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Research paper

Economic Models of Aid Effectiveness in Moldova

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Table of contents

Executive Summary

In this paper, we provide an overview of the objectives and challenges to be met in the delivery of EU development aid to Moldova. Our analysis, carried out with pooled OLS, suggests that aid commitments and the number of aid projects are conducive to higher levels of socio-economic development; while the results for aid disbursements are in the same direction, they are less robust. EU development aid is effective when we introduce the three-year lag and the outcome variable is long-term investment, meaning that the impact of EU development aid can be observed in the medium and long-run, which points on positive and sustainable impact on the development of the country. Giving Central European bilateral donors such as Austria, Slovakia, and Romania a share in the programs does tend to generate higher levels of socio-economic performance. The same observation holds for transport, health, and water projects. The authors found that aid disbursements are much lower compared to aid commitments, revealing a large unexplored potential of EU development aid in Moldova, which is mostly due to governance issues in Moldova. In order to bridge the gap between aid commitments and aid disbursements, it is important for the European Union to bolster transnational sovereignty partnerships that bypass central government budgets and foster the implementation of local-scale projects with the participation of subnational bureaucracies and local civil society.

Keywords: central government, local governments, development aid, European Union, Moldova

Introduction

The decentralization of development aid to avoid aid fungibility and rent seeking has been a central question in identifying the origins and dimensions of aid effectiveness. The problematic economic performance and high levels of corruption of central governments that have received aid, particularly those in transition economies that enjoyed a high degree of bureaucratic monitoring and regulatory oversight relative to developing economies, shows the need for regional and local models of development aid provision. According to the experimental literature, microfinance institutions and schooling initiatives have been shown to be effective when they are associated with financial incentives and take issues of social capital into account.[2] Furthermore, decisions on the delivery of development aid are often entangled with the domestic politics of donor governments (Milner and Tingley, 2010; Krueger, 1986; Knack and Rahman 2007). This applies especially to EU development aid and the steps of the decision-making process required for the support of transition economies to the Eastern and Southern European periphery. The experience of the TACIS program in the post-Soviet space from 1992 and up to 2007, when the European Neighbourhood and Partnership Instrument (ENPI) replaced it, indicated that the number of domestic veto-players and the type of administrative structure in the national agency for international development can predict the orientation of development cooperation. As Grigoriadis (2013a) has pointed out, aid for trade is more likely to occur when there is an organized development agency aligned with the donor's foreign policy; on the other hand, multi-tier aid governance is more likely to underscore the role of values and positive obligations such as human rights and the provision of public goods.[3]

The distinctive feature of the EU development aid for the former Soviet Union disbursed in the framework of the TACIS program was its reliance on in-the-field partnerships between subnational bureaucrats, local and regional NGOs, and EU businesses, which facilitated the implementation of the assigned aid contracts. Grigoriadis (2011) describes these partnerships as transnational sovereignty partnerships (TSPs). The core of the argument in his *Economics Letters* paper is that the European Union was able to achieve higher levels of aid effectiveness by using the instrument of transnational sovereignty partnerships. These partnerships have pros and cons: On the one hand, the pathology of soft budget constraints emerges when the recipient organization is a bureaucracy whose incentive is to extract the higher possible

[2] For an overview, see Karlan Dean S. "Using Experimental Economics to measure social capital and predict financial decisions", *American Economic Review*, Vol. 95, No. 5 (December 2005): 1688-1699.

[3] The British DFID and the German BMZ offer characteristic examples of aid bureaucracies organized as singular agencies and multitier institutions respectively.

amount of resources from the donor. On the other hand, the donor's ability to finance another TSP in the second aid delivery period if there is no contract implementation in the first period allows for a hardening of the budget constraint. Hence aid decentralization leads to a rise in the number of civic organizations on the territory of the recipient while also meeting the long-run development goals of subnational bureaucrats (ibid.). This result is corroborated under conditions of imperfect information (Grigoriadis, 2013b), which only strengthens the donor's ability to penalize deviating TSPs. Rather than treating the highly bureaucratized structure of post-Soviet economies as a hindrance to their long-run development, it is possible to use it to hold subnational bureaucrats accountable vis-à-vis their central government and at the same time give rise to both privatized and state-sponsored forms of civil society that maintain a strong interest in the implementation of EU contracts and continued flows of EU development aid.

Russia's rise to the status of an international donor in 2007 and the transformation of EU development policy in Eastern Europe, with the inclusion of Moldova, Ukraine, Belarus and the three South Caucasus countries in the Eastern Partnership, have created better conditions for project monitoring and long-run structural and institutional reforms. Nevertheless, the evolution of TACIS to ENPI and then to the European Neighbourhood Instrument (ENI) is no guarantee of the aid's effectiveness. In Moldova, the logic of transnational partnerships between European and Moldovan NGOs with the purpose of complementing the budgetary and policy goals of local governments is clear. In a country with 35 administrative districts (and without including Transnistria), EU development aid can become a source of local state capacity rather than a source of corruption for the central government. This approach will motivate the central government to exercise a higher degree of oversight of local budgets and introduce selective fiscal decentralization for administrative districts that are more successful in attracting foreign direct investment. Having a multiplicity of civic organizations in the territory of the recipient and enabling a donor to change its partner in the field in case of contractual non-implementation are crucial starting points for Moldova's EU convergence, and neither requires ex-ante democratic reforms or an opening of Moldovan public space to Western entrepreneurship.

The suspension of budget support payments by EU institutions in 2015 due to financial fraud, as well as the involvement of the IMF (with the purpose of banking stabilization and public spending oversight), has necessitated the evaluation of EU development aid to Moldova and the proposal of a development aid concept. This concept is to be designed based on Soviet-style legacies and developmental priorities set in Moldovan administrative districts. We have run pooled OLS estimations, and the results suggest that commitments vs. disbursements as well as the type of aid contracts may matter for both contemporaneous and lagged aid effectiveness.

The structure of this paper is as follows. Section 2 offers an overview and identifies challenges for aid governance in Moldova. In section 3, the data description and empirical strategy are provided, and in section 4 we discuss the empirical

results of the study. Section 5 offers some key policy recommendations on the reform of EU development aid to Moldova.

Aid Governance in Moldova

The administrative management of development aid in Moldova is multifaceted, involving multiple domestic and international players. On the one hand, the Ministry of Finance, the State Chancellery, and the Ministry of Foreign Affairs are the main government bodies involved in all decision-making and implementation stages from the recipient's side. The Ministry of Finance has the general overview of development assistance coordination and disbursement, while the State Chancellery's focus is the approval and administrative support of technical assistance. On the other hand, the donor community has declared its intention to coordinate and jointly monitor large-scale projects that involve both multilateral donors such as the EU and the UNDP and bilateral donors such as the German GIZ and the Swedish Development Agency. Common financing and monitoring initiatives between the Moldovan Ministry of Finance, the European Union, and the UNDP have facilitated local energy and biomass support in Gagauzia and Taraclia based on impact evaluation and comparative analysis. Other project areas include the role of emigrants in local economic development, capacity infrastructure for business, and cross-border cooperation between Moldova and Ukraine. The creation of, for example, an IT space in Cahul and a free economic zone in Ungheni has strengthened the influence of conditionality on Moldova's economic performance, though it has not built institutional capacity. The logic of the Eastern Partnership lies in the complementarity between conditionality and institutional capacity. However, these potential benefits have yet to be realized, as the central government is still persistently involved all stages of aid disbursement.

In addition to the coordinating role of the Ministry of Finance, various other ministries are recipients of development aid, such as the Ministries of Education, Justice, Infrastructure, and Public Order. While the decentralization of development aid is proposed in this paper as the main solution to the pathologies of aid effectiveness in Moldova, carrying this out would require the introduction of competitive structures across regional and local governments. These structures would then reward with more aid flows those subnational administrations that are less corrupt and therefore more capable of maximizing the effectiveness of implemented projects. The existence of eleven business incubators may have helped with the identification of new firms; however, the extent to which they can restrain high migration rates to Ukraine, Russia, Romania or other EU countries is still debatable. While regional development appears to be a key priority of the central government, there is still a large mismatch between commitments and disbursements, which is due to the internal procedures of both the donor and the central recipient.

The influence of local authorities in the aid delivery process remains limited and monitored by the central administration. In Moldova there are 898 local authorities, which constitute the lowest level of public goods provision, as well as 35 rayons that form the regional level of government and lie between municipalities and central government. Despite the position of Chisinau and Balti as metropolitan areas, local authorities in these areas have heavily criticized the fact that they have limited direct access to development aid flows, even in project areas that would be relevant for them such as the Moldova-Ukraine-Romania or the Moldova-Ukraine cross-border cooperation. The same observation persists in NALAS reports on fiscal decentralization, which suggests that EU development policies in Moldova have not effectively strengthened state capacity and have therefore not extensively advanced the role of local governments in negotiations and disbursements of development aid.[4] Whereas USAID has been much more active in designing and implementing municipal projects, the German GIZ has been pursuing projects on the improvement of local infrastructure and local public administration reforms through central government channels.

Our study focuses on data from the period 2007-2017, when Moldova became a direct neighbour of the EU after Romania became a member of EU community starting January 1st 2007; this time period also covers EU's Eastern Partnership initiative, launched officially in May 7th 2009 in Prague. Moldova's State Chancellery, as the first coordinator of development aid flows into the country, developed an advanced system of project reporting from the field, which was linked to an incentive system of annual reporting and tax exemption. Furthermore, the high level of bureaucratic politicization has undermined the role of special interest groups such as the European Business Association, which has introduced its own business processes separately from EU development aid and based on a bottom-up concept and a customer-based principle. USAID projects provide limited budget support and are inclined to produce more lasting socio-economic outcomes, as the example of Gagauzia clearly shows. The differential timing between commitment and disbursement in EU development aid also appears to be problematic, as it undermines the positive spill-over effects from the announcement of aid projects at local and regional levels. While this issue seems to be more crucial for the delivery of EU development aid, it also influences the disbursement cycle of other major bilateral and multilateral donors such as Germany, Sweden, Switzerland, Turkey, the US, or UNDP.

Local state capacity and transparent budgeting at the central level appear to be the main institutional challenges facing both EU development assistance to Moldova and that of the country's main bilateral donors. The macro-financial assistance freeze has generated the conditions for reform at the central, regional, and local levels, but reform will require the commitment and active participation of the Ministry of Finance. Establishing a comprehensive central strategy and

[4] Network of Associations of Local Authorities of Southeastern Europe, nalas.eu/Publications/Books/FDReport.

a local action group would be the first steps toward better data collection, improved aid coordination among donors, and clear setting of government priorities. The lack of reliable data on migration also undermines a strong political vision, as the building of infrastructure capacity and environmental protection are important components of social development and poverty reduction. Aid decentralization would constrain the political hijacking of aid by central authorities, but it would also entail more donor effort to ensure aid effectiveness. This applies in particular to the long period of maturity that would be required for decentralized aid commitments, which produces delays and thus a higher degree of flexibility in contract implementation in order to allow adjustment to new economic and financial realities. Twinning projects as a peer-to-peer assistance format and the using the TAIEX instrument of the European Commission for short-term support are useful ways of strengthening local administrations and bridging the gap between commitment and disbursement.

Data Description & Empirical Strategy

The data for this paper is collected from the statistics service of the Republic of Moldova and the website of the Aid Management Platform, which offers the full geocoded set of aid projects in all 35 administrative districts (rayons) of the country. As outcomes for aid effectiveness, the monthly salary, mortality and long-term investment at the rayon level was averaged. The actual financial commitments and disbursements of development aid to the rayons was set as main independent variables. To measure the effects of both lagged and contemporaneous development aid on economic performance in Moldovan regions, it was provided both types of aid volumes, with a three-year lag and without any lags. It was also collected the number of projects per rayon as well as the shares of different policy areas and donorship related to development aid at the country level. Policy areas are coded at the national level per year and include education, health, water and sanitation, government and civil society, social infrastructure, energy and resources, communications, transport, forestry, humanitarian affairs, business development, agriculture, and multisector projects. Donors are also coded at the national level per year and include the European Union, the United States, the UN system, Switzerland, Germany, Sweden, Turkey, Poland, Romania, Austria, Slovakia, the World Bank, the EBRD, the EIB, Japan, Liechtenstein, the Czech Republic, and Norway. Table 1 offers the key information with respect to variables, units of measurement, and data sources. The descriptive statistics are provided in tables 2a and 2b.

Table 1: Data description and sources

Variable	Unit	Period	Data source	Notes
Average monthly wage	MDL	2007-17	National Bureau of Statistics of the Republic of Moldova	Logarithm for estimations
Mortality	%	2007-17	National Bureau of Statistics of the Republic of Moldova	
Long-term investment	Million MDL	2007-17	National Bureau of Statistics of the Republic of Moldova	Logarithm for estimations
Number of projects	-	2007-17	Aid Management Platform of the Republic of Moldova	
Actual disbursements	%	2007-17	Aid Management Platform of the Republic of Moldova	Share of rayon disbursement over overall disbursement in a given year
Actual commitments	%	2007-17	Aid Management Platform of the Republic of Moldova	Share of rayon commitment over overall disbursement in a given year

Policy area	%	2007-17	Aid Management Platform of the Republic of Moldova	education, health, water and sanitation, government and civil society, social infrastructure, energy and resources, communications, transport, forestry, humanitarian affairs, business development, agriculture and multisector projects
Donor	%	2007-17	Aid Management Platform of the Republic of Moldova	European Union, the United States, the UN system, Switzerland, Germany, Sweden, Turkey, Poland, Romania, Austria, Slovakia, World Bank, EBRD, EIB, Japan, Liechtenstein, Czech Republic and Norway

Table 2a: Descriptive statistics – Chisinau & Centre

Variable	Full sample					Chisinau					Centre				
	N	Min	Max	P50	SD	N	Min	Max	P50	SD	N	Min	Max	P50	SD
Ln-Average monthly wage	385	7.068	8.818	7.917	0.345	11	7.900	8.818	8.301	0.275	143	7.068	8.524	7.920	0.340
Mortality	385	7.4	18.8	12.1	1.936	11	7.4	9.9	8.1	0.706	143	9.3	16.6	11.9	1.329
Ln-Long-term investment	384	-2.303	9.589	4.915	1.836	11	3.995	9.589	9.294	1.614	142	-2.303	6.090	4.964	1.574
Number of projects	232	1	22	3	3.735	11	2	22	10	7.802	89	1	13	2	2.304
Actual disbursements	385	0	1.52e+07	0	2112620	11	260000	1.19e+07	1117000	3769377	143	0	1.17e+07	52518.38	1912875
Actual commitments	385	0	6.72e+07	19703.21	1.10e+07	11	120000	6.72e+07	3851755	2.50e+07	143	0	5.54e+07	0	8918213
Education	385	0	0.47	0.47	0.140	11	0	0.47	0.12	0.147	143	0	0.47	0.12	0.141
Health	385	0	0.15	0.15	0.051	11	0	0.15	0.08	0.054	143	0	0.15	0.08	0.052
Water	385	0	1	1	0.256	11	0	1	0.16	0.268	143	0	1	0.16	0.256
Government	385	0	0.32	0.32	0.109	11	0	0.32	0.14	0.114	143	0	0.32	0.14	0.109
Social Infrastructure	385	0	1	1	0.359	11	0	1	0.08	0.376	143	0	1	0.08	0.360
Energy	385	0	0.28	0.28	0.090	11	0	0.28	0.01	0.095	143	0	0.28	0.01	0.090
Forestry	385	0	0.4	0	0.142	11	0	0.40	0	0.148	143	0	0.4	0	0.142
Communications	385	0	0.03	0	0.012	11	0	0.03	0	0.012	143	0	0.03	0	0.012
Agriculture	385	0	0.01	0	0.003	11	0	0.01	0	0.003	143	0	0.01	0	0.003
Transport	385	0	0.23	0	0.065	11	0	0.23	0	0.068	143	0	0.23	0	0.065
Multisector	385	0	0.15	0	0.059	11	0	0.15	0	0.062	143	0	0.15	0	0.059
Humanitarian	385	0	0.11	0.08	0.032	11	0	0.11	0	0.033	143	0	0.11	0	0.032
European Union	385	0	0.16	0.09	0.057	11	0	0.16	0	0.060	143	0	0.16	0.09	0.057
United States	385	0	0.42	0.07	0.116	11	0	0.42	0.09	0.122	143	0	0.42	0.07	0.117
Switzerland	385	0	0.36	0.08	0.115	11	0	0.36	0.07	0.120	143	0	0.36	0.08	0.115
Turkey	385	0	1	0.06	0.275	11	0	1	0.06	0.288	143	0	1	0.06	0.275
Germany	385	0	0.02	0	0.006	11	0	0.02	0	0.006	143	0	0.02	0	0.006

Sweden	385	0	0.08	0	0.024	11	0	0.08	0	0.025	143	0	0.08	0	0.024
World Bank	385	0	0.64	0	0.261	11	0	0.64	0	0.274	143	0	0.64	0	0.262
United Nations	385	0	0.35	0.02	0.112	11	0	0.35	0.02	0.117	143	0	0.35	0.02	0.112
Poland	385	0	0.05	0	0.063	11	0	0.05	0	0.015	143	0	0.05	0	0.014
Romania	385	0	0.04	0	0.014	11	0	0.04	0	0.014	143	0	0.04	0	0.014
Austria	385	0	0.47	0.08	0.140	11	0	0.47	0.02	0.147	143	0	0.47	0.08	0.014
EBRD	385	0	0.15	0	0.050	11	0	0.15	0	0.053	143	0	0.15	0	0.050
Japan	385	0	0.12	0.031	0.038	11	0	0.120	0	0.040	143	0	0.120	0.031	0.038
Liechtenstein	385	0	0.15	0.01	0.043	11	0	0.15	0.01	0.045	143	0	0.15	0.01	0.043
Slovakia	385	0	0.12	0	0.039	11	0	0.12	0	0.041	143	0	0.12	0	0.040
Czech Republic	385	0	0.08	0	0.027	11	0	0.08	0	0.029	143	0	0.08	0	0.027
Norway	385	0.04	0.01	0	0.003	11	0	0.01	0	0.003	143	0	0.01	0	0.003

Notes: SD is standard deviation.

Table 2b: Descriptive statistics – North, South & Gagauzia

Variable	North					South					Gagauzia				
	N	Min	Max	P50	SD	N	Min	Max	P50	SD	N	Min	Max	P50	SD
Ln-Average monthly wage	132	7.125	8.669	7.917	0.334	88	7.105	8.437	7.850	0.340	11	7.271	8.313	7.865	0.347
Mortality	132	8.4	18.8	12.1	2.357	88	8.3	13.9	11.75	0.706	11	9.7	12.9	11.2	1.008
Ln-Long-term investment	132	-2.303	7.061	4.915	1.706	88	-2.303	6.541	4.717	4.744	11	1.281	6.127	5.776	1.390
Actual disbursements	132	0	1.17e+07	0	1877484	88	0	1.17e+07	0	1842793	11	0	1.52e+07	759229.8	4428319
Actual commitments	132	0	5.78e+07	0	1.07e+07	88	0	5.52e+07	0	8964698	11	0	5.78e+07	2598332	1.84e+07
Education	132	0	0.47	0.12	0.141	88	0	0.47	0.12	0.141	11	0	0.47	0.12	0.147
Health	132	0	0.15	0.08	0.052	88	0	0.15	0.08	0.052	11	0	0.15	0.08	0.054
Water	132	0	1	0.16	0.256	88	0	1	0.16	0.257	11	0	1	0.16	0.268
Government	132	0	0.32	0.14	0.109	88	0	0.32	0.14	0.110	11	0	0.32	0.14	0.114
Social Infrastructure	132	0	1	0.08	0.360	88	0	1	0.08	0.360	11	0	1	0.08	0.376
Energy	132	0	0.28	0.01	0.090	88	0	0.28	0.01	0.091	11	0	0.28	0.01	0.095
Forestry	132	0	0.4	0	0.109	88	0	0.40	0	0.109	11	0	0.40	0	0.109
Communications	132	0	0.03	0	0.012	88	0	0.03	0	0.012	11	0	0.03	0	0.012
Agriculture	132	0	0.01	0	0.003	88	0	0.01	0	0.003	11	0	0.01	0	0.003
Transport	132	0	0.23	0	0.065	88	0	0.23	0	0.066	11	0	0.23	0	0.068
Multisector	132	0	0.15	0	0.059	88	0	0.15	0	0.059	11	0	0.15	0	0.062
Humanitarian	132	0	0.11	0	0.032	88	0	0.11	0	0.032	11	0	0.11	0	0.033
European Union	132	0	0.16	0.09	0.057	88	0	0.16	0.09	0.057	11	0	0.16	0.09	0.060
United States	132	0	0.42	0.07	0.117	88	0	0.42	0.07	0.117	11	0	0.42	0.07	0.122
Switzerland	132	0	0.36	0.08	0.115	88	0	0.36	0.08	0.115	11	0	0.36	0.08	0.120
Turkey	132	0	1	0.06	0.275	88	0	1	0.06	0.276	11	0	1	0.06	0.288
Germany	132	0	0.02	0	0.006	88	0	0.02	0	0.006	11	0	0.02	0	0.006
Sweden	132	0	0.08	0	0.024	88	0	0.08	0	0.024	11	0	0.08	0	0.025
World Bank	132	0	0.64	0	0.262	88	0	0.64	0	0.263	11	0	0.64	0	0.274

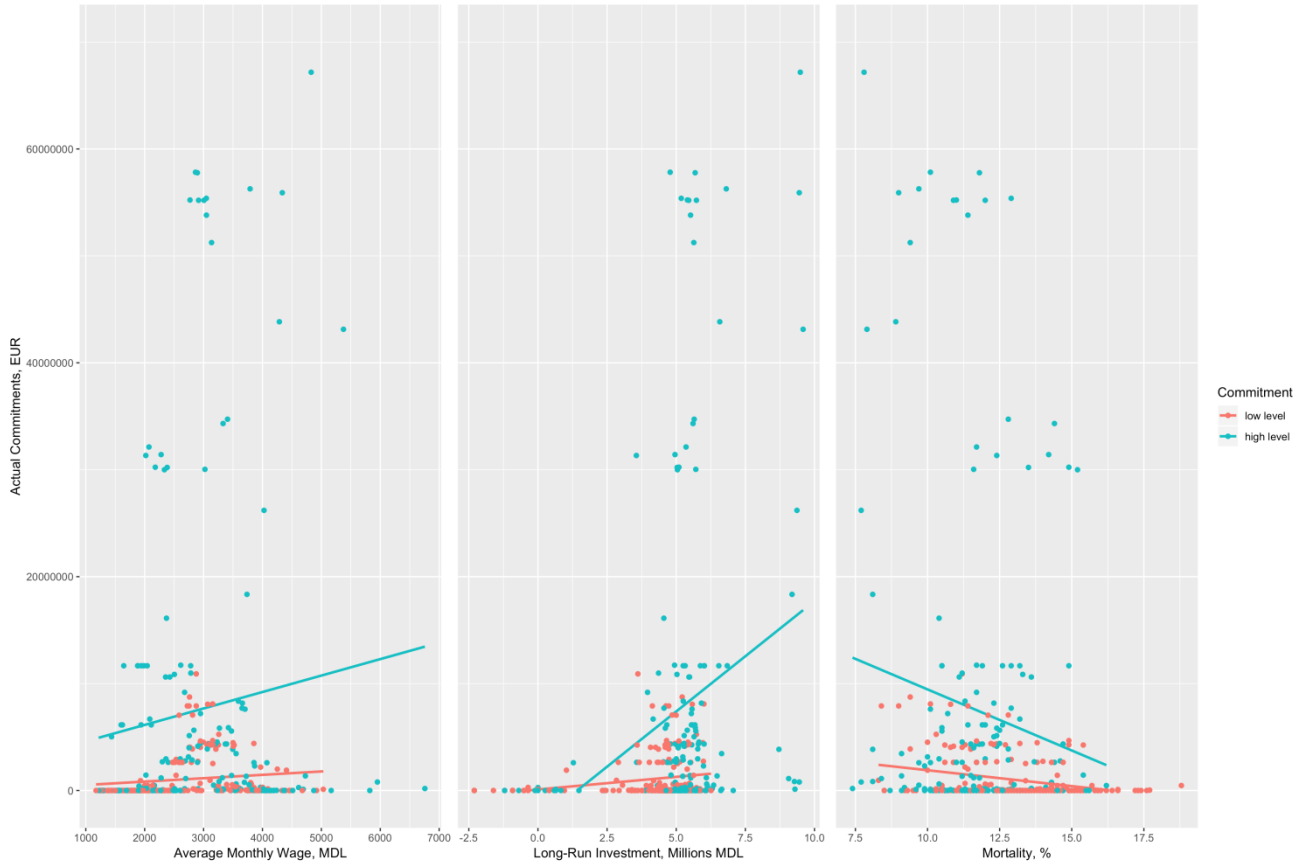
United Nations	132	0	0.35	0.02	0.112	88	0	0.35	0.02	0.112	11	0	0.35	0.02	0.117
Poland	132	0	0.05	0	0.014	88	0	0.05	0	0.014	11	0	0.05	0	0.015
Romania	132	0	0.04	0	0.014	88	0	0.04	0	0.014	11	0	0.04	0	0.014
Austria	132	0	0.47	0.08	0.141	88	0	0.47	0.08	0.141	11	0	0.47	0.08	0.147
EBRD	132	0	0.15	0	0.050	88	0	0.15	0	0.050	11	0	0.15	0	0.053
Japan	132	0	0.120	0.031	0.038	88	0	0.120	0.031	0.038	11	0	0.120	0.031	0.040
Liechtenstein	132	0	0.15	0.01	0.043	88	0	0.15	0.01	0.043	11	0	0.15	0.01	0.045
Slovakia	132	0	0.12	0	0.040	88	0	0.12	0	0.040	11	0	0.12	0	0.041
Czech Republic	132	0	0.08	0	0.027	88	0	0.08	0	0.027	11	0	0.08	0	0.029
Norway	132	0	0.01	0	0.003	88	0	0.01	0	0.003	11	0	0.01	0	0.003

We observe that Chisinau and the Central region, followed by Gagauzia, appear to be the largest beneficiaries of development aid, whereas the Northern and Southern regions overall display lower levels of foreign aid support. Chisinau and the Central region perform better than the other regions in the main growth indicators such as investment, average monthly salary and industrial production, though the situation regarding human development indicators such as mortality and infant mortality rates is not much different there. Our empirical strategy uses pooled OLS estimations to explore the effect of development aid on Moldovan development, . Average monthly wage, mortality, and long-term investment are used as the main dependent variables of this study, while standardized commitments and disbursements as well as the number of projects agreed are the independent ones. The shares of donors and policy sectors per budget year are utilized as control variables. We provide seven different specifications of our baseline aid effectiveness model. In the first three specifications, we regress our main dependent variable (average monthly wage, mortality, long-term investment) on each of our three selected measures of development aid: aid commitments, aid disbursements, and number of development aid projects. Specifications 4-5 also include the shares of aid policy sectors, where the main set of independent variables changes (aid commitments and disbursements vs. number of aid projects). Specification 6 includes shares of bilateral and multilateral donors as control variables, with aid commitments and disbursements as key independent variables. Similarly, specification 7 includes the shares of both policy sectors and donors.

Results

In figure 1 and tables 3a-c, we report the main results of this paper. The average monthly wage, mortality, and long-term investment are interchangeably used as the dependent variables here. Different OLS specifications (1-7) are introduced to capture the robustness of the statistical significance of the main indicators: aid commitments, aid disbursements, and number of projects concluded in a given budget year. It is important to observe whether the statistical significance of commitments, disbursements, and projects is robust to different linear combinations. Aid commitments are statistically significant in most specifications of tables 3a-c at the one percent level and are inclined to lead to higher levels of economic development. Similarly, the number of aid projects is conducive to higher levels of wealth at the 1 percent level in all three pooled OLS models reported.

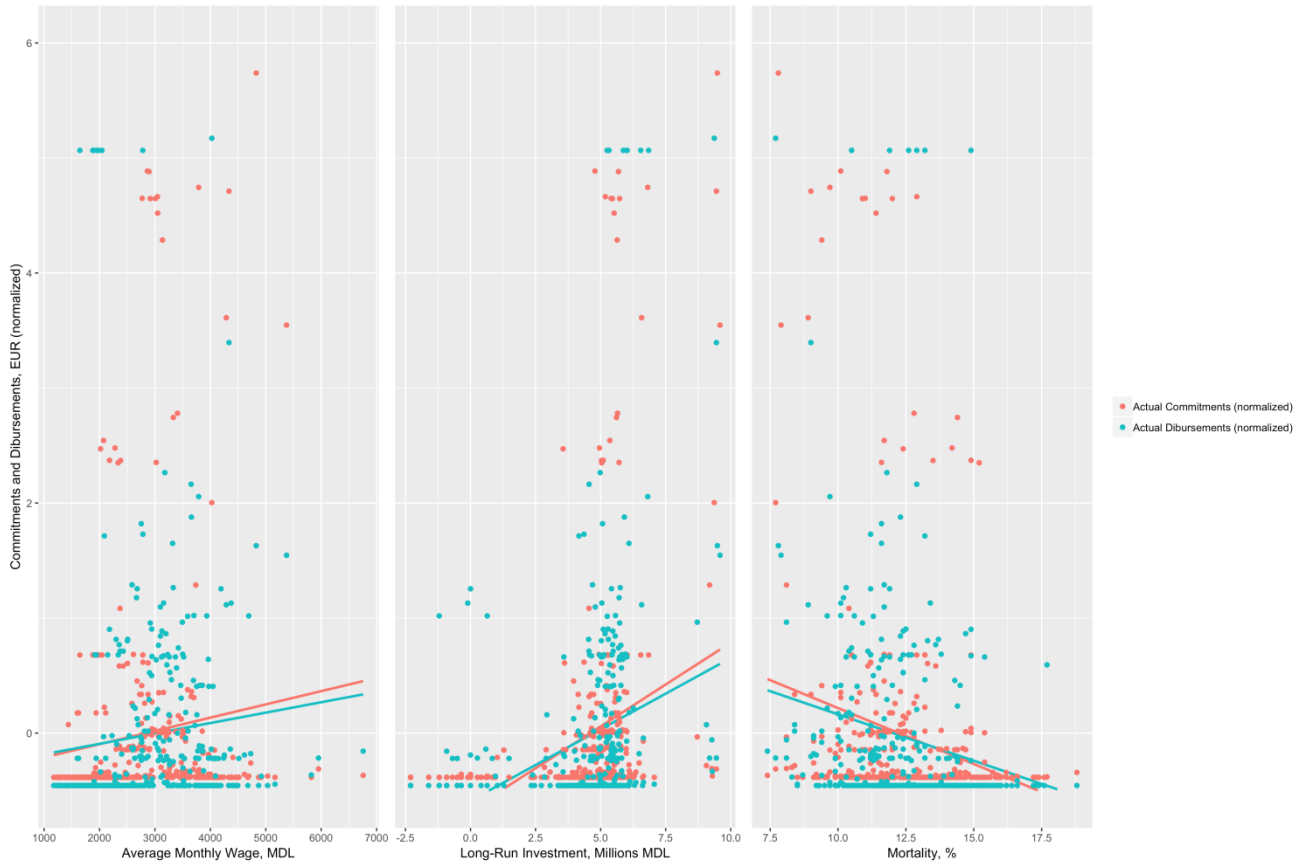
Figure 1. *Scatterplots of contemporaneous aid commitments vs. socio-economic development in high- and low-aid Moldovan rayons.*



As both figures 1 and 2 indicate, high-aid rayons are inclined to perform better than low-aid rayons. Contemporaneous aid disbursements also appear to have a statistically significant and positive effect on socio-economic development in Moldovan rayons, although the reported results are less robust compared to those related to contemporaneous aid commitments (figure 3).

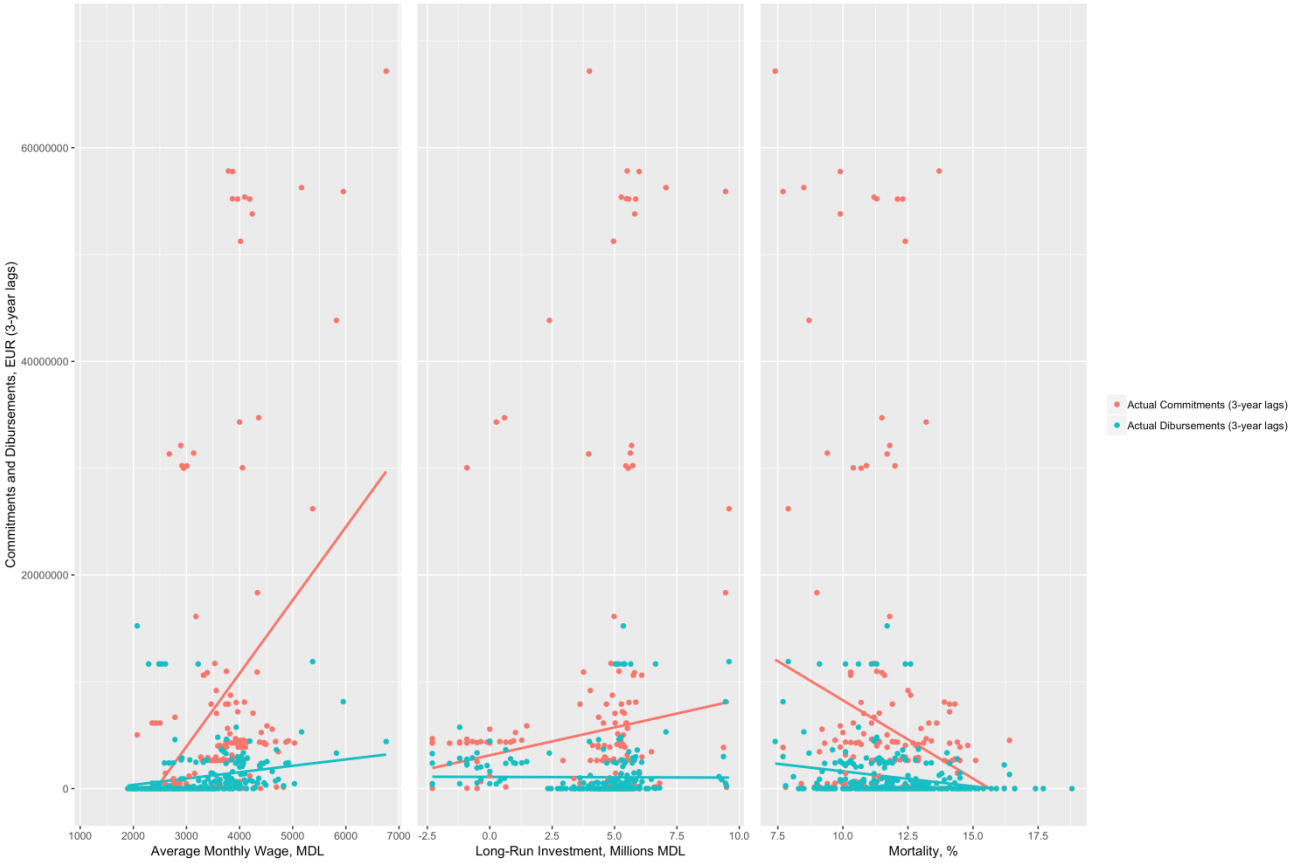
Figure 2. *Scatterplots of contemporaneous aid disbursements vs. socio-economic development in high- and low-aid Moldovan rayons.*

Figure 3. *Comparison of contemporaneous aid commitments and disbursements in high- and low-aid Moldovan rayons.*



However, using three-year lags for independent and control variables (figure 4 and tables A.1a-c) reveals that aid disbursements are less inclined to have positive development effects than aid commitments.

Figure 4. *Comparison of lagged aid commitments and disbursements in high- and low-aid Moldovan rayons.*



It is clear that beneficiaries have different practices in project implementation. The purpose of the study is to offer a country-level overview of development aid effectiveness based on the current availability of data. The positive effect of aid commitments shows that external incentives matter for socio-economic development. Comparing rayons with high and low aid provisions, we find that high-aid rayons are better performers than low-aid rayons. Hence, no adverse effects of development aid are identified. However, the disparity between the effectiveness of commitments and disbursements demands that donors take action to adjust the channels and control of aid disbursement—and also improve management practices for the distribution of financial resources. The involved administrative institutions and the absence of multilevel partnerships for the implementation of aid projects may account for the observed difference between the effectiveness of commitments and disbursements. While aid commitments and aid projects *per se* provide incentives for private sector development and better living conditions in Moldovan rayons, aid disbursements generate contradictory incentives. Furthermore donorship and policy sectors of aid projects offer some unique insights on aid effectiveness in Moldova. The distinction between contemporaneous and lagged effects also suggests that, when it comes to donor share and aid effectiveness, nuanced interpretations should be provided. For example, EU development aid is effective when we introduce the three-year lag and the outcome variable is long-term investment (table A.1c). Austrian, Slovak and Romanian project shares seem to also produce robust and positive developmental effects. The opposite observation holds for UN and

World Bank project shares, while there is inconclusive evidence about the effectiveness of US development aid in Moldova. Transport, health, and water projects have a positive and statistically significant effect on socio-economic development at the one, five, and ten percent levels. Project shares on communications and social infrastructure are less conducive to economic growth. There is inconclusive evidence on the economic effect of education-related projects. Government and civil society projects have a negative lagged effect, but a positive contemporaneous effect (see tables 3a-c and A.1a-c in the appendix).

Table 3a: Aid & Development in Moldovan Rayons – Pooled OLS

Average Monthly Wage	OLS						
	1	2	3	4	5	6	7
Aid commitments	0.045			0.028		0.028	0.021
	[0.013]***			[0.009]***		[0.009]***	[0.010]***
Aid disbursements		0.023		0.021		0.021	0.028
		[0.023]		[0.009]**		[0.009]**	[0.009]***
No. of projects			0.021		0.016		
			[0.004]***		[0.003]***		
Education				-0.316	-0.413		-1.425
				[0.084]***	[0.124]***		[0.235]***
Health				8.107	6.521		
				[0.781]***	[1.536]***		
Water & Sanitation				0.184	0.043		0.297
				[0.044]***	[0.241]		[0.049]***
Government & Civil Society				1.538	1.380		2.187
				[0.150]***	[0.221]***		[0.183]***
Social Infrastructure				0.359	0.335		-0.137
				[0.121]***	[0.250]		[0.061]**
Energy							
Communications				-7.716	-6.446		
				[1.095]***	[1.410]***		
Multisector				0.959	0.069		
				[0.304]***	[0.613]		
Transport				-0.087	-0.016		2.229
				[0.189]	[0.263]		[0.305]***
Agriculture				-62.882	-51.642		
				[4.875]***	[8.482]***		
Humanitarian							
Forestry				0.688	0.366		
				[0.199]***	[0.388]		
European Union						-1.136	
						[0.288]***	
United States						-0.539	0.463
						[0.154]***	[0.116]***
Switzerland						-1.649	
						[0.200]***	
Turkey						-2.081	
						[0.149]***	

Germany							
Sweden							
World Bank						-2.037	-0.177
						[0.144]***	[0.060]***
United Nations						-3.025	-1.371
						[0.213]***	[0.155]***
Poland							
Romania						-7.632	
						[0.713]***	
Austria						-1.309	2.012
						[0.178]***	[0.244]***
EBRD						-2.973	
						[0.301]***	
Japan							
Liechtenstein							
Slovakia						2.018	3.068
						[0.359]***	[0.312]***
Czech Republic							
Norway							
Constant	7.893	7.893	7.942	6.965	7.211	9.406	7.461
	[0.017]***	[0.018]***	[0.024]***	[0.122]***	[0.257]***	[0.147]***	[0.057]***
Observations	385	385	232	385	232	385	385
R-squared	0.017	0.005	0.098	0.868	0.789	0.868	0.868

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Table 3b: Aid & Development in Moldovan Rayons – Pooled OLS

Mortality	OLS						
	1	2	3	4	5	6	7
Aid commitments	-0.364			-0.187		-0.187	0.293
	[0.092]***			[0.119]		[0.119]	[0.094]***
Aid disbursements		-0.301		-0.293		-0.293	-0.187
		[0.109]***		[0.094]***		[0.094]***	[0.119]
No. of projects			-0.181		-0.217		
			[0.026]***		[0.033]***		
Education				4.775	7.631		13.494
				[1.458]***	[1.542]***		[3.456]***
Health				-57.745	-28.937		
				[10.416]***	[16.206]*		
Water & Sanitation				0.022	1.236		2.152
				[0.452]	[1.566]		[0.690]***
Government & Civil Society				-3.576	1.849		-11.028
				[2.272]	[2.935]		[2.497]***
Social Infrastructure				-5.467	-1.891		-3.420
				[1.634]***	[2.501]		[0.858]***
Energy							
Communications				46.875	55.203		

				[17.234]***	[19.451]***		
Multisector				-13.075	2.551		
				[4.264]***	[6.173]		
Transport				6.574	9.534		-28.832
				[3.555]*	[3.644]**		[4.315]***
Agriculture				194.293	24.326		
				[69.765]***	[94.700]		
Humanitarian							
Forestry				-9.706	-0.834		
				[2.689]***	[3.874]		
European Union						24.967	
						[3.808]***	
United States						10.483	-6.443
						[2.190]***	[1.678]***
Switzerland						18.392	
						[2.590]***	
Turkey						15.321	
						[2.105]***	
Germany							
Sweden							
World Bank						13.628	-3.327
						[2.072]***	[0.962]***
United Nations						18.707	-4.783
						[2.901]***	[2.335]**
Poland							
Romania						31.309	
						[10.657]***	
Austria						14.963	-16.868
						[2.608]***	[3.158]***
EBRD						25.142	
						[4.076]***	
Japan							
Liechtenstein							
Slovakia						8.807	10.257
						[5.772]	[5.247]*
Czech Republic							
Norway							
Constant	12.237	12.237	12.557	18.498	12.783	-2.290	16.451
	[0.097]***	[0.098]***	[0.164]***	[1.639]***	[2.523]***	[2.084]***	[0.831]***
Observations	385	385	232	385	232	385	385
R-squared	0.035	0.024	0.127	0.219	0.314	0.219	0.219

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Table 3c: Aid & Development in Moldovan Rayons – Pooled OLS

Long-term Investment	OLS						
	1	2	3	4	5	6	7

Aid commitments	0.490			0.344		0.344	0.246
	[0.087]***			[0.077]***		[0.077]***	[0.066]***
Aid disbursements		0.435		0.246		0.246	0.344
		[0.085]***		[0.066]***		[0.066]***	[0.077]***
No. of projects			0.178		0.198		
			[0.029]***		[0.028]***		
Education				10.594	8.046		-10.564
				[0.807]***	[0.911]***		[1.892]***
Health				18.487	9.136		
				[5.930]***	[10.232]		
Water & Sanitation				-0.209	-1.043		-0.441
				[0.240]	[1.353]		[0.387]
Government & Civil Society				-1.804	-4.083		-11.020
				[1.325]	[1.664]**		[1.412]***
Social Infrastructure				8.361	7.618		-1.642
				[0.933]***	[1.629]***		[0.477]***
Energy							
Communications				-23.897	-20.627		
				[8.824]***	[10.213]**		
Multisector				31.662	23.512		
				[2.518]***	[4.042]***		
Transport				18.414	16.410		4.851
				[1.823]***	[2.013]***		[2.538]*
Agriculture				-122.292	-36.762		
				[38.781]***	[57.916]		
Humanitarian							
Forestry				18.713	15.313		
				[1.642]***	[2.691]***		
European Union						-9.016	
						[2.293]***	
United States						-15.021	-8.868
						[1.331]***	[0.961]***
Switzerland						-7.799	
						[1.592]***	
Turkey						-3.151	
						[1.227]**	
Germany							
Sweden							
World Bank						-0.863	0.364
						[1.163]	[0.559]
United Nations						-8.651	5.901
						[1.677]***	[1.359]***
Poland							
Romania						49.533	
						[6.084]***	

Austria						-0.888	11.073
						[1.466]	[1.858]***
EBRD						-1.506	
						[2.248]	
Japan							
Liechtenstein							
Slovakia						19.464	7.401
						[3.171]***	[2.795]***
Czech Republic							
Norway							
Constant	4.608	4.608	4.241	-3.005	-0.757	8.507	6.998
	[0.090]***	[0.091]***	[0.160]***	[0.943]***	[1.655]	[1.219]***	[0.471]***
Observations	384	384	232	384	232	384	384
R-squared	0.071	0.056	0.149	0.731	0.746	0.731	0.731

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

We have employed a difference-in-difference empirical design to our analysis on the effect of the announcement of the EU development aid freeze and found that the results are insignificant in terms of the distinction between rayons receiving less projects in the aftermath of the announcement and rayons receiving more or the same number of projects because of the EU Commission's decision. Moreover, the robustness checks reported in the appendix indicate the validity of the results reported here. Aid commitments and multiplicity of projects have a robust positive effect on economic development, whereas aid disbursements do not produce robustly significant effects in terms of contemporaneous or lagged financial flows.

Policy recommendations

The main focus of this paper is the analysis of development aid effectiveness in Moldova. We also intend to complement existing evaluation mechanisms of aid projects. The majority of donor monitoring and evaluation instruments use a project-by-project or program-by-program approach. Nevertheless, there is still no comprehensive toolbox for assessing development aid effectiveness in the medium- and long-term. What is important is to multiply positive effects and concentrate on areas with lower levels of aid effectiveness. This would entail strategic planning and a full review of policy approaches at the country level. As the evidence indicates, the dichotomy between aid commitments and projects on the one hand and aid disbursements on the other, the inconclusive evidence on EU aid effectiveness, the rather negative effect of UN and World Bank project shares, and the positive experience from Central European aid commitments and disbursements all reveal the urgent need to review the strategic approach toward development aid, particularly when it comes to methods and channels of aid disbursement. The EU is one of the main central government donors in Moldova. From our study it is clear that bilateral donors focused on local development aid have produced better results. Academic literature and international aid policy experience show that direct developmental support and aid decentralization toward the regional, local, and community levels tend to generate higher levels of socio-economic development. But this approach has to be combined with new monitoring tools, thereby ensuring a rise in the quality and quantity of local civic organizations. Furthermore, aid projects should be seen as capacity-enhancing mechanisms that involve the local bureaucracy in the development process and produce socio-economic outcomes in line with the economic strategy and social welfare needs of the population of the respective rayons. Policy recommendations of the paper include therefore the following:

1. **Thorough review of aid distribution channels and monitoring instruments.** A significant share of development aid flows should arrive at the local level. The monitoring of aid distribution at the local level should involve civil society institutions.

2. **Decentralization of monitoring and management structures of EU aid projects at the local level.** This would reduce the rent-seeking incentives of central bureaucrats, minimize the expected payoff from corrupt practices, and utilize existing bureaucratic structures for purposes of capacity building. Joint EU-Moldovan bodies would then monitor the stages of project implementation by EU-Moldovan consortia, whose financial accounts would be located in European banks.

3. **The Europeanization of the lower and middle levels of the Moldovan civil service**, particularly in the Southern rayons of the country, which – with the exception of Gagauzia – are consistent underperformers both in the attraction of EU funds and general indicators of economic growth and human development. EU development aid should expand rather than undermine state capacity, and this can be possible only with the strengthening of Moldova's economic bureaucracy at the local level.

4. **Empowering Moldovan civil society and giving it a competitive edge**. The active involvement of Moldovan civil society is key; it raises informational asymmetries for European business and civil society partners, giving local actors a leg up, and allows for the emergence of win-win policy scenarios and, eventually, situations where the long-run economic development of the country is backed up by a competitive "fringe" of EU-oriented civic organizations that do not interfere with but rather complement state functions. That way politics stays out of the immediate EU-Moldovan negotiations, and everybody becomes better off.
5. **Flexible and efficient donor oversight of aid project implementation**, which necessitates a higher degree of institutional embeddedness in the recipient economy. It requires EU institutions to be actively involved in Moldovan universities and the promotion of start-up entrepreneurship, as well as in partnerships and financing instruments that link EU small and medium entrepreneurs with possible Moldovan partners. The creation of synergetic structures between economy and society would only enhance the long-run impact of EU development aid projects.

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Appendix

Table A.1a: Lagged Aid & Development in Moldovan Rayons – Pooled OLS

Average Monthly Wage	OLS						
	1	2	3	4	5	6	7
Aid commitments	0.089			0.027		0.027	0.027
	[0.011]***			[0.009]***		[0.009]***	[0.009]***
Aid disbursements		0.038		0.016		0.016	0.016
		[0.022]*		[0.008]*		[0.008]*	[0.008]*
No. of projects			0.027		0.015		
			[0.004]***		[0.004]***		
Education				-2.055	-1.866		-0.023
				[0.171]***	[0.309]***		[0.186]
Health				2.019	2.086		
				[0.336]***	[0.515]***		
Water & Sanitation				0.064	-0.051		0.137
				[0.033]	[0.223]		[0.042]***
Government & Civil Society				1.375	1.178		
				[0.179]	[0.228]***		
Social Infrastructure				-0.445	-0.236		-0.182
				[0.056]***	[0.192]		[0.049]***
Energy							
Communications				2.974	2.065		
				[0.891]***	[1.361]		
Multisector							
Transport							
Agriculture							
Humanitarian							
Forestry				-1.081	-0.857		
				[0.096]***	[0.167]***		
European Union						-1.096	
						[0.192]***	
United States							1. 378
							[0.158]***
Switzerland						-1.203	
						[0.112]***	
Turkey						-1.118	
						[0.092]***	
Germany							
Sweden							
World Bank						-0.971	-0.115
						[0.103]***	[0.054]**
United Nations						-0.307	1.063
						[0.131]**	[0.124]***
Poland							

Romania							
Austria						-1.229	
						[0.230]***	
EBRD						-2.316	-2.269
						[0.216]***	[0.294]***
Japan							
Liechtenstein							
Slovakia							
Czech Republic							
Norway							
Constant	8.036	8.044	8.079	8.172	8.131	8.844	7.909
	[0.014]***	[0.014]***	[0.020]***	[0.054]***	[0.069]***	[0.090]***	[0.047]***
Observations	280	280	157	280	157	280	280
R-squared	0.164	0.030	0.291	0.814	0.705	0.814	0.814

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Table A.1b: Lagged Aid & Development in Moldovan Rayons – Pooled OLS

Mortality	OLS						
	1	2	3	4	5	6	7
Aid commitments	-0.380			-0.289		-0.289	-0.289
	[0.101]***			[0.107]***		[0.107]***	[0.107]***
Aid disbursements		-0.381		-0.219		-0.219	-0.219
		[0.098]***		[0.094]**		[0.094]**	[0.094]**
No. of projects			-0.141		-0.193		
			[0.029]***		[0.036]***		
Education				-6.687	-7.454		3.092
				[2.999]**	[3.931]*		[3.043]
Health				15.916	15.322		
				[5.452]***	[6.567]**		
Water & Sanitation				-2.194	1.134		-1.606
				[0.412]***	[1.440]		[0.718]**
Government & Civil Society				-3.853	0.668		
				[3.015]	[3.279]		
Social Infrastructure				-0.019	-2.333		0.516
				[1.015]	[1.518]		[0.872]
Energy							
Communications				-47.434	-25.437		
				[14.877]***	[17.563]		
Multisector							
Transport							
Agriculture							
Humanitarian							
Forestry				-1.803	-3.971		
				[1.780]	[2.280]*		
European Union						1.832	
						[3.485]	
United States							-0.994
							[2.901]
Switzerland						-2.098	
						[1.854]	
Turkey						1.720	
						[1.602]	
Germany							
Sweden							
World Bank						0.440	-0.919
						[1.812]	[1.022]
United Nations						-1.054	-3.627
						[2.403]	[2.067]*
Poland							
Romania							
Austria						3.442	
						[3.779]	
EBRD						-14.974	-17.407
						[3.380]***	[4.588]***

Japan							
Liechtenstein							
Slovakia							
Czech Republic							
Norway							
Constant	11.988	11.966	12.068	13.379	12.717	11.639	12.843
	[0.112]***	[0.111]***	[0.182]***	[0.990]***	[1.009]***	[1.573]***	[0.850]***
Observations	280	280	157	280	157	280	280
R-squared	0.051	0.051	0.104	0.224	0.238	0.224	0.224

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Table A.1c: Lagged Aid & Development in Moldovan Rayons – Pooled OLS

Long-term Investment	OLS						
	1	2	3	4	5	6	7
Aid commitments	0.156			0.343		0.342	0.343
	[0.103]			[0.073]***		[0.073]***	[0.073]***
Aid disbursements		-0.010		0.221		0.221	0.221
		[0.125]		[0.070]***		[0.070]***	[0.070]***
No. of projects			-0.056		0.185		
			[0.062]		[0.032]***		
Education				-1.253	1.894		21.240
				[1.651]	[2.637]		[1.632]***
Health				48.584	48.347		
				[3.198]***	[4.413]***		
Water & Sanitation				0.005	-1.344		0.635
				[0.269]	[1.504]		[0.372]*
Government & Civil Society				-40.898	-43.854		
				[1.872]***	[2.235]***		
Social Infrastructure				-5.063	-2.641		-0.918
				[0.537]***	[1.343]*		[0.465]**
Energy							
Communications				-143.928	-160.057		
				[8.798]***	[11.917]***		
Multisector							
Transport							
Agriculture							
Humanitarian							
Forestry				0.496	3.747		
				[0.929]	[1.446]**		
European Union						10.148	
						[1.890]***	
United States							1.876
							[1.546]
Switzerland						3.763	
						[1.082]***	
Turkey						4.626	
						[0.851]***	
Germany							
Sweden							
World Bank						5.120	-0.985
						[0.965]***	[0.519]*
United Nations						-13.339	-27.702
						[1.272]***	[1.281]***
Poland							
Romania							
Austria						25.866	
						[2.064]***	
EBRD						-8.915	-29.155
						[2.126]***	[2.783]***

Japan							
Liechtenstein							
Slovakia							
Czech Republic							
Norway							
Constant	4.396	4.414	4.439	9.894	9.450	0.205	5.750
	[0.121]***	[0.120]***	[0.256]***	[0.531]***	[0.614]***	[0.837]	[0.459]***
Observations	279	279	156	279	156	279	279
R-squared	0.007	0.000	0.007	0.768	0.860	0.768	0.768

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.