

A micro-econometric analysis of rural households saving determinants in Kazakhstan.

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Abstract

Changes of economic state, high climate risk and a number of specific shocks leave rural households in Kazakhstan vulnerable to severe hardship. Moreover, the credit and insurance services are limited and the state support is weak. In this context, households' saving is crucial to provide an insurance against the economic and social shocks, particularly, savings in financial assets. Additionally, a better knowledge of rural households saving behavior could provide information regarding the development of financial services in rural areas.

This article provides an analysis of microeconomic factors which could explain the Kazakhstani rural household behavior regarding savings in general, and demand for formal saving services in particular by using a unique survey. Rural household savings are estimated in order to test households' responses to income, monetary or non-monetary wealth and some socio-demographic variables. Surprisingly, a variable "income" is insignificant for in-kind savings, but significant and positive for savings in monetary form. However, it was expected that this variable would affect positively both ways to save. We find possessing a house and a car positively and significantly affects a decision of the household to make savings. Finally, we find that a desire to have access to formal credit positively influences the probability to be found among households making savings.

Based on data it was found that rural households make saving in various ways such as financial assets and animal stock. However, it is also important to underline that most households prefer to make saving in animal stock. This situation could be explained by that the commercial banks in Kazakhstan are reluctant to deal with low income rural population on one side, and operating since 2003 Rural Credit Partnerships are not allowed to attract neither savings nor to deal with legally-non-registered clientele as subsidiary small households. At the same time, the latter cover approximately 70-80% of all dairy products, meat products, fruits and vegetables in the Kazakhstani food market.

1. Introduction

Three main theories have been widely used in studies on household saving behavior: The Life Cycle Hypothesis (LCH) offered by Modigliani (Modigliani 1963), Kynesian theory (Keynes 1936) and Permanent Income Hypothesis (PIH) by Friedman (Friedman 1957). By a definition, saving entails an intertemporal reallocation of resources. Theory provides a number of reasons for such reallocation by a household (Browning and Lusardi 1996; Kennickell and Lusardi 2003). Savings are an important way of improving well-being, insuring against times of shocks, and providing a buffer to help people cope in times of crisis (Zeller and Sharma 2000). Directly, saving could be used for investment. Indirectly, saving indicates repayment ability, also increase credit rating and as a collateral in a credit market (Brata 1999). The inability, willingness and opportunity of households to save over time can therefore significantly influence the rate and sustainability of capital accumulation and economic growth in developing countries (Bautista and Lamberte 1990).

Precautionary savings provide households with an emergency cushion in case of a sudden loss of income or an unexpected spike in expenditures. Retirement savings enable households to maintain a relative stable lifetime level of living during retirement. It is also likely that households refrain from current consumption to save for a house down payment or for children's education (Yao et al. 2011). Therefore, an understanding of factors that affect the savings performance of households is a necessary step toward theory building in social development research, which in turn leads to the formulation of more effective social development policy (Chowa 2006).

The most significant determinant of household saving behavior is the level of income. However, the determinants of savings will include but not limited to the income of the household. A number of authors used as determinants of saving behavior non-financial assets as real estate, cars, durable goods, and animal stock. Kulikov et al. concluded that there is no significant effect of ownership of real estate on saving, while ownership of durable consumer goods reduces household saving. Ownership of stocks of various financial assets and liabilities and accessibility to liquid assets affect saving negatively. Nevertheless, if wealth is in the form of productive assets such as farmland, it can have a positive impact on saving. Larger land ownership helps the farmers to benefit from economies of scale and, hence, higher production and earning (Kulikov 2004).

Education is another factor that has an effect on asset accumulation (Browning and Lusardi 1996). Education affects savings performance by influencing the level of income and the options for asset accumulation available to the individual.

Similarly, the type of work determines the regularity of income. Wage employment, self-employment, or casual employment provides a source of income, of which a portion can be saved. Income is identified as a risk factor in precautionary savings theory. This theory predicts that risk depresses consumption and increases the accumulation of wealth (Kennickell and Lusardi 2003).

Denizer et al. use household budget data from Bulgaria, Hungary and Poland from the mid - 90s and show that saving is a positive function of income, but is unaffected by the source of income. In addition to variables like income, income shocks, wealth and financial exposure, saving preferences will generally also depend on a range of characteristics such as the size and composition of the household as well as the age and education of individuals in the household (Denizer et al. 2002).

According to Gersovitz there are at least three approaches to conceptualizing the role of the family in the saving process: (1) as a veil concealing purely individualistic behavior; (2) as a substitute for absent or imperfect markets; or (3) as the fundamental and indecomposable decision unit (Gersovitz 1995).

Micro-econometric analysis helps to assess the importance of various economic variables and household characteristics on the decision to save. Such analyses may also help shed light on the motive(s) underlying the decision to save. This paper comprises a micro-econometric analysis of the determinants of rural household saving in Kazakhstan based on the data collected by means of a survey undertaken in 2011 in Pavlodar region of Kazakhstan. One reason for the limited literature on the determinants of rural household saving in Kazakhstan is the lack of appropriate data, in particular, data sets containing information on household income, savings and wealth. Such datasets are not readily available in most transition countries, including Kazakhstan. Therefore this survey could be considered as a unique one.

The paper is aimed to contribute to the understanding on rural household saving behavior in at least three ways. First, it is the first study to estimate rural household saving for Kazakhstan and, overall, only a few studies have dealt with saving behavior of rural households in transition economies. Second, we attempt to assess ways in which rural households in Kazakhstan prefer to make savings. Third, we seek to assess the effect on household saving of variables that capture its financial and non-financial asset position as well as its desire to apply for credit from formal financial institutions.

There are two commercial banks which have branches in rural area of Kazakhstan: Halyk bank and Kazpochta (Post bank). Kazpochta and Halyk provide most formal savings services in rural areas. These services appear to be underutilized; Kazpochta's entire rural deposit base was about \$500,000 as of January 2002, while Halyk's average rural area deposit is about \$60, compared to \$343 in urban areas. In Halyk's case, while better-off urban residents could be expected to have higher average deposit levels than rural residents, a more telling perspective on these deposit figures is provided by the fact that being able to pay for one's own funeral is an extremely important cultural norm for both Russians and Kazakhs. Therefore, adult rural residents can reasonably be assumed to be hoarding several hundred (Lamberte et al. 2006)

Questions regarding rural savings in Kazakhstan remain unclear:

- 1) whether rural population has a capacity to save at all.
- 2) if it has, in what form people would prefer to make savings.
- 3) what factors determine rural household savings behavior, and
- 4) what factors determine the forms in which savings are held.

A few studies were undertaking to analyze this issue in Kazakhstan and not all of them considered it on the micro level.

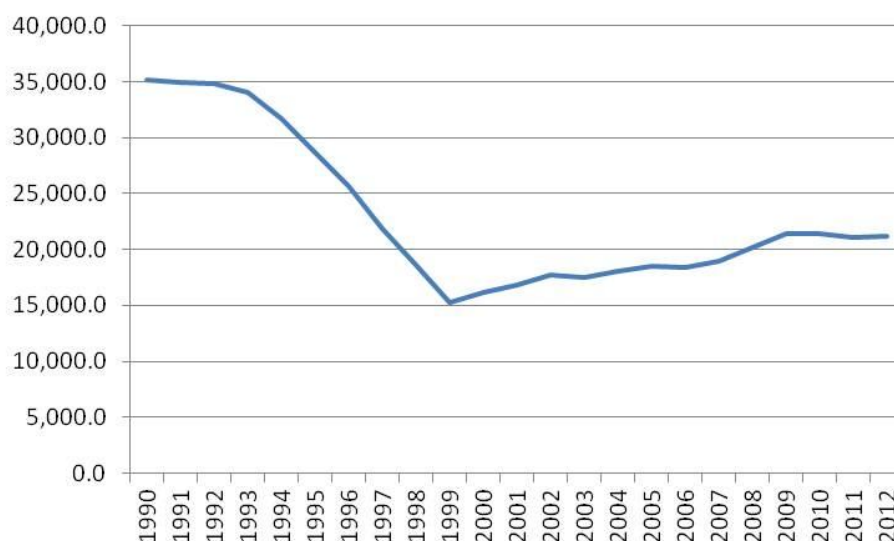
The rest of this paper is structured as follows. Section 2 presents an overview of the agricultural development in Kazakhstan. Section 3 introduces survey and presents variable definitions and summary statistics. Section 4 reports the results of a micro- econometric analysis of the saving behavior of Kazakhstan rural households. Section 5 provides some preliminary conclusions.

2. Agriculture of Kazakhstan

During the Soviet period, Kazakhstan was a major agricultural producer, supplying other Soviet republics with its surpluses of crop and livestock products (OECD 1998). Agricultural production accounted for a considerable share of the GDP in that period, on average about 30%. In the 1980s, Kazakhstan was responsible for over seven percent of the total Soviet agricultural gross product, third after Russia and Ukraine, as well as approximately 13% of the grain, and a larger share of the valuable durum and hard spring wheat used for pasta.

During transition, both cultivated area and the yield level declined markedly, but Kazakhstan has nevertheless remained a net-exporter of grain amounted to US 27,849 million dollar in 2005. Total cultivated area in 1999 decreased by 56.6% compared to 1990, however starting from 2000 cultivated area has been increasing and account nowadays 21191 thousand hectares or about 60% of area in 1990 (Figure 1). All crops, except for vegetables, were affected by the reduction in cultivated area.

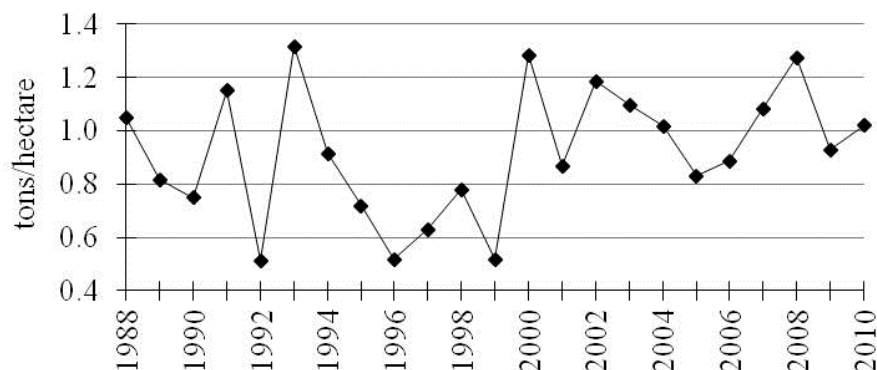
Figure1. Total cultivated area under crops, thousand hectares



Source: Agency of statistics of the Republic of Kazakhstan, www.stat.kz

Yield has been steadily rising, but are quite variable due to the variability of the seasons. Average yields seem to have reached a stable level over the last 10 years with a slight upward bias. Average yields are relatively low and reflect the soils and rainfall of the country as well as lack of irrigation areas, high quality seeds, fertilizer and pesticides, and large losses due to old, deficient farm machinery. Average grain yields amount to only 0.9 ton per hectare (Figure 2). Total grain production in 2007 amounted to 20.1 million tones that is less by 31.0% then in 1992, with the same level of yield 13.2 and 13.3 respectively. Moreover, in the middle of the 90s namely in 1997 about 1.5 million hectares under grain, i.e. 10 % of a total grain area, were not harvested because of lack of fuel.

Figure 2. Kazakhstan wheat yield



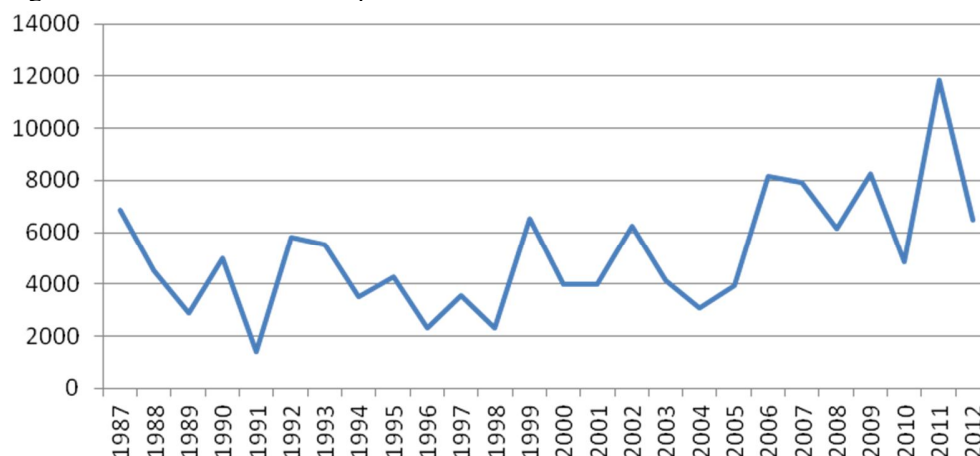
Source: Kazakhstan: wheat data analysis, 2009, <http://www.analysingagriculture.com/default.aspx>.

After the country's booming extractive sector, grain production is the second most important economic sector. Kazakhstan is a net agricultural goods exporter. Main exports in 2002 were in wheat (67.3%), cotton lint (12.2%), and barley (7%). The export of higher-value agricultural products is, however, insignificant. For sugar, processed foods and oilseeds there is a high import surplus. Independence has led to a re-sourcing of trade flows from the former Soviet Union to Asian and Western countries.

Kazakhstan imports a minor quantity of wheat. While Kazakhstan's consumption has remained static and so exports are likely to vary with production changes. This variable export capacity will have an effect on world markets with poor years putting added pressure on world prices.

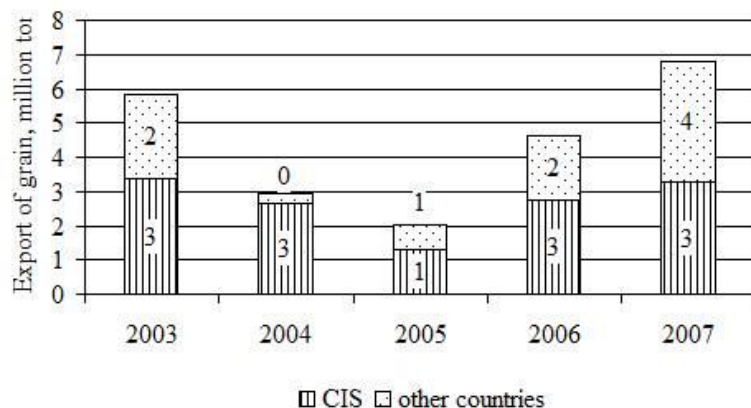
One of the main reason constraining a grain export rate is a shortage of own specialized transport equipment which numbers presently about five thousand units and allows transporting only 0.5 million tons of grain for export a month, whereas a planned volume of grain export is of 1.0 million tons of grain a month (Figure 3 and Figure 4).

Figure 3. Kazakhstan wheat exports



Source: <http://www.indexmundi.com/agriculture/?country=kz&commodity=wheat&graph=exports>

Figure 4. Kazakhstan wheat exports by countries

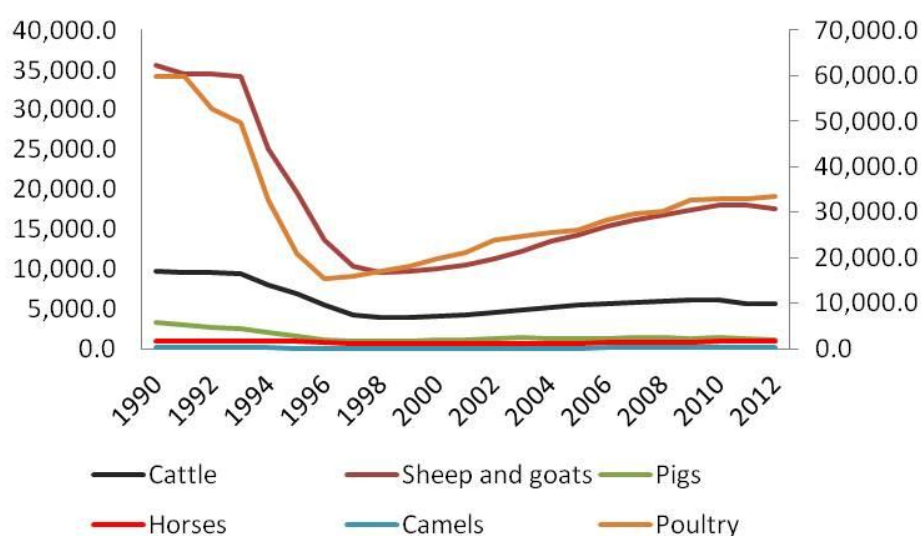


Source: Agency of statistics of the Republic of Kazakhstan, www.stat.kz

Kazakhstan's livestock and poultry sector has a significant, but under-exploited development potential. Livestock production has been a key economic activity in Kazakhstan for centuries and continues to be a major source of employment, food, and income for the rural population. Prior to the collapse of the Soviet Union, livestock share accounted for 60% of agriculture GDP; at present it accounts for 42%. Kazakhstan's vast grasslands provide an important production base, and improved local and world market prices provide opportunities for livestock development, especially for the emerging small and medium size producers (Voronina 2005).

Because of decreasing an output to input price ratio in the middle of the 90s, livestock farming in Kazakhstan became extremely unprofitable. Corporate farms slaughtered, exported, sold, or transferred 90% of their inventories during this period, while subsidiary household and individual farms eliminated only five percent of their inventories. Indeed, according to official statistics Kazakhstan experienced the sharpest reduction of livestock numbers among all the CIS countries. The value of livestock for the period from 1992 to 1998 has substantially decreased from 9 million heads to 3.9 million heads. The poultry numbers fell between 1991 and 1996 by no less than 74.3% (Figure 5).

Figure 5. Kazakhstan animal numbers by year



Source: Agency of statistics of the Republic of Kazakhstan, www.stat.kz

3. Survey

Having more than two million SSH (subsidiary small households) in Kazakhstan means that the majority of Kazakhstani rural population earns their living through such non-legally registered small-scale business. Due to the poorly developed micro-crediting in rural areas and the lack of commercial banks branches, the impact of microcredit schemes on SSH outcomes is still largely unknown and under-investigated. Therefore, we focus on savings instead of credit, it is possible to suggest that individuals should be able to save their way out of credit constraints. However, another issue rises: people demand accessible opportunities to save securely.

3.1 Data set

In order to investigate how and in what extent some factors influence a probability to save in monetary form in the presence of an alternative way as savings in animal stock, an analysis based on a static model with cross-sectional data from a specific period (the year 2011) was used. Data for the analysis were obtained from rural inhabitants living in rural districts of Pavlodar region, Kazakhstan. The data are collected from 38 villages of eight districts in Pavlodar region. They are Jelezinka (including villages Lesnoi, Aktauskiy, Bashmachinskiy), Sherbakty (Aleekseevskiy, Ilichevskiy, Hmel'nickiy, Tat'yanovskiy, Maraldu), Kachiry (Berezovskiy, Kommunariskiy, Fedorskij, Ivanovskiy, Peschanui, Jaskairat, Bobrovskiy, Janabet, Osmerujskiy, Zelenaya Rosha, Beregovoe, Terenkolskiy), Irtysh (Uzunsy, Seletinskiy, Golubovka, Kuzulkak), Lebyajinskiy (Yamushevskiy, Kyzylaskerskiy, Shakinskiy, Baimuldinskiy), Bayanayl (Maykop, Bayanayl, Solnechnui, Janajol), Ekibastuz (Kudaikol, Tortkuduk, Solnechnui, Baitetskij, Sarujolskiy), Lebaninskiy (Tlektes).

The primary data relating to the socio-economic particulars of selected households and the other data relating to the saving behavior of the households has been collected by using questionnaires. A questionnaire consists of 32 questions aimed to clarify determinants of rural population for making savings and borrowing from formal credit institutions. People were asked to provide an average income per annum, purposes of their savings, employment unites, possessed properties, access to internet etc. In addition, respondents provided information regarding their sex, age, family size, educations. The sample size for the analysis is 704.

3.2 Regional aspect of agricultural development

Pavlodar region geographically is situated in Northern-Central Kazakhstan and belongs to the region known as Siberia. Its territory is 124.8 thousand sq. km and accounts for 4.6% of total Kazakhstan territory. Population of the region consists of 99 nationalities and makes about 750 thousand people, 34% of total population in the region lives in rural areas. Climate could be characterized as having harsh condition with long and cold winters with temperatures reaching -20°C and low precipitation in the range of 200-300 mm per year. These conditions make agriculture a difficult and risky business in this region. Historically, wheat yield is reduced by drought in two out of every five crop seasons. The dry climate, however, contributes to the consistently high quality of Kazakhstan wheat.

However, intensive cultivation during Soviet times led to high soil degradation and it became a serious impediment to agricultural production. Wheat farming lost profitability and after the collapse of the Soviet Union, the wheat production area dropped down very significantly. Vast agricultural areas of northern Kazakhstan were abandoned. The problems with soil fertility, profitability of farming were aggravated by the worn-out and obsolete stock of machinery, which all together led to the reduction in farmland. Newly privatized farmers and farming enterprises resulting from the previous state owned cooperatives found it difficult to keep the old machinery working or to invest into new equipment (Hickman 2006).

The soils of north-central Kazakhstan are highly variable: deep and fertile in some locations and highly salty and unsuitable for agriculture in others. The land is flat and expansive and lends itself to large-scale agriculture. Individual fields frequently measure over 400 hectares.

Spring wheat comprises 95% of total wheat area in Kazakhstan and virtually all of the wheat in the three north-central regions. The crop is planted in the second half of May. Harvest begins in late August and is usually finished by early October (USDA 2009).

As of January 2009 in Pavlodar region, there were 158 corporate farms, 3644 individual farms, and about 88 thousand subsidiary households. Regional contribution to agricultural GDP accounts about 5%.

3.3 Sample description

Descriptive statistics were first generated to present participant characteristics across age, education, sources of income, and type of work.

As it is presented in the Table 1 rural population in the age group of 21-30, who were born after the Soviet Union collapse, have more opportunities to get higher education (33.58%), while those who are older and got their education in the soviet period had less opportunities to be enrolled at the higher education institutions. It is explained by the new state education policy.

Table 1 Composition of educational level by age group

Level of education	Ages				
	Under 20	21-30	31-50	51-68	More than 68
Primary school	20.00%	0.00%	0.72%	2.84%	20.00%
High school	40.00%	28.47%	42.79%	58.87%	80.00%
Secondary school	40.00%	37.96%	37.74%	24.11%	0.00%
Higher Education	0.00%	33.58%	18.51%	12.77%	0.00%
Post graduation	0.00%	0.00%	0.24%	1.42%	0.00%
total	100.00	100.00	100.00	100.00	100.00

Source: Own survey, 2011

In the Table 2 one can see that there is no big difference in the composition of educational level by type of employment unite, excluding a group of civil servants.

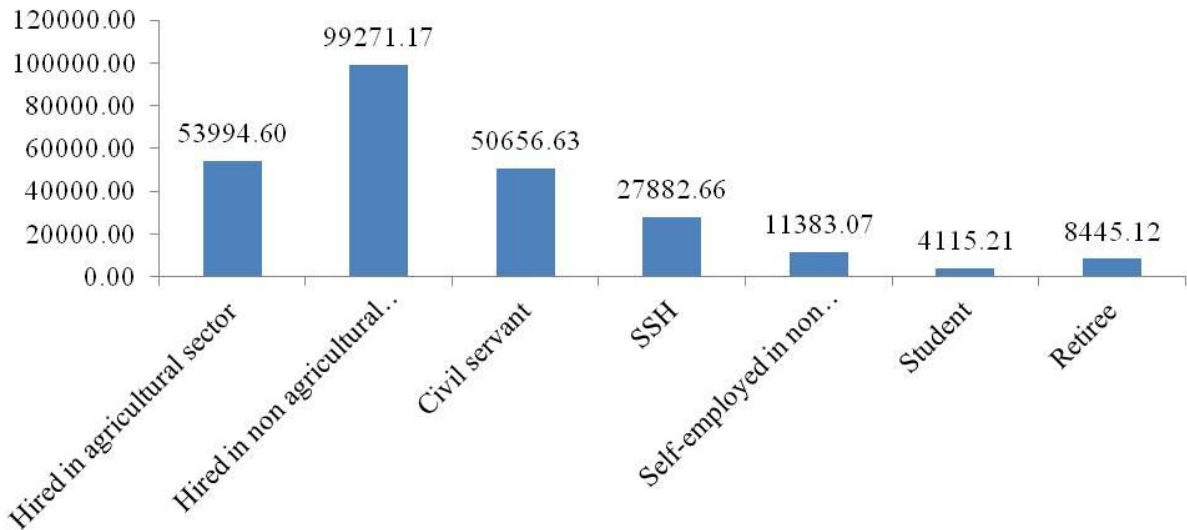
Table 2. Composition of educational level by type of employment unite

Level of education	Hired in agricultural sector	Hired in non agricultural sector	Civil servant	SSH	Self-employed in non agricultural sector
Primary school	1.68%	0.59%	0.00%	0.50%	2.56%
High school	52.10%	46.15%	14.29%	51.00%	38.46%
Secondary school	36.97%	34.91%	41.90%	31.50%	48.72%
Higher Education	9.24%	17.75%	43.81%	16.50%	7.69%
Post graduation	0.00%	0.59%	0.00%	0.50%	2.56%

Source: Own survey, 2011

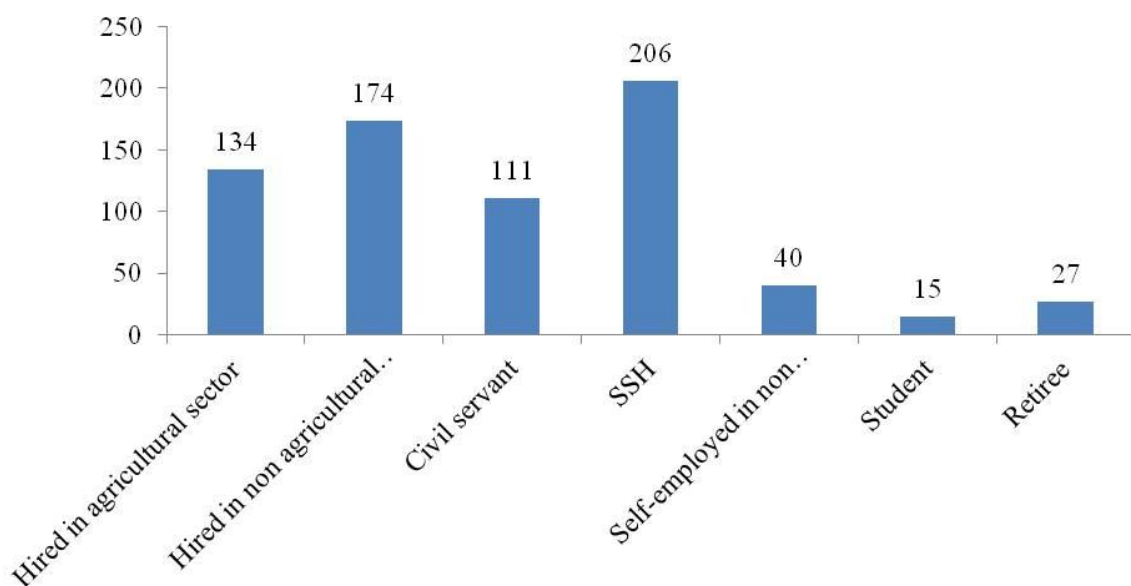
Despite the level of income in SSH is low enough in comparison with other job opportunities (Figure 6), the majority of rural population get their income from SSH (Figure 7).

Figure 6. Average income by type of employment unite per annum, KZT



Source: Own survey, 2011

Figure 7. Structure of employment by type of unite



Source: Own survey, 2011

4. Empirical implementation and results

The analysis is based on the Absolute Income Hypotheses, which relates household saving behavior with household income and other socio-economic variables:

$$S = \alpha + \beta_1 Y + Z + u_i$$

Where, S = Saving

Y = Income

Z = other socio-economic variables

u_i = Error term

Hypothesis 1: Rural population in Kazakhstan prefers to make savings in animal stock rather than in monetary form such as a deposit account or cash.

Hypothesis 2: In order to make investments or to cover private needs, rural population in Kazakhstan prefers to save in animal stock rather than in monetary form such as a deposit account or cash.

4.1 General analysis of sample

As a first step of this study, a general analysis of the groups of respondents was carried out to compare them in terms of variables. The mean values of the all variables were calculated for the two groups of respondents, i.e. the two groups either with or without any savings. Results are obtained using a t-test and are presented in the Table 3.

Table 3. Comparison of two groups of respondents, with and without savings

Factors	Entire sample (N=704)	With savings (N=486)	Without savings (N=218)	t-test
Total income, mio. KZT	0.41	0.49	0.25	0.77
Credit wish, dummy (1 – wish, 0 – no)	0.62	0.68***	0.48***	5.2
Car dummy (1 – have, 0 – no)	0.24	0.31***	0.08***	6.66
Own house dummy (1 – have, 0 – no)	0.51	0.6***	0.3***	6.54

Note: *** - significant at a level of 0.1%;

The results showed that there are significant differences between two groups of respondents compared with respect to variables such as possessing own house, a car, having a wish to apply for credit. Thus, those who have the car, own house, and wishing to apply for credit have more opportunities to make savings. At the same time, the income happened to be not significant. Even though this analysis can give some information about general tendencies, it is not able to explain how each individual variable actually influences savings determinants in rural areas.

4.2 Bivariate probit

In this study, bivariate probit models are used to predict probability that respondents (rural dwellers) have been making savings in monetary form (deposits and cash) in the presence of an opportunity to make savings in animal stock, and to describe the factors influencing this choice. A bivariate probit model is a "natural extension" of the individual probit model (Greene, 1993). Four outcomes are denoted: Y_{10} (if $Y_1 = 1$ and $Y_2 = 0$), Y_{01} , Y_{11} , Y_{00} .

There are two main ways for rural inhabitants to make savings: money (as savings in formal institutions or holding cash) and purchasing animal. The model specifies the probability of making savings in one of two forms as a bivariate normal distribution, jointly determined by making savings in animal stock and making savings in monetary form. However, people may also make savings in both forms at the same time. Thus, the dependent variables are two binary choice variables, Y_1 and Y_2 , indicating a respondent's saving in animal

stock (Y10) along with savings in both forms (Y11) and savings in monetary terms (Y01) along savings in both forms (Y11). More formally:

- $Y1 = 1$ if a respondent states that he/she has made savings in animal stock (Y10) and in both ways (Y11), zero otherwise (Y00);
- $Y2 = 1$ a respondent states that he/she has made savings in money (Y01) and in both ways (Y11), zero otherwise (Y00).

A bivariate probit model is used because it is possible to see whether the two types of savings are interdependent. Unfortunately, it was impossible to get information on whether people would never want to save. Thus, in the analysis it is assumed that all people in the sample would want to save.

In this study, the same regressors are used for both outcomes.

For the Hypothesis 1 four independent variables were used: HOUSE, CAR, CREDIT, and INCOME:

- HOUSE refers to the house possession, a dummy variable (having a house = 1, not having a house = 0).
- CAR refers to the car possession, (having a car = 1, not having a car = 0).
- CREDIT refers to the wish to apply for, (wishing to get credit = 1, not wishing to get credit = 0).
- INCOME measures total income of a respondent from all available sources, it is a continuous variable, mio. KZT.

The variables expressed in terms of money are indicated in Kazakhstani currency – KZT (1 Euro= 198 KZT in 2011).

This model fits the data well ($\chi^2=117.86$, $p<.0000$), and tells us that our model as a whole is statistically significant, that is, it fits significantly better than a model with no predictors.

Table 4 shows the marginal effects of the probability of a respondent to make savings in animal stock and in a monetary form when the independent variables are at their mean. A bivariate probit model shows a marginal effects of .2156989 and .1329294 ($p < 0.001$) reflecting that moving from the group without an own house in the procession to the group with a house increases the likelihood of making savings in animal stock and in monetary form by 21.5% and 13.2% ($p < 0.001$), respectively; for a variable CAR, probability to make savings in animal stock and in monetary form for the respondents with a car in comparison with those without the car increases by 19.4% and 17.7% ($p < 0.001$), respectively; the probability increases by 21.8% and 13.9% ($p < 0.001$) for those who save by purchasing animal or in monetary form, respectively, if the respondent moves from the group not wishing to apply for credit to the group wishing to; an increase by 1 mio. KZT of income will increase the probability to save in monetary form by 12.2% ($p < 0.001$), however an increase in income does not affect the probability of making savings in animal stock.

Table 4. Bivariate probit results of saving in animal stock or monetary form, 2011

Independent variables	Dependent variables			
	ANIMAL STOCK probability 65.05%		MONEY probability 32.4%	
	Marginal effect	Coefficient	Marginal effect	Coefficient
HOUSE	.2156989	0.5877661*** (5.73)	.1329294	0.3724494*** (3.58)
CAR	.1949354	0.5693806*** (4.45)	.1769827	0.4727763*** (4.02)
CREDIT	.218416	0.5830492*** (5.61)	.1389104	0.3972455*** (3.6)
INCOME	.0040066	0.0108223 (0.42)	.122212	0.3399605* (2.33)
Const.		0.4179108 (-4.2)		-1.147847 (-9.42)

Note: Figures in parentheses are corresponding t-values;

*** - significant at a level of 0.1%;

** - significant at a level of 1%

* - significant at a level of 5%

According to this analysis, the probability that the rural dwellers will make saving in the monetary form is 32.4% whereas it is more likely that they will make savings in animal stock with a probability of 65.04%. This means people in rural areas prefer to purchase animal if they have got extra funds and would like to make savings. However, the probability of having no savings at all is high enough and equal to 28.7%.

For the Hypothesis 2 explanatory variables include purposes of making savings which would affect a choice in what form to save. The independent variables are INVESTMENTS; PRIVATE, and FINANCIAL, all are dummy variables:

- INVESTMENTS variable includes such purposes as purchasing equipment, making savings for education, undertaking any renovations (savings for investment=1, otherwise=0).
- PRIVATE variable includes such purposes as making savings for wedding, funeral, for any emergency cases, (savings for private purposes=1, otherwise=0).
- FINANCIAL variable includes such purposes as savings to cover both principle and interest for credit, (savings for financial purposes=1, otherwise=0).

Table 5 shows the marginal effects of the probability of a respondent to make savings in animal stock and in a monetary form when the independent variables are at their mean. A bivariate probit model shows a marginal effects of .174479 ($p < 0.001$) reflecting that moving from the group making savings for the investment purposes to the group not making savings for the investment purposes increases the likelihood of making savings in animal stock by 17.4%; for a variable PRIVATE, probability to make savings in animal stock for the respondents with a purpose to finance for private goals in comparison with those who does not do that increases by 11.8% ($p < 0.01$); the variable FINANCIAL is not significant for both ways to make savings.

According to this analysis, the probability that the rural dwellers will make saving in the monetary form if they have mentioned purposes is 31.2%, whereas it is more likely that they will make savings in animal stock with a probability of 63.9%.

Table 5. Bivariate probit results of saving in animal stock or monetary form for particular purposes, 2011

Independent variables	Dependent variables			
	ANIMAL STOCK probability 63.9%		MONEY probability 31.9%	
	Marginal effect	Coefficient	Marginal effect	Coefficient
Investments	.174479	0.4691451*** (4.5)	.0511469	0.1433885* (1.36)
Private	.1181766	0.3197586*** (2.96)	.0551646	0.1537031* (1.41)
Financial	.03198	0.0864327 (0.57)	.0364616	0.1004344 (0.66)
Const.		-0.0265568 (-0.27)		0.6204249 (-6.01)

Note: ^a Figures in parentheses are corresponding t-values;

*** - significant at a level of 1%;

** - significant at a level of 5%

* - significant at a level of 10%

Despite people in rural areas of Kazakhstan save some amount in cash at home and very few have deposit accounts in formal financial institutions, most of the interviewed respondents prefer to make in-kind savings in a form of animal stock. Some people are forced to hold some amounts greater than is necessary for everyday expenses, because there are no better options available for saving in monetary form in rural areas. There is not yet a well developed net of branches of formal financial institutions in rural areas in Kazakhstan. Only two banks out of 35 have their branches in district centers and they offer a limited list of financial services. Obviously, making savings in a monetary form is most convenient in terms of liquidity and accessibility, however, having big amounts in cash at home is very risky and in the absence of formal financial institutions available, people prefer to save in-kind.

There is another reason of such a decision to save in-kind, the economic one. Let us make simple calculations.

A countryman purchases a 3 months bull-calf of a weight of 90 kg for 350-400 KZT per 1 kg of carcass weight. After 15 months of fattening (an average monthly gain is 0.8kg), he would have a bull of 450 kg. Main expenses on the fattening are fodder – about 50 thousand KZT and other expenses about 15 thousand KZT, total expenses accounts for :

Purchasing price – 36 thousand KZT

Fodder – 50 thousand KZT

Other – 15 thousand KZT

Total – 101 thousand KZT

The countryman has two opportunities: either to sell this bull at the price of 400 KZT per 1 kg or to sell meat at the price of 1000 KZT per 1 kg.

At the first case, he will get as income $450 \text{ kg} \times 400 \text{ KZT} = 180 \text{ thousand KZT}$. His profit is 79000 KZT after 15 months. The profitability index is 1.78. An interest rate on deposits in commercial banks of Kazakhstan on average is about 8%, it means by the end of 15 months the depositor would get on his savings additionally 10433 KZT, or about 68600 KZT less then he would get selling a bull.

In the case, he would prefer to sell meat. The calculations of the profit are following:

Generated income is:

$400 \text{ kg} \times 58\% = 232 \text{ kg of meat} \times 1000 \text{ KZT} = 232000 \text{ KZT}$.

Head + legs = about 6000 KZT

Haslet= $20 \text{ kg} \times 700 \text{ KZT} = 14000 \text{ KZT}$

Total 252000 KZT

Profit: $252 \text{ thousand KZT} - 101 \text{ thousand KZT} = 151 \text{ thousand KZT}$

Profitability index is 2.49.

The second option is not available for all the rural dwellers, due to the long distance to towns and cities, where the peasant can sell meat, the absence of a proper vehicle, and in many case due to the presence of a shadow intermediary business in this sphere.

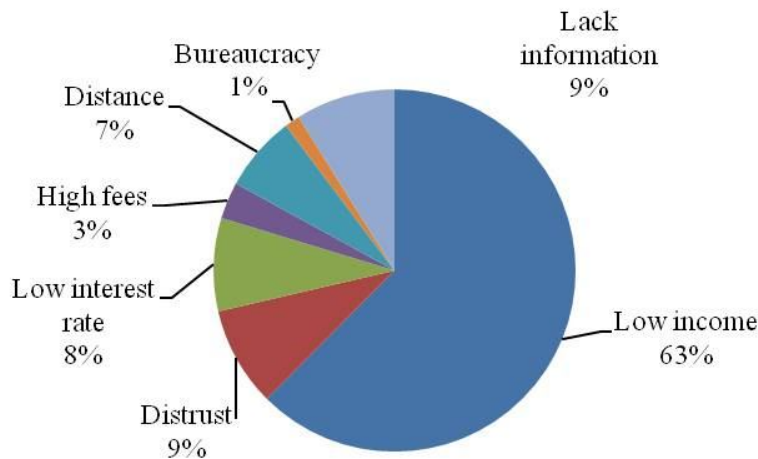
Thus, savings in animal stock provide higher return than any savings product offered by a financial institution, which offer an average rate of interest of about 7-9 percent on a one-year time deposit. The use of in-kind savings can be determined by the norms of use of public pastureland. Therefore, saving in-kind is easy and convenient. Not only can these savings be monetized easily, but they can also be bartered for other needed products. Additionally, some cultural norms define social status and thus affect the type of savings in-kind. Traditionally Kazakh folk was nomadic one and having a lot of animal always meant prosperity and sustainability.

Despite savings in-kind can give high returns, but only if they are successful. The risks attached to in-kind savings are many. Livestock may be susceptible to diseases requiring expensive treatment or leading to death; may be stolen; and may perish in natural disasters. Some emergency cases would require having some amount of cash available immediately, whilst in-kind savings be liquidated takes some time (Moulick 2008).

Out of 704 respondents 218 do not make any savings, it means one third either does not have enough income to save or their debts are high. 604 respondents indicated not having a deposit account, in other words only each seventh rural inhabitant has an account in the bank. Among reasons preventing them from opening an account the most significant are low income, lack of information, and distrust (Figure 8). People from rural areas are less financial literate and have relatively low economic status, therefore most of them simply are

afraid to open accounts in private commercial banks for fear of being cheated. In turn, being reluctant to deal with low income savers, commercial banks do not provide enough information and in comprehensible form. Bank staff not always is sensitive to such specific clientele, and financially illiterate respondents are reluctant to visit banks because they do not get favorable responses. Commercial banks do not have specific rural-client-oriented products.

Figure 8. Reasons not save in formal FIs



Source: Own survey, 2011

5. Conclusions

The results of this study should be interpreted with the following limitations in mind. First, as the study is still ongoing, the full picture of respondents' savings behavior is not yet clear. Second, the small number of respondents might have affected the results of the analysis. Further research is needed to study what factors affect respondents' decision to save, in particular in monetary form.

The saving behavior of the study area is largely determined by possessed property of the household rather than by its income. At the same time increased income would motivate people to save in monetary form.

The results reveal that investment and private needs will be covered rather with savings made in animal stock. Low income is the most significant reason of not make savings in formal financial institutions.

It is an urgent need in the development of rural financial institutions as credit co-operatives (unions), MCO, and other rural oriented institutions

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