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How social assistance affects subjective Well-being: Lessons from Kyrgyzstan

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How Social Assistance Affects Subjective Well-being: Lessons from Kyrgyzstan

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Abstract

This paper investigates the effects of social assistance on subjective well-being looking at the case of Kyrgyzstan. For this purpose, we exploit recent changes in the design of social assistance and apply a difference in difference (DiD) method combined with an inverse probability weighting (IPW) technique. In contrast to the existing literature, we find that the receipt of social assistance benefits is associated with lower levels of subjective well-being. Our findings also reveal that participation in social assistance leads to some reduction in satisfaction regarding recipients' own economic conditions. Moreover, we find that the negative effects on subjective well-being disappear for the oldest generations, which experienced the dissolution of the Soviet Union. By contrast, the effect is negative for the youth, who grew up in a new society where needing help is ultimately the responsibility of the individual citizen. For individuals with high trust in political institutions, the negative effect of state intervention does not hold, while it persists in case of low trust in political institutions.

Keywords: subjective well-being, social assistance, institutional trust, Soviet Union, Kyrgyz Republic

JEL Codes: I31, I38, P36

1. Introduction

How does policy affect subjective well-being? This question has been receiving a lot of attention recently (Attah et al. 2016). Subjective well-being is usually defined as “people’s multidimensional evaluation of their lives, including cognitive judgements of life satisfaction as well as affective evaluations of moods and emotions” (Eid and Diener 2004, 63).¹ The rising interest around subjective well-being is mainly related to the fact that some of its dimensions - such as positive emotions, happiness, satisfaction with life - have been recognised to have an instrumental value for outcomes such as productivity, decision-making, educational achievements and health status (Attah et al. 2016; Haushofer and Fehr 2014). Happier people are healthier, live longer and are more productive workers (Anand 2017). A higher job satisfaction is related to increased productivity (Bryson, Forth and Stokes 2017) and, at the macro-level, subjective well-being is an input to higher total factor productivity (DiMaria, Peroni and Sarracino 2014). Subjective well-being (or happiness) has also gained a high position in the political discourse being recognised as an important goal for society (Layard, 2020). For example, New Zealand has recently implemented the “well-being budget” prioritising happiness and life satisfaction over economic growth.² Before that, many other political institutions have adopted similar initiatives including the former French president, Nicolas Sarkozy, who set up the highly influential commission to report on this topic led by Fitoussi, Sen and Stiglitz (Stiglitz et al., 2009). In view of this, it is important to understand how policy may affect subjective well-being.

In this paper, we investigate the role of social assistance transfers³ in shaping subjective well-being. Our study is in line with a new and growing empirical literature documenting the importance of cash transfer programmes in improving mental health, happiness and life satisfaction (Attah, et al 2016). Most of these studies show improvements in subjective well-being following the implementation of cash transfers in Sub-Saharan African countries (Baird et al 2013; Handa et al 2014a; Handa et al 2014b; Haushofer and Fehr 2014). Similar results are also reported in the context of Latin America (Fernald and Gunnar, 2009; Macours et al, 2008; Ozer et al 2011). More recently, a systematic review summarising 37 studies (all of them conducted in Africa and Latin America except for one in India and one in Cambodia)

¹ Happiness and subjective well-being are often used interchangeably in the psychology, sociology and economic literature (see, for example, Stewart 2014, Bartram 2013, or Diener 1984).

² <https://www.weforum.org/agenda/2019/05/new-zealand-is-publishing-its-first-well-being-budget/>

³ Social assistance as a subset of social protection policies refers to transfers in cash or in kind aimed at supporting individuals and households in need. Contrary to social insurance, eligibility does not depend on contributions made in the past.

concludes cash transfers significantly improve mental health and subjective well-being in LMICs (McGuire et al. 2020). The main explanation provided by these contributions is that social assistance increases subjective well-being by addressing the negative consequences associated with poverty, including mental health problems (Haushofer and Fehr 2014).

However, a different strand of the literature highlights that this may be only one side of the coin (Roelen, 2017). According to this strand of the literature, the mental health of recipients of social assistance could be negatively affected despite the increase in material well-being, if receiving benefits leads to stigma or shame (Yan et. Al 2014; Kassenböhmer and Haisken-DeNew 2009)⁴ Indeed, social assistance is different from other social protection schemes, such as social insurance and labour market policies, as entitlement does not depend on contributions made in the past (World Bank, 2018). This characteristic is related to the narrative of deservingness, which has implications for subjective well-being as social assistance can increase the feelings of stigma and shame (Jun, 2019). The particular policy design, such as the targeting method, can further lead to negative consequences on psychological well-being (see Devereux et al 2015 for an overview). For example, the publication of names or queueing to collect government benefits in a public space can induce stigma and shame (Roelen 2017). The same feelings may occur with verification processes in the community, where the eligibility is verified by a community leader (Yan et al. 2014). As a result, “the design and implementation of social assistance, and the wider discourse within which it takes place, can instigate stigma and shame”, leading to worsening mental well-being (Roelen, 2017: 2).

Whether or not social assistance is leading to higher or lower levels of subjective well-being is, therefore, an open question. Our study aims to fill this gap in the literature investigating the effects of social assistance on subjective well-being looking at the case of Kyrgyzstan. This country makes an interesting setting to test these alternative hypotheses. Under the Soviet Union, poverty existed, although people rarely admitted to be poor and the regime tried to mask the real numbers (Matthews, 1985; McAuley, 2008). Given the low inequalities

⁴ Shame is defined as an emotion happening after social rejection or feeling of lower social attractiveness that undermine one’s self-esteem (Roelen 2017, Van Vliet 2008), whereas stigma is defined as “a set of negative and often unfair beliefs that a society or group of people have about something” (Merriam-Webster English dictionary). Public stigma (or social stigma) refers to people’s views or attitude towards a specific group, while self-stigma refers to a process of internalising of prejudices and stereotypes resulting in the acceptance of certain views (Corrigan and Watson 2002). Public stigma can lead to self-stigma, or the “potential internalisation of the negative beliefs and feelings associated with the stigmatised condition” (Bos et al. 2013:2).

and presumed adequate social conditions, poverty was seen, to a large extent, a responsibility directly attributed to the individuals suffering from poverty (Barr 1994). Yet, the dissolution of the Soviet Union and the transition to the market economy generated feelings of collective deprivation through the dramatic increase in unemployment and the rapid worsening of general economic conditions (Ponticelli and Voth 2011; Campante and Chor 2012; Weinberg and Bakker 2015). In such a setting, as explained by Alesina and Giuliano (2009: 14): “...[P]eople realize the importance of government intervention”. This may have resulted in poverty no longer understood as a responsibility directly attributed to the individual suffering from such a negative shock and in a more positive attitude towards government redistribution (Giuliano and Spilimbergo, 2009; Alesina and Giuliano, 2009). By contrast, the stigma or shame associated to social assistance may persist in the young generation who did not experience the dramatic shock of the dissolution of the Soviet Union while growing up in a society that used to think that it is the individual’s fault if citizens are in need of help (Alesina and Fuchs-Schündeln, 2007). Moreover, as explained above, the stigmatisation and shame might be further induced by the design and implementation of the “new” social protection schemes. Indeed, it is a common practice in Kyrgyzstan to publish the list of beneficiaries in local social welfare offices (OECD, 2018).

In order to investigate the impact of social assistance on subjective well-being, we use two rounds of the Life in Kyrgyzstan survey (LiK). Observational data makes it difficult to obtain reliable estimates due to reverse causality and omitted variable biases. However, in order to deal with these problems, we exploit recent changes in the design of social assistance and approach our empirical analysis applying a difference in difference (DiD) method combined with inverse probability weighting (IPW). Our results reject the first hypothesis that social assistance always increases subjective well-being. In fact, we find that the receipt of social assistance benefits results in lower subjective well-being levels. Our analysis also reveals that the participation in social assistance leads to a decreased satisfaction with beneficiaries’ own economic conditions. As reported above, these results might be explained by perceptions of stigma and shame. Indeed, when we do heterogeneous analysis by age of beneficiaries, we find that the negative effects on subjective well-being disappear for the oldest generations – those that were in the labour market before the dissolution of the Soviet Union but who also experienced the transition to the market economy. By contrast, the effect is negative for the youth who grew up in a new society where needing help is ultimately the responsibility of the individual citizen. Lastly, we find that the negative effects of state intervention on life

satisfaction hold only in case of low trust in political institutions. These results are robust to the use of alternative specifications of the main dependent variable, model specifications and estimation techniques. Additionally, this paper shows that this effect is only related to welfare receipt. Other forms of transfers including remittances received from migrants living abroad do not affect subjective well-being.

Our paper contributes to the literature on social assistance and subjective well-being as follows (Attah, et al 2016). It adds important new evidence to the literature looking at the relationship between shame and poverty (Roelen 2017). In particular, our paper shows that social transfers may lead to a decrease in subjective well-being despite improvements in material conditions. Moreover, this paper adds new evidence to the literature investigating this topic in a former Soviet country. Indeed, current literature mainly focuses on Sub-Saharan Africa and Latin America (Baird et al 2013; Handa et al 2014a; Handa et al 2014b; Haushofer and Shapiro 2014; Fernald and Gunnar 2009; Ozer et al 2011; Macours et al 2008). Analysing the impact of social transfers on subjective well-being in Kyrgyzstan, we show the relevance of the cultural setting and history. Our findings could therefore be informative for other countries that share similar characteristics. By focusing on different age groups, as Alesina and Fuchs-Schundeln (2007), we also investigate if living in different political regimes and experiencing different shocks play a role on tastes and attitudes towards welfare policies. Lastly, this paper provides lessons for policy design. In particular, the results of our paper seem to be consistent with the idea that stigmatisation and shame may occur as a consequence of how programmes are designed and/or implemented (Devereux et al 2015).

The rest of the paper is structured as follows: Section 2 introduces the case study, Kyrgyzstan. Section 3 presents the data and methodology used in this study. Section 4 provides descriptive statistics of the sample used in the analysis, and Section 5 presents the regression results of the relationship between social assistance and subjective well-being. Finally, Section 6 concludes.

2. Social assistance under the Soviet Union and the case of Kyrgyzstan

Kyrgyzstan is a land-locked country with six million inhabitants, many of them living in mountainous territory (World Bank 2019). It is one of the poorest countries in Central Asia with a Gross National Income (GNI) per capita of \$1,220 in 2018 (World Bank 2019). In 1991, Kyrgyzstan became independent. As other Former Soviet Union countries, the new

government promoted a transition to the market economy that, however, was associated with a reduction in industrial activity, a dramatic increase in unemployment, and a considerable increase of poverty and inequality. Independence meant not only the loss of subsidies from the central Soviet budget, but also the disappearance of the export base. By 1995, the country's GDP was reduced by 50 per cent compared to 1990 (World Bank, 2003). The poverty rate increased from 12 per cent pre-transition to 76 per cent in 1993-94 (Subbaro et al., 1997), and the Gini coefficient from 0.26 to 0.55 over the same timeframe (Milanovic, 1998). Although economic and social conditions started to improve at the beginning of the 21st century, more than 20 per cent of the population is currently living below the national poverty line (World Bank 2019).

The rapid increase in poverty after independence is partially explained by the weakness of the system of social protection. Indeed, social safety nets were almost absent during the Soviet times. Soviet authorities controlled the economic activity while "protection against poverty was provided primarily through the state's policy of full employment and its control over the prices of basic consumer goods" (McAuley, 2008:16). While poverty was understood as a socially undesirable phenomenon with high individual responsibility, social assistance was considered a residual component of the social protection system (Barr 1994). As reported by Atkinson and Micklewright (1992) "social assistance was rudimentary, a last resort due to the denial of existence of poverty... benefits were stigmatising and handed only to the deserving poor" (Atkinson and Micklewright 1992: 220-221). Transfers were mainly targeted to certain groups of the population such as elderly people, war veterans or individuals unable to work in order to satisfy basic needs (Atkinson and Micklewright 1992). Another important component of the Soviet social protection system were maternity benefits for employed women and child benefits. Women giving birth to four or more children were entitled to additional benefits. They were also eligible to a lump sum payment on the birth of their third child. Single mothers could receive child allowances until the child's sixteenth birthday (McAuley, 2008).

Before independence, Soviet subsidies, accounting for 30% of the Kyrgyz government budget in 1990, ensured the provision of basic universal health care, education and employment (World Bank, 2003). The collapse of the Soviet Union and the transition to a market economy resulted in a rapid increase in unemployment and a significant impoverishment of the society, together with a continuous failure of the new institutions to

deliver basic services, widespread corruption and inter-ethnic conflicts (ICG 2016). In an effort to protect its citizens during this difficult time, the new government introduced a number of reforms including several measures to improve the effectiveness of the social protection system, which was inherited from the Soviet Union and mainly consisted of categorical benefits⁵ (World Bank 2009). In 1996, just after the peak of the recession, social protection spending, broadly defined, accounted for 14 per cent of GDP.⁶ Yet, spending on poverty-targeted social assistance was only 2 per cent of GDP. After 1996, the share decreased further and by 2001, spending on social assistance was down to 0.6 per cent of GDP (Tesliuc, 2004).

In 1998 the Kyrgyz government introduced a new unified monthly benefit thereby unifying and simplifying the previous cash assistance policies. The Monthly Benefit for Poor Families (MBPF) is means-tested and targeted at extremely poor families with children (Tesliuc, 2004). Over the years, the benefit changed its name two times, but the design remained in essence the same.⁷ Eligibility for the MBPF is based on the Guaranteed Minimum Income (GMI) which is a discretionary threshold set by the government, as well as the presence of children in the household. The GMI is usually set between 30 and 50 per cent of the extreme poverty line⁸ (Gassmann and Trindade 2015). Since its introduction in 1998, the government has tried to perfect the targeting criteria (Tesliuc, 2004; Gassmann, 2011; Gassmann and Timár, 2018). As a result, the MBPF is well-targeted; however, the coverage of the poor is low and the benefit size - only 15 percent of the average income of beneficiaries - is too small to have a significant effect on poverty reduction.

Beyond the MBPF, the government introduced other social assistance benefits after the collapse of the Soviet Union including the Monthly Social Benefit (MSB), which is a categorical cash transfer paid to vulnerable groups regardless of income, such as orphans, individuals with a disability or elderly individuals without pension rights, and it continued with the provision of state benefits for privileged groups such as war veterans (Gassmann and Trindade, 2015).⁹ Benefit level varies depending on the beneficiary group, but it is usually

⁵ Eligibility depended on demographic or other characteristics, such as being a war veteran, Chernobyl cleaner or having more than three children.

⁶ This included social insurance (53 per cent of total social protection spending), social assistance (14 per cent) and quasi-fiscal transfers (33%) (Tesliuc, 2004).

⁷ The programme was previously known as the Unified Monthly Benefit. In 2018 it was renamed to *Uybulugu Komok*.

⁸ The extreme poverty line is an empirically estimated threshold reflecting the average costs of 2100 kcal per person per day.

⁹ State benefits are essentially a legacy of the Soviet Union. While most of these benefits were previously provided in kind, in 2010, the government monetized the state benefits (Gassmann, 2011).

higher than the value of the MBPF. Coverage of the MSB has been rising in recent years (OECD, 2018). Overall, social assistance benefits in Kyrgyzstan cover a small percentage of the population (between 1 and 10 percent depending on the benefit type) (Gassmann and Trindade 2015).

Therefore, despite the various reforms, social assistance is still implemented on a low scale, and benefits may be seen as charity reflecting the legacy of the Soviet Union (OECD 2018; World Bank 1993). Moreover, it is common practice to publish the list of beneficiaries in local social welfare offices, which can also lead to higher stigma and shame. Interestingly, qualitative studies show that the receipt of poverty-targeted benefits such as the MBPF, is likely to be associated with shame and stigma (Narayan et al 2000).

3. Data and methodology

3.1. Data

Our analysis draws on data extracted from two rounds (2011 and 2012) of the Life in Kyrgyzstan Study (LiK study). The LiK study is a yearly multi-topic longitudinal survey with information on around 2,800 households and 8,000 adult household members collected in all seven oblasts¹⁰ of Kyrgyzstan – i.e. Batken, Chui, Jalal-Abad, Issyk-Kul, Naryn, Osh, and Talas - and the cities of Bishkek and Osh. This survey provides comprehensive information on several dimensions including demographic characteristics, employment, economic variables as well as well-being outcomes (Bruck et al. 2014). The household section includes information on the different sources of income including data on government transfers such as social assistance. In particular, the household is asked whether they have received any social assistance transfer in the last 12 months. This allows us to obtain the needed information about the recipients of the Monthly Social Benefit and the Monthly Benefit for Poor Families.¹¹ Table 1 provides some statistics regarding our sample of analysis showing that about nine percent of the households is benefitting from any of these two programmes, in line with Gassmann and Trindade (2015). Beneficiary households receive about KGS 1400 per capita (19 USD approximately) on average per month, which represents around 15 percent of the total household income.

¹⁰ An oblast is an administrative unit similar to a province or region.

¹¹ State benefits and energy compensations are excluded because they are regressive. Households at the middle or top of the distribution are the main beneficiaries of these benefits.

The LIK study also collects information on subjective indicators such as self-reported life satisfaction. We use this indicator because it has been defined as one of the core measures of subjective well-being (OECD 2013). Life satisfaction has been widely used both in the psychological as well as the economic literature (Pavot and Diener 2008, Frijters et al. 2004); it was also shown to be reliable and valid measure of well-being and so it is also widely used to develop comparison across countries (Krueger and Schkade 2008). Life satisfaction ranges between 0 and 10 – with high values indicating more satisfaction. Our data shows that the average life satisfaction value in the year 2011 was 6.75 while it slightly increased up 6.93 in 2012.

Table 1: Social assistance characteristics and life satisfaction by year

		2011	2012
% individuals living in recipient households	Mean	8.2	9.7
	SD	0.003	0.003
Average monthly transfer in recipient households (KGS)	Mean	1374	1496
	SD	46.8	46.9
% of total household income (recipients)	Mean	15.1	13.7
	SD	0.006	0.006
Life satisfaction (scale 0-10)	Mean	6.75	6.93
	SD	0.03	0.03

Source: authors' calculations, LiK 2011 and 2012.

Note: Social assistance transfers include the Monthly Benefit for Poor Families (means-tested) and the Monthly Social Benefit while state benefits and energy compensation are excluded.

3.2. Methodology

The question this paper aims to address is whether and how the receipt of social assistance benefits affects subjective well-being. We exploit the changes in the eligibility for the MBPF introduced in 2012. The GMI was raised and the transfer amount changed to a flat rate transfer (Gassmann and Timar, 2018). One would therefore expect an increase in beneficiaries following the increase of the GMI, and the LIK data seem to confirm this.

Taking advantage of these changes, we apply a difference-in-differences (DiD) approach comparing the subjective well-being of non-recipients (those who do not receive benefits

either in 2011 or in 2012) with recipients, that is individuals living in households that started receiving social assistance in 2012. The difference in difference specification is denoted as:

$$Y_{ikt} = \beta_0 + \beta_1 T_t + \beta_2 D_{ik} + \beta_3 (T_t * D_{ik}) + \beta_4 Z_{ikt} + \delta_k + \varepsilon \quad (1)$$

where Y_{ikt} is the outcome variable reporting the level of life satisfaction - with values ranging between 0 and 10 – for an individual i , living in oblast k and in time t . D is the variable indicating treatment status which equals 1 if an individual benefits from a social assistance programme. T is a time dummy that equals 1 for the post-reform period (year 2012). Our main independent variable is the interaction term, $T_t * D_{ik}$, which intends to measure how the extension of social assistance affected subjective well-being in the post reform period. In particular, the coefficient β_3 in the equation (1) aims to capture how social assistance schemes translate into differential levels of life satisfaction before and after the reform.

Z_{ikt} is a vector of demographic and economic variables. First, demographic factors such as age, sex, marital status, ethnicity, education, and household size are included in the regression. Second, in order to control for economic conditions, an asset index was built considering the following items: television, radio, internet, landline phone, mobile phone, computer, gas stove, electric stove, microwave, refrigerator, sewing machine and washing machine.¹² Controlling for material conditions is important to avoid problems of omitted variable bias. Indeed, the existing literature shows a positive relationship between living standard and subjective well-being (Deaton 2008; Stevenson and Wolfers 2008). This relationship becomes stronger in the context of poor countries as the quality of life of the poor depends on their ability to satisfy basic needs (Handa et al. 2014a). We also control for working status of the individual (if the individual is currently working) and place of residence (urban/rural).

Additionally, we apply inverse probability weighting (IPW) to adjust for the selection bias resulting from the fact that we are using observational data (Wooldridge, 2007). IPW aims to reproduce an experimental setting by matching “quasi – identical” households in the treatment and control groups. For this purpose, we use a probit model to estimate the probability of being a recipient of social assistance in 2012. Variables in the model include number of children in the household, which is one of the required eligibility conditions to

¹² To compute the asset index, we applied factor analysis. The results are reported in Table A1.

receive the means-tested social assistance benefit (the MBPF), number of elderly individuals living in the household, gender and education of the household head, logarithm of per capita income, dependency ratio (defined as the number of individuals working in the household divided by the number of household members), oblast, and a dummy variable indicating whether the household owns livestock. These variables refer to 2011 in order to reproduce initial conditions.¹³

Table A3 in the appendix shows that the differences in means between control and treatment group are not statistically different after matching. The goodness of the overall balance after matching is confirmed by the Hotelling test ($\text{Prob} > F(17, 8109) = 0.7703$). Evidence that the treated and control group are balanced after matching is also provided in figure A.1, which shows the distribution of the probability scores before (panel a) and after (panel b) applying the inverse probability weights.

4. Results

4.1. Main results

Table 2 shows the results of our estimations. The first column of Table 2 shows the difference in difference estimates of the effects of social assistance on subjective well-being when no control variables are included. The regression shown in column 2 shows the same estimation when controls are added to the model. The treatment effect of receiving social assistance is given by the interaction term between treatment status and time variable. We see that in both models receiving social assistance has a negative effect on life satisfaction. The coefficient our preferred specification (Table 2 - Column 2) indicates that the participation in social assistance leads to a decrease of 0.24 points change in life satisfaction.

In terms of the control variables, being a woman, being married, having a higher level of education or living in a rural area is associated with higher levels of life satisfaction. Being ethnic Kyrgyz, as opposed to Uzbek, Russian, or other ethnicity is also associated with higher subjective well-being levels. Living in a larger household and having a job also correlates with higher levels of life satisfaction. Finally, those households that enjoy better living standards (measured through the asset index) have, on average, higher levels of subjective well-being.

¹³ Results of the probit model are reported in Table A2.

Overall, our findings indicate that receiving social assistance does not contribute to an improvement in subjective well-being, but rather has negative consequences on life satisfaction. These results contradict most of the previous studies on the topic. There are several reasons that could explain the largely negative association between social assistance receipt and subjective well-being in the context of Kyrgyzstan. We turn to analyse some of them in the section 5.

Table 2: Main results

	(1) Model 1	(2) Model 2
Treated*time	-0.24** (0.12)	-0.24** (0.12)
Treated	0.34*** (0.09)	0.36*** (0.08)
Time	0.28*** (0.05)	0.27*** (0.05)
Age		-0.06*** (0.01)
Age squared		0.00*** (0.00)
Male		-0.09 (0.06)
Married		0.51*** (0.08)
Ethnic Kyrgyz		0.37*** (0.08)
Secondary education		0.23** (0.10)
Technical education		0.31** (0.13)
University		0.51*** (0.14)
Household size		0.03** (0.01)
Asset index		0.49*** (0.06)
Works		0.19** (0.08)
Urban		-0.65*** (0.09)
Constant	6.34*** (0.15)	6.76*** (0.30)
Observations	14812	14808
R-squared	0.06	0.10

*** p<0.01, ** p<0.05, * p<0.1; Notes: All regressions include oblast fixed effects. Robust standard errors in parentheses.

4.2. Subjective economic well-being

This section extends our main analysis investigating the specific dimension that may affect subjective well-being. In particular, it might be that life satisfaction decreases because the participation in social assistance generates feelings of stigma and shame regarding recipients'

own economic conditions. Hence, we repeat the same difference in difference estimation substituting life satisfaction with measures of subjective economic well-being with respect to the past and to the future. In doing so, we consider two questions: (1) “If you look back one year, how has your household’s economic situation changed since that date?”, and (2) “How do you think the economic situation of your household will be in one year from now?”. Answers range between five options, from ‘highly increased’ to ‘highly decreased’. For ease of interpretation, we have re-scaled the categories so that 5 reflects highly increased and 1 highly decreased. Results show a negative association between receiving social assistance and subjective economic well-being (Table 3). As expected, these results focusing on the economic component show that feelings of dissatisfaction might be explained by material conditions.

Table 3. Alternative dependent variables

	(1) Subjective economic well-being with respect to the past	(2) Subjective economic well-being with respect to the future
Treated*time	-0.16*** (0.04)	-0.18*** (0.04)
Treated	0.12*** (0.03)	0.11*** (0.03)
Time	0.07*** (0.02)	0.05*** (0.02)
Constant	3.21*** (0.09)	3.30*** (0.09)
Controls	Yes	Yes
Observations	14822	14822
R-squared	0.09	0.09

*** p<0.01, ** p<0.05, * p<0.1; Notes: All regressions include controls (age, age squared, male, married, ethnicity, education, working status, household size, asset index, and urban/rural) and oblast fixed effects. Robust standard errors in parentheses.

4.3. Robustness Checks

We first apply a series of robustness tests to check the validity of the main results. These tests include (i) alternative estimator techniques, (ii) alternative model specifications, (iii) and a falsification test using remittances instead of the participation in the programme.

(i) *Alternative estimator techniques.* We use two alternative estimator techniques to test the robustness of our baseline estimation results. First, we apply a fixed effects regression strategy. By including individual fixed effects, we are able to control for unobserved variation that can be correlated with the explanatory variables and are likely to generate bias. Fixed

effects cannot control for time variant unobserved characteristics though. Second, we use an alternative matching technique. Entropy balance matching is a multivariate reweighting method described in Hainmueller (2012) which allows users to reweight the data in a way that the distribution of the covariates satisfies a set of specified moment conditions. This is useful when using quasi-experimental data to create a balanced sample of treatment and controls, where the covariates of the control group of an intervention can be reweighted to match the covariate moments in the treatment group. Results show that our results hold when we use fixed effects and entropy balanced matching confirming the validity of our baseline estimations (Table A4 in the appendix).

(ii) *Alternative model specifications.* Three alternative specifications are used in order to test the correct specification of our model and potential issues in terms of omitted variable biases. First, we exclude the set of socio-economic variables and check the result using only demographic variables. Second, we exclude the set of demographic variables and use only economic variables as controls. Third, we test the validity of the previous results to the introduction of additional controls that may also affect subjective well-being, such as whether the individual has a chronic illness. Lastly, we add an additional set of variables referring to other social dimensions such as whether the respondent practices sports or has access to a network in case of need. Table A5 in the appendix shows that the results are robust to different model specifications.

(iii) *Falsification test using remittances.* An additional question is whether our main results indicate a specific effect of social assistance transfers or reflect the effects of monetary transfers more generally. For this purpose, we re-estimate our baseline regressions by substituting social assistance transfers with remittances received from migrants living abroad. Table A6 in the appendix shows that the interaction term is no longer statistically significant, confirming that it is specifically social assistance that is associated with reductions in life satisfaction.

5. Heterogenous impact of social assistance receipt

The results above raise the question of what could possibly explain the negative effects. For this purpose, we investigate the conditions under which social assistance receipt may reduce subjective well-being. Given the case study, we consider two different variables i.e. age and trust in institutions.

Age. The experience individuals acquire over their lifetime and particularly during their formative years matters for their attitudes towards inequality (Ignácz, 2018). A large share of Kyrgyz citizens experienced the Soviet Union and its dissolution. Its underlying egalitarian principles were commonly shared by the population. The state was supposed to provide economic security and social protection and to prevent economic inequality (Junisbai, 2010). Following the egalitarian Zeitgeist principle (Robinson and Bell, 1978), individuals that lived and worked during the Soviet period are expected to be more egalitarian, hence more supportive towards redistribution (Junisabi, 2010). This hypothesis seems to be confirmed by Table 4. In particular, the older group (people who were 18 years and older in 1992) shows more willingness to pay extra money to help the needy. The difference between the two age groups is of about 9 percentage points and it is also statistically significant.

Table 4. Share of respondents willing to pay extra money to increase spending on selected areas

	Older group	Younger group	difference	p-value
Public education	0.379	0.420	-0.041	0.301
Health	0.415	0.469	-0.054	0.178
Climate change	0.134	0.135	-0.001	0.981
Poverty	0.519	0.426	0.093	0.020

Notes: authors' elaboration on data extracted from Life in Transition Survey II. Older are individuals aged 38 years and older at the time of the survey 2010/2011. Younger are those aged less than 38 years old. The two age groups are built in order to distinguish between those who were already older than 18 years old during the transition and the younger generations. The question asked to the participants of the survey is: "Would you be willing to give part of your income or pay more taxes, if you were sure that the extra money was used to...".

Moreover, individuals that lived and worked during the Soviet period experienced the dissolution of the regime. This event (and the subsequent economic recession) was of historical magnitude to leave a lasting mark on citizens and form their attitudes and beliefs for the rest of their lives. Individuals that have experienced a macroeconomic shock during early adulthood are more supportive to government redistribution (Giuliano and Spilimbergo, 2009; Alesino and Giuliano, 2009). By contrast, the transition to the market has increased individual responsibilities in the process of income generation as well as the feeling of shame and stigma for people being in need of state support. We hypothesise that younger people are less egalitarian and more likely to feel stigma and shame given the poverty targeting approach of social protection adopted after the transition.

Hence, this section explores whether there is some age cohort effect that can explain our main results. To do that, we separate our initial sample between individuals aged 40 years and older and those aged less than 40 years old. The former not only transitioned to adulthood under the Soviet Union, but as explained above, they also experienced the dissolution of the Soviet Union. Table 4 indeed shows that results are different by age group. We find negative effects only among the younger population confirming the hypothesis that younger people are likely to be less egalitarian and more likely to feel stigma and shame given the poverty targeting approach adopted in post-Soviet Union societies. In particular, this new approach of identifying (and separating) the eligible population has most probably increased stigmatisation of programme beneficiaries.

Trust. Subjective well-being is both a function of socio-economic characteristics and institutional trust, which depends on the quality of institutions (Hudson, 2006). Poor citizens relying on social assistance after the dissolution of Soviet Union may have lost trust in the authorities. The help they get from social assistance is only marginal and not enough to cover their basic needs. Given the small amount of social assistance benefits and the fact that these are not enough for recipients to escape poverty, individuals may feel deceived by the government and its institutions. We explore this moderator through a series of variables measuring trust. In particular, we include variables that measure the levels of trust in the president and in local government officials. We follow the same approach as before, dividing the sample and distinguishing between individuals who have some level of trust in the aforementioned government officials and those who do not have trust in these political institutions.

Table 5 shows that the negative effects of social assistance on subjective well-being fade away when recipients have trust in their president and in local government officials. This means the negative effects of social assistance on subjective well-being are driven by those recipients who have low trust in institutions. Local officials are involved in the allocation of benefits, particularly the MBPF. Social staff at the district level assesses applications and applies the means test. Applicants, particularly in rural areas, depend on local officials to receive information on land and livestock ownership, and to obtain certified documents. A local committee eventually approves the list of eligible beneficiaries. For those having trust in local officials, social assistance receipt does not affect their subjective well-being, possibly

reflecting satisfaction with the decision-making process. In contrast, if trust in local officials is low, benefit receipt leads to lower subjective well-being, possibly indicating a dissatisfaction with the process (Sapsford et al., 2015).

Table 5. Age and Trust on president and local officials.

	Age		Trust in President		Trust in Local officials	
	Age 18-39	Age 40+	No trust (3)	Trust (4)	No trust (1)	Trust (2)
Treated*time	-0.32** (0.15)	-0.14 (0.18)	-0.30* (0.17)	-0.26 (0.16)	-0.38** (0.18)	-0.20 (0.15)
Treated	0.40*** (0.11)	0.32** (0.13)	0.62*** (0.13)	0.18 (0.11)	0.44*** (0.12)	0.29*** (0.11)
Time	0.27*** (0.07)	0.29*** (0.07)	0.31*** (0.07)	0.24*** (0.07)	0.53*** (0.08)	0.11* (0.06)
Constant	7.52*** (0.99)	5.94*** (1.15)	6.65*** (0.39)	6.67*** (0.46)	7.01*** (0.39)	6.29*** (0.44)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7523	7285	6437	7400	5895	7942
R-squared	0.11	0.11	0.17	0.11	0.14	0.11

*** p<0.01, ** p<0.05, * p<0.1;

Notes: All regressions include controls (age, age squared, male, married, ethnicity, education, working status, household size, asset index, and urban/rural) and oblast fixed effects.

Robust standard errors in parentheses.

6. Conclusion

Using data from the Life in Kyrgyzstan Study, this paper investigates the effects of social assistance on subjective well-being looking at the case of Kyrgyzstan. This country makes an interesting setting to test this relationship given that its social protection system and the understanding of poverty are still influenced by its history as a member of the Soviet Union. To our knowledge, this is the first study looking at the effects of social assistance on subjective well-being in Kyrgyzstan, and findings could also be informative to other Former Soviet Union countries who share a very similar history.

Contrary to previous studies in the field, this paper underscores a negative relationship between social assistance and both life satisfaction and subjective economic well-being. Two factors seem to explain these negative impacts. First, our study shows that the negative effects on subjective well-being disappear for the oldest generations – who were in the labour market before the dissolution of the Soviet Union but who also experienced the transition to the market economy. We find significant effects only among the younger population who seem to be less egalitarian and more likely to feel stigma and shame given the poverty targeting approach adopted in post-Soviet Union societies. Our paper also shows that trust in institutions matters for the acceptance and experience of public interventions. The negative effects of social assistance on subjective well-being are driven by those recipients who have low trust in political institutions.

This paper provides important lessons for policy makers by showing that cash transfers not always “buy” happiness. Factors such as the design of social protection programmes and their implementation, as well as the discourse associated to these schemes might generate stigma and shame with negative consequences on the subjective well-being of recipients.

References

- Alesina, A., & Fuchs-Schündeln, N. (2007). Goodbye Lenin (or not?): The effect of communism on people's preferences. *American Economic Review*, 97(4), 1507-1528.
- Alesina, A., & Giuliano, P. (2009). Preferences for redistribution. NBER. Working Paper 14825. <https://www.nber.org/papers/w14825.pdf>
- Abbott, P., Wallace, C., & Sapsford, R. (2010). Well-Being in Central Asia and the Caucasus. *Rwanda Journal*, 19, 34-55
- Anand, P. (2017). Happiness, well-being and human development: The case for subjective measures. Background Paper 2016 Human Development Report. New York: UNDP Human Development Office.
- Attah, R., Barca, V., Kardan, A., MacAuslan, I., Merttens, F., & Pellerano, L. (2016). Can social protection affect psychosocial wellbeing and why does this matter? Lessons from cash transfers in sub-Saharan Africa. *The Journal of Development Studies*, 52(8), 1115-1131.
- Atkinson, A. B., & Micklewright, J. (1992). *Economic transformation in Eastern Europe and the distribution of income*. Cambridge University Press.
- Baird, S., de Hoop, J., & Ozler, B. (2013). Income shocks and adolescent mental health. *Journal of Human Resources*, 48(2), 370 - 403.
- Barr, N. A. (Ed.). (1994). *Labor markets and social policy in Central and Eastern Europe: The transition and beyond*. World Bank Publications.
- Barrientos, A., & Kudebayeva, A. (2015). Social Transfers and Women's Labour Supply in Kyrgyzstan. *BWPI Working Paper* 215, The University of Manchester, Manchester, UK.
- Bartram, D. (2013). Happiness and 'economic migration': A comparison of Eastern European migrants and stayers. *Migration Studies*, 1(2), 156-175.
- Baumberg, B. (2014). Benefits and the cost of living. Pressures on the cost of living and attitudes to benefit claiming. In Park, A., Bryson, C. & Curtice, J. (eds.). *British Social Attitudes 31*. London: NatCen Social Research.
- Bos, A. E., Pryor, J. B., Reeder, G. D., & Stutterheim, S. E. (2013). Stigma: Advances in theory and research. *Basic and applied social psychology*, 35(1), 1-9.
- Brück, T., Esenaliev, D., Kroeger, A., Kudebayeva, A., Mirkasimov, B., & Steiner, S. (2014). Household survey data for research on well-being and behavior in Central Asia. *Journal of Comparative Economics*, 42(3), 819-835.
- Bryson, A., Forth, J., & Stokes, L. (2017). Does employees' subjective well-being affect workplace performance? *Human Relations*, 70(8), 1017-1037.
- Campante, F. & Chor, D. (2012). Schooling, Political Participation, and the Economy. *The Review of Economics and Statistics*, 94, (4), 841-859.

- Corrigan, P.W. & Watson, A.C. (2002). Understanding the impact of stigma on people with mental illness. *World Psychiatry*, 1(1), 16-20.
- Deaton, A. (2008). Income, Health, and Well-Being around the World: Evidence from the Gallup World Poll. *Journal of Economic Perspectives*, 22(2): 53-72.
- Devereux, S., Masset, E., Sabates-Wheeler, R., Samson, M., Rivas, A. & te Lintelo, D. (2015). Evaluating the Targeting Effectiveness of Social Transfers: A Literature Review. *IDS Working Paper*, 460. Brighton: Institute of Development Studies.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95 (3), 542-575
- DiMaria, C.H., Peroni, C., & Sarracino, F. (2014). Happiness matters: the role of well-being in productivity. *Quaderni Del Dipartimento Di Economia Politica e Statistica*, 699. Siena: Universita di Siena.
- Eid, M., & Diener, E. (2004). Global judgments of subjective well-being: Situational variability and long-term stability. *Social indicators research*, 65(3), 245-277.
- Fernald, L. & Gunnar, M. (2009). Effects of a poverty-alleviation intervention on salivary cortisol in very low-income children. *Social Science and Medicine*, 68 (12): 2180–2189.
- Frijters, P., Haiken-DeNew, J. P., & Shields, M. A. (2004). Money does matter! Evidence from increasing real income and life satisfaction in East Germany following reunification. *American Economic Review*, 94(3), 730-740.
- Galama, T.J., Morgan, R. & Saavedra, J.E. (2017). The Impacts of Social Assistance Programs on Financial and Subjective Wellbeing: Evidence from a Conditional Cash-Transfer Program in Colombia. *CESR Working Paper* No. 2017.
- Gassmann, F. (2011). *To What Extent Does the Existing Safety Net Protect the Poor?* Washington, D.C: World Bank Group.
<http://documents.worldbank.org/curated/en/914301486988386789/To-what-extent-does-the-existing-safety-net-protect-the-poor>
- Gassmann, F. (2014). Switching the Lights Off: The Impact of Energy Tariff Increases on Households in the Kyrgyz Republic. *Journal of Comparative Economics*, 42(3): 755-769.
- Gassmann, F., & Timár, E. (2018). *Scoping Study on Social Protection and Safety Nets for Enhanced Food Security and Nutrition in the Kyrgyz Republic*. Cairo: World Food Programme.
- Gassmann, F. & Trindade, L.Z. (2015). *Analysis of Potential Work Disincentive Effects of the Monthly Benefit for Poor Families in the Kyrgyz Republic*. Report No. 99776-KG. Washington DC: World Bank Group.
- Giuliano, P., & Spilimbergo, A. (2009). Growing up in a recession: Beliefs and the macroeconomy. *NBER Working Paper*, 15321. National Bureau of Economic Research.
- Handa, S., Martorano, B., Halpern, C., Pettifor, A., & Thirumurthy, H. (2014a). Subjective Well-being, Risk Perceptions and Time Discounting. Evidence from a Large-Scale Cash Transfer Programme. *Office of Research Working Paper*, UNICEF.

- Handa, S., Martorano, B., Halpern, C., Pettifor, A., & Thirumurthy, H. (2014b). The impact of the Kenya CT–OVC on parents’ wellbeing and their children. Available at <https://www.siecon.org/sites/siecon.org/files/oldfiles/uploads/2014/10/Martorano-et-al.-369.pdf>
- Hainmueller, J. (2012). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political analysis*, 20, 25-46.
- Haushofer, J., & Fehr, E. (2014). On the psychology of poverty. *Science*, 344(6186), 862-867.
- Haushofer, J., & Shapiro, J. (2013). Household response to income changes: Evidence from an unconditional cash transfer program in Kenya. Mimeo. https://www.poverty-action.org/sites/default/files/publications/Haushofer_Shapiro_UCT_2013.pdf
- Hudson, J. (2006). Institutional Trust and Subjective Well-Being across the EU. *Kyklos*, 59(1), 43-62.
- ICG (2016). Kyrgyzstan: State Fragility and Radicalisation, Crisis Group Europe and Central Asia. Briefing N°83.
- Ignácz, Z.S. (2018). The Remains of the Socialist Legacy: The Influence of Socialist Socialization on Attitudes toward Income Inequality. *Societies*, 8(62), 1-33.
- Jun, M. (2019). Stigma and shame attached to claiming social assistance benefits: understanding the detrimental impact on UK lone mothers’ social relationships. *Journal of Family Studies*, 1-17.
- Junisbai, A. K. (2010). Understanding economic justice attitudes in two countries: Kazakhstan and Kyrgyzstan. *Social Forces*, 88(4), 1677-1702.
- Kassenböhmer, Sonja C.; Haisken-DeNew, John P. (2009): Social Jealousy and Stigma: Negative Externalities of Social Assistance Payments in Germany, Ruhr Economic Papers, No. 117, ISBN 978-3-86788-130-2, Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI), Essen
- Krueger, A. B., & Schkade, D. A. (2008). The reliability of subjective well-being measures. *Journal of Public Economics*, 92(8-9), 1833-1845.
- Layard, R. (2020). *Can We Be Happier? Evidence and Ethics*. Pelican Books.
- Macours, K., Schady, N. & Vakis, R. (2008). Cash Transfers, Behavior Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment. World Bank Policy Research Working Paper 4759.
- Matthews, M. (1985). Poverty in the Soviet Union. *The Wilson Quarterly* (1976-), 9(4), 75-84. Retrieved July 11, 2020, from www.jstor.org/stable/40256927
- McAuley, A. (2008). Development strategy, welfare regime and poverty reduction in the former Soviet Union. United Nations Research Institute for Social Development Project on Poverty Reduction and Policy Regimes Country Overview Paper No. 3.

McGuire, J., Kaiser, C., & Bach-Mortensen, A. (2020). The impact of cash transfers on subjective well-being and mental health in low-and middle-income countries: A systematic review and meta-analysis

Milanovic, B. (1998). *Income, Inequality and Poverty during Transition from Planned to Market Economy*. Washington DC: The World Bank.

Narayan, D., Chambers, R., Shah, M. K., & Petesch, P. (2000). *Voices of the Poor: Crying out for Change*. New York: Oxford University Press for the World Bank.

Ngoo, Y. T., Tey, N. P., & Tan, E. C. (2015). Determinants of life satisfaction in Asia. *Social Indicators Research*, 124(1), 141-156

OECD (2018). *Social Protection System Review of Kyrgyzstan*. OECD Development Pathways. Paris: OECD Publishing. <http://dx.doi.org/10.1787/9789264302273-en>

OECD (2013). *OECD Guidelines on Measuring Subjective Well-Being*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264191655-en>

Ozer, E. J., Fernald, L. C., Weber, A., Flynn, E. P., & VanderWeele, T.J. (2011). Does alleviating poverty affect mothers' depressive symptoms? A quasi-experimental investigation of Mexico's Oportunidades programme. *International Journal of Epidemiology*, 40(6), 1565-1576.

Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *The journal of positive psychology*, 3(2), 137-152.

Ponticelli, J., & Voth, H. J. (2019). Austerity and anarchy: Budget cuts and social unrest in Europe, 1919–2008. *Journal of Comparative Economics*, 48(1), 1-19.

Robinson, R. V., & Bell, W. (1978). Equality, Success, and Social Justice in England and the United States. *American Sociological Review*, 43(2), 125-43.

Roelen, K. (2017). Shame, Poverty and Social Protection. *CSP Working Paper*, 489. Brighton: Institute of Development Studies.

Sapsford, R., Abbott, P., Haerpfer, C., & Wallace, C. (2015). Trust in Post-Soviet Countries, ten years on. *European Politics and Society*, 16(4), 523-539.

Stevenson, B., & Wolfers, J. (2008). Economic growth and subjective well-being: reassessing the Easterlin paradox. *NBER Working Paper*, 14282. National Bureau of Economic Research.

Stewart, F. (2014). Against happiness: A critical appraisal of the use of measures of happiness for evaluating progress in development. *Journal of Human Development and Capabilities*, 15(4), 293-307.

Stiglitz, J., Sen, A., & Fitoussi, J. P. (2009). The measurement of economic performance and social progress revisited: Reflections and overview. hal-01069384. <https://hal-sciencespo.archives-ouvertes.fr/hal-01069384>

Subbarao, k., Bonnerjee, A., Braithwaite, J., Carvalho, S., Ezemenari, K., Graham, C., & Thompson A. (1997). *Safety Net Programs and Poverty Reduction. Lessons from Cross-Country Experience*. Washington DC: The World Bank.

Tesliuc, E. D. (2004). Mitigating Social Risks in Kyrgyz Republic. *Social Protection Discussion Paper Series*; 408. Washington, DC: World Bank.
<http://documents.worldbank.org/curated/en/917891468758403442/Mitigating-social-risks-in-Kyrgyz-Republic>.

Van Vliet, K. J. (2008). Shame and Resilience in Adulthood: A Grounded Theory Study. *Journal of Counseling Psychology* 55(2), 233–45.

Waidler, J. (2018). *Social assistance and remittances and their role in the fight against poverty*. Datawyse / Universitaire Pers Maastricht. <https://doi.org/10.26481/dis.20181004jw>

Weinberg, J., & Bakker, R. (2015). Let them eat cake: Food prices, domestic policy and social unrest. *Conflict Management and Peace Science*, 32(3), 309-326.

Wooldridge, J. M. (2007). Inverse probability weighted estimation for general missing data problems. *Journal of Econometrics*, 141(2), 1281-1301.

World Bank (2003). *Memorandum Of The President of the International Development Association and the International Finance Corporation to the Executive Directors on a Country Assistance Strategy for the Kyrgyz Republic*. Report No. 25708-KG. Washington DC: The World Bank.

World Bank (2009). *Social Safety Net in the Kyrgyz Republic. Capitalizing on Achievements and Addressing New Challenges*. Report No. AAA-38-KG. Washington DC: The World Bank.

World Bank (2018). *The State of Social Safety Nets 2018*. Washington, DC: World Bank.

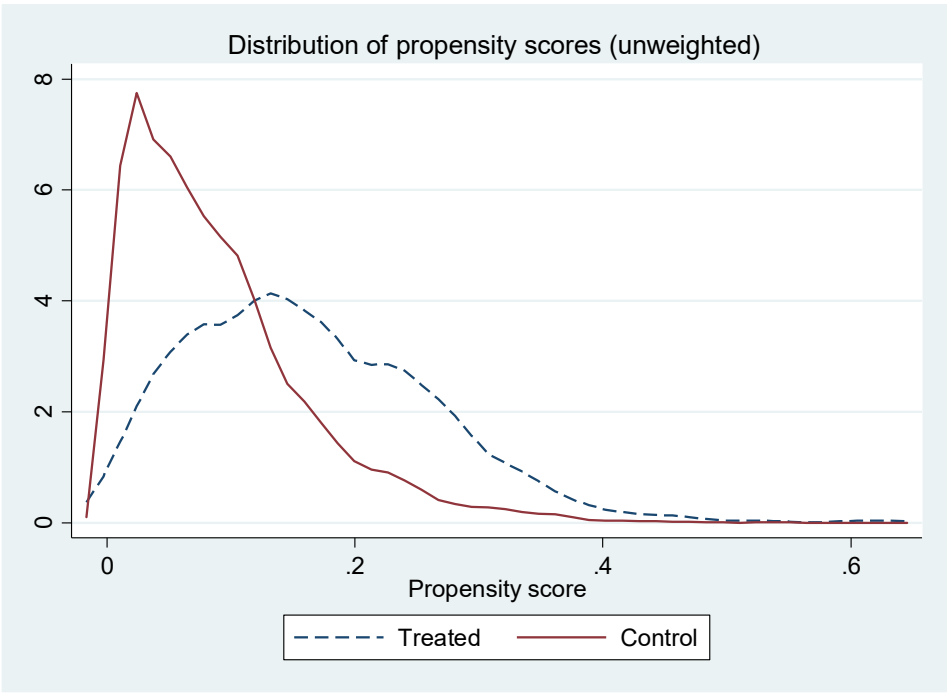
World Bank (2019). World Bank Data, Kyrgyz Republic.
<https://data.worldbank.org/country/kyrgyz-republic> [accessed 26 November 2019]

Yan, M., Gubrium, E., Pellissery, S., & Lodemel, I. (2014). New urban poverty and new welfare provision: China's dibao system. *The Shame of It. Global Perspectives on Anti-Poverty Policies*, 17-36.

Appendix

Figure A.1: distribution of the probability of receiving social assistance before (a) and after (b) applying inverse probability weights

a)



b)

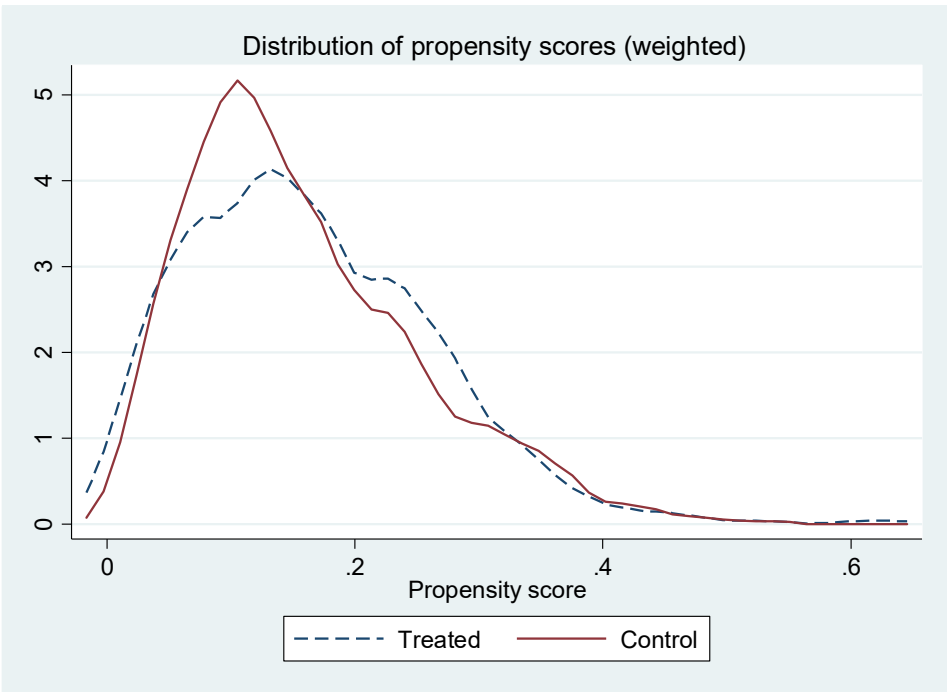


Table A.1: Asset index, factor analysis

Variable	Eigenvalue	Factor	Uniqueness
Refrigerator	2.16	0.32	0.90
Gas stove	0.76	0.58	0.66
Electric stove	0.36	-0.09	0.99
Microwave	0.26	0.46	0.79
Sewing machine	0.13	-0.03	0.99
Washing machine	-0.01	-0.18	0.97
Washing machine	-0.05	0.68	0.54
Mobile phone	-0.07	0.12	0.99
Landline phone	-0.12	0.60	0.64
Internet	-0.15	0.52	0.73
TV	-0.17	0.08	0.99
Computer	-0.22	0.60	0.64
Radio	-0.27	0.07	0.99

Note: only eigenvalues higher than one are retained, although the index is robust to different options.

Table A.2: Probability of receiving social assistance (marginal effects)

Oblast	
Jalal-Abad	0.05*** (0.01)
Naryn	0.07*** (0.02)
Batken	0.05*** (0.02)
Osh	0.00 (0.01)
Chui	-0.01 (0.01)
Bishkek	-0.04*** (0.01)
Osh city	-0.01 (0.02)
Education of hh head	
Secondary	0.00 (0.01)
Technical	-0.01 (0.01)
University	-0.04*** (0.01)
Number of kids	0.03*** (0.00)
Number of elder	-0.01 (0.01)
Dependency ratio	-0.02 (0.02)
Household size	-0.01*** (0.00)
Male head	-0.00 (0.01)
Log of pc income	-0.02*** (0.00)
Owns livestock	0.01*** (0.00)
Observations	8127
R^2	0.11

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1;

Note: coefficients are expressed as average marginal effects.

Table A3 Differences in means between control and treatment group

Variable	Mean treated	Mean control
<i>Oblast</i>		
Jalal-Abad	0.3548	0.3547
Naryn	0.0925	0.0925
Batken	0.1105	0.1105
Osh	0.2121	0.2121
Chui	0.0964	0.0964
Bishkek	0.0295	0.0296
Osh city	0.0231	0.0231
<i>Education of hh head</i>		
Secondary	0.5797	0.5797
Technical	0.1941	0.1941
University	0.0617	0.0617
Number of kids	2.506	2.506
Number of elder	0.3612	0.3612
Dependency ratio	0.1136	0.1136
Household size	6.147	6.146
Male head	0.7995	0.7995
Log of pc income	7.467	7.467
Owns livestock	2.003	2.002

Table A4. Alternative estimators

	(2) Fixed effects	(3) Entropy balanced matching
Treated*time	-0.21** (0.10)	-0.24** (0.12)
Treated		0.33*** (0.09)
Time	0.19 (0.15)	0.26*** (0.05)
Constant	4.33 (5.12)	6.72*** (0.29)
Controls	Yes	Yes
Observations	14808	14757
R-squared	0.02	0.10

*** p<0.01, ** p<0.05, * p<0.1; Notes: All regressions include controls (age, age squared, male, married, ethnicity, education, working status, household size, asset index, and urban/rural) and oblast fixed effects. Robust standard errors in parentheses.

Table A5: Alternative model specifications

	(1) Demographic controls	(2) Economic controls	(3) Extended
Treated*time	-0.23* (0.12)	-0.26** (0.12)	-0.27** (0.12)
Treated	0.31*** (0.09)	0.40*** (0.08)	0.40*** (0.08)
Time	0.30*** (0.05)	0.26*** (0.05)	0.29*** (0.05)
Age	-0.06*** (0.01)		-0.06*** (0.01)
Age squared	0.00*** (0.00)		0.00*** (0.00)
Male	-0.06 (0.06)		-0.27*** (0.06)
Married	0.51*** (0.08)		0.50*** (0.08)
Ethnic Kyrgyz	0.33*** (0.08)		0.30*** (0.08)
Secondary	0.26*** (0.10)		0.08 (0.10)
Technical	0.40*** (0.13)		0.13 (0.12)
University	0.76*** (0.13)		0.30** (0.14)
Household size	0.04*** (0.01)		0.03** (0.01)
Asset index		0.50*** (0.05)	0.42*** (0.06)
Works		0.21*** (0.07)	0.10 (0.08)
Urban		-0.71*** (0.09)	-0.54*** (0.09)
Networks			0.60*** (0.06)
Does not have a chronic illness			0.30*** (0.08)
Member of an organization			-0.09 (0.10)
Plays sports			0.48*** (0.08)
Constant	6.53*** (0.28)	6.38*** (0.17)	6.21*** (0.31)
Observations	14808	14812	14455
R- squared	0.08	0.08	0.13

*** p<0.01, ** p<0.05, * p<0.1; Notes: All regressions include oblast fixed effects. Robust standard errors in parentheses.

Table A6: Receiving remittances and life satisfaction

	(1)
	Life satisfaction
Treated*time	-0.17
	(0.16)
Treated	0.28**
	(0.11)
Time	0.18**
	(0.07)
Constant	6.96***
	(0.30)
Controls	Yes
Observations	14808
R-squared	0.10

*** p<0.01, ** p<0.05, * p<0.1; Notes: All regressions include controls (age, age squared, male, married, ethnicity, education, working status, household size, asset index, and urban/rural) and oblast fixed effects. Robust standard errors in parentheses.

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