

A.A. Khitakhunov 

Al-Farabi Kazakh National University and Eurasian Research Institute,
Kazakhstan, Almaty, e-mail: azimkhun@gmail.com

HOW TO ALLEVIATE POVERTY: LESSONS FROM THE 2019 NOBEL PRIZE IN ECONOMICS

In 2019, Esther Duflo, Abhijit Banerjee and Michael Kremer were awarded the Nobel Memorial Prize in Economic Sciences “for their experimental approach to alleviating global poverty.” This approach is mainly based on randomized controlled trials (RCTs). Therefore, a goal of the paper is to analyze and review major findings of the Nobel Prize winners and to show directions for their application in Central Asia. The methodology of the paper is based on the analysis of RCTs conducted by the Nobel Prize winners and in Central Asia. The paper finds that there are a lot of factors restricting poverty alleviation in developing countries, including underdevelopment of educational and healthcare systems. These problems can be addressed using experimental studies in different fields. The paper also reviews the main findings of the Central Asia-based RCTs. Their results were positive in terms of identifying problems and providing solutions that can be useful for further policymaking and can positively affect institutional, educational, healthcare and social issues. The paper shows that the potential priority sectors for the regional RCTs are educational and agricultural policies, where they can be conducted in order to test the efficiency of the existing programs and develop recommendations for future policy improvements. However, the RCTs alone are not enough for poverty alleviation and the paper emphasizes on the essential role of economic growth. The paper can be useful for policymakers, who form anti-poverty policy and development programs.

Key words: randomized controlled trials, poverty alleviation, economic development, Central Asia.

А.А. Хитахунов

Әл-Фараби атындағы Қазақ ұлттық университеті және
Еуразия ғылыми-зерттеу институты, Қазақстан, Алматы қ.,
e-mail: azimkhun@gmail.com

Кедейлікпен күресу жолдары: 2019 жылғы экономика саласы бойынша Нобель сыйлығынан алынған сабақтар

2019 жылы Эстер Дюфло, Абхиджит Банерджи және Майкл Кремер «жаһандық кедейлікпен күрестегі эксперименттік көзқарасы үшін» экономика саласындағы Нобель сыйлығына ие болды. Бұл тәсіл негізінен рандомизацияланған бақыланатын сынақтарға (РБС) негізделген. Сондықтан жұмыстың мақсаты – Нобель сыйлығы лауреаттарының негізгі қорытындыларына талдау және шолу жасау, сондай-ақ оларды Орталық Азияда қолданудың негізгі бағыттарын көрсету. Жұмыстың әдістемесі негізінен Нобель сыйлығының иегерлері мен Орталық Азияда өткізілген рандомизацияланған бақыланатын сынақтарды талдауға негізделген. Мақалада дамушы елдерде кедейлікпен күресті шектейтін көптеген факторлар бар екені анықталды. Олардың қатарына білім беру және денсаулық сақтау жүйесінің жеткіліксіз дамуы жатады. Бұл мәселелерді әртүрлі салалардағы тәжірибелік зерттеулердің көмегімен шешуге болады. Сондай-ақ, бұл мақалада Орталық Азияға негізделген РБС-ның басты тұжырымдары қарастырылған. Олардың нәтижелері алдағы уақытта саяси шешімдер қабылдау үшін пайдалы болып, институционалдық, білім беру, денсаулық сақтау және әлеуметтік мәселелерге оң әсерін тигізетін мәселелерді анықтау және оларды шешу тұрғысынан оң болды. Жұмыста аймақтық РБС-ның әлеуетті басымдықты салалары білім беру және агроөнеркәсіптік саясат екені көрсетілген. Бұл салаларда РБС-ны қолданыстағы бағдарламалардың тиімділігін тексеру және болашақтағы саясатты жақсарту бойынша ұсыныстар жасау мақсатында жүргізуге болады. Алайда, кедейліктен арылу үшін РБС-ның өзі жеткіліксіз және мақалада экономикалық өсудің маңызды рөліне баса назар аударылады. Бұл мақала кедейлікке қарсы саясат пен даму бағдарламаларын қалыптастыратын саясаткерлер үшін пайдалы болуы мүмкін.

Түйін сөздер: рандомизацияланған бақыланатын сынақтар, кедейлікті жою, экономикалық даму, Орталық Азия.

А.А. Хитахунов

Казахский национальный университет имени аль-Фараби и
Евразийский научно-исследовательский институт, Казахстан, г. Алматы,
e-mail: azimkhun@gmail.com

Как бороться с бедностью: уроки Нобелевской премии по экономике за 2019 год

В 2019 году Эстер Дюфло, Абхиджит Банерджи и Майкл Кремер были удостоены Нобелевской премии в области экономики «за экспериментальный подход в борьбе с глобальной бедностью». Этот подход в основном базируется на рандомизированных контролируемых исследованиях (РКИ). Следовательно, цель данной статьи – проанализировать и сделать обзор основных выводов работ лауреатов Нобелевской премии и показать основные направления их применения в Центральной Азии. Методология работы основана на анализе РКИ, проведенных лауреатами Нобелевской премии и в Центральной Азии. В статье показано, что существует множество факторов, сдерживающих борьбу с бедностью в развивающихся странах, в том числе неразвитость систем образования и здравоохранения. Эти проблемы могут быть решены с использованием экспериментальных исследований в различных областях. В статье также рассматриваются основные выводы РКИ, проведенных в Центральной Азии. Их результаты были положительными с точки зрения выявления проблем и поиска решений, которые могут быть полезны для дальнейшей разработки политики и могут положительно повлиять на развитие институтов, образования, здравоохранения и других социальных вопросов. В статье показано, что потенциальными приоритетными секторами для региональных РКИ являются образовательная и сельскохозяйственная политика, где они могут проводиться для проверки эффективности существующих программ и разработки рекомендаций для будущих улучшений политики. Однако одних РКИ недостаточно для сокращения масштабов бедности, и статья подчеркивает важную роль экономического роста. Эта статья может быть полезна для государственных служащих, которые формируют политику по борьбе с бедностью и программы развития.

Ключевые слова: рандомизированные контролируемые исследования, борьба с бедностью, экономическое развитие, Центральная Азия.

Introduction

In 2019, Esther Duflo, Abhijit Banerjee (both from the Massachusetts Institute of Technology) and Michael Kremer (Harvard University) were awarded the Nobel Memorial Prize in Economic Sciences “for their experimental approach to alleviating global poverty.” This approach is mainly based on randomized controlled trials (RCTs). The RCTs are experimental studies under which treatment and control groups are formed based on random selection. The treatment group is intervened by policy or programs, then the impact of the intervention is assessed based on econometric techniques and compared with the results of the control group. Outcomes of the experiments help to choose efficient policies, which then can be used by policymakers. This approach has gained popularity since early 2000s and many international development institutions, such as the World Bank, implement it regularly in cooperation with governments or non-governmental organizations.

Majority of RCTs are being conducted by the Abdul Latif Jameel Poverty Action Lab (J-PAL), cofounded by A. Banerjee and E. Duflo in 2003. The J-PAL affiliated researchers have up to one thousand

ongoing and completed randomized evaluations in 83 countries, with the help of which more than 400 million people have been reached by scale-ups of programs (J-PAL, 2019). Due to popularization, number of RCTs around the world increased substantially. As of November 10, 2019, American Economic Association’s (AEA) RCT Registry lists 3020 studies with locations in 142 countries (AEA, 2019). These studies are mainly conducted in developing or poor countries and aim to form effective policies for poverty alleviation through improvements of education, healthcare, agricultural, governance and many other policies, which affect the lives of the poor people. Many researchers identified a profile of poor people and their needs as follows. A poor individual consumes up to 80% of his income. This individual is undernourished and underweight, and, as a consequence, less productive. Education spending of poor people is insignificant. They have multiple occupations, cultivate their land and known as short term migrants. Poor households do not get loans from formal lending sources and borrow from relatives and neighbors. It is difficult for poor people to save in the poor environment. Poor families are generally young and they have specific psychology. They are provided by poor infrastructure, including

education and health. Moreover, parents' illiteracy does not allow their children to study better (Banerjee and Duflo, 2007). All these facts increase the need in development of the appropriate poverty alleviation programs and policies.

Researchers show that the world economy achieved significant results in terms of global poverty reduction. The proportion of the global population living in extreme poverty fell from 37% in 1990 to 11% by 2013 (from 2 billion to 766 million people). However, the poverty features described above are still important. In particular, poor people live primarily in rural areas and they are young. Their children attend and complete primary schools, but this is not enough to exit poverty (Castañeda et al., 2018). Economic growth slowdown still poses risks on future of development. Recent joint report of the Food and Agriculture Organization of the United Nations and other development institutions (FAO et al., 2019) states that after a decade of steady decline (2005-2015), the number of people suffering from hunger started to increase since 2015. If in 2015 the number of undernourished people in the world was 785.4 million, in 2018 it increased to 821.6 million people. The situation in developed countries is also not so promising due to rising income and wealth inequality (Alvaredo et al., 2017), which causes social discontent and can lead to poverty.

All these factors are important for Central Asian countries, majority of which have high rates of poverty and vulnerable to global shocks. This means that the lessons from the 2019 Nobel Prize can be used by the regional governments in order to increase efficiency of ongoing or future policies. Consequently, the purpose of the paper is threefold. First, it aims to review basic contributions of the Nobel Prize winners and highlight some lessons for Central Asia. Second, it reviews and analyses RCTs conducted in Central Asia and shows their results. Finally, it identifies potential sectors for experimentation and makes policy recommendations.

Literature review

Findings of the Nobel Laureates

While conducting the RCTs, the Prize winners found a lot of factors restricting poverty alleviation in developing countries. These factors include teacher and healthcare workers absenteeism. Kremer et al. (2005) show that India has one of the highest average teacher absence rates in the world, ranging from 15% to 42% and depending on income level of the states. Only 45% of teachers were actively

engaged in teaching at the time of the visit, and in some states, this ratio varied from 20% to 25%. According to the findings of the Chaudhury et al. (2006), averaging across the selected developing countries, about 19% of teachers and 35% of health workers were absent, and those who were at their facilities were not working. The authors constructed an index measuring the quality of the school's infrastructure, including the availability of a toilet, covered classrooms, non-dirt floors, electricity and a school library. According to their results, facilities (in particular schools) with higher quality of infrastructure have higher attendance rates.

Duflo et al. (2012) conducted a study aimed to identify effects of monitoring (via cameras) and financial incentives on teacher absence and learning outcomes in India. In treatment schools, teacher absenteeism fell by 21 percentage points relative to the control group, and the students benefited from about 30% more instruction time. As a result, the children's test scores increased by 0.17 standard deviations, which significantly improved their chances to be admitted to government schools. Furthermore, teachers started to change their attitude towards their work, and their status in the societies improved, which indicates that the study positively affected social norms of the communities. Duflo et al. (2015) consider another important problem of developing countries such as providing educational reforms via hiring additional teachers and providing the School Based Management (SBM) training programs to empower parents. They find that if schools hire additional contract teachers, then existing civil-service teachers respond by higher absence rate and their students did not show any improvements in test scores despite substantial reduction in class size. Additionally, there were cases when civil service teachers hired their relatives. At the same time, the SBMs mitigated all negative consequences: in those schools teachers had higher attendance rates, relatives were hired less and in the cases they were hired they performed as well as non-relatives. The authors conclude that under weak institutions, increases in resources may be undermined by the behavioral responses of existing providers. It should be noted that after the study the Kenyan government hired 18000 contract teachers. Thus, education systems can be significantly improved by providing above mentioned reforms. These policy improvements positively affect schooling and learning outcomes, giving children in developing countries more chances to exit poverty.

Despite such kind of promising results, the RCTs are being criticized. Angus Deaton, the 2015 Nobel

Prize winner for his analysis of consumption, poverty and welfare, is among the critics of the RCTs. His recent work (Deaton, 2019) emphasizes long list of weaknesses of the randomization, including external validity and ethics. Towards external validity he notes that a “result that is true in one place, at one time, and under one set of circumstances, will typically not be true in another place, another time, or under different circumstances”. He counts unethical when better-educated people conduct experiments on less-educated people. Moreover, he notes that majority of American experiments were done in the interests of rich people, who aimed to prevent the worst of poverty and wanted to minimize the cost of doing so. Another prominent economist William Easterly, in his recent review of the of the new book of E. Duflo and A. Banerjee criticizes their desire of redesign social programs for effectiveness and calling for expanding the role of government (Easterly, 2019). Duflo (2017) recognizes that some interventions worsen the existing situations. In particular, she shows that fighting with healthcare worker absenteeism in India further increased the absence rate. Therefore, the methodology is important and contributes to problem identification and finding appropriate solutions. However, the criticism should also be taken into consideration while conducting the RCTs.

Methodology

Review and analysis of the RCT-based studies in Central Asia

Central Asian regional poverty reduction and its achievements mainly based on external factors, such as commodity prices, migrant remittances, extensive borrowing from both international development institutions and other countries. This fact makes poverty rate as well as poverty alleviation policies vulnerable towards external shocks, which are likely to increase in their numbers in coming years. Seitz (2019) mentions that since the start of the oil shock, regions of Kazakhstan with lower average incomes experienced larger increases in poverty. The highest rate of poverty in some districts of Kazakhstan by the upper-middle income countries line definition (\$5.5/day) was 44% in 2017, while in Tajikistan and the Kyrgyzstan there were districts in which nearly all people were poor. Despite the poverty rate in Tajikistan fell from over 72% in 2003 to 29% in 2017 (according to the national poverty line), strong seasonal fluctuations persist and about half of the population falls into poverty at least once during the year. Here it should be noted that the national

poverty lines of Central Asian countries do not correspond to those of the international standards, in particular, the World Bank methodology. This creates additional risks of influence of regulation, which can affect poverty rates. For instance, according to data from the Statistics Committee of Kazakhstan (2019a), the poverty rate increased from 2.6% in 2017 to 4.3% in 2018 due to the changes in the structure of subsistence level. Thus, poverty reduction in Central Asia was mainly achieved by the redistribution of resource based earnings due to favorable external factors. Growth which reduces poverty but relies on natural resources, is vulnerable. This means that poverty can easily be increased following resource shocks. Moreover, this type of growth under conditions of low quality institutions can lead to inequality, strengthening of politically powerful firms and rent-seeking. Uneven distribution increases gaps between top and bottom levels of population causing social instability.

Three countries of Central Asia, in particular Kazakhstan, Kyrgyzstan and Tajikistan, conducted RCTs in cooperation with the World Bank. The RCT in Kazakhstan was devoted to the youth problem as significant barriers on the labor markets remain for the youth. Consequently the youth demonstrate high rates of disconnectedness from social institutions and have high prevalence of risky behaviors, in particular, alcoholism, sexual violence and crime. In order to overcome this risky situation, the Government of Kazakhstan (the Ministry of Education and Sciences) with financing from the World Bank, has carried out the Youth Corps Project. The project aims to promote civic, community and labor force engagement of targeted young people through grants. The pilot phase of the project targeted about 4000 young people (Bhanot et al., 2019). As the project was completed recently, its results are not available. Amodio et al. (2018) conducted a study aimed to decrease the costs, associated with bribes in Kyrgyzstan. In doing so, they designed a feedback incentive scheme for business tax inspectors that rewarded them according to the anonymous evaluation submitted by inspected firms. The authors find that the proposed scheme decreased the equilibrium bribe amount, which, in turn, reduced the average cost for firms and the price they charged to consumers. Consequently, tax revenues also increased. A study by Okunogbe and Pouliquen (2018) used electronic tax filing (e-filing) of Tajikistan’s firms to assess the impact of e-filing on compliance costs, tax and bribe payments. The authors findings show that there are no significant average effects of e-filing on tax or

bribe payments. Firms previously evaded e-filing doubled tax payments. At the same time, among firms less likely to have been evading, e-filing reduced tax payments, suggesting that officials had previously required them to pay more. The authors conclude that the e-filing reduces compliance costs and makes the distribution of tax payments across firms more equitable. Ahmed et al. (2019) evaluated the impact of a performance-based financing pilot in primary care facilities in rural areas of two regions of Tajikistan. They show that the pilot had positive impact on quality of care. However, despite reported higher satisfaction of the local communities and the improvements in quality, the findings suggest moderate effects on utilization: among the incentivized utilization indicators, only timely postnatal care and blood pressure measurements for adults were significantly impacted. It should be noted that there was a study aimed to assess the impact of a school-based peace education program in southern Kyrgyzstan. This project was conducted after violent interethnic clashes and for promotion of interethnic and inter-religious tolerance and understanding. The impact of the program was modest (Aladysheva et al., 2017). However, such kind of education interventions are in high value in the region, due to existence of regional conflicts (border and water issues). Thus, the RCTs conducted in the region, show positive results by identifying problems and providing solutions, which can be useful for further policymaking and can affect institutional, healthcare and social issues.

Discussion and policy recommendations

Changing the situation with economic development models will require comprehensive reforms. Based on the above mentioned experience, it is important to start from the education policies. Misunderstanding of the role and future impact of education and its reforms shows the recent scandal in Kyrgyz Republic, where local administration opened a school in a rural area, which in fact consisted of

several shipping containers. Interestingly, civil-servants from administration were presented at this official opening ceremony. At the same time, the elite school, constructed by the Gazprom, was opened in Bishkek, which shows the existence of inequality of opportunities that generally leads to economic inequality and poverty (Bowdler, 2019). Sabzalieva (2019) analyzed the higher education sector of Central Asia and listed some of its disadvantages that can be applied to all education levels. The author finds that demand for education in the region is strong. However, weaknesses of the education systems prevail and include lack of funding of education, low salaries, low qualifications of teaching staff, not attractive careers, diminishing learning, outdated infrastructure, high centralization, low level of innovation and persistent corruption. Russia has the same problems. In the recent interview, prominent Russian economist A. Kudrin notes that if the Russian government continues to use general approaches in education, then still 25% of children will not have functional literacy, and as a result, can become poor. Regarding poverty he mentions, that the government's social assistance only in 20% of cases reaches poor people (TASS, 2019).

The following Table 1 shows selected indicators of secondary schools in Kazakhstan. As the data shows, number of schools in Kazakhstan decreased significantly: from 8487 in 1990 to 7319 in 2019. In the same period, the number of students increased slightly. However, the number of teaching staff had a continuous growth for the reported period. This means that Kazakhstan has oversized class problem, which reduces efficiency of learning. In addition to the reduction in numbers, lack of funding led to degradation of school infrastructure. Many important problems, such as availability of toilets, are still unsolved. Still existing street school toilets pose threat to safety of the students. Even comparatively rich Kazakhstan couldn't overcome all of these restrictions, which affect the quality of human capital and impede its development process. It can be assumed that the situation in the rest of Central Asian countries is much worse.

Table 1 – Selected indicators of secondary schools in Kazakhstan (excluding evening schools)

Indicators	1990/91	1995/96	2000/01	2005/06	2010/11	2015/16	2018/19
Number of schools, units	8 487	8 732	8 309	8 157	7 755	7 432	7 319
Number of students, thousand	3 146	3 060	3 247	2 825	2 531	2 785	3 176
Number of teaching staff, units	248 200	274 300	276 343	286 345	286 733	325 184	337 835

Source: Author's compilation based on the Statistics Committee (2019b) data

It is clear, that RCTs cannot provide capital investments in education facilities. This measure requires political will. However, they can significantly improve existing policies or positively affect future regulation, when Central Asia finally shifts towards knowledge-based inclusive development.

Thus, improvement of efficiency of current or planned policies should be in priority for the Central Asian governments (besides investment in educational infrastructure). In doing so, they should take into account the above mentioned RCT based findings of the Nobel Prize winners. Educational reforms based on class size reduction via hiring additional staff is a valuable measure. As the institutions are weak in Central Asia, all challenges (adverse behavioral response, hiring low performing relatives) should be taken into consideration. Therefore it is important to make students' parents to be involved in the process of education control as in the case of SBM trainings. This measure can lead to positive institutional changes, such as openness and transparency and will contribute to the fight with corruption. Additionally, issues of monitoring complemented with financial incentives and high quality infrastructure should be in priority for top management of educational facilities. It is also important to assess the impact of extensive use of cameras on student and teaching staff productivity. These open questions can be a good starting point for universities and other education entities to better understand the input-output links, needs of students and teaching staff and deal with them. Results of the experiments can not only increase efficiency of the educational programs, but also substantially contribute to knowledge accumulation with positive impact on social development in the long-run period.

Regional agricultural policies also can be objects for the experiments. In particular, agricultural subsidies, which are wide in Kazakhstan, but the sector lacks of development. The major issue here is how to organize the environmentally friendly subsidy systems in order to increase efficiencies of the policies. Relevance for such kind of policy is high due to prevalence of rural population, the higher share of which is poor. Moreover, agricultural employment in the region is still high despite significant growth of services sectors. There are several RCTs in agricultural sector, conducted by the Nobel Prize winners. Duflo et al. (2008) conducted a study devoted to identification of impact of fertilizers on agricultural yields in rural Kenya. The study shows that depending on the quantity of the fertilizers used, increases in

yield varies between 28% and 63%. However, while fertilizers can be very profitable when used correctly, one reason why farmers may not use them is that the official recommendations are not adapted to many farmers in the region. This study raises the problem of underuse and overuse of fertilizers. In the former case, yields can be lower which decrease profits for the farmers. The latter case can lead to environmental degradation and reduction of quality of harvested products. Duflo et al. (2011) show that small, time-limited subsidies can increase fertilizer use and thus presumably be environmentally more attractive than heavy subsidies and would be less likely to encourage heavy rent-seeking. They would have no impact if fertilizer had low returns.

Thus, there are important sectors such as educational and agricultural policies, where the RCT's can be conducted in order to test the efficiency of the existing programs and develop recommendations for future policy improvements. The above mentioned directions can also be expanded. However, it is worth noting that the RCTs alone are not enough for poverty alleviation. There are several examples, including China, which alleviated poverty without any kind of experiments, but due to economic policy. Kazakhstan is also in the list of those countries, as reduction of its poverty rates followed fast economic growth, based on the resource sector. This means that economic growth is extremely important for poverty alleviation. Therefore, in order to reduce poverty, countries of the region need stimulate and attract investment, develop and transfer technologies, use opportunities and manage risks of the globalization process, and form strong economic and political institutions. This policy will stimulate emergence of the new fields for the RCTs. RCTs alone, can contribute, but locally, taking into account all constraints, related to economic and institutional development of the region. As Page and Pande (2018) note the process of ending poverty requires efforts of all interested parties, including domestic states, which usually have problems of capacity and will. They insist that poverty reduction is an outcome of joint actions of states (infrastructural development), international community (strengthening institutions), private sector (provision of services) and poor people in terms of demanding active and adequate policy from policymakers.

Politicians, economists and public actively discuss social problems, but policymaking in the region is based on beliefs rather than evidence. Conducting experiments can be helpful in problems identification and finding solutions. By improving

educational policies, the regional governments can significantly reduce the existing rate of poverty and strengthen economic and political stability.

Conclusion

Poverty remains an important problem for the global economy, despite its significant reduction. Even in developed economies, rising inequality poses threat on social policies and causes discontent. The paper shows that fighting poverty requires a wide range of instruments and methodologies. One of which, the experimental approach, was globally recognized by the Nobel Prize. This methodology is important in identification of problems, associated with poverty and finding solutions. The RCTs, conducted by the Prize winners, show that contribution of the findings to increasing efficiency was significant. For instance, education interventions were important and had high impact.

Central Asia did not overcome the poverty problem due to combination of factors. Moreover, regional educational policies are still poor and policymakers misunderstand its role and potential impact. As the paper shows, poor education system in combination with declining resource rents can lead to increasing poverty rate in the long run. This means that there are potential fields for the RCTs in education. Agricultural policy can also be assessed

by the RCTs. The Central Asian region gained experience in conducting experiments, the results of which were positive and valuable for policymaking. The paper shows that reduction of poverty also needs comprehensive reforms, aimed to sustainable economic growth.

There are few fields where economists are totally agree, and any theory or methodology has both proponents and opponents. The RCTs are also criticized by many well-known economists. However, this criticism should be taken into consideration as anti-poverty measures differ across countries and regions and one-size-fits-all perception is incorrect.

In Central Asia, solutions of any problems are expected to come from the top. At the same time, policymakers are very active in seeking for external forces in explaining major policy fails (the reasons include commodity prices, migrant remittances, global shocks, changes in regulation, etc.). Unfortunately, micro-evidence, experiments based impact assessment and efficiency based policy implementation are out of focus of the state policymakers, local top management and heads of social facilities. However, the 2019 Nobel Prize in Economics shows that in majority of cases improvements of these invisible day-to-day activities essential for poverty alleviation and economic development.

References

- AEA (2019) AEA RCT Registry. Available at <https://www.socialsciceregistry.org/>. Accessed 10.11.2019.
- Ahmed T., Aneesa A., de Walque D., Shapira G. (2019) Incentivizing Quantity and Quality of Care. Evidence from an Impact Evaluation of Performance-Based Financing in the Health Sector in Tajikistan. World Bank Policy Research Working Paper 8951. Available at <http://documents.worldbank.org/curated/en/612501564495857201/pdf/Incentivizing-Quantity-and-Quality-of-Care-Evidence-from-an-Impact-Evaluation-of-Performance-Based-Financing-in-the-Health-Sector-in-Tajikistan.pdf> Accessed 18.11.2019.
- Aladysheva A., Asylbek Kyzy G., Brück T., Esenaliev D., Karabaeva J., Leung W., Nillesen E. (2017) Impact evaluation of the Livingsidebyside peacebuilding educational programme in Kyrgyzstan. Grantee Final Report. Available at <https://www.3ieimpact.org/sites/default/files/2019-02/gfr-PW2.13-Kyrgyzstan-peace-building-web.pdf>. Accessed 19.11.2019.
- Alvaredo F., Chancel L., Piketty T., Saez E., Zucman G. (2017) Global Inequality Dynamics: New Findings from WID world. *American Economic Review: Papers & Proceedings*, vol. 107(5), pp. 404–409.
- Amodio F., Choi J., De Giorgi G., Rahman A. (2018) Bribes vs. Taxes: Market Structure and Incentives. IZA DP No. 11668. Available at <http://ftp.iza.org/dp11668.pdf>. Accessed 18.11.2019.
- Banerjee A., Duflo E. (2007) The Economic Lives of the Poor. *Journal of Economic Perspectives*, vol. 21(1), pp. 141–168.
- Bhanot S. et al. (2019) Promoting community and labor force engagement through service grants and non-cognitive skills training: a randomized control trial in Kazakhstan. AEA RCT Registry. <https://doi.org/10.1257/rct.4708-1.0>.
- Bowdler N. (2019) Outrage About Kyrgyz School Made From Shipping Containers. Available at <https://www.rferl.org/a/outrage-about-kyrgyz-school-made-from-shipping-containers/30154327.html>. Accessed 25.11.2019.
- Castañeda A., Doan D., Newhouse D., Nguyen M. C., Uematsu H., Azevedo J. P., World Bank Data for Goals Group (2018) A New Profile of the Global Poor. *World Development*, vol. 101, pp. 250–267.
- Chaudhury N., Hammer J., Kremer M., Muralidharan K., Rogers F. H. (2006) Missing in Action: Teacher and Health Worker Absence in Developing Countries. *Journal of Economic Perspectives*, vol. 20(1), pp. 91–116.
- Deaton A. (2019) Randomization in the tropics revisited: a theme and eleven variations. Available at https://scholar.princeton.edu/sites/default/files/deaton/files/deaton_randomization_revisited_v3_2019.pdf. Accessed 18.11.2019.

- Duflo E. (2017) Richard T. Ely Lecture: The Economist as Plumber. *American Economic Review*, vol. 107(5), pp. 1–26.
- Duflo E., Dupas P., Kremer M. (2015) School governance, teacher incentives, and pupil–teacher ratios: Experimental evidence from Kenyan primary schools. *Journal of Public Economics*, vol. 123, pp. 92–110.
- Duflo E., Hanna R., Ryan S. P. (2012) Incentives Work: Getting Teachers to Come to School. *American Economic Review*, vol. 102(4), pp. 1241–1278.
- Duflo E., Kremer M., Robinson J. (2008) How High Are Rates of Return to Fertilizer? Evidence from Field Experiments in Kenya. *American Economic Review: Papers & Proceedings*, vol. 98(2), pp. 482–488.
- Duflo E., Kremer M., Robinson J. (2011) Nudging Farmers to Use Fertilizer: Theory and Experimental Evidence from Kenya. *American Economic Review*, vol. 101, pp. 2350–2390.
- Easterly W. (2019) ‘Good Economics for Hard Times’ Review: Sticky Markets, Tricky Solutions. *The Wall Street Journal*. Available at <https://www.wsj.com/articles/good-economics-for-hard-times-review-sticky-markets-tricky-solutions-11574021736>. Accessed 19.11.2019.
- FAO, IFAD, UNICEF, WFP and WHO (2019) *The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns*. Rome, FAO. Available at <http://www.fao.org/3/ca5162en/ca5162en.pdf>. Accessed 25.10.2019.
- J-PAL (2019) Release: J-PAL Co-Founders Abhijit Banerjee and Esther Duflo Awarded Nobel Memorial Prize in Economics. Available at <https://www.povertyactionlab.org/news/release-j-pal-co-founders-abhijit-banerjee-and-esther-duflo-awarded-nobel-memorial-prize>. Accessed 04.11.2019.
- Kremer M., Chaudhury N., Rogers F. H., Muralidharan K., Hammer J. (2005) Teacher Absence in India: A Snapshot. *Journal of the European Economic Association*, vol. 3(2–3), pp. 658–67.
- Okunogbe O., Pouliquen V. (2018) Technology, Taxation, and Corruption Evidence from the Introduction of Electronic Tax Filing. *World Bank Policy Research Working Paper 8452*. Available at <http://documents.worldbank.org/curated/en/906671526994655975/pdf/WPS8452.pdf>. Accessed 18.11.2019.
- Page L., Pande R. (2018) Ending Global Poverty: Why Money Isn’t Enough. *Journal of Economic Perspectives*, vol. 32(4), pp.173–200.
- Sabzalieva E. (2019) Higher Education Policy in Central Asia and Afghanistan. *The University of Central Asia Working Paper № 51*, pp. 1-42.
- Seitz W. (2019) Where They Live. District-Level Measures of Poverty, Average Consumption, and the Middle Class in Central Asia. *World Bank Policy Research Working Paper 8940*. Available at <http://documents.worldbank.org/curated/en/770411562850918468/pdf/Where-They-Live-District-Level-Measures-of-Poverty-Average-Consumption-and-the-Middle-Class-in-Central-Asia.pdf>. Accessed 11.11.2019.
- Statistical Committee of the Ministry of National Economy of the Republic of Kazakhstan (2019a) Indicators of the standards of living. Available at <http://stat.gov.kz/api/getFile/?docId=ESTAT105279>. Accessed 12.11.2019.
- Statistical Committee of the Ministry of National Economy of the Republic of Kazakhstan (2019b) Day and evening secondary schools. Available at <http://stat.gov.kz/api/getFile/?docId=ESTAT094525>. Accessed 12.11.2019.
- TASS (2019) Kudrin: economic growth is impossible without investments in human. Available at <https://tass.ru/interviews/7098811>. Accessed 12.11.2019.