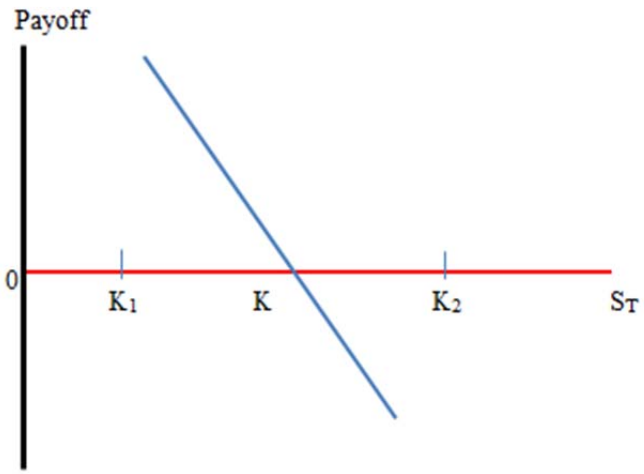


Figure 2: Short Position in Futures Contract

When an individual goes short, it means that they have agreed to sell at K price for a specific time in the future. If at the end of the contract the commodity price is at K_1 the seller is going to gain by the difference between K and K_1. If the price is going to be exactly K, then the seller is going to break even. The seller is going to lose if the price is more than K, meaning if the price is at K_2 the seller is going to lose by the difference between K_2 and K. Thus, the payoff for a short position is $K-S_T$.

Margin Requirements

Initial Margin

Margin is an amount of cash set up as collateral that supports futures contract (Domash p.3). A trader cannot open a position if the initial margin is not set up. Margin account serves as security account for the trader; thus, collateral and initial margin refers to the same notion. Margin requirements for futures contracts are approximately 10 to 20 % of a contract's value (Understanding Margins).

Initial margin is determined through a calculation called SPAN margining. SPAN calculates the risk of each futures contract for a specific commodity. Then it adds up the overall risk of the portfolio, meaning it calculates the maximum loss and gain that a portfolio would incur under different market conditions during one day of trading. SPAN methodology is based on risk array. It is a set of numerical values that determine the gain or loss of the contract under

different conditions (Domash p.6). Those conditions are called risk scenarios and are the price of underlying commodity, volatility, strike price[7], risk-free interest rate[8], and time to expiration[9].

Volatility is the uncertainty arising from changes in commodity prices. The difference between price change and volatility is that volatility measures the percentage of price change. High volatility means drastic changes in prices. Price volatility affects the margin because commodities with higher volatility require a larger initial margin (Introduction to Margin Accounts). This means that if a commodity has a higher volatility it has higher uncertainty attached to price movements; therefore, higher risk requires higher back up.

Maintenance Margin and Margin Call

In order for the balance in the margin account not to be negative, a maintenance margin is set, which is lower than the initial margin. Maintenance margin is usually set near the initial margin. If the value of the account drops below the maintenance margin, the broker issues a margin call. The margin call is the amount of money that the investor needs to add to the margin account so that the balance gets back to its initial margin amount. The extra funds deposited in the margin account is called variation margin. If the investor fails to provide the variation margin by next day that he/she receives the margin call, then the broker closes out the position by selling/buying the contract.

Example of margin set up

Initial margin protects the trader from incurring a loss from a default. To illustrate how initial margin works, suppose that an investor wants to buy potatoes and contacts his/her broker on June 5 to buy two December potatoes contracts. Suppose that one contract is for 10 bushels of potatoes. Suppose that the futures price is €7000 per contract (€700 per bushel). Usually the margin requirements are set 5% of the futures price. In this case margin requirement would be €700 for both contracts. The maintenance margin would be €500 for both contracts. At the end of each trading day, the initial margin is adjusted for any gain or loss that the trade incurs. This adjustment is called margin to market the account. If the trader incurs loss, the maintenance

[7] It is the price that two parties (farmers and traders) agree now to pay in the future, when the delivery of the underlying commodity takes place. This is the price specified in the contract that needs to be paid no matter what the market price in the future is.
[8] The return an investor takes on a risk-free investment.
[9] The time until the futures contract matures.

margin is going to be lower and lower than €700. The moment when maintenance margin becomes lower than €500, the trader receives a margin call from the broker asking to refund the account up to €700, which is the maintenance margin. If the trader gains money, then he/she takes that gain at the end of each day.

Basis Risk

The difference between the futures price and the spot price for the time and place where delivery occurs is known as basis. The basis risk, also known as spread risk, is the market risk coming from the position on the spot market and the corresponding futures market (Understanding Basis).

The formula representing basis: Basis = Spot price[10] – Futures price

If the spot price is lower than the futures price, the basis is said to be weakening and the interpretation would be "[price] under [futures month]." In the other hand, this means that the local demand is lower than the local supply for that specific commodity. If the spot price is higher than the futures price, the basis is said to be strengthening and the interpretation would be "[price] over [futures month]" (Understanding Basis). In the other hand, this means that local demand is greater than the local supply for that specific commodity (Benhamou p.5). What is more, the futures price of a commodity can be used to set the basis for a commodity with no futures contract. For example, corn futures price can be used for calculation of sorghum basis (McKissick & Shumaker). Commodity basis is affected from supply and demand for the commodity, storage costs, and transportation costs. The importance of basis relies in its possibility to predict prices. Buyers and sellers of commodity futures use current market fundamentals along with historical basis to anticipate futures prices.

Futures Market Participants

Hedge/Hedgers

Hedgers are people who use futures to reduce a particular market risk that they face. This risk might be related to the supply of a particular commodity, price, foreign exchange rate and

[10] It is the actual market price for the underlying commodity being traded. Todays or at the moment price.

other market factors. The argument behind hedging is for investors to protect themselves against variables they do not have control over (Hull p.50). There are two types of hedge: perfect and optimal hedging. Perfect hedging is a protective measure that completely eliminates risk; while, optimal hedging is one that hedgers use to partially protect their investment to achieve the optimal tradeoff between expected return and risk (Hull p.600. The arguments against hedging are that hedging may decrease the opportunity to win. However, the purpose of hedging is to win in one contract and lose in the other contract. This means that the investor is again going to win, but a lower amount than it would contrary do if not using hedging (in case when market would turn in favor of the investor).

Long Hedge

Hedge involved in the long position in futures contract is known as long hedge. Long hedge is appropriate when an investor or a farmer knows they will need to purchase a specific commodity in the future and want to lock in a specific price.

Example:

Suppose it is March 15. A farmer knows that he/she is going to require 10 bushels of wheat on June 15 to meet a certain contract. The spot price of wheat is 700 dollars per bushel, and the futures price for June delivery is 680 dollars per bushel. The farmer can hedge its position by taking a long position in one June futures contract and close the position on June 15.

Suppose that price of wheat on June 15 is 685 dollars per bushel. [Since June is delivery month for the futures contract; this price should be close to the futures price].

Therefore, the fabricator gains 10($685 - $680) = $50 on the futures contract. However, it pays 10*$685 = $6,850 (on the spot market) for wheat and thus the total cost is approximately $6850 - $50 = $6,800

Similarly, loss on the futures contract is offset by gain on the spot market. Thus, this strategy has the effect of locking into the required price of close to 6,800 dollars.

Short Hedge

Hedge involved in the short position in futures contract are known as short hedge. A short futures hedge is appropriate when a farmer or investor knows they will sell a commodity in the future and want to lock in the price.

Example:

Suppose it is March 15 and a farmer has agreed to sell 10 bushels of corn. The contract specifies the price that will apply to be the market (spot) price on September 15. Suppose that the current spot price is $500 per bushel, and the futures price for September delivery is $505 per bushel.

The farmer can hedge his/her position by shorting 10 September futures contracts. If the farmer closes out the position on September 15, the effect is of locking into the required price of close to $505 per bushel.

Suppose that on September 15 the market price of corn is $506 per bushel. The corn producer realizes $5,060 for the corn, but loses approximately $5,060 - $5,050 = $10 on the futures contract, since the futures price is close to the spot price during the delivery month. Therefore, the total amount realized approximately is $505 per bushel.

Similarly, loss in the spot market is offset by gains in the futures contract.

Speculation/Speculators

Contrary from hedgers, speculators seek to take price risk and benefit from future decline or increase in the price of underlying commodity. Speculators usually do not own the commodity; they enter in futures market with the aim to buy and sell commodities only for profit purposes.

Two core functions of the speculators are that they keep the market active and they influence the market price for futures commodities. In order for the market to keep going, there is the need of people who do not actually produce commodities but they trade with them to make profit. At the same time, willing to take risk means speculating that the price is going to decrease or increase, which in turn affects the market price.

Arbitrage Opportunity/ Arbitrageurs

"Arbitrage opportunity involves locking in a riskless profit by simultaneously entering into transactions in two or more markets." (Hull p.14) Arbitrage opportunity happens when the same asset is traded with different price in different countries; same asset futures price is estimated differently in one country and differently in another country; and there is no same price movement between countries (How to Use Arbitrage Opportunities in Commodities).

Economic Background of Kosovo

Kosovo is a transformed economy, from centrally planned to an open market economy. Country's GDP in 2013 was €5.2 million, while GDP for capita was €2,894 (Kosovo's Economy). Agriculture has 20% share on GDP, to continue with 20% industry, and 60% services (Statistical Agency of Kosovo). Besides minerals, such as lignite, zinc, lead, ferronickel, Kosovo is also rich on agricultural arable land (Appendix I).

Kosovo exports mainly metals, around 60% of total exports, agricultural products around 16%, and mineral products around 12% of total exports. However, agricultural products remain still one of the biggest imported categories (12%), to continue with machinery and equipment, and base metals (Statistical Agency of Kosovo). Kosovo's 2013 trade deficit was high. Kosovo imported about €2.5 billion in 2013, while it exported €270 million (Economic Report Kosovo 2013). Kosovo exports goods and services mostly toward Albania, Macedonia, and Italy, while it imports most of the goods from Germany, Italy, Macedonia, and Serbia (Statistical Agency of Kosovo) (Appendix II).

Agricultural Economy in Kosovo

With 20% of GDP coming from agriculture, Kosovo agricultural economy is an important segment of the economic development. 53% of the overall Kosovo area is agricultural land, respectively 0.15 hectares per capita (Raport I Zhvillimit Hapesinor per Sektorin E Bujqesise). Of the total agricultural land, 39% is arable land. Agriculture employs about 100,000 people, 22% of the overall employment in Kosovo (Zhvillimi Rural Në Kosovë). Cereals followed by fodder crops are two main agricultural outputs of Kosovo, to continue with vegetables as the third most important sector.

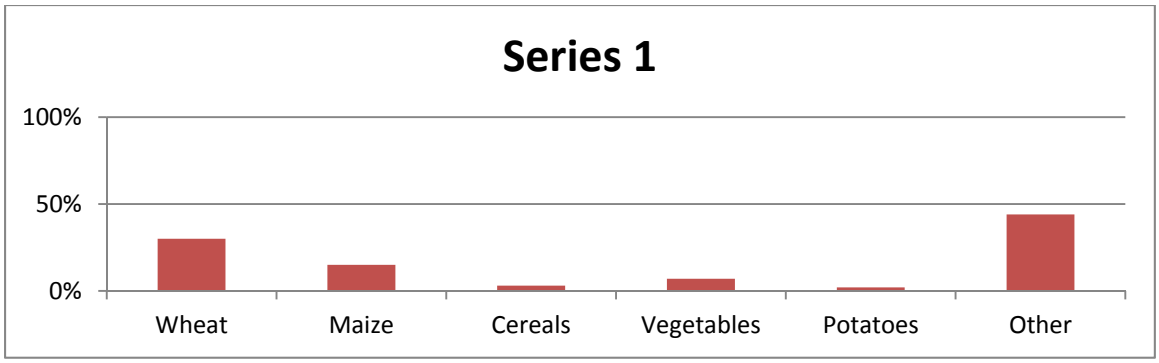


Table 2: Main Crops Harvested in Kosovo. Main crops harvested in Kosovo are wheat, maize, cereals, vegetables, potatoes, and other agricultural products. Source: "Agriculture in the Western Balkan Countries"

As it can be seen from the table, cereals, vegetables, and potatoes form part of agricultural input in Kosovo, which could also be sources of future economic growth of Kosovo (Appendix III). However, vegetables and potatoes production have potential for increase, since currently they do not suffice domestic demand. For instance, the percentage of self-consumption for vegetables is 27, while self-sufficiency is only 13 (Kosovo Report) (Appendix IV).

Exports/Imports of agricultural products

Kosovo exports most of its agricultural products with western Balkan countries. As it can be seen from the table below, in 2008[11], Kosovo exported €6.4 million value of agricultural products in Albania, and €4.6 value in Macedonia. The biggest categories of agricultural products exported are vegetables, followed by cereals, and beverages.

Name of the product	2007	2008
Vegetables	3,010,785.04	3,634,802.03
Cereals	2,112,641.05	2,846,438.30
Vegetable Processing	3,108,593.07	3,030,694.13
Beverages and achoolic drinks	2,964,316.00	5,606,464.01

Table 3: Biggest agricultural categories exported. Source: Shkëmbimi Tregtar I Produkteve Bujqësore, Ministry of Agriculture, Forest, and Rural Development in Kosovo

[11] Because of the lack of recent data, 2008 was used so the audience could have an understanding of what agricultural products are exported in Kosovo.

Agricultural Prices

The price of agricultural inputs and final products are determined mainly by the price of imports. Prices for main cereals, fruits, and vegetables are presented in the table below (Appendix V).

Article Code	Description	2005	2006	2007	2008	2009	2010	2011
01.1.	Wheat[1]	0.14	0.15	0.25	0.27	0.17	0.19	0.25
01.3.	Barley[2]	0.18	0.19	0.30	0.41	0.31	0.24	0.30
01.5.	Maize[3]	0.18	0.16	0.22	0.29	0.20	0.22	0.29
05.1.	Potatoes[9]	0.23	0.31	0.30	0.31	0.30	0.29	0.30
04.1.9.6	Onion[11]	0.37	0.44	0.46	0.44	0.44	0.55	0.47
04.1.9	Pepper[12]	0.52	0.59	0.62	0.69	0.63	0.59	0.58
04.1.9.7	Beans[14]	1.54	1.65	1.91	2.27	2.11	1.80	1.95
04.1.2	Tomatoe[15]	0.54	0.63	0.67	0.57	0.61	0.62	0.50
05.1.1	Apple[20]	0.50	0.51	0.56	0.60	0.51	0.49	0.49
05.1.2	Pear[21]	0.78	1.00	1.15	1.11	1.08	0.99	1.09

Table 4: Agricultural Products Price. The table presents the price per kilogram from 2006 to 2011. Source: Statistical Agency of Kosovo

As it can be seen from the table above, the price of most agricultural products has dropped from 2008 to 2009, and then increased again in 2010. This demand-driven price change is related to the European crisis of 2008, when remittances sent in Kosovo decreased, lowering the budget of people for the purchase of products. This is another fact that confirms the open market-oriented system of prices for Kosovo agricultural products.

According to the Agricultural Household Survey 2005, main products consumed in Kosovo are cereals (23%), meat (17%), vegetables (13%), and milk, cheese and eggs (11%) (p. 24). This is also related to the price, since cereals have the lowest price from other products.

Methodology

The paper uses descriptive-qualitative data in attempt to conduct feasibility studies for futures exchange in Kosovo. Available data on futures exchange were used in order to explain them and study the possibility of implementing them in Kosovo. Since futures exchange is a new topic discussed in Kosovo, the paper starts with an explanation of key terms used in futures exchange. At the same time, those terms need to be specified in Kosovo futures contracts. Since

futures exchange in Kosovo have the main purpose the economic development of the country by increasing exports, export data have been analyzed for each sector in Kosovo, focusing especially in agriculture sector. The data are taken from reliable sources, such as: Kosovo government, ministry of finance, ministry of agriculture, forest and rural development, statistical agency of Kosovo, World Bank data, CME website etc. Several developing countries that have already established or are in the process of developing agricultural futures market have been analyzed in order to see what methods they have applied for the futures contracts to be successfully launched. Specifically, the advantages and disadvantages of Africa, India, and Iran market have been analyzed in the literature review section of the paper. Those three countries were chosen because they had similar agriculture indicators with Kosovo, namely, agriculture land, dependency in agriculture, arable land, percentage of population that works in agriculture, and economic benefits from agriculture. “Challenges to Commodity Markets in India,” “The Choice of Feasible Commodities for Futures Trading: A Study of Iranian Agricultural Commodities,” and "Market Efficiency of Commodity Futures in India" are some of main resources that describe how futures market were established in developing countries. Since those three countries are third world countries, same as Kosovo, their main problem were the formulation and adjustment of regulations associated with futures contracts. Lack of rule of law and well-established institutions were two main problems encountered from developing countries, which actually are present in Kosovo as well.

"Success Factors of Agricultural Futures Markets in Developing Countries and their Implication on Existing and New Local Exchanges in Developing Countries” by Shim at al. has been one of the most important sources analyzed through the research. This paper discusses several hypotheses that developing countries should fulfill in order to establish futures exchange. Those hypotheses have been applied in Kosovo case also, to study the feasibility of Kosovo to develop exchange market. The most important ones are: macroeconomic stability, committed actors with special focus on financial intermediaries, special contract, large market on the underlying product, and export-oriented country. The decision to establish or not such markets in Kosovo has been taken based on these hypotheses.

Based on the data collected, Kosovo’s main problems on establishing futures contracts are: lack of regulation, difficulty on establishing regulations, strong justice system (those three

are vital to the function of futures for customer rights and traders security), security provided to farmers since agriculture is the sector that might have different problems starting from weather conditions, and unconditional support from government and financial institutions.

Limitations on Methodology

Since it is the first time such feasibility study is being conducted in Kosovo, there is lack of data that are connected to this trade facility. Considering the fact that farmers in Kosovo produce mainly for their own needs, and only some of them have started producing quantities to export, there is lack of knowledge for futures contracts in Kosovo. The major limitation on methodology is lack of primary data that would apply specifically to Kosovo's market.

There is also lack of recent agricultural export data. The project would be more complete if there would be export and import data specifically for potatoes, apples, pears, wheat, and corn. There are statistical data that present exports of vegetables and cereals as broad categories, but not specifically emphasizing what is being exported in the vegetables categories. What is more, there is no such data that specifies in which country each of the agricultural products are exported and from where are they imported.

Literature Review

Commodity futures exchange was the first futures exchange initiated by countries around the world. Later on, it continued its expansion toward financial markets and manufacture goods. Actually, in today's futures market, where their specialization has reached its utmost development, traders, speculators, and hedgers use those markets even for weather and other nature-related matters (Hull p.20). Three main countries were chosen to be analyzed and see what Kosovo can learn from them: South Africa, India, and Iran. Given the similar problems of those developing countries, such as low economic output, high trade imbalance, low value of exports, poverty, high unemployment, low macroeconomic development, and environmental problems, the development of futures market in one of these countries can serve as a reference point for another developing country. Also, the agricultural development similarities, such as agricultural economic indicators, agricultural land, and agricultural products, between those developing countries and Kosovo, have presented relevant data and information for the paper.

Even though those problems have prevailed in the developing countries, futures market as a mean of economic development has proven to be quite successful for some developing countries.

South Africa

Agricultural commodities exchange was first established in South Africa in 1990. This exchange was initiated to raise the agricultural output in Africa, to improve the market transparency, price formation, and country trade, as well as to incentivize farmers to produce more agricultural goods and export them (Onumah p.1). At the beginning, several initiative bodies were created to support the futures exchange. Some of those initiatives were: Comprehensive Africa Agriculture Development Programme (CAADP) and New Partnership for Africa's Development (NEPAD). This practice of initiative bodies could also be applied in Kosovo, where those bodies would provide information for futures contracts to farmers and everyone who wants to trade in futures exchange. The challenges of African economy were price volatility and high food distribution margins, which disabled African farmers to raise agricultural productivity and trade (Onumah p.4). Storage and transportation costs were the main disadvantage of futures market, because of the paper-based trade, where farmers were obligated to meet with traders and set the trading terms. Furthermore, the lack of quality and quantity standards specified in the contract, created the need for physical sampling, which increased the transacting costs (Rashid p.7). Farmers in Africa storage their goods for less than one month, which means that traders are not involved in speculation, which is seen as stabilization factor of the market. What is more, the warehouses in Africa were in very low conditions, meaning that they could not serve for a long-time storage of goods. Other problems were the lack of transparency, rule of law, and well-establish institutions that manage price risk, which discouraged the financial system to provide loans to farmers for investment in inventory (SAFEX Commodity Derivatives). Africa developed a government-based approach to solve those issues, by including government in decision making, creating as such a centrally-planned trade exchange. However, government interventions ended up in huge fiscal burden, not contributing to the increase of agricultural output (Onumah p.10). Africa lacked a credible delivery system. One way to fix this problem is by building a credible warehouse receipt system. The same system could also be built in each place where Kosovar farmers are located, and provide to them warehouses so that they can storage their products. Issues related to the warehouse system in Africa were lack of storage infrastructure, lack of requisite skills,

regulatory problems, and lack of strategy to attract stakeholders (Onumah p.3). As it can be seen, warehouse system again is related to the above-mentioned problems of creating the exchange system. The advantages of warehouse receipt are the reduction of transfer costs and facilitation of financial transaction; however, it does not manage risk and price variability (Rashid p.10).
The technical problems attached to the creation of exchange market in Africa, were also tightly connected with the development of agricultural output of the country. According to Onumah, the development of the exchange market would incentivize farmers to produce qualitative crops, apply productive-enhancing methods of production, and develop better crop practices. In turn, farmers could increase the yield crops but at the same time increase their household income up to 25% (p.20).

Financial system is another factor, highly important, for the well-function of the agricultural commodities exchange. Futures exchange need not be controlled by government, but it needs government regulations and investments in order to create security in the market. According to Onumah, “traders can benefit from easier access to inventory finance as the warehoused grains can be collateralized.” (p.21) This would lower procurement costs and increase the trading margins up to 30%. This process, along with insurance companies involved, makes the collateral more secured, leading to a more efficient trading system.

For an exchange system to be efficient, a large spot market is necessary to be placed, in terms of volume of crops traded and number of participants involved. This was an issue in Africa, since Africa has low agricultural value added crops (Rashid p.12). However, Africa found two main crops, at which they have comparative advantage on and specialized in the trade of those crops. In this way, SAFEX has proven to be quite successful on trading futures contracts in Africa (Rutten p.5).

Based on these arguments, as well as successful and unsuccessful examples of futures exchange in different countries of Africa, prerequisites for successful futures exchange are: reliable market information system, transparent trading system (which includes trading platform and brokers), clearing and settlement system, and rules & procedures for contract enforcement (Onumah p.12).

India

India is a commodity-based economy, with more than the half of the population depending in agricultural output. The futures market in India was first established in 1875 with the purpose of hedging against price fluctuations. At that time, this market was centrally planned, with government regulating each segment of the market. Since 2003, the futures market has been freed from government intervention, leading to a spontaneous growth of the market. However, Indian government has again formulated the policy according to which the commodity futures should be traded. The government established a committee, which evaluates the work of futures market on yearly basis, and changes the policy based on the market requirements. Kosovo could also establish such committee, whose job would be to evaluate the work done through futures market and also create awareness among farmers for the importance of agricultural futures contracts. Even though the commodity futures has been created years ago, today's research articles still discuss the effectiveness of this market in the development of agricultural economy in India. Some of the issues India faced in successfully developing such market were: legal challenges, poor management, regulatory challenges, lack of logistic organization, poor infrastructure, and lack of awareness created among investors and producers (Kaur p.5).

As an emerging market, India has problems with rule of law (Kaur p.10). The approval of amendments related to the exchange market takes a long time in India, causing implications in the decision making process. What is more, financial institutions, such as banks and assurance companies are not allowed to participate in the futures market, with the aim to protect the financial sector in case of failure of commodities market (Inoue p.10). There was no strong monitoring system established in India, which is one of the most important factors for the development of this market. In order to address this issue, Indian Government has created the Forward Market Commission, which had very low competences at the beginning of its formation. This in turn is tightly connected with regulatory challenges, since the FMC is part of the Ministry of Consumer Affairs, Food, and Public Distribution and depends on it for funds. This in turn questions the independency and security of this commission. Thus, for a more successful futures market government has managed to grant more power to FMC (Challenges to Commodity Markets in India). What is more, a very important function of the FMC was to create awareness to farmers for the benefits of such market. As with any other place that was initiating a new form of trade, India had also the problem of convincing farmers, producers, investors,

speculators, hedgers, to participate in the market and make it function. FMC held more than 800 awareness programs in different places in India, where half of them were dedicated to the farmers since farmers were the most important factor for the market (Challenges to Commodity Markets in India). Same as in Africa, the warehouse and standardization system did not work efficiently. Quality, grade, and quantity testing labs did not function in each region, which disabled the opportunity of creating one standard contract that would abolish potential shocks for the ultimate buyer. In order to address the problem of warehouse, the government of India has created the Central Warehousing Corporation of India that operates with more than 500 warehouses across different places in India (Challenges to Commodity Markets in India). The compilation of contracts, were another issue the Indian market faced. At the beginning, the interest for futures market was presented only from small farmers, while the contracts were designed only for bit investors. Regulatory and exchange office needed to carefully address this topic in order to attract small investors not only the bigger ones.

India stands as a very successful example of agricultural commodities futures market. It has a long history of futures market, with stages of stagnation as well as success. It has made progress trading activity, technology, and transparency. With its economic factors of a developing country and with its dependence on agriculture India has managed to attract investors and develop the futures market. Through this market, India has achieved to manage price fluctuations, has increased the trading volume, and has played the function of price discovery (Inoue p.10).

Iran

Iran has recently established the agricultural commodities exchange, where contracts were and still are made by cash. According to Hoseini, Zibaei, & Allen studies, Iran has the possibility to develop futures market on three agricultural products: saffron, rice, and pistachios (p.7). After those commodities, the second suitable products are dates, apples, and tea (p.7). Those conclusions have been reached by analyzing the spot price fluctuations, liquidity costs, basis risk, market size, and commercialization rates (p.7).

Almost one third of the total area of Iran is farmable land; however, because of water soil and water issues, Iran cultivates only 12% of the total land. 14% of GDP comes from agricultural activity, which is near Kosovo (20%). The agricultural economy is characterized with small

farmers who obtain 5 hectares of agricultural land. They constitute more than 73% of the Iran's agricultural producers (Stads p.10). "Problems and obstacles that villagers as agricultural producers face include: lack of transparency in market, lack of information, uncertainty of future prices of products, inefficiency of distribution of agricultural products, and sharp fluctuations of price."(Shirzad & Babak p.1). Because of these market inefficiencies the agricultural production has been switched from subsistence farming toward commercial farming, seeking for futures markets to have the role of saver that would mitigate those problems.

Iran trades agricultural commodities through Iran Agricultural Commodity Exchange. Commodities mostly traded in IAEC are: corn with 67%, oilseed meals with 20%, and barely with 10% (Hoseini p.4). As mentioned before, prices of agricultural products in Iran are very volatile. This price volatility presents risks to farmers as well as investors who are willing to invest in Iran. What is more, IAEC contracts in Iran cannot be used for hedging. The biggest problem faced in Iran, is the basis risk. There is difference in price between IAEC contracts and other contracts in world, such as TGE; thus, the risk to invest in Iran is high and the world contracts cannot be used for substitution for Iran contracts. Adding the fact that futures contract are time-consuming and an expensive process, along with those market difficulties, were the reasons why 53% of the futures contract failed in the beginning in Iran (Hosseini p.7). According to Hosseini, margin requirements, contract size, expiration intervals, and daily price limits are big four categories that need assessment from the Iranian futures contracts (p.10).

Besides difficulties encountered in futures market, those contracts are the only tradable derivatives in Iran. According to Shirzad econometric analysis, "futures exchanges have a great role in solving rural market's problems." (p.3) Previously the Iranian government needed to supply and subsidy Iranian farmers because of their role in food production. Often times this caused a fiscal problem, with the reason that the majority of taxes were going for the farmers, while the agriculture sector was not being developed. With the futures market, the role of government and its impact on agricultural products diminished a little, because now farmers had the possibility to play the trader role and generate revenues by selling their commodities even before being produced. Thus, besides the problems that the development of futures market had and are still having, Iranian economy would highly benefit in term of agricultural development if they succeed in futures market. Given the market similarities of Kosovo and Iran, it can be said

that Kosovo could also experience economic benefits from establishing agricultural futures exchange. According to Iranian scholars, such as Hosseini, Zibaei, and Bakhshoodehde, futures contract are seen as the only mean to fix price fluctuation, volatility, and price risk attached to agricultural commodities.

Main Findings

Kosovo, as a developing country, shares about the same economic factors of other developing countries. Kosovo is an agricultural-based country, which imports most of the goods citizens use. In order for the country to be developed, it needs to increase its exports, so that it can decrease the trade imbalance that currently Kosovo faces. Even though Kosovo currently exports metals as the main category, another sector that has high comparative advantage is the agricultural sector. With its percentage of arable land (39%) and with 22% of population employed in agriculture, and 2/3 of population living in rural areas, Kosovo has good possibilities of increasing economic output by developing agriculture sector. The agricultural land in Kosovo is considered to be of high quality. The continental climate creates very good conditions for agricultural production. Because of it fragmentation, the agricultural land in Kosovo suits best the cultivation of high value crops, such as vegetables and fruits. According to the investment publication of Ministry of Trade in Kosovo, agriculture in Kosovo comprises approximately 143 rural households, of which 70% are defined as small farms with 1 hectare agricultural cultivation and 1800 cooperatives and commercial farms (2008).

Agricultural Products[12]

Three main agricultural categories produced and processed in Kosovo are: vegetables, cereals, and fruits.

Vegetables

Vegetables are the most important sector in Kosovo. Around 27 thousand hectares per year are used for the growing of vegetables. Vegetables are one of agricultural categories that actually are exported in western Balkan countries. The biggest category in vegetables is the production of potatoes. Potatoes are also processed into chips and other similar food products.

[12] Data for agricultural products date from 2008. Because of the lack of data from recent years, data from 2008 are used in order to have a though about agriculture production in Kosovo.

Furthermore, the consumption of vegetables in Kosovo is high (146 kg per capita). Since Kosovo has a comparative advantage on producing vegetables, and has shown success on doing so, it is necessary for Kosovo to continue the production of vegetables and increase its exports. Vegetables are highly dependent on weather conditions, which contribute to price and quantity risks. This risk could be mitigated by introducing agriculture futures contract. This in turn, would expand the vegetables export and would offer security and support for Kosovo farmers.

Cereals

Wheat: Is widely used in Kosovo. For each hectare of land in Kosovo, around 3 tons of wheat is produced. Yearly wheat cultivation in Kosovo is near 4.4 million tons (Statistical Agency of Kosovo). This number is higher, if it is compared with other western Balkan countries. Even though Kosovo cultivates such higher number of wheat yearly, it still supplies only 60% of the population, with 40% of it being imported (Sektori Bujqesor p.7). The main reason why Kosovo still imports wheat is the lower price of imported wheat. Current imported wheat costs 0.12 euro. One way to increase the usage of domestic wheat is to lower its price. The price can be lowered by import tariffs on wheat or government subsidies and through promotional campaigns funded from government for the usage of domestic products.

Corn: Kosovo produces 4.9 tons of corn for each one hectare. It is mainly used to feed animals; therefore is a cereal that is cultivated and saved from Kosovar farmers to feed their animals.

Maize: Is used for the production of beer, another plus for the economic development of Kosovo. With a total crop areas of around 4,000 hectares and 11,000 tons of maize produced (Agriculture and Food Processing Industry), Kosovo has high comparative advantage on using it to produce beer and export it.

Fruits

The production of fruits is characterized by small farms, where the majority of the fields are privately held. The consumption of fruits is quite high in Kosovo, 20 kg per capita. Currently Kosovo produces 27,000 tons of fruits, while the local demand is 50,000 tons (Agriculture and Food Processing Industry). This means that Kosovo production does not meet the local demand, where around 40% of the fruits demanded comes from imports. Kosovo needs to increase the

production of fruits, not only to meet local demand but to export them as well. This is based on the comparative advantage that Kosovo has on production of apples and pears specifically. If one visits villages in Kosovo, it can be noticed different types of pears produced, which in the world are very scarce. Introducing futures market for pears trading, along with government support (in terms of subsidies and taxation means) would increase production of those fruits thus decreasing trade imbalance.

Pears and apples are the two biggest fruit categories in Kosovo. The annual local production of pears is 14,000 tons, with 141 hectares, and average yield of 30 kg/tree. The annual local production of apples is 61,000 tons, grown in 608 hectares, and with an average yield of 45 kg/tree (Agriculture and Food Processing Industry).

Hypothesis Testing for Establishment of Agricultural Futures Market in Kosovo

An assessment of hypothesis is going to be applied toward Kosovo ability to develop futures market. It is not mandatory for a country to satisfy all hypothesis presented; it varies from country to country based on their specifications.

Hypothesis 1: Macroeconomic Stability

Given the fact that Kosovo is going to start trading futures contracts for the first time, it is important to have data on macroeconomic stability in Kosovo. Traders, who want to buy agriculture products from Kosovo need to have clear information on macroeconomic data. This would provide security to the traders that the price of the contract will not frequently fluctuate, leading to trader's loss, demotivating them as such to trade again in Kosovo.

Macroeconomic stability is measured through GDO fluctuation, exchange fluctuation, and unemployment. Kosovo's GDP did not fluctuate that much during the last five years, meaning that it was on average 4.5 million euro. However, Kosovo has high unemployment of 40%, which presents a serious burden to Kosovo's economy. The biggest advantage of Kosovo is that it does not have exchange fluctuations, because it uses euro which is administered from another country. Thus, Kosovo does not have the right to provide money supply, which in turn restricts inflation. This means that Kosovo depends on European Union for money supply, which in one hand creates stability, but in the other hand it does not have a decision making authority.

Kosovo has experienced deflation from 2003 to 2005. World Bank data show that Kosovo has in general a low inflation rate, 2.41% in 2008; however, due to the economic crisis in 2008, the inflation rate was increased to 6.20. As it can be seen from the table below, in 2010 Kosovo had an inflation rate of 2.41%.

Country Name	Indicator Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Kosovo	Inflation, GDP deflator (annual %)	11.40	1.81	-2.17	-3.84	-3.21	0.44	2.41	6.20	-0.31	3.81	5.31	2.41
Kosovo	Inflation, consumer prices (annual %)	..	..	-1.08	-1.06	-1.39	0.62	4.36	9.35	-2.41	3.48	7.34	2.48

Table 5: Inflation in Kosovo 2001-2012. Source: World Bank Data: Kosovo

Hypothesis 2: Contract that is different from other existing contracts

The aim of the entire paper is to develop future market for agricultural products in Kosovo, focusing particularly potatoes in Kosovo. As mentioned before, agricultural production in Kosovo includes vegetables, cereals, and fruits as major production categories. The implementation of the futures contracts for agricultural products is quite similar, but the focus is to establish potatoes futures exchange. The reason behind this is that currently there is no potato futures exchange contract in world. This means that Kosovo, besides being the center of futures exchange in western Balkan countries, could also be the first place in the world offering such commodity. What is more, Kosovo has experience on international market prices for potatoes. Kosovo exports €3.6 million vegetables, and €2.8 million cereals. In order for a country to offer a product for sale in the international market, it needs to fulfill its country demand and have excess supply of that good, which can be exported. When the good is exported, it means that the country has knowledge on tariffs and prices that apply in the international market. Kosovo meets partially the local demand for potatoes and also exports it, so it satisfies the condition for successful development of futures market.

Hypothesis 3: Presence of sufficient large domestic market for the underlying product

Liquidity is one of the main conditions for futures contract to function in a country. A threshold level of liquidity serves as fundamental condition to make the exchange viable. As mentioned before, Kosovo produces 210,247 tons of potatoes on yearly basis with which tries not only to meet local demand, but also to export them. This is another exception that puts Kosovo on advantage to develop domestic as well as regionally-integrated futures contracts.

When the physical market is large enough, the launching of the local exchange enables the generation of speculative and hedging interest, which are two main pillars of the futures contracts.

Another problem that Kosovo might face is the difference between being a small country compared to a large country. Even though the product exchanged might be unique, it might be more important to surpass larges shares of the market. Taking into consideration that potato is considered as essential food product that can fight hunger almost all countries have high import tariffs for potato trade. Being a small and developing country, Kosovo might encounter problems on performing futures exchange. However, Luxemburg and Singapore are also small countries but they managed to successfully develop futures exchange.

Hypothesis 4: Presence of committed actors

Besides demand for futures market, it is also necessary to have the willingness and ability of committed actors to support the exchange market. The presence of committed actors, such as financial institutions (including banks and non-banks institutions, such as pension funds, insurance companies, and micro-financial institutions), private enterprises, farmers, and government, is vital when the profitability of the trading is not certain. Traders and interested candidates to engage in futures markets want to be sure for the liquidity of the market, so that they will not incur losses. The presence and well-function of financial institutions is the most important, since the futures trade, the payment of the products happens through financial intermediaries. At the beginning of the futures market, when there is not enough liquidity, the committed actors can artificially engender liquidity enough to enable allow the exchange to start up.

The financial system in Kosovo is one of the strongest sectors operating currently that contributes 60% in Kosovo's GDP. Microfinance institutions constitute about 4% of the overall financial sector; however, they are the key lender to agriculture, with 46% of the funds distributed for agriculture (Republic of Kosovo: Financial System Stability Assessment). Since Kosovo agricultural sector is characterized by small private farmers and there is no processing agricultural company or large corporate farming that would generate liquidity, then financial intermediaries would function as an exchange catalyst. The role of government is also essential because of two main reasons: to create the rules according to which exchange parties should

behave, and to provide incentives for financial intermediates to help the creation of futures market. The help of government might come in different ways. One of them is to exempt banks and insurance companies from taxes. Government can also lower the bureaucratic procedures needed from such enterprises to enter in the market or to supply funds toward the creation of futures market.

Hypothesis 5: Low level of industry integration

Industry integration is the cooperation of different development stages that increases the efficiency of the production. Agricultural products entail the production, processing, and retailing of commodities between they reach the final market. If this production and selling process is well integrated, then the main pillars of futures market, hedging and speculation would not be of much importance. In fact, Kosovo lacks such industry integration. Small farmers plant their fruits, cereals, or vegetables and process them into further goods. If their crops are successful then they personally distribute their products to the retail industry and distribution channels, or sometimes they personally become the sellers of their products. Even though this system is not well integrated, it provides a risk gap that hedgers and speculators each of them to secure themselves from losses or take risks for higher profits, respectively. As more integrated these markets become, the less is the opportunity for hedgers and speculators to operate. However, when Kosovo gains experience on exchanging futures contracts, then it is necessary to develop a highly integrated agricultural market. In other words, government in cooperation with farmers should work toward the specialization of farmers either in production or processment of the products. In this way, farmers would be able to specialize in production or processment of agricultural products achieving economies of scale and producing more products which can then be traded through futures market.

Hypothesis 6: Export-orientation for the underlying agriculture product

Being an export-oriented country for the product that will enter futures market, might help the country understand the world prices and volatility, which would be of greater use in exchange contracts. However, this is not a fundamental condition for futures contracts to be successful. Kosovo is not an export-oriented country, and does not fulfill 100% of local demand

with fruits, cereals, and vegetables. However, if Kosovo reaches to successfully launch the futures market, it might incentivize farmers to produce more not only for the local demand but also to be a leading country for the export of these agriculture products, namely potatoes.

A difficulty Kosovo might face is the currency risk. The currency risk comes because majority of contracts not only for agricultural futures exchange, but also for other types of contracts are dollar-based. In one hand, any difference between the currency used for commodities in futures contract and the currency in the physical market creates incentives for hedgers to hedge against the currency risk. For example, if one domestic futures contract is in dollars, while in Kosovo we use euro, then a hedger needs to enter in a foreign futures contract to offset the currency risk. In the other hand, if there is discrepancy between currency exchange in futures contracts and physical market, arbitrageurs can use it to make profits for themselves.

Hypothesis 7: Established institution – well-functioning clearing house and regulations

One of the most important conditions for the well-functioning of the futures market is the existence and obedience of futures contract regulation and institutions. If traders and farmers are not secured for their money and their commodities, then they will not be engaged in the exchange market.

The first step Kosovo should take is to establish a regulatory office, called clearing house that will clearly specify all the regulations that need be followed for futures market to start functioning. The clearing house acts as a third party which enables the entire functioning of the futures market. They act as sellers to clearing brokerage buyers and act as buyers to cleaning brokerage sellers. The regulatory office should serve as the trading point where farmers are connected with traders around the world. Since Kosovo is the first time implementing such market, it will be necessary for Kosovo to first establish physical trade. This means there will be a building where traders and farmers will meet, either online of in person, and agree for the terms of contract. The disadvantage of this form of trade will be time, as it will take more time than the exchange market. However, after some years of functioning, Kosovo can switch to exchange, online system of trade, where everything, prices, regulations, contracts, amount traded, delivery months, delivery day, etc. will be posted on the webpage of the clearinghouse office. Traders and

farm will not need to meet or know each other. The clearing house is there to ensure to traders that even if one party fails to fulfill the contract, the other party is going to be compensated for the loss. Farmers should find all the needed regulations from the starting point of a trade until the phase where the delivery of commodity and money takes place. This office regulates the contract size, delivery arrangements, delivery months, the price quotes, price limits, position limits, daily settlement, and margins.[13] It is important for the clearing house to be continually cooperating with Kosovo government and the financial institutions. In order for traders to start buying and selling in Kosovo, the government, central bank of Kosovo, and the ministry of trade and finance should serve as implicit guarantor in case of default.

Since the focus of the paper is potatoes, then Kosovo needs also to create a Potato Board, which will serve as a controller for potato price in the market and for marketing channels. The job of the Board would be to establish a single-price system, which would then be used from the regulatory office for commodities exchange. What is more, the regulatory office should always cooperate with the Potato Board for the settlement of the regulations. The Potato Board should address the challenges and difficulties of Kosovo farmers when the exchange begins, so that there is always someone who will know what was done until now and what needs to be done so that the futures exchange keep functioning.

Clearing brokerage are individuals or institutions that act as intermediaries between the clearing house and the investor or farmer. The main job of a broker is to ensure that the exchange has been settled correctly and the transaction is successful. They set the entire transaction, find sellers in the market for buyers, and find buyers for sellers. They also keep the entire documentation that specifies the trading conditions for which both buyer and seller agree, and in case of default those documents serve as proof to protect the harmed party.

Contract Specifications for Futures Contracts in Kosovo

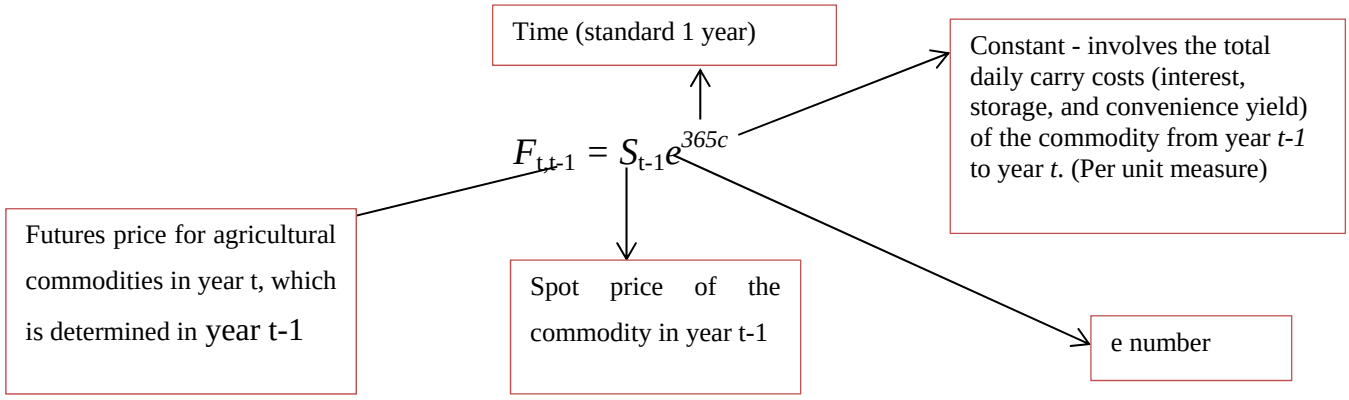
Price Determination

As with all other prices, the price of agricultural futures commodities depends on the demand and supply of the underlying good. Because agricultural commodities depend highly on

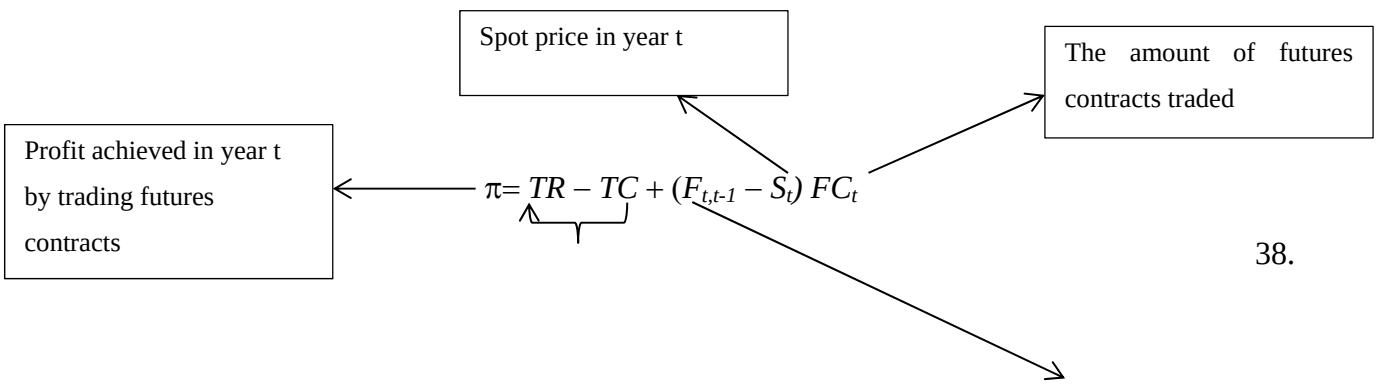
[13] Which will be explained in paragraphs below how would they function in Kosovo.

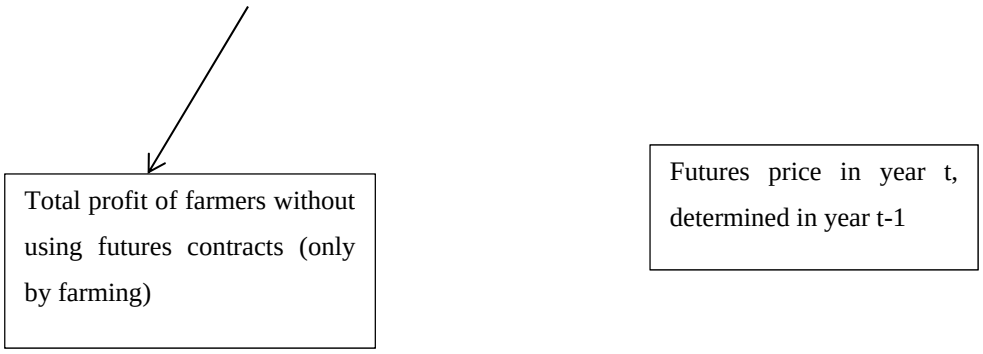
seasonal conditions, then the supply of those commodities also varies with season. This means that the prices for agricultural commodities also change. Prior to the harvest time, the price of agricultural commodities rises, and then it drops continually as storage of commodity ceases.

Since a trader or farmer who enters in an agricultural futures contract lock in price that will be delivered at some future date, then the price depends on:



Since agriculture is a sector that is continuously threatened from weather conditions, farmers need to secure themselves more than any other trader of other types of futures contracts. Farmers can be secured in two ways: by financial sector and by price. In case of loss coming from nature, financial banks and insurance companies should provide loans with lower interest rates. In order for the interest rates to be lower, the market risk and default risk should be lowered for financial institutions; this can be achieved through government support as the main guarantor to the farmers. The other way is by price. Farmers can manage market risk by agreeing to sell a particular amount of futures contract at a futures price F_t, which is agreed in t-1 time (one year before). In this case, farmer's profit can be evaluated by the formula:





Kosovo needs to follow standard world prices. The price for agricultural commodities in Kosovo will be determined as any other price, by demand and supply for the underlying product; however, Kosovo will need to trade in dollar terms, since world contracts for agriculture are traded in dollar terms.

Price limit specifies the minimum price based on the value of the underlying commodity for which a contract can be traded. CBOT price limits are: for wheat – $0.30/bushel (which is 3.75% of the value of the commodity); for soy beans - $0.50/bushel (which is 5% of the value of the commodity); and for corn - $0.30/bushel (which is 6% of the value of the commodity) (CBOT). In order for Kosovo to determine the price limit also, it will need to take a role model, which might be this one. However, it must be noted that price limit depends on the country's price for the product, value of the product, and economic indicators.

Storage costs are of great importance. Each farmer should have a warehouse build, where they can store their products when farming. The warehouses should be isolated and kept clean all the time since they present the quality of the products being traded. At the same time, investors knowing that farmers do not have well-established warehouses, will not want to buy in Kosovo. Thus, farmers should work on building warehouses simultaneously while developing futures market.

Delivery Months

Delivery month is the month when futures contract matures and is delivered as specified in the contract. Agriculture futures contracts cannot be delivered each month; thus, Kosovo must also specify the delivery month in the futures contracts. For example, the delivery months for

corn commodity in CBOT are March, may, July, September, December. The codes of delivery months are presented below, according to which Kosovo will also need to specify the contract:

Month	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Code	F	G	H	J	K	M	N	Q	U	V	X	Z

Trading Days

Kosovo's contract needs also have specified the trading days and trading hours for agricultural commodities. This is of high importance, because investors and farmers should be familiar with days and time for contracts being traded, so when they want to enter or close a position they will know the exact time when to do it. If Kosovo farmers are not informed about the trading hours, then they could incur losses and blame the regulatory exchange office for their losses. In turn, in lack of adequate information, farmers can lose their trust in futures exchange.

Please refer to Appendix VI & VII to see a sample of contract specifications from CME Group and price quotations for different agricultural products traded in CME Group.

Why is important for Kosovo to develop futures market?

Reduce Price Volatility and Risk

Farmers who know that next year they are going to produce potatoes and investors that want to buy potatoes they can engage by their own in futures market and make trade arrangements as specified in the contract. In this way, interested people drove by their self-interest, work freely by creating demand and supply in the market. If there is more supply than demand in the market, excess supply of potatoes will be created in the market, which will drive prices down. If there is more demand than supply in the market, excess demand will drive prices of potatoes up. This reduces price volatility by bringing the market into balance as the market continually adjusts itself to the market situation. Even in times when supply and demand do not work perfectly, commodity futures market provides the perfect system where farmers and traders can virtually or physically meet and use exchange market information to set the price. This is done by all participants of futures market who altogether determine the futures price for potatoe.

What is more, the function of hedger reduces risks by locking in the price of potatoes, input costs, or raw materials. By reducing the risk farmers might produce more potatoes and trade them, promoting as such Kosovo's economic growth.

Provide Liquid Market

Traders and farmers can engage in the futures market by opening and closing trading positions even when they do not want to hold the commodity until expiration. The potato futures market provides profits also for people who want to engage in the exchange with the only mean to buy and sell in order to make profit. A trader might buy potatoes from a farmer in Kosovo. The trade might be contracted in year 2014 (for example), for the exchange to happen in 2015. However, the first investor who agreed to buy potatoes from the farmer in Kosovo can sell the contract to another investor; now in 2015 the trade will happen between the farmer in Kosovo and the second trader. In this way, futures contract can be rolled from one investor to another, until the time of expiration comes where the actual delivery of goods should happen. Thus, futures market provides means for investors to make profit, but at the same time does not present any problem to the farmer who agreed to sell their potatoes one year after. So, there are two parties that can benefit from futures markets- farmers and people who want to invest not only in Kosovo but also outside it.

Provide Security and Transparency

The most important fact of futures market is the security they provide to both, farmers and investors. Each farmer and investor that wants to trade futures market needs to open a margin account, which has the function of a deposit account. Market participants deposit an amount specified by regulatory office regulations, which in case of default will be delivered to the harmed party of the trade. Even though agriculture has more risks than other contracts because of weather conditions, the margin account helps Kosovo mitigate this risk.

Each investor and farmer that wants to engage in trade has the possibility to see prices. Furthermore, when the exchange system will be established in Kosovo, each person that needs information on commodity prices can visit the webpage of Kosovo clearinghouse and have just the exact information on how commodities are being priced. This contributed to price transparency, where no one can complain about price differences in the futures market.

Information

The reputation and information about Kosovo on the entire world will increase. Furthermore, with potatoes being the first futures contracts in the world, Kosovo will gain attention faster than imagined. Futures market in Kosovo will not only present information for agriculture products in Kosovo, but they will also give insightful information about the economy and prices of Kosovo. Investors will have the exact information about prices in Kosovo and market conditions. So, futures market can also be used to attract investments in Kosovo.

Additionally, investors need not worry for the quality of products being purchased in Kosovo because quality will be specified and ensured in the contracts traded. Contracts for potatoes in Kosovo will be designed in accordance to European contracts and it needs to be accredited from the ICE. As follows, Kosovo being a developing country needs to be distinguished from other producers with its price, meaning that in order to gain market share it needs to set lower prices at the beginning. This can be possible by government providing subsidies to farmers. With price information and quality guaranteed, Kosovo will have better chances to develop futures market and increase the economic output.

Taxation System

The establishment of futures market requires the willingness of many actors to collaborate and enable the well-functioning of such market in Kosovo. Throughout the paper several time has been stated the fundamental role of the government in helping this market. Here again, Kosovo government might use its power to provide incentives for people to be engaged in futures market.

The regulatory office in Kosovo will be created as a private corporate that brings together farmers of different places of Kosovo. With this legal connotation, the regulatory office needs to be taxed with corporate tax. If it achieves a yearly turnover of more than €50,000, then it also needs to pay the VAT tax. However, government might exempt the regulatory office from paying corporate tax for the first five years of operation. If government notices potential and has interest for futures market to be developed in Kosovo, then it should provide incentives for individuals or companies to initiate this process.

Since centrally planned futures exchanged have shown failure more than one time, in more than one country, it would not be recommended for Kosovo to have government-regulated futures market. Thus, government might help others to start this process by eliminating taxes that often times are seen as burden to the initial phase of companies.

Conclusion

Based on the analysis conducted throughout the paper and the data presented, Kosovo has the possibility to establish agriculture futures exchange. Given the fact that Kosovo is endowed with agricultural land, where 53% of the land is agricultural land, the aim is to start futures exchange with agricultural products and then based on the demand and supply factors, continue also with manufacture products. The main factors that a country should possess in order for the futures market to be established are: macroeconomic stability, well-functioning of financial system, and special contract that differs from the others in the futures market. Because Kosovo uses euro as country's currency, it does not have the possibility of printing money. This means that inflation in Kosovo has lower probability of reaching high rates, which is an advantage for Kosovo. In one hand this restricts the central bank's possibility to affect money supply, but it allows more time to focus on the control of financial banks. Due to this fact and to the favorable conditions supplied by the Kosovo government, financial sector in Kosovo is one of the most developed sectors that contribute to the economic development of our country. The purpose for Kosovo to develop futures contracts on potatoes, gives Kosovo another advantage. Currently, there is no such contract on potatoes traded in world futures exchange. This will attract the attention of other countries toward Kosovo, giving greater possibility to the well-functioning of the futures market.

As with any other development, Kosovo needs to follow a model of futures exchange in order to know that difficulties it may encounter in the market and know how to fix them. Based on what other developing countries have done, such as Africa, Iran, and India that has already established agriculture futures exchange, Kosovo needs to focus on: rule of law and legal challenges, margin settlements, price fluctuation and price-risk, warehouse establishment, quality standards, and farmer's awareness on the importance of futures market.

The lessons taken from other developing countries, that Kosovo needs to follow when it starts the process of implementing futures contracts, are:

- Creation of initiative bodies to support futures exchange

  The role of the initiative bodies in Kosovo would be to inform people in general about the importance of futures exchange. They need to work simultaneously with the regulatory office of futures exchange and keep people updated with any regulation or activity that regulatory office takes.
- Build a credible warehouse receipt system

  The creation of warehouse system will have the duty to build warehouses in different places in Kosovo, where farmers are located and farm their products. The functioning of the warehouse system is really important since it serves as storage for agricultural products. If warehouses are built with quality, they ensure that the agricultural products also deliver quality. Furthermore, warehouses reduce transaction and financial costs for the farmers.
- Establish a committee that evaluates the work of futures market

  Each time there should be a committee that updates the regulatory office about challenges and difficulties encountered in the market. It has the role to inform the regulatory office about changes they need to make in order to be successful. What is more, their role is going to be to create awareness to farmers for the importance of futures markets. Given that farmers in Kosovo do not have adequate information about the functioning of futures market, they might oppose to be part of it. Thus, this committee needs to hold awareness programs in different cities of Kosovo, often times, so that they inform farmers about everything related to the futures market.
- Establish strong monitoring system

  The monitoring system should be established in Kosovo at the same time the regulatory office is established, so that it can evaluate the work that is done from this office and also the entire process. It needs to see if each participant is obeying the rules and if the futures market is functioning according to the Kosovo law.
- Build quality testing labs

  In order for investors believe in the futures market in Kosovo, quality testing labs should be created which ensure that each commodity traded from Kosovo has the quality

specified in the contract. This is of high importance, because it created trust to investors that no default is going to happen. The quality testing lab should also be monitored from the monitoring system.

Recommendations

Sensitize people on the importance of regulatory office for futures contract

In order for Kosovo to have agricultural development, it needs to open a regulatory office that will develop the futures market. The aim of this paper is to sensitize people on the importance of futures market in economic development. For Kosovo it is of high importance to inform farmers particularly about the benefits of the futures market. If farmers, as well as the entire population are aware and willing to invest in such markets, then the well-function of futures market will be a fact.

Create a practice platform for farmers in Kosovo before launching futures exchange

In order for farmers to be familiar with futures exchange, it would be helpful to launch a practice platform so that not only farmers, but everyone who wants to engage in futures market could first practice and learn the process and then engage in agricultural futures exchange.

Make Kosovo the center of futures market in the region

The aim is to ensure well-functioning of futures market, which will make Kosovo the center of futures exchange. Currently, only Macedonia has such futures exchange established in the regional countries. Kosovo can have the futures market, through which all other regional countries can trade. In this way Kosovo would benefit more from people who not only spend money for contracts but also spend money to come here, live, and eat here. So, other businesses will benefit as well.

Strengthen the implementation and protection of consumer rights

Currently, Kosovo has the perfect law on consumer protection. This law is of fundamental importance for futures market. Each investor that wants to invest in Kosovo and buy products from Kosovo, they need to be insured that in case of any default they will have a place where to complain. Thus, through consumer protection law, Kosovo can protect its farmers and investors. The focus is

for Kosovo to restrict the implementation of consumer rights, and seek the functioning of this law not only for futures market, but also for other businesses.

Foster economic development of Kosovo

If agriculture sector is developed in Kosovo, then the entire economy of Kosovo will benefit. The 22% of population employed in the agriculture sector highlights the importance of this sector on Kosovo development. By using futures contract on agriculture commodities, farmers will hedge their products by the time they plant them. In this way farmers are going to avoid the loss on their unsold products. This will increase the farmer's profit, which at the same time will contribute to the enlargement of agricultural sector. More job opportunities will be created, which means that the unemployment rate will be reduced in Kosovo.

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Appendices

Appendix I

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014 (Proj.)	2015 (Proj.)
GDP										
GDP (millions)	3,118	3,411	3,851	3,912	4,216	4,637	4,885	5,169	5,501	5,892
GDP growth rate (% change)	3.8	4	6.9	2.9	3.9	5.2	2.3	2.6	4.2	4.5
GDP per capita (euros)	2,277	2,688	2,323	2,325	2,468	2,674	2,776	2,894	3,034	3,202
GDP per capita growth rate (% change)	5.2	5.4	6	2.1	3.1	3.8	1.4	1.1	2.7	3
Fiscal Balance										
Budget revenues (millions)	620	891	889	1,146	1,166	1,309	1,322	1,422	1,441	1,490
Budget Expenditures (millions)	734	662	937	1,110	1,202	1,376	1,441	1,578	1,568	1,597
Deficit (millions)	-114	229	-49	36	-36	-67	-119	-156	-127	-107
External Trade Balance										
Exports (millions)	441	512	569	612	820	875	933	995	1,049	1,152
Exports (% of GDP)	14.14	15.01	14.78	15.64	19.45	18.87	19.1	19.25	19.1	19.56
Imports(millions)	1,585	1,821	2,156	2,146	2,504	2,742	2,912	3,030	3,124	3,293
Imports (% of GDP)	50.83	53.38	55.99	54.86	59.4	59.13	59.13	58.62	56.79	55.89
Deficit (millions)	-1,144	-1,309	-1,587	-1,534	-1,684	-1,867	-1,979	-2,035	-2,075	-2,141
Balance of Payments										
Current account (millions)	-226	-214	-461	-374	-515	-659	-380	-553	-487	-494
Capital and financial account (millions)	-14.9	10.7	298.9	209.3	298	419	140	353	287	294
Net errors and omissions (millions)	240.9	203.3	162	164.6	217	240	240	200	200	200
Remittances, Inflation rate										
Remittances(neto)	467	516	609	586	584	585	519	532	547	569
Inflation rate	0.6	4.4	9.4	-2.4	3.5	7.3	2.5	2.4	1.5	1.5

Key Economic Indicators - *Source: IMF, CBK, World Bank, Global Finance*

Appendix II

COUNTRIES	EXPORTS BY COUNTRIES					
	2006	2007	2008	2009	2010	2011
Austria	1,211	2,005	2,072	1,978	5,670	5,711
Belgium	17	5,587	28,113	5,176	11,455	5,085
Great Britain	62	154	173	249	681	1,343
Denmark	44	94	53	75	44	52
France	232	145	247	639	1,084	1,305
Germany	3,952	16,190	7,205	7,563	15,587	24,144
Greece	3,914	8,400	10,851	240	222	194
Netherland	1,128	2,413	1,888	1,506	1,018	2,923
Hungary	18	112	105	396	29	89
Ireland	20	48	10	3	6	7
Italy	12,654	9,672	25,485	46,218	80,193	83,924
Luxembourg	:	:	:	:	:	8
Poland	281	121	102	53	150	650
Czech Republic	356	159	1,127	463	297	168
Slovakia	37	395	241	391	920	2,405
Slovenia	4,515	4,290	6,304	2,882	6,203	6,001
Spain	49	114	196	51	49	57
Sweden	43	8,155	4,390	322	1,116	365
Romania	:	1,142	43	232	272	987
Bulgaria	13,506	10,005	2,632	2,709	6,765	936
Other of EU	69	169	2737	129	50	294
27 EU countries	42,108	69,370	93,974	71,275	131,811	136,648
Albania	12,645	20,799	21,113	26,182	30,841	34,566
Macedonia	9,734	17,384	20,046	17,355	26,308	30,949
Montonegro	2,207	2,913	3,770	3,084	3,920	6,988
Serbia	20,910	19,280	9,893	3,504	3,941	7,198
Turkey	1,668	2,660	3,044	6,512	9,357	7,831
Switzerland	7,047	12,937	7,380	10,510	17,786	17,611
Bosnia and Herzegovina	5,126	5,287	5,919	1,206	1,847	612
Croatia	1,123	1,837	793	2,151	2,744	2,794
USA	3	17	286	290	116	182
China	5	18	31	1,596	14,779	28,268
Other	8,198	12,560	32,214	21,660	52,495	45,470
TOTAL*	**152,882**	**234,432**	**292,437**	**236,600**	**427,756**	**455,765**

Source: Statistical Agency in Kosovo; agriculture and trade sector

Appendix III

Vegetable Production in Kosovo				
Vegetables	**Production (tons)**	**Yield**	**Surface (hectares)**	**Production Regions**
Potatoes	210,247	30	6,604	Vushtrri, Lipjan, Klinë
Peppers	109,547	24.61	4,449	Rahovec, Suharek
Cabbages	64,632	41.3	1,563	Podujevë, Pejë
Tomatoes	55,671	35.08	1,638	Pejë, Deçan, Rahovec
Onions	29,682	14.51	2,044	Rahovec, Deçan
Cucumbers	19,582	32.33	575	Rahovec, Pejë, Prizren
Cauliflower	3,020	31.53	96	Podujevë
Fresh Onions	2,284	16.78	136	Rahovec

The table shows the production of vegetables in Kosovo. As it can be seen from the table, potatoes constitute the highest production (in tons) and most of the arable land is planted with this vegetable. Often, in literature, because potatoes constitute such high production, they are not included in vegetable production, instead are treated as a special category.

Source: Sektori Bujqesor, Oda Tregtare Kosovaro Turke

http://www.kt-to.org/site/assets/files/1045/raporti_i_sektorit_bujqesor.pdf

Appendix IV

	Local Production (% of Dom Demand)	Import (% of Dom Demand)	Self-Consumption (% of Production)
Milk	74	26	47
Meat	19	81	-
Vegetables	75	25	26
Fruit	80	20	54
Wheat	71	29	27
Wine	125	2	-

The table represents the local production (percentage of domestic demand), imports (percentage of domestic demand), and self-consumption (percentage of production) of the major categories of agricultural production in Kosovo. 74% of domestic demand is met by local production for milk, and 26% is imported. Self-consumption is 47% of the production of milk. This analogy applied to the other products.

Source: "Kosovo Report." ARCOTRASS- Consortium, 2006. Web. 28 Mar. 2014. <http://ec.europa.eu/agriculture/analysis/external/applicant/kosovo_en.pdf>.

Appendix V

Kodi i artikullit Item code	Description	2005	2006	2007	2008	2009	2010	2011
01.1.	Wheat[1]	0.14	0.15	0.25	0.27	0.17	0.19	0.25
01.3.	Barley[2]	0.18	0.19	0.30	0.41	0.31	0.24	0.30
01.5.	Maize[3]	0.18	0.16	0.22	0.29	0.20	0.22	0.29
01.2.	Rye[4]	0.18	0.19	0.32	0.42	0.28	0.29	0.34
01.4.	Oats[5]	0.22	0.24	0.39	0.45	0.28	0.25	0.32
03.9.1	Hay[6]	0.10	0.11	0.16	0.20	0.14	0.12	0.13
03.9.2	Straw[7]	0.06	0.07	0.08	0.10	0.07	0.07	0.08
03.9.9.	Lucern[8]	0.13	0.11	0.17	0.22	0.16	0.15	0.15
05.1.	Potatoes[9]	0.23	0.31	0.30	0.31	0.30	0.29	0.30
04.1.9.1	Cabbage[10]	0.18	0.17	0.30	0.18	0.19	0.18	0.17
04.1.9.6	Onion[11]	0.37	0.44	0.46	0.44	0.44	0.55	0.47
04.1.9	Pepper[12]	0.52	0.59	0.62	0.69	0.63	0.59	0.58
04.1.9.3	Spinach[13]	0.63	0.60	0.70	0.67	0.74	0.83	0.79
04.1.9.7	Beans[14]	1.54	1.65	1.91	2.27	2.11	1.80	1.95
04.1.2	Tomatoe[15]	0.54	0.63	0.67	0.57	0.61	0.62	0.50
04.1.9.4	Cucumber[16]	0.41	0.48	0.56	0.51	0.47	0.49	0.43
04.1.9	Watermelon[17]	0.20	0.16	0.20	0.18	0.19	0.21	0.17
04.1.9.9.9	Leek[18]	0.80	0.87	0.77	0.77	0.84	0.88	0.72
04.1.9.9.9	Garlic[19]	1.38	1.68	1.91	1.89	2.01	2.90	3.51
05.1.1	Apple[20]	0.50	0.51	0.56	0.60	0.51	0.49	0.49
05.1.2	Pear[21]	0.78	1.00	1.15	1.11	1.08	0.99	1.09
05.1.3	Chestnuts[22]	0.89	0.95	1.25	1.13	1.13	0.87	1.45
05.1.4	Grape[23]	0.76	0.75	0.88	0.85	0.83	0.80	0.93
05.1.9	Walnuts[24]	1.64	1.64	1.64	1.78	1.68	1.75	2.28
11.1	Cattle[25]	1.73	1.79	1.73	1.92	2.06	2.02	2.13
11.2	Pigs[26]	1.58	1.58	1.64	2.02	2.11	2.13	2.08
11.4	Sheep[27]	1.89	1.79	1.83	2.04	2.15	2.22	2.31
11.5	Chickens (wilages)[28]	4.16	4.51	4.72	6.79	7.29	7.95	8.71
11.5.1	Chickens (farms)[29]	1.59	1.59	1.59	1.78	1.92	1.94	2.12
12.1	Milk[30]	0.28	0.29	0.29	0.34	0.31	0.29	0.31
12.9	Honey[31]	6.96	6.93	6.69	6.82	7.21	7.42	8.11
12.2	Eggs[32]	2.32	2.24	2.45	2.74	2.12	2.13	2.51

Kosovo agricultural products prices from 2005-2011. Prices are per kilogram.

Source: Statistical Agency of Kosovo

Appendix VI

Contract Size	5,000 bushels (~ 127 Metric Tons)	
Deliverable Grade	#2 Yellow at contract Price, #1 Yellow at a 1.5 cent/bushel premium #3 Yellow at a 1.5 cent/bushel discount	
Pricing Unit	Cents per bushel	
Tick Size (minimum fluctuation)	1/4 of one cent per bushel ($12.50 per contract)	
Contract Months/Symbols	March (H), May (K), July (N), September (U) & December (Z)	
Trading Hours	CME Globex (Electronic Platform)	Sunday – Friday, 7:00 p.m. – 7:45 a.m. CT and Monday – Friday, 8:30 a.m. – 1:15 p.m. CT
	Open Outcry (Trading Floor)	Monday – Friday, 8:30 a.m. – 1:15 p.m. CT
Daily Price Limit	View Daily Price Limits for initial and expanded price limits. There shall be no price limits on the current month contract on or after the second business day preceding the first day of the delivery month.	
Settlement Procedure	Daily Grains Settlement Procedure (PDF) Final Corn Settlement Procedure (PDF)	
Last Trade Date	The business day prior to the 15th calendar day of the contract month.	
Last Delivery Date	Second business day following the last trading day of the delivery month.	
Product Ticker Symbols	CME Globex (Electronic Platform)	ZC C=Clearing
	Open Outcry (Trading Floor)	C
Exchange Rule	These contracts are listed with, and subject to, the rules and regulations of CBOT.	

Source: CME Group.

The table shows an example of contract specifications in CME Group. As it can be seen from the table, the contract size is for 5,000 bushels and the price is quoted cents for bushels. Delivery months are March, July, September, and December. It also specifies trading hours and daily price limits.

Appendix VII

Product Name	Code	Contract		Charts	Last		Change	Open	High	Low	Globex Volume
Corn	ZCN4	Jul 2014	OPT		499'0		-0'4	507'0	509'6	497'6	118856
Soybeans	ZSN4	Jul 2014	OPT		1471'0		+0'2	1462'4	1472'0	1451'0	80128
Soybean Oil	ZLN4	Jul 2014	OPT		41.48		-0.03	41.20	41.69	40.87	37350
Soybean Meal	ZMN4	Jul 2014	OPT		480.9		+0.5	476.9	481.4	474.2	29822
Chicago Soft Red Winter (SRW) Wheat	ZWN4	Jul 2014	OPT		715'0	a	-1'0	709'2	720'6	706'2	46202
Live Cattle	LEM4	Jun 2014	OPT		138.400		+0.350	139.375	139.950	137.875	28191
Lean Hogs	HEM4	Jun 2014	OPT		122.225		0	122.100	123.200	121.625	15364
Feeder Cattle	GFQ4	Aug 2014	OPT		190.775		+0.450	190.675	193.475	189.725	6900
Class III Milk	DCM4	Jun 2014	OPT		21.48		-0.07	21.77	21.89	21.45	232

Source: CME Group

This is one snapshot of prices for agricultural products in futures exchange. The code presents the number of the product which traders use when they trade with products. Contract tells the delivery month for the product. Open price is the price when the trade was opened at the beginning of the day. High and low present the highest and lowest price the product hit during the day. Last is the price currently being exchanged for the product (in this case when the snapshot picture was taken). The chart tells how the price has changed during the day.