MIGRATION AND REMITTANCES IN KYRGYZSTAN: IMPACT ON POVERTY, HOUSEHOLD EXPENDITURE AND YOUTH AND WOMEN EMPLOYMENT

RESEARCH PROPOSAL
(Revised)
Presented to

Partnership for Economic Policy (PEP)

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Kyrgyz Republic

March 30, 2014
Before you begin
Please consult the following webpages/documents regarding PEP’s expectations in terms of:

- Specific policy issues to be addressed by projects supported under the PAGE programme
- Scientific content of eligible research project proposals
- Initiatives to be undertaken by PEP supported research teams in terms of policy outreach

**SECTION A – For all projects**

1. **Abstract (100 to 250 words)**

The abstract should state the main research question, the context and its relevance in terms of policy issues/needs in relation to PAGE thematic foci, complete with a brief description of the data that will be used.

Kyrgyz Republic compared to other countries in Eastern Europe and Central Asia is among the poorest countries, reaching the half of population living on less than PPP $2.50 per day. According to the World Bank (2013) report Kyrgyz Republic ranks the second highest place as most poor and vulnerable country among selected ECA countries. According to the National Statistical Committee of Kyrgyz Republic the population living below absolute poverty lines in 2011 was 36.8% of total population. The share of poor among rural and urban areas shows that poverty predominantly lies in rural areas, reaching 68% of total poverty. Lack of investment activities since the dissolution of the USSR, caused mass labor migration to other countries, mostly to Russia and Kazakhstan. Regional development differences within country caused internal migration mostly from rural part to capital city and central region. According to official data almost 10 % percent of active population is considered as migrated seasonally and permanently each year to Russia. Unofficial evaluations assert even higher numbers. Because of the high tendencies of migration for the last seven years remittances inflow to Kyrgyz Republic has increased approximately for 6,8 times. According to the World Bank (2012) Kyrgyz Republic Republic 3rd, after Tajikistan and Liberia, among the top 10 recipients of migrant remittances as per cent of GDP in 2011. It is expected that for 2013 it will account almost for 31 % of GDP.

Most of the reports state that migration helps to mitigate social tension in country and Kyrgyz Republic becomes dependent to external shocks - policies towards migrant and general economic performance in Russia. Although it is generally agreed that remittances presently the major source of income in Kyrgyz Republic economy and plays crucial role in reduction of the poverty level, there is lack of quantitative assessment of remittances impact on poverty in Kyrgyz Republic.

On the other hand, under the conditions of large amount inflow of remittances channeling them into productive investment is one of the important issues for government institutions. Moreover, migration process is strictly related with the employment generation capacity of the economy, in
particularly for youth population. Widespread male-driven migration process brings about opportunity and necessity for left-behind women employment. Therefore, labor supply response of left-behind youth and women. Increase in employment of youth and women in sending community decreases household vulnerability to external shocks and increases remittances potentials for investment oriented use.

Hence, analysis of remittances receiving and non-receiving household expenditure structure and their factors behind them is important for designing effective social and economic policies. Therefore, the aim of this research project consists of following investigations:
1) to investigate remittances impact on poverty
2) to investigate remittances impact on household expenditure structure
3) to investigate remittances impact on youth and women labor supply

Large and nationally representative household survey data will be used. Taking into consideration arguments in remittances related literature on the possibility of selection bias two-stage multinomial model will be applied. To our best knowledge it is the first attempt to analyse this topic quantitatively in Kyrgyz Republic context.

2. Main research questions and contributions

    Explain the focus (or key questions) of your research and its policy relevance.

2.1. Explain why you think this is an interesting research question and what the potential value added of your work might be (knowledge gaps). You might want to explain whether or not this question has been addressed before in this context (including key references), and if so, what do you wish to achieve (in addition) by examining the question again?


On the other hand, for migrant sending economy it is important that remittances will have long run impact on economic development. Use of remittances for investment purposes will create internal capacity for this economy to decrease poverty in the future. As remittances represent the source for current income and although it contributes to reduction of poverty, use of remittances for current consumption does not promote future capacity for poverty reduction. Arguments on the economic consequences of remittance are controversial. Classical and widely accepted view is that remittances are rarely used in productive investments, but mostly channeled to current consumption. Although there are some optimistically oriented evidences, studies on countries analogous to Kyrgyz Republic by income level, such as Ghana by Adams et al. (2008) and on Tajikistan by Clément (2011), find no evidence on productive use of remittances as for physical and human capital investment. In other words the question whether remittances are used productively is debatable and may vary by country specifics.
Therefore, analysis of impact of remittances on household expenditure pattern shed light on remittances implications for economic growth and development.

Most of the empirical studies on household expenditure behavior define investment expenditures in real terms as physical capital investment or investments into small enterprises. While spending of households on housing, land, durable goods, education and health, which constitute large share in total expenditure, are considered as “non-productive”. However, this standard approach of disaggregating household expenditure is questionable. Since, durable goods increases living conditions, while expenditures on education and health are human capital investments, which are beneficial to economy and increases household capacity to increase income in the long run. Some of the empirical studies conclude that remittances positively contribute to education status of remittance receiving households and communities (for instance, see Lopez-Cordova, 2004; Hanson and Woodruff, 2003; Cox, Edwards and Ureta, 2003; Yang, 2005). This capital formation approach to remittances provided the ground for possible “brain-gain” argument.

Apart from these expenditure groups, if to consider Kyrgyz societal features where kinship relations play significant role, inclusion of another spending item - customs and traditions, is important. Kyrgyz society shows strong adherence to kinship relations and mutual support among social network and pay significant attention to contributions to funeral or weddings of relatives or acquaintances. Although to our knowledge there is no officially reported or scientifically conducted survey on this topic, according to some expert evaluations household spending on customs and traditions in Kyrgyz Republic may reach to 1 billion USD, while GDP in 2012 was about 6 billion USD. According to government officials and experts these expenditure are too consumptive and do not promote economic growth. Government officials at different levels of discussion suggested various measures to reduce excessive household spending on customs and traditions. Hence, inclusion of this expenditure groups is important for evaluation of remittance receiving household spending behavior in Kyrgyz Republic context.

Therefore, simple presentation of household expenditure as consumption and real (physical or investment into enterprises) investment might be misleading in terms of the future capacity to reduce poverty. Because of this disaggregation of household expenditures into more groups is necessary.

Labor migration may have different effects on labor force at the family left behind. On one hand the migration of a household member may cause reallocation of labor within the household with the aim to replace the migrants’ labor or income. Thus received amount of additional income or remittances can be used as extra income to invest in an existing household enterprise or to start a new business. On the other hand large amount of remittances causing household dependency on it may stimulate decrease likelihood that household members enter or stay in the labor market (for instance see, Binzel and Assaad, 2011; Mendola and Carleto, 2009; Amuedo-Dorantes and Pozo, 2006).

Labor supply behavior of left-behind youth and women in migrant sending communities are
important in terms of the government attempt to reduce unemployment rate. Higher rate of population growth results in growth of youth population at higher rates than employment generating capacity of the economy. Hence, job-seeking youth population may further facilitate migration process. Along with this migration may lead to women’s empowerment in access to income earning opportunities at migrant sending country. Thus, women employment in the long run contributes to households income source diversification and economic growth performance. In Kyrgyzstan youth and women employment status are among the challenging issues for government employment policy. In Kyrgyzstan Government Program on Employment and Regulation of Migration for 2013-2020 years it is noted that labor force growth, or growth of youth population, requires increase of employment generating capacities in the economy and will probably increase migration from the country. Moreover, it emphasizes that women are less economically active and are mostly employed in informal sectors of the economy (agriculture, services, trade etc.). And self-employment of women are mostly related with micro-credit activities. According to the program these characteristics of women employment activities make them vulnerable and pose risk to their employment. Thus, it is important to investigate impact of migration and remittances on labor supply of youth and women.

Thus, remittances in Kyrgyz Republic case represents large income source for households and mitigates social tensions for the country, which since 2005 had two political shocks. Government budget social expenditures are not sufficient to considerably reduce poverty level. Under these conditions remittances play significant role in maintaining household livelihood. At the same time receiving large remittances both from abroad and internal, Kyrgyz Republic remains sensitive to internal labor mobility and external labor market shocks. For reduction of this dependence in the future, it is critically important to productively utilize remittances. Therefore, the objective of this proposed research is to investigate impact of remittances on household poverty, household expenditure pattern and youth and women employment. Given this principal objective this study attempts to examine the following research questions:

1) What is the difference in welfare of households receiving international and internal remittances from households not receiving remittances
2) What are the factors that determine household choice to send internal and international migrant and receive internal and international remittances
3) What would be the expenditure of international and internal remittance receiving households by different expenditure groups, if they did not receive remittances
4) Which group of expenditure is emphasized in remittance receiving households
5) What is the impact of remittance receiving status on left-behind youth and women labor supply

There are only few studies focused on remittances in Kyrgyz Republic. Atamanov and Van Der Berg (2010) analyze the motives for remitting for permanent and seasonal migrants. However, this study on determinants of remittances and not on remittances impact on household poverty and expenditure. Ukueva and Becker (2010) analysed the effect of remittances on the purchase of durable goods. They concluded that remittances increase durable goods
consumption. Anderson and Kroeger (2011) investigated relationship between remittances and expenditures on child education and health. They found that remittances have not promoted investments in children education and health. However, these two studies focus on one expenditure type and do not analyse remittances impact on household welfare. Moreover, the latter two studies do control for selectivity issue. As Bettin et al. (2012) points out in remittance related studies sample selection issue should be taken into account.

Thus, little is known about the remittances impact on poverty in Kyrgyz Republic. Moreover, rigorous and quantitative studies on this topic for Kyrgyz Republic case do not exist. To our knowledge this is the first study attempting to quantitatively evaluate impact of remittances on household poverty level. Moreover, this research will focus on the expenditure categories of households. Our research project differs from other studies at following points:

- In analysis of household expenditure pattern more detailed classification of expenditure categories will be used. While previous studies used just one specific category of expenditures.
- In particularly, data that will be used in this research allows to model customs and traditions as separate expenditure category. Given strong kinship relations and informal financial relations among households in Kyrgyz Republic proper analysis of this category of expenditure deserves attention. Since they are criticized for increasing current consumption, and not investment.
- This research will have methodological advantages. Previous studies on Kyrgyz Republic did not control for selection issue. Since there might be factors that affect household choice to send migrant and receive remittances and they should be taken into account. Empirical technique employed in this research will be based on two-stage multinomial selection model.
- It aims to investigate determinants of consumption pattern of remittance receiving and non-receiving households by building counterfactual scenario and estimating marginal budget share of goods in total expenditure. As this approach takes into account selection bias it makes possible to compare expenditure pattern of households by remittance status not in average terms, but in terms of the marginal budget shares. Building of the counterfactual scenario is important. Since with this approach it is possible to predict possible expenditure of households if they did not receive remittances.
- Households in this study will be classified into three types: remittance non receiving, international remittance receiving and internal remittance receiving. Thus, we specify and take into account not only international migration, but also internal migration.

2.2. Describe the specific policy issues/needs that your research aims to address; how your potential outcomes/findings may be used in policy making?

- Justify timing of your research in terms of policy and socioeconomic needs/context – e.g. reference to existing/planned/potential policies at the national level.
- Evidence of previous consultation with potential users (e.g. policymakers and key stakeholders) to help define your research question is strongly encouraged. Include a list of names, institutions and email addresses when possible.
Presently Kyrgyz Republic lacks strategic policies for addressing migration issue and the policy of effective use of remittances. However, both of the government institutions and international organizations emphasize growing importance of labor migration and remittances for poverty reduction and economic growth in Kyrgyz Republic. But discussions and official international meetings on labor migration in Kyrgyz Republic are mostly focused on the juridical and social status of migrants abroad and protection of their security and rights. There is a lack of analytical reports based on quantitative analysis on the impact of remittances and how remittances are used. Our consultations with representatives of government agencies and international donor organizations indicated that there is a strong interest in results of this research. Findings of this research will contribute to the policy discussions on economic consequences of remittances in Kyrgyz Republic, which currently remains just at the descriptive level. In particularly, it will help for government ministries and international donor organizations to understand more about factors for migration and use of remittances by households.

Moreover, this research contributes to understanding expenditure structure of remittance receiving and non-receiving households. Difference of households in their expenditures on consumption, human capital investment, physical investment and customs and traditions provides better information about household behavior and its implication for economic development.

To sum up, results of this survey potentially will contribute to main four policy discussions:

- **Migration Policy**: Determination of significance of remittances for poverty reduction and understanding factors that are important for migration decision will contribute to formulation of migration policy aimed at mitigation of negative aspects of migration. Since migration is double-sided. On one hand it helps to mitigate poverty and increase consumption of household directly and community indirectly. On the other hand it decreases labor supply and further potentially decreases local development. Thus understanding characteristics of household and factors behind migration can set good base for policy making.

- **Social Policy**: Household expenditure analysis will give information about economic and social conditions of migrant left-behind families. Identification whether education and health services are demanded more by remittances receiving households or not will help for better addressing the social policy. Moreover, inclusion of regional dummies as explanatory variables will make possible to discuss supply and demand of social policies (education, health etc.) in terms of the regional disparity.

- **Employment Policy**: Understanding the impact of remittances on labor supply of left-behind youth and women will shed light on whether remittances and migration cause dependency of households or increases employment activities by other household members in case of absence of migrant member. Employment of women in informal sectors of the economy and their attempt to generate income should be associated by government programs that bring about gender policy actuality. The set of regional and household characteristics as explanatory variables will give possibility to discuss results in terms of different household composition and regional context within country.

- **Investment policy**: Under the conditions of insufficient capital accumulation in the country large flow of remittances represents one of the possible sources for increasing investment. Analysis of the expenditure pattern of households will make possible to discuss about the
potential internal resources available for investment in the country. Investigation results on this aspect would be interesting for development of programs to support returning migrants and their small entrepreneurship activities or channelling migrants’ remittances into investment.

3. Methodology

Presentation of the specific techniques that will be used to answer the research questions and how exactly they will be used to do so. Explain whether you will use a particular technique normally used in other contexts or whether you intend to extend a particular method and how you will do so. Explain if these methods have already been used in the context you are interested in (including key references).

3.1. Remittances and Selection Bias

Before detailed description of the methodology it should be noted that poverty can be measured by income or expenditure. But empirical literature on poverty generally uses expenditure than income. Moreover, in developing countries, like Kyrgyz Republic, presence of large scale informal economy, large share of employment in agriculture and other difficulties to accurately measure income level are major rationales for using household expenditure (for instance see: Deaton, 1997). Taking into consideration these arguments in order to estimate impact of remittances on poverty total per capita household expenditure will be used in this study.

In a general framework poverty can be argued to be affected by various factors including household characteristics, regional factors and other economic and demographic features of household. This functional relationship can be represented by the following equation.

\[ EXP_i = \alpha_i + \sum \beta_j X_{ij} + \varepsilon_i \]  

(1)

Where \( EXP_i \) is total expenditure of household. \( X_{ij} \) is a vector of explanatory variables, which in our case along with other variables includes internal and international remittances. If the households who receive both internal and international remittance were randomly drawn from the whole population, this consumption function could be estimated using OLS method. But, there is evidence that that this may not necessarily be the case. Remittance receiving households are not randomly selected and have some unobservable characteristics that make them to decide to send migrant and receive remittances, i.e. they are rather self-selected. In this case of self-selection OLS will not give consistent and unbiased estimates. Therefore, methodology applied in the research should take into account this selectivity bias issue.

There are two main approaches in evaluation of impact of remittances on household welfare in the literature: propensity matching score and instrumental variables approach. The first approach results in unbiased estimate through designing a control group. However, this approach assumes that there are no unobservable characteristics of households that might influence the decision of household to send migrant and receive remittances. In this case, as noted above, estimation will be biased. Since households receiving remittances might have unobservable characteristics that are different from households not receiving remittances and should be taken into account in predicting household expenditure (for instance see: Bettin et al., 2012).
Second approach proposes to use instrumental variables in addressing selection bias. This approach employs two-stage estimation technique. In the first stage instrumental variables and other explanatory variables are used to predict probability of remittance receiving (internal and international) by households. Then selection correction term derived from this estimation along with other explanatory variables is used in the second stage to predict household expenditure. Thus, self-selection issue is addressed in the first stage by using instrumental variables. Given the potential self-selection issue our econometric method for estimation will be two-stage multinomial logit model with instrumental variables.

Although finding of suitable instrumental variables is difficult task, following empirical literature potential instrumental variables are migration network, distance to main road and water supply for farming.

3.2. Two-Stage Multinomial Logit Model with Instrumental Variables

To deal with selection bias in binary-choice cases Heckman (1979) method is generally employed. But as in our analysis households are classified in three types (no remittance receiving, internal remittance receiving and international remittance receiving), we have polychotomous-choice model. Bourguigon et al. (2007) show that Dubin and McFadden (1984) method performs better in case of polychotomous-choice model. Because of this we follow Adams and Cuecuecha (2010) and use two-stage multinomial logit model. This approach estimates a different equation for each type of households, taking into account in the estimation the selection bias.

Stating that EXP\_i in the equation (1) is per capita household expenditure and following Bourguigon et al. (2007) and Adams and Cuecuecha (2010) equation (1) can be rewritten as following:

$$\text{Log (EXP}_i) = \alpha_i + \sum_j \beta_{ij} X_{ij} + \varepsilon_i \quad (2)$$

Thus equation (2) is consumption equation, where dependent variable is per capita expenditure and Xs are explanatory variables. However, dealing with self-selection issue requires specification of choice equation which can be formulated as:

$$Y_h^* = \alpha_i + \sum_j \beta_{ij} X_{ij} + \sum_j \xi_j Z_{ij} + \eta_i \quad (3)$$

$h$ is the categorical variable that describes the choices of remittance situation: 1) receive no remittances; 2) receive internal remittances; 3) receives international remittances. Hence, $Y_h^*$ is a latent function to capture a discreet observation about remittance situation of household. The vector Z represents instrumental variables and X is the vector of explanatory variables that are supposed to affect the migration decision of household. The outcome variable Log (EXP\_i) is observed only if international remittance situation is chosen, that is, when $h = 1$. Assuming that the $\eta_i$'s are independently and identically Gumbel distributed the choice component, as shown by McFadden (1973), can be estimated using a multinomial logit regression.

According to the Dubin and McFadden method if the choice model and the consumption model
have correlated error components, then consumption equation can be corrected by including selection correction term, which is derived from the estimation of choice equation. Then, consumption equation (2) can be modified as following:

\[
\text{Log (EXP}_i \text{)} = \alpha_i + \sum \beta_j X_{ij} + \sum \lambda_{ih} + \varepsilon_i
\]  

(4)

where, \( \lambda_{ih} \) is the selection correction term related to choice \( h \). Significance of this term as variable in estimations of this equation will imply that selectivity in unobservable components matters for households receiving international and internal remittances. Putting it differently, if it is significant then estimations without this selection term would be biased.

Therefore two stage multinomial logit method consists of two stages: in the first stage remittance receiving or non-receiving choice equation is estimated using instrumental variables along with other explanatory variables; and in the second stage consumption equation is estimated using selection correction term from the first stage along with other explanatory variables. As our purpose is to evaluate impact of remittances on poverty total per capita expenditure of households will be used as the dependent variable in consumption equation (4). But analysis of investment expenditures of households requires disaggregation of household expenditure and evaluations based on marginal spending, which is explained in the following section.

3.3. Model specification of household expenditure pattern

For analysis of household expenditure pattern not total expenditure, but share of expenditure group in total expenditure is used as dependent variable within the same two-stage multinomial logit model. Analysis of expenditure pattern of households conditional on remittances necessitates analysis of marginal spending behavior of remittance receiving and non-receiving households. Studies on expenditure pattern generally employ Engel function through Working-Lesser functional form (for instance see: Adams and Cuecuecha, 2010; Gubert et al. 2009; Taylor and Mora, 2006; Taniguchi and Chern, 2000; Tey et al. 2009; Nicolau and Mas, 2004). Working-Lesser model relates budget share linearly to the logarithm of total expenditure. Engel function can be expressed as following:

\[
C_i = \alpha_i \text{ EXP} + \beta_i \text{ (log EXP)}
\]  

(5)

where \( C_i \) is the expenditure on good \( i \), \( \text{EXP} \) is the total expenditure. In order to express this formula in terms of the share of expenditures in total expenditures, Equation (5) can be divided by \( \text{EXP} \), which gives:

\[
C_i / \text{EXP} = \alpha_i + \beta_i \text{ (log EXP)}
\]  

(6)

Expenditure pattern of different households requires consideration of different socioeconomic, demographic and location factors. Spending behavior may be explained by household characteristics (households size, household head age and sex, number of children or number of male adults), type of residence and geographical location. Let \( D_j \) denote \( j^{th} \) household characteristic variable and \( u_{ij} \) be constant. The complete model then
\[ C_i = \alpha_i \text{EXP} + \beta_i \text{EXP} (\log \text{EXP}_i) + \sum_j (u_{ij}) (D_j) \text{EXP} \]  

(7)

As Adams and Cuecuecha (2010) note, functional form for estimation of remittances impact on expenditure pattern must correspond to several requirements. First, it must provide a good statistical fit to a wide range of goods (or expenditure categories). Second, functional form should allow for different marginal propensities. Third, functional form should correspond to the criterion of additivity, i.e., the sum of the share should be equal to 1. Indeed, Working-Leser model selected for this research corresponds to these requirements. To be able to show this Equation (7) can be rewritten in expenditure share form as:

\[ \frac{C_i}{\text{EXP}} = \alpha_i + \beta_i (\log \text{EXP}) + \sum_j (u_{ij}) (D_j) \]  

(8)

From equation (8) the marginal budget shares (MBSs) and average budget shares (ABSs) for good \( i \) can be derived as follows:

\[ \text{MBS}_i = \frac{dC_i}{d\text{EXP}} = \beta_i (1+\log \text{EXP}) + \sum_j (u_{ij}) (D_j) \]  

(9)

\[ \text{ABS}_i = \frac{C_i}{\text{EXP}} \]  

(10)

Thus, as Equation (8) shows that functional form provides statistical fit to a wide range of goods. Estimation of MBS with Equation (9) shows that this functional form allows for different marginal propensities. Sum of the average budget shares as given in Equation (10) equals to unity.

Consumption equation will be corrected by including selection correction term, which is derived from the choice equations estimations with logit model. Then, consumption equation can be written as:

\[ \frac{C_i}{\text{EXP}} = \alpha_i + \beta_i (\log \text{EXP}) + \sum_j (u_{ij}) (D_j) + \sum_h \lambda_{ih} + \varepsilon_i \]  

(11)

where, \( \lambda_{ih} \) is the selection correction term related to choice \( h \). To estimate the impact of remittances on marginal expenditure pattern of households, coefficients obtained from estimation of equation (11) is used to estimate MBSs using equation (9).

Following the literature and debates on consumption and investment expenditures of households, eight groups of expenditures will be constructed: food and consumer goods, durable goods, education, health, house, customs and traditions, leisure and other goods and services (see Table 1). Education and health are human capital investment expenditures, while house construction and purchase of durable goods can be considered as physical investment and expenditures improving living conditions.

<table>
<thead>
<tr>
<th>Table 1. Expenditure groups</th>
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<tr>
<td><strong>Group</strong></td>
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<tr>
<td>1 Food and consumer goods</td>
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<tr>
<td>2 Durable goods</td>
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### 3.4. Counterfactual Expenditure and Average Treatment Effects on the Treated

Evaluation of remittances impact on household expenditure requires determination of “counterfactual scenario without remittances” and estimation of Average Treatment Effects on the Treated (ATT). In our context the counterfactual scenario identifies what would be the household expenditure (or types of expenditure) of those households which receive remittances, if they would not receive remittances. Such approach was adopted by Adams and Cuecuecha (2010), Adams et al. (2008), Barham and Boucher (1998) and Rodriguez (1998).

Predicted total per capita household expenditure and counterfactual scenario of not receiving remittances for two types of households (internal and international remittance receiving households) will be used for estimation of the Average Treatment Effects on the Treated (ATT).

If to assume that there is a treatment A and B, then Average Treatment Effect of treatment A (say receive international remittances) compared to treatment B (say receive no remittances) on the participants of treatment A can be represented as:

\[
\text{ATT}_{AB} = E (\text{EXP}_A \mid s = A) - E (\text{EXP}_B \mid s = A)
\]

Where \( E (\text{EXP}_A \mid s = A) \) is the per capita expenditure estimated with the equation for households that choose action A (say receive international remittances), conditioning on the characteristics of households that choose action A. While \( E (\text{EXP}_B \mid s = A) \) is per capita expenditure estimated with the equation for households that choose action B (say receive no remittances), based on the characteristics of households that choose action A. Difference between them gives us the changes in expenditures of households that receive international (or internal remittances) if they would not receive remittances.

Therefore for estimation of the ATT, estimation of the counterfactual expenditure is necessary. As Equation 12 shows counterfactual expenditure of households receiving international remittances is estimated through the equation for households that receives no remittances based on the characteristics of households that receives international remittances. Econometric literature on the evaluation of programs for the case in which instrumental variable is available provides the basis for the methodology for obtaining such estimates (for instance, see: Wooldridge, 2002).
Following Adams and Cuecuecha (2010) and Adams et al. (2008) estimation of counterfactual expenditure may be described by two steps.

Step 1. Obtaining predicted expenditures for households of type A (receiving international or internal remittances), conditional on choosing type A (receiving international or internal remittances).

Step 2. The counterfactual expenditures for households, defined as the expected value of expenditures for households of type B, conditional on choosing type A. It means estimation by using equation for households that receive no remittances on households that receive international or internal remittances, taking into account the selection part that household receives internal or international remittances.

Adding the selection term in the second step eliminates the issue of unobservable (skills, motivations etc.) or observable characteristics that households of type, say, A (international or internal remittance receiving) may have and make them different from household type B (remittance non-receiving).

Thus, for evaluation of remittances impact on poverty first Equation 4 is estimated, where dependent variable is the total per capita household expenditure. Selection correction term from this estimation $\lambda_{ih}$ is used in estimation of counterfactual expenditure. By doing so, selection bias will be eliminated and estimation results will be unbiased, which gives the possibility to compare predicted expenditure and counterfactual expenditure.

With this approach based on the predicted and counterfactual per capita expenditure estimates, we will be able to identify the impact of remittances on poverty status of households: what is the per capita household expenditure of remittance (internal and international) receiving households and what would be their expenditure if they did not receive remittances.

Poverty will be analysed with three poverty measures based on national poverty line of Kyrgyz Republic: poverty headcount, poverty gap index and the squared poverty index. Poverty headcount ratio measures the percent of the population living beneath the poverty line, the poverty gap index shows in percentage terms how far the average expenditures of the poor fall short of the national poverty line, the squared poverty index show the severity of poverty.

The same procedure of constructing counterfactual scenario will be implemented for analysis of remittances impact on expenditure pattern of households. Counterfactual marginal budget shares (MBSs) will be obtained using the equation for expenditure shares for households receiving no remittances conditioning on the characteristics of households receiving internal and international remittances and selection term from Equation 11.

Therefore, counterfactual MBSs mean what would be the expenditure pattern of household that receive international or internal remittances, given their characteristics, if they would not receive remittances. Difference between estimated MBS and counterfactual MBS for household type will show the impact of remittances on particular expenditure group.
3.5. Estimation of Remittances Impact on Youth and Women Employment

The third part of this research aims to investigate impact of migration and remittances received on employment of youth and women. As already noted in previous estimation methodologies migration is a selective process and unobservable characteristics may cause selection bias in estimations. Since households might have an unobservable characteristics which may be associated with the likelihood of youth and women to work. Moreover, regional level characteristics related to labor access and social services may influence both the decision to migrate and to participate in the labor market.

By taking into account the selectivity bias and relevant literature (for instance, see: Binzel and Assaad, 2011; Mendola and Carleto, 2009; Amuedo-Dorantes and Pozo, 2006) the effect of international and internal migration on the labor supply behavior of left behind young household members and women will be estimated by two methods.

First, several binary response (tobit and probit) models and simple cross-sectional regression will be estimated. Second, in order to address the the potential endogeneity bias instrumental variable (IV) strategy will be used to estimate the labor choice model. Both methods will be specified and estimated for youth and women differently. In both estimation approaches, labor response of youth and women will be measured through several dependent variables (or outcome variables). These dependent variables are:

1. Employment status (Employed or not )
2. Wage status (Employer, Own-account worker, Employee, Member of a producers’ cooperative, Contributing family worker, Other).
3. Hours of work in a week

Set of explanatory variables will consists of variables of household characteristics, regional characteristics, residence and migration and remittances status. Our main explanatory variable is the presence of a migrant abroad and remittances received by household.

The general equation for specification the decision of youth and women to join labor market and employment selection can be represented with the following equation:

\[ P( W_{ij} = \Theta ) = \beta_0 + \beta_1 X_{ij} + \alpha_1 M_{ij} + \epsilon_{ij} \]  \hspace{1cm} (13)

in which \( W \) is the dependent variable, as mentioned above: employment status, wage status or hours of work in a week of youth and women. In case of hours of work, not the binary response models, but cross-sectional regression technique will be applied. These dependent variables are explained with household characteristics (X), and with dummy variable (M) reflecting whether household has migrant (internal and international) and whether household receives remittances (internal or international).
Methodology of instrumental variable (IV) estimation in order to deal with endogeneity issue, as already described above, consists of two stages. Selection correction term derived from the first stage will be included in estimation of the equation (13).

4. Data requirements and sources

This is a critical part of the proposal. The key issue is to explain the reason for the use of the particular data. You must establish that they are ideal for the question you wish to address. Please consult the “Guide for designing a research project proposals” for more detail.

This study will be based on the 2012 data of “Life in Kyrgyz Republic” survey. This survey includes sample of 3000 households and representative at the national level as well as for urban and rural areas of the country. This survey conducted by DIW Berlin in collaboration of Humboldt University of Berlin, the Center for Social and Economic Research (CASE-Kyrgyz Republic), and the American University of Central Asia (AUCA). 2012 data is the third wave data and was collected between October and December 2012 and presently available for researchers.

The survey includes wide range of data including information on household characteristics (composition, education, child education, health etc.), assets, shocks, social networks, income and expenditure of households. Along with this the survey contains special section on migration and remittances. With respect to migration the survey questionnaire includes questions on number of migrant, education level, destination, employment status and duration of staying abroad. In remittances section questions on size of remittances, area of use these remittances and several other questions on household opinion on remittances. Income section of questionnaire gives the detailed information on sources of income: wage, income from agricultural enterprises or other enterprises, government social security payments, internal remittances and remittances sent from abroad. On the household expenditure section expenditures on food and non-food items (health, education, house construction, consumer goods, durable goods, customs and traditions etc.) on weekly, monthly and yearly bases are given.

These data on expenditure and income of households and other characteristic data give possibility to examine the impact of remittances on poverty and expenditure pattern of households. Data on household budget income structure are used to classify households into three categories: receiving no remittances, receiving internal remittances and receiving international remittances. All remittances are cash remittances as reported in income source part of the questionnaire.

This is the newest dataset and most relevant for remittances related studies for Kyrgyz Republic. Although, the main alternative dataset for this research might be in Integrated Household Survey (IHS) conducted by the National Statistical Committee of Kyrgyz Republic (NSCK) every year. However, HIS data of the NSCK has limited information on migration and remittances. IHS questionnaire includes only one specific question related to remittances in part devoted to the income sources of household. While “Life in Kyrgyz Republic” dataset has distinct sections on migration and remittances: migration duration, migrant characteristics, remittances received both internal and from abroad, years household has been receiving remittances and other subjective
opinion of household on remittances impact. Moreover detailed data on household expenditure given in this survey allows investigation of remittances impact on customs and traditions, which is generally very debated among Kyrgyz Republic society and criticized to be too consumptive, but omitted in studies using household data.

To our best knowledge this is the first study which will use the “Life in Kyrgyz Republic” for remittances analyses and will focus on remittances impact on different expenditure groups of household. Therefore to our opinion this dataset is the newest and more accurate in remittances measurement and most relevant currently available dataset for the impact evaluation of remittances on household welfare and spending behavior in Kyrgyz Republic case.

5. **Policy influence plan (or research communication strategy)**

- Identify potential users of your research findings, including policymakers and other key stakeholders. Provide a list of institutions and, whenever possible, specific individuals to be targeted for effective policy influence. Please also indicate whether you have already made contacts within the institution

- How, in the elaboration and execution of your project (from design to dissemination), will you consult/communicate with these users to both gather their inputs and keep them informed of your project (expected contributions and uses), in order to increase chances of your findings to be taken-up into policymaking?

You can refer to PEP’s research communications strategy and guidance to have a better idea of what is expected in terms of activities for policy outreach and dissemination.

Related government agencies and international donor organizations have been contacted and they all expressed their interest in participating at all stages of conducting research. Policy influence strategy of this project consists of two components of activities.

1. **Consultation of policymakers**

   Findings of this research will be used to inform policymakers and discuss at planned small consultative meeting and one roundtable with participation of the key stakeholders and government institutions. First small meeting will present preliminary findings and will aim to identify strategic approaches of the key stakeholders to remittances, poverty and to the issue of rational utilization of remittances. During this meeting, all possibilities for consideration of research findings into the perspective strategic policy documents will be discussed. As mentioned above specific policies to evaluate the impact of remittances on poverty reduction and to address the issue of effective use of remittances yet do not exist in Kyrgyz Republic. Policy makers did not have enough analytical reports with quantitative analysis to help them in designing employment, investment and poverty reduction policies. We expect to receive feedbacks during this small group meeting that will help us to prepare final report and policy oriented recommendations. Final round table will present the findings and the policy recommendations to the wider public: ministries, international donor organizations, NGOs, research institutions and experts.

   The primary government institutions for dissemination and discussions of research findings are Ministry of Labor, Migration and Youth and Ministry of Social Development. Our primary
consultations indicated that these institutions are interested in migration, employment and social development interrelationship. Also there is a high possibility that research findings will be discussed with other institutions that are continuously interested with researches related with household consumption and investment. These potential government institutions are National Bank of Kyrgyz Republic and Ministry of Economy.

2. Dissemination of results:
Findings of the research will be disseminated by three channels. First, short informative article on findings and policy briefs will be published in local journals and local newspapers in Russian and Kyrgyz languages. It will help to attract attention of institutions and general public interested in this issue. Results also will be presented at other meetings devoted to the migration issue, which are occasionally organized in Kyrgyz Republic. Second working paper format of this research will be posted at the website of the Central Asian Research Centre (ORASAM) of Kyrgyzstan-Turkey Manas University and disseminated among its counterparts. Third, articles will be submitted to international peer-reviewed journal. Although it may take longer time and require training activities.

Below is indicative list of key stakeholders for our research communication. Although the issue of interest of these stakeholders is the same, their activity area is different. Therefore, as targets we shortly described directions for these institutions where findings of this research will be used. We expect that this list of potentially interested institutions will be expanded, including such institutions as Ministry of Economy and National Bank of Kyrgyz Republic after official invitation for presentation of the preliminary results.
<table>
<thead>
<tr>
<th>Institution</th>
<th>Contact</th>
<th>Position</th>
<th>Email or Phone</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Labor, Migration and Youth</td>
<td>Aliasbek Alymkulov,</td>
<td>Minister</td>
<td>(00996) 312 300 232</td>
<td>Discussion of remittances impact on labor employment, in particularly youth employment and factors of migration</td>
</tr>
<tr>
<td>Ministry of Social Development</td>
<td>Kymbat Kadyralieva,</td>
<td>Press-secretary</td>
<td><a href="mailto:kymbat3@mail.ru">kymbat3@mail.ru</a></td>
<td>Social protection of low income households, social services and households receiving remittances</td>
</tr>
<tr>
<td>Apparat of the Gogorku Kenesh of Kyrgyz Republic (Parliament of Kyrgyz Republic)</td>
<td>Raikan Kurmanbekova,</td>
<td>Expert on taxation and government budget analysis</td>
<td><a href="mailto:raikan.kurmanbekova@manas.edu.kg">raikan.kurmanbekova@manas.edu.kg</a></td>
<td>Potentials for improving social expenditures effectiveness and consideration of taxation reliefs for microenterprises initiatives of remittance receiving households</td>
</tr>
<tr>
<td>Institute of Public Research</td>
<td>Rita Karasartova,</td>
<td>Executive Director</td>
<td><a href="mailto:koom.kg@gmail.com">koom.kg@gmail.com</a></td>
<td>Discussion of actuality of remittances and migration for policy making.</td>
</tr>
<tr>
<td>GIZ Kyrgyz Republic</td>
<td>Bolotkan Sydykanov,</td>
<td>Coordinator of the project</td>
<td><a href="mailto:bolotkan@gmail.com">bolotkan@gmail.com</a></td>
<td>Labor migration, health issues and access to health services in regions</td>
</tr>
<tr>
<td>ICCO</td>
<td>Muratbek Ismailov,</td>
<td>Deputy Director</td>
<td><a href="mailto:muratbek.ismailov@icco.nl">muratbek.ismailov@icco.nl</a></td>
<td>Local specifics, small size enterprises access to financial sources and efficient utilization of remittances by households.</td>
</tr>
<tr>
<td>JICA OVOP</td>
<td>Shakir Uulu Emil,</td>
<td>Coordinator Assistant</td>
<td><a href="mailto:shuemil@gmail.com">shuemil@gmail.com</a></td>
<td>Households investment potential and local development</td>
</tr>
<tr>
<td>AVEP</td>
<td>Daniar Jasoolov,</td>
<td>Project specialist</td>
<td><a href="mailto:d.jasoolov@gmail.com">d.jasoolov@gmail.com</a></td>
<td>Households investment potential and local development</td>
</tr>
<tr>
<td>Academy of Science of Kyrgyz Republic</td>
<td>Turar Koychuev,</td>
<td>Senior Researcher</td>
<td><a href="mailto:turar.koychuev@manas.edu.kg">turar.koychuev@manas.edu.kg</a></td>
<td>Further intensification of quantitative studies on migration and remittances</td>
</tr>
<tr>
<td>Foundation for Progressive Initiatives</td>
<td>Amanegeldi Cumadilov,</td>
<td>Director</td>
<td><a href="mailto:kagan.kg@mail.ru">kagan.kg@mail.ru</a></td>
<td>Discussion of actuality of remittances and migration for policy making.</td>
</tr>
<tr>
<td>ACTED (Batken)</td>
<td>Saparov</td>
<td>Project</td>
<td><a href="mailto:daniyarsaparov@list.ru">daniyarsaparov@list.ru</a></td>
<td>Remittances and local</td>
</tr>
</tbody>
</table>
6. **List of team members**

Indicating their age (or whether they are under 30), sex, as well as relevant/prior training and experience in the issues and research techniques involved (start with lead researcher).

Note that PEP favors gender-balanced teams, composed of one senior (or experienced) researcher supervising a group of junior researchers, including at least 50% female researchers contributing substantively to the research project. PEP also seeks gender balance in team leaders and thus positively encourages female-led research teams. (Each listed member must post an up-to-date CV in their profile on the PEP website – refer to “How to submit a proposal”)

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Sex (M,F)</th>
<th>Training and experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kamalbek Karymshakov</td>
<td>More than 30</td>
<td>M</td>
<td>PhD in Economics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Work and Research Experience:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Assistant Professor, Kyrgyz Republic-Turkey</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Manas University, Finance and Banking Department (Bishkek, Kyrgyz Republic)</td>
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<td></td>
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<td></td>
<td>• Post-doctoral Research Fellow, Free University of Berlin (Germany)</td>
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<td></td>
<td></td>
<td></td>
<td>• Research Fellow (ORASAM, Bishkek, Kyrgyz Republic)</td>
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<td></td>
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<td></td>
<td>• Research experience for 7 years</td>
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<td>• Household welfare</td>
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<td></td>
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<td>• Social accounting matrix</td>
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<td>• Economic integration issues</td>
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<td>• Corruption</td>
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<td></td>
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<td></td>
<td><strong>Training</strong></td>
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<td></td>
<td></td>
<td></td>
<td>• GAUSS programming</td>
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<td></td>
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<td></td>
<td>• Microeconometrics with STATA</td>
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<td></td>
<td>• CGE analysis with GAMS</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Teaching integrity</td>
</tr>
<tr>
<td>Raziiakhan Abdieva</td>
<td>More than 30</td>
<td>F</td>
<td>PhD in Economics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Work and Research Experience:</strong></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Lecturer, Kyrgyz Republic</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Research experience for 7 years</td>
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<td></td>
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<td>• Questionnaire-based surveys</td>
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<td></td>
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<td>• Fiscal sociology</td>
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<td></td>
<td></td>
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<td>• Tax culture</td>
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<td></td>
<td></td>
<td></td>
<td>• Behavioral Finance and Investment</td>
</tr>
</tbody>
</table>
7. **Expected capacity building**

Description of the research capacities that team members (and potentially their affiliated institutions) are expected to build through their participation in this project. This is an important aspect in the evaluation of proposals and should be presented in some detail. What techniques, literature, theories, tools, etc. will the team and their institutions learn (acquire in practice) or deepen their knowledge of? How will these skills help team members in their career development? Also indicate which specific tasks each team member would carry out in executing the project.
Quantitative research in social sciences and, in particularly, impact evaluation studies are at low level in Kyrgyz Republic. Lack of corresponding expert evaluations on the impact of different economic policies is one of the obstacles in designing effective government policies. Most of the quantitative researches are done with support of international donor organizations. However, development of research capacities of local scientific environment is extremely important for conduction of permanent analytical works for any government policies. Kyrgyz Republic-Turkey Manas University (KTMU) tries to bring new analytical skills through development of academic staff and stimulating research projects. This is done through internal and external training programs and development of research projects within post-graduate education. Several academic staff and post-graduate students are involved in questionnaire-based survey and utilize statistical analysis with SPSS or adopt econometric approach with STATA. These studies have local character and do not encompass more deep quantitative policy evaluation analysis, while policy studies and impact evaluation aspects have not been mastered yet. Thus, training in impact evaluation is significantly beneficial to capacity development at KTMU. For this research work, we propose a team of four persons.

<table>
<thead>
<tr>
<th>Name</th>
<th>Task</th>
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<tbody>
<tr>
<td>Kamalbek Karymshakov</td>
<td>As team leader of this project Kamalbek Karymshakov will perform the following tasks:</td>
</tr>
<tr>
<td></td>
<td>- Overall coordination of team members work</td>
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<td></td>
<td>- Guide the theoretical reasoning of research</td>
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<td></td>
<td>- Guide the data utilization</td>
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<td></td>
<td>- Guide on econometric estimation techniques</td>
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<tr>
<td></td>
<td>- Communicate for consultation meeting and organization of round table for discussion of preliminary results and dissemination of final results</td>
</tr>
<tr>
<td></td>
<td>- Review of the final paper for national and international publications</td>
</tr>
<tr>
<td>Raziiakhan Abdieva</td>
<td>She will be responsible for the following tasks:</td>
</tr>
<tr>
<td></td>
<td>- Review of theoretical and empirical bases of the paper for efficiency of results</td>
</tr>
<tr>
<td></td>
<td>- Prepare dataset for analysis.</td>
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<td></td>
<td>- Work on modeling techniques</td>
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<td></td>
<td>- Involved for communication and organization works discussion and dissemination</td>
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<td></td>
<td>- Write up discussion part</td>
</tr>
<tr>
<td>Burulcha Sulaimanova</td>
<td>She will perform the followings:</td>
</tr>
<tr>
<td></td>
<td>- Review and analyse migration and remittances tendencies in Kyrgyz Republic in last 10 years.</td>
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<tr>
<td></td>
<td>- Produce necessary graphs, tables and figures for the paper</td>
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<tr>
<td></td>
<td>- Perform statistical analyses</td>
</tr>
<tr>
<td></td>
<td>- Help to Raziiakhan Abdieva for modeling techniques</td>
</tr>
<tr>
<td></td>
<td>- Write up discussion part together with Raziiakhan Abdieva</td>
</tr>
<tr>
<td>Kadyrbek Sultakeev</td>
<td>He will perform the followings:</td>
</tr>
<tr>
<td></td>
<td>- Review relevant literature and write up the literature review part.</td>
</tr>
<tr>
<td></td>
<td>- Review of statistical analysis performed by Burulcha Sulaimanova</td>
</tr>
</tbody>
</table>
- Finalise the paper combining different parts from other members.
- Assist in preparation of dataset to Raziiakhan Abdieva
- Assist in communication and organization activities
- Assist in other logistical works

8. List of past, current or pending projects in related areas involving team members

<table>
<thead>
<tr>
<th>Name of funding institution</th>
<th>Title of project</th>
<th>Team members involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation for Progressive Initiatives</td>
<td>Accession of Kyrgyz Republic to Customs Union: Advantages and Disadvantages (includes analysis of impact on households welfare)</td>
<td>Kamalbek Karymshakov</td>
</tr>
<tr>
<td>Friedrich-Ebert Stiftung (Bishkek)</td>
<td>The Role and Perception of Turkey in Central Asia</td>
<td>Kamalbek Karymshakov</td>
</tr>
<tr>
<td>National Council for Sustainable Development of Kyrgyz Republic and Kyrgyz Republic-Turkey Manas University</td>
<td>Development of Microfinance in Kyrgyz Republic</td>
<td>Kadyrbek Sultakeev</td>
</tr>
<tr>
<td>Kyrgyz Republic-Turkey Manas University</td>
<td>Preferences of Kyrgyz society in their choice of investment instruments: Evaluation within behavioral finance</td>
<td>Raziiakhan Abdieva</td>
</tr>
<tr>
<td>National Bank of Kyrgyz Republic</td>
<td>Monetary Transmission Mechanism in Kyrgyz Republic</td>
<td>Burulcha Sulaimanova</td>
</tr>
<tr>
<td>Akdeniz University</td>
<td>Savings and Credit Behavior Investigation from the Perspectives of Formal and Informal Finance: Case of Bishkek city. Akdeniz University</td>
<td>Burulcha Sulaimanova</td>
</tr>
</tbody>
</table>

9. Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project.

The research posts no ethical, social, gender or environmental risk. The gender balance is maintained by having two female and two male in the team. Other risks related with the conduction of research have been minimised and potential interested parties and policymaking institutions are informed.
REFERENCES


Hanson, G. and Woodruff, C., (2003), "Emigration and Educational Attainment in Mexico" mimeo.


World Bank, 2012, “Migration and Development Brief 12”