The Impacts of Migration on Multidimensional Child Well-Being: Comparative Analysis between Moldova and Georgia

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Abstract

Using novel household survey data collected between September 2011 and December 2012 on migrant- and non-migrant households in Moldova and Georgia, this paper proposes a method for measuring and comparing multidimensional child well-being in a migration context. While a growing body of literature addresses the effects of migration for children "left behind", relatively few studies have empirically analysed if and to what extent migration implies different well-being outcomes for children. To compare the outcomes of children in current- and non-migrant households, the present paper defines a multidimensional well-being index comprised of six dimensions of wellness: education, material living standards, protection, physical health, emotional health, and communication access. The results of both bivariate and multivariate analysis suggest that migration bears limited consequences for different domains of well-being. In both Moldova and Georgia children in migrant households were found to have a slightly lower probability of attaining material well-being, but in Georgia migration was linked to higher probabilities of children attaining well-being in physical health, communication access, and on total index level. The results suggest that when migration has any statistically significant effect on child well-being, it is generally positive and relatively low in magnitude. The impacts of migration appear to differ widely between Moldova and Georgia, however. While migration was seen to have limited effect on the well-being of children in Moldova, it seemed to bear more consequences for children in Georgia, which likely reflects different migration trajectories, mobility patterns, and levels of maturity of each migration stream.

Key words: migration, children, multi-dimensional poverty, Moldova, Georgia

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I. Introduction

Particularly in societies experiencing large-scale mobility transitions, migration has become a powerful phenomenon that incites dialogue and discourse on both public and policy level, some of which is woefully uninformed. This is especially true when the discussion turns to the "costs" and the "benefits" of migration, particularly for children 'left behind'.

Migration and its outputs are notoriously difficult to quantify. The development-boosting potential of remittances is one of the best-explored benefits of migration, which is understandable given the substantial financial flows it can generate: in Moldova, remittances accounted for over 23 percent of GDP in 2009, and in Georgia, remittances were the equivalent of 6.4 percent of GDP (Ratha *et al*, 2010). Such remittance flows can play a key role in protecting recipient households from economic shocks and income vulnerability, yet at the same time it is unclear to what extent such transfers replace the contributions that a migrant would make to the household if s/he were present. The impact of a migrant's absence is particularly pertinent to explore within the context of child well-being, but relatively few empirical studies have attempted to define and measure child well-being to the end of measuring migration's impacts on it. As noted by Kandel and Kao (2001), relatively little analysis has been conducted on the trade-offs between increased material resources and less-easily quantified consequences of parental absence, and this is especially true of Moldova and Georgia, where limited research is available to document specific channels through which migration can affect the well-being of children. As with other Eastern European and former Soviet states, Moldova and Georgia have experienced a rapid rise in emigration that has inspired policy makers and civil society organisations to raise concerns about the potential impact these growing migration flows have on society. While public discourse generally recognises the inflow of remittances as a positive outcome of migration, the perceived social impacts of migration are less well understood.

The present paper bridges this gap by elaborating a multidimensional well-being index for children in Moldovan and Georgian households. This index provides a means through which the specific impact of migration on multiple aspects of well-being can be measured. Through the construction of an index comprised of six dimensions representing different facets of a child's life, the relationship between migration and a child's holistic well-being is made measurable. The implications of migration—beyond remittance receipt—for a child's physical health, emotional health, protection, educational outcomes, material living conditions, and communication access are explored. While the results are oriented within the unique contexts of Moldova and Georgia, the instrument has been constructed to enable cross-country comparability. This characteristic of the index provide important analytical power to the method, particularly as it allows for discussion of how deviations in country context correspond to different well-being outcomes. The results from the following analysis provide important insights into the potential social impact of migration, not only for Moldova and Georgia but also for other countries in the region that are characterised by similar migration experiences. The results may provide appropriate guidance for policy makers in their effort to increase the well-being of children in general, and those living in migrant households in particular, by highlighting the domains in which children face deprivation. From a scientific perspective, this paper benefits from data collected specifically for the purpose of this analysis. The use of identical survey instruments in both countries makes the data comparable for two countries with divergent migrant profiles.

The first section of this paper explores the theoretical relationship between migration and well-being and provides a brief overview of previous studies on the effects of migration on child well-being. The second section then addresses the fundamental dilemma of how child well-being should be defined and made measurable. Following the suggestion of a definition of child well-being, brief backgrounds are provided for both Moldova and Georgia before the data utilized in the following analysis is described. The indicators and methodology for constructing and using the specified child well-being index are then explained, followed by a summary of results. This paper concludes with a discussion of the results.

II. Migration & Well-Being

By assessing the impacts of migration on child well-being, an implicit assumption is made that migration bears unique consequences for the individuals and households it affects. The intuitive logic behind this assumption bears further exploration, particularly given the emphasis placed on migration as a uniquely disruptive agent. Migration and the well-being of children 'left behind' can be expected to be linked through several avenues, the most obvious of which is that migration can directly affect the resources available to a household, both withdrawing and adding resources to be shared on the household level. Within this rationale both positive and negative repercussions can be envisioned, which both theory and prior research have explored.

The suggestion that migration and well-being are linked through the transmission of resources from the migrant to the household has formed a cornerstone of migration theory since the early 1980s. The new economics of [labour] migration (NELM) theory originally posed by Stark and Bloom in 1985 suggests that migration is a decision jointly made by migrants and a group of non-migrants—namely the family—with whom potential costs and returns are shared according to implicit agreement about the distribution. Within this theory the migration decision is a mutually-beneficial one in which remittances are transmitted from the migrant abroad as a means of sharing income and providing coinsurance (Stark & Bloom, 1985). Migration can be seen as means of not only increasing the potential volume of income received by a household but as a means of diversifying income sources and thus hedging the risks associated with reliance on a small number of income sources. Particularly in countries with inefficient or missing insurance and credit markets, migration can act as a means of smoothing consumption over time, supplementing lost income during unemployment spells and providing additional capital for use in the development of small-scale enterprise (Massey *et al*, 1993; Taylor, 1999; Stark & Bloom, 1985). As household members children would be expected to benefit from the resources provided by migrants, particularly given use of those resources for expenditures such as healthcare and education.

The resources a migrant can potentially share with the household in the country of origin can include not only financial capital, through monetary remittances, but human capital, through the transmission of knowledge, values, and ideas in the form of "social remittances" (Levitt, 1998; Acosta, Fajnzylber, & Lopez, 2007). A range of prior studies has explored the potential uses of both financial and social remittances for children "left behind". Yang (2008) in the Philippines and Mansuri (2006) in Pakistan, for instance, both suggest that the receipt of remittances can loosen economic constraints on households, enabling children to pursue education and reducing child labour rates.

Other studies have found a positive relationship between migration and child health outcomes: remittances can enable investment in more and higher quality foods, vitamins, and medicines (Salah, 2008) as well as in preventative and curative healthcare (Cortés, 2007). The receipt of both monetary and social remittances has been further correlated to higher rates of educational attainment, greater rates of participation in extra-curricular activities, and better schooling outcome measures such as grades in diverse countries such as Guatemala (Moran-Taylor, 2008), El Salvador (de la Garza, 2010), the Philippines (Edillon, 2008; Yang, 2008), and Pakistan (Mansuri, 2006).

The positive relationship among migration, remittances, and increased child well-being is not without its negative counterbalance, however. Much of the benefit migration can bring to children "left behind" relies on the transfer of remittances, but the act of migration in and of itself is no guarantee of remittance receipt. Particularly when migration is undertaken as a survival strategy and is funded through loans, children left behind may be placed in an even more tenuous economic situation than prior to migration, particularly if they shoulder the migration debt burden (van de Glind, 2010). In some situations, as a study of Kandel (2003) in Mexico found, migration may increase child labour rates, particularly among male children who must work to support the household. While remittances may enable greater expenditure on healthcare inputs, positive outcomes may develop only over time: in Mexico McKenzie (2007) observed that migration was initially correlated to lower use of preventative healthcare, incomplete adherence to vaccination regimes, and lower rates of breastfeeding. While infant mortality was observed to decrease over time (Hildebrandt *et al*, 2005; McKenzie, 2007), parental migration during a child's infancy can lead to less-than-optimal health behaviours. Migration can also bear negative potential consequences for child educational outcomes, with studies in Albania (Giannelli & Mangiavacchi, 2010), Ecuador (Carillo & Herrera, 2004, in Cortés, 2007), and Moldova (Salah, 2008) finding a relationship between parental absence and higher rates of school absenteeism, declining school performance, and declining graduation rates.

Despite the categorization of potential effects into "positive" or "negative" outcomes, most prior studies caution that the relationship between migration and child well-being outcomes is dynamic, depending on a number of situational and contextual features such as a child's age, post-migration caregiving arrangements, a household's socio-economic status, and the retained ties between a migrant and the household members remaining in the origin country. The generalizability of insights provided from past studies is also low, particularly as many have not relied on large-scale, nationally-representative data using the child as the unit of analysis but more often on household surveys with few questions related directly to migration. Among those studies that have explicitly focused on children in migrant households, few have explored the situation of children remaining in the country of origin, and fewer still have engaged an appropriate control group against which the outcomes of children in migrant households can be compared (Graham & Jordon, 2011). Past studies have also largely focused on singular aspects of well-being such as physical health or educational outcomes, but given the complex interplay between migration and the conditions that affect household members, a more encompassing assessment of migration's impact on well-being is needed. The present study is well-oriented to fill the identified gaps in past research, particularly as it defines and operationalizes well-being in a more holistic framework.

III. Defining Well-Being

One of the first challenges faced in the assessment of child well-being is in defining the concept. In constructing a concept of child well-being, the inherent assumption is made that children are unlike adults: the components of child well-being, while shared to a certain extent with that of adults, differs according to the different needs and vulnerabilities children face (White, Leavy, & Masters, 2003; Brooks-Gunn & Duncan, 1997; Waddington, 2004). In acknowledging that children are a unique population group with differentiated needs, one makes the commitment to emphasise the child as the unit of observation—to measure the phenomenon and characteristics of a child's life on his or her own level and not exclusively on the household level (Ben-Arieh, 2000). While in much research on child poverty, "children are routinely considered as a property of their households and are assumed to share equally in its fortunes (or misfortunes)" (Gordon *et al*, 2003; pg. 3), there are many inherent flaws to assessing child poverty in this way. The first is that children may not share equally in the resources available to a household, and even if equal access is guaranteed, the actual consumption behaviour of children is uncertain[5] (Gordon *et al*, 2003). Issues of access and consumption also make measurement of child well-being (or its inverse, poverty) incompatible with the monetary approach of poverty measurement in which deprivation is assessed exclusively on the basis of material means such as income or expenditure (Minujin, Delamonica, Davidziuk, & Gonzalez, 2006; Gordon *et al*, 2003; Roelen, Gassmann, & de Neubourg, 2009). This hints at a key hurdle to assessing child poverty: identifying and defining dimensions or domains of child well-being.

As for any population group, decomposing the "contents" of child well-being or poverty requires a conceptual basis. Deprivation—and its end result, poverty—can be defined according to many different sources such as national norms and legislation, internationally-agreed definitions and conventions, scholarly theories, public consensus, and empirical evidence (de Neubourg *et al*, 2012). Given increased recognition that childhood is not only a means to an end (adulthood) but rather an end to itself[6], one of the most important sources for defining deprivation is international instruments such as the Convention on the Rights of the Child (CRC), which provides a rights-based framework for approaching well-being. The CRC, which was adopted by the UN General Assembly in 1989, is a legal instrument for promotion and protection of children's rights that outlines minimum standards for "the treatment, care, survival, development, protection and participation that are due to every individual under age 18." (UNICEF, 2009; pg. 2). Within the CRC children are envisioned as rights holders, yet this entitlement to rights is both challenged and complemented by dependence on families, communities, and societies to attain minimum standards of well-ness. Within this rights-based framework, child well-being can be understood as the realization of children's rights and the fulfilment of opportunities for a child to reach his/her potential, both at the present moment (well-being) but also in the future (well-becoming) (Bradshaw, Hoelscher, & Richardson, 2007). Interpreted this way, well-being in the context of child's rights has strong parallels with the human development and capabilities approach championed by Amartya Sen. The capabilities approach envisions well-being as the product of an individual's effective opportunities or capabilities to attain a desired

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[5] While the use of adult equivalence scales attempts to "approportion" household resources to account for economies of scales within households according to the consumption behaviours of certain members, it is unclear how universal or appropriate widely-used scales (like the OECD 1982 scale) are for all country contexts.

[6] This is related to the discussion of *well-being* versus *well-becoming*. While much discussion of childhood poverty relates to the potential effects of deprivation for future growth, development, and eventual functionality as adults (that is, a child's *well becoming*), a child's wellness can also be assessed as it exists at the present moment, in terms of access to equivalent rights and privileges as other members of a society (Ben-Arieh, 2000; Roelen, 2010).

outcome; lack of capabilities, or the freedom to choose among them, limits the range of realizable functionings, leading to deprivation or poverty (Sen, 1993; Robeyns, 2005). Both the child's rights-based framework and capability approach to defining well-being envision well-being as inherently multidimensional, comprised of opportunities and entitlements in multiple facets of life; deprivation in single dimensions can thus lead to failure to attain well-being in total (Alkire, 2002; Sen, 1993; Robeyns, 2005; Alkire & Foster, 2011).

To translate concepts of well-being into functional measurement instruments, a list of dimensions of well-being—and the indicators by which they can be measured—must necessarily be elaborated. A significant body of literature has addressed the multidimensional nature of child poverty (see Roelen & Gassmanm, 2008, for a review), and much follows a rights-based perspective in which the CRC and other international summits and instruments provide initial lists of domains (Alkire & Roche, 2011). The first internationally-comparable estimates of child poverty in the developing world produced by the research team at Bristol University's Townsend Centre for International Poverty Research[7] relied on indicators of poverty that aligned with the internationally-agreed definition of poverty proposed during the World Summit for Social Development in Copenhagen in 1995. The resulting instrument was comprised of eight dimensions across which children could experience deprivation: food, safe drinking water, sanitation facilities, health, shelter, education, information, and basic social services (Gordon *et al*, 2003). A 2007 study by Bradshaw and colleagues on child well-being in the European Union drew from the CRC to construct an index that similarly defined well-being in terms of eight "clusters" of indicators: material situation, housing, health, subjective well-being, education, children's relationships, civic participation, and risk and safety. Drawing from a different source of inspiration—a review of 27 subjective well-being studies conducted by Cummins and colleagues— Land, Lamb, and Mustillo (2001) developed a child well-being index for the United States that bore striking resemblance to the previously-mentioned studies. The index elaborated by Land and colleagues was comprised of seven domains: material well-being, health, safety/behavioural concerns, educational attainment, place in the community, emotional/spiritual well-being, and social relationships (Land *et al*, 2001).

While it is impossible to say that consensus on defining and measuring child poverty has been reached on the basis of this small number of studies, the overlap in dimensions and convergence toward similar operationalisations of more abstract frameworks such as the CRC provides initial guidance on key components of child well-being, particularly in a cross-country comparative context. Based on reviewed literature, functionality in a cross-cultural context, and availability of data, the following definition of child well-being is operationalized in this study:

> Well-being is a multidimensional state of personal being comprised of both self-assessed (subjective) and externally-assessed (objective) positive outcomes across six realms of rights and opportunity: education, physical health, emotional health, material living standards, protection, and communication.

This definition recognises the inherent complexity and multidimensionality of well-being. Individual components of well-being and their expression are the products of on-going and dynamic processes that change the risk factors and resources within a child's immediate and more distant development

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[7] The basis for the "Bristol approach" of child poverty measurement adopted by UNICEF's Global Study is derived from this report.

environment (Bradshaw *et al*, 2007). Migration is one such process that alters the context in which individuals develop and function, but its effects are not universal and homogenous. While the aim of the present study is to assess the potential implications of migration on well-being attainment in two separate countries, such comparison must necessarily be oriented in the migration context of each study country.

IV. Country Backgrounds

Before analysis of child well-being can be compared across the two study countries of Moldova and Georgia, the rationale in choosing these two countries must be made clear. Both countries have experienced rapid mobility transitions that have brought with them increasing concerns over the potentially disruptive effects of migration for the 'left behind'. Both countries experienced economic and political transitions following the collapse of the Soviet Union in 1991 that enabled and encouraged international migration. Despite the shared Soviet past and the many changes the post-Soviet transition brought, each country has developed unique migration trends and trajectories that make the experiences of each country valuable to compare and contrast, particularly in the context of the effects of migration on the 'left behind'.

Over the past two decades, migration from Moldova has been largely driven by economic crises. Following the dissolution of the Soviet Union, the Moldovan economy remained closely tied to the Russian economy: until 1998, Russia received over 60 percent of the total exports produced in Moldova. The economic crisis that swept Russia in the end of the 1990s inspired severe consequences for Moldova, where industrial output plummeted by 25 percent and agricultural production by 20 percent between 1998 and 1999. This crisis compounded existing economic problems related to the loss of control over the separatist territory of Transnistria, which was home to most of Moldova's energy and industrial plants (Pantiru, Black, & Sabates-Wheeler, 2007). The loss of Transnistria and the downturn of the Russian economy contributed to the dire economic situation Moldova found itself in 1999: gross domestic product was just 34 percent of the level experienced a decade earlier (Pantiru *et al*, 2007; CIVIS/IASCI, 2010), and 71 percent of the population lived below the poverty line (IMF, 2006). The extreme level of economic vulnerability provided the first initial "push" for large-scale emigration, which has continued relatively unabated since (CIVIS/IASCI, 2010). As of 2010 it was estimated that over 770,000 people—equivalent to 21.5 percent of the total population—was living abroad, the majority of whom were in the Russian Federation, Ukraine, Italy, and Romania (Ratha *et al*, 2010). Most migrants are of prime working age, with approximately 80 percent between the ages of 18 and 44 (CIVIS/IASCI, 2010). As of 2008 the majority of migrants (58 percent) were male (Salah, 2008), but a greater proportion of women have entered international migration, particularly to destination countries in the European Union for work in the home-care sector (CIVIS/IASCI, 2010).

Mobility trends in Georgia bear some similarity to those of Moldova, but the origin of large-scale migration following the Soviet collapse is somewhat different. In the first years following independence, migration flows were largely dictated by the ethnic return of non-Georgians to countries such as Russia, Greece, and Israel as well as by conflict-induced displacement that promoted both internal and international migration (CRRC, 2007). Internal conflict and ethnic strife

during the early 1990s resulted in a several waves of migration from the *de facto* independent regions of Abkhazia and South Ossetia, and the 2008 Russian-Georgian war over the territory of South Ossetia promoted additional waves of conflict-driven migration. As in Moldova the post-Soviet period in Georgia has been characterized by the deterioration of the economic system and state infrastructure, and despite reforms and political transitions in the early 2000s, wide-scale poverty and economic insecurity have remained a concern, with over half of the population living under the national poverty line in 2007 (Hofmann & Buckley, 2011). The ongoing economic insecurity has contributed to continuing emigration, which in recent years has been characterised by the movement of prime working-age individuals to foreign labour markets. As of 2010 it was estimated that the emigrant stock represented 25.1 percent of the total population (Ratha *et al*, 2010), and a significant volume of individuals are thought to leave Georgia every year[8]. While the Russian Federation and other Commonwealth of Independent States countries represented the most important destinations of migrants during the early years of free mobility, the migration stream has diversified, with the Russian Federation, Armenia, Ukraine, Greece, and Israel representing the most important destination countries for migrants in 2010 (Ratha *et al*, 2010). The country of destination differs considerably for men and women: while migration to the Russian Federation is dominated by men, female migration is increasingly directed to Greece and other European Union countries with growing elder/home care markets (IOM, 2009).

The different origins of migration flows from Moldova and Georgia correspond to different migration experiences for individuals from each country. While the migration stream from Moldova can be considered relatively "immature", with low rates of settlement and family reunification in destination countries (CIVIS/IASCI, 2010), emigration from Georgia has included more significant levels of settlement in host countries and lower rates of return, particularly among those individuals and households that left during the conflict period (CRRC, 2007). Moldovan emigration is now characterized by high levels of circularity, facilitated by favourable visa regimes with the Russian Federation and by access to the European Union among dual Moldovan-Romanian passport holders. Many Georgian emigrants are in a more disadvantaged position, particularly those residing in the EU without legal right to residency or work. These factors influence the capacity migrants have to maintain contact with their families and communities, thus Moldova and Georgia—and the differential patterns of emigration they experience—provide interesting case studies for exploration of how migration can affect the lives of those 'left behind'.

V. Data & Methodology

While in the past analysis of the potential links between migration and the well-being of migration-affected households has been challenging due to lack of (child/migration-specified) data, nationally-representative household data collected in the course of the project "the Effects of Migration on

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[8] While emigration flows are seldom provided, the IOM estimated the net emigration rate at -10.8 migrants/1000 population in 2008, which suggests a significant flow of outward migration (IOM, 2008).

Children and the Elderly Left Behind in Moldova and Georgia[9]" has enabled detailed, in-depth analysis of various aspects of child well-being and their links to household-member migration. In Moldova 3,571 households were surveyed between September 2011 and March 2012. In Georgia 4,010 households were surveyed between March and December 2012. Given the project's focus on specific subset of the population (children and the elderly), a high number of households in both countries contained either children or the elderly: in Moldova 1,983 households contained one or more children under the age of 18, while in Georgia the sample of households with children included 2,394 households. As the project explicitly focused on children, the survey was designed to retain the child as the unit of analysis, collecting detailed data on the conditions in which children live in both countries. In both countries all regions were sampled, excepting the breakaway territory of Transnistria in Moldova and the *de facto* independent regions of Abkhazia and South Ossetia in Georgia. While the survey collected information on all children in the household aged zero to 18, the present analysis focuses on children aged 5-17, for whom the most complete data are available[10]. Table 1 below provides an overview of characteristics of households used in the present analysis containing at least one child aged 5-17, split by household migration status to provide initial descriptive differences.

Table 1: Characteristics of Household Containing One or More Children Aged 5-17

	Moldova		Georgia	
	Migrant[11] HH	Non-migrant HH	Migrant HH	Non-migrant HH
Total unweighted [12] sample	516 (39.5%)	789 (60.5%)	821 (51.4%)	776 (48.6%)
Total weighted sample	33.5%	66.5%	17.6%	82.4%
Total child sample (# of individuals)	735	1,206	1,135	1,164
Average HH size	4.6	4.4	4.9	4.6
Average HH dependency ratio	1.06	1.04	0.96	1.12
Average nº people employed in the HH	0.5	1.2	0.51	0.86

Source: Authors' calculation based on migration survey. Note: dependency ratio is calculated as the ratio of children and elderly in the household to the number of working-age adults; all results represent sample averages unless indicated otherwise.

Descriptively the two survey samples differ from one another in several ways. The sample collected in Georgia is larger than that collected in Moldova, and while the Georgian sample featured a larger number of households containing a migrant absent at the time of the survey, such households

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[9] More information on the project and its outputs is available at the University of Maastricht Graduate School of Governance website at: http://mgsog.merit.unu.edu/research/moldova_georgia.php.

[10] Note that throughout the analysis, sample numbers vary due to missing data for particular indicators or variables.

[11] Within the survey a migrant was defined as any person who had been absent for three or months at the time of the survey. A household was classified as a migrant household of it contained a migrant. Households with a returned migrant (someone who had lived abroad for three or months but who had since returned for residence) were dropped from the sample to enable clearer comparison between current- and non-migrant households.

[12] Unweighted numbers reflect the actual number and proportion of households with a given characteristic in the survey sample; the weighted sample reflects the proportion of households sharing a given characteristics when proportional weights are applied, providing a sense of the proportional distribution of a characteristic across the whole country (as based on the distribution within the survey sample).

actually represent a smaller proportion of the total population in Georgia than in Moldova. Reflecting the larger sample size, the total number of children included in the sample is larger in Georgia than in Moldova, and a nearly equal number live in migrant- as non-migrant households. The differences between households in each country extend to migration-related characteristics as well. Table 2 shows key characteristics of migrants as well as the relationship with the children left behind.

Table 2: Key personal and demographic characteristics of migrants, weighted to represent total population

	Moldova	Georgia
Gender		
Male	509 (59.5%)	902 (46.3%)
Female	346 (40.5%)	1045 (53.7%)
Average age	35	41
Most prevalent level of education	Lower secondary	Incomplete tertiary
% Holding a residence permit	64%	67%
% HH receiving remittances	40.6%	60.5%

Source: Authors' calculation based on migration survey.

The selectivity of migrants also differs between the two countries: in Moldova almost 60 percent of migrants were male, while in Georgia a larger proportion of migrants were female (53.7 percent). Georgian migrants also tended to be slightly older than migrants in Moldova and to have a slightly higher level of education: while the average migrant in Moldova had attained lower secondary education, Georgian migrants achieved, on average, a secondary degree and had incomplete tertiary education. Within households with a current migrant, a larger portion in Moldova than in Georgia featured an absent father of children in the household, while in Georgia a larger proportion of absent migrants were non-parents of children in the household. Almost 20 percent more households in Georgia than Moldova received remittances from an absent migrant, which likely reflects differences in migration patterns such as degree of circularity, duration of migration, etc.

These initial descriptive differences may suggest that the experiences of children "left behind" differ between the two countries. The different migration histories, trajectories, and selectivity are just a few of the factors that would likely influence how children in post-migration households are affected by the migration experience.

A. Indicators

To analyse multidimensional well-being rates, it is necessary to construct a child-specific well-being index comprised of different dimensions of well-being. Based on the definition of child well-being adopted for this analysis, six dimensions of child well-being are included: education, health, material living standards, protection, communication, and emotional well-being. The current analysis has the advantage of being able to draw from measurement tools expressly designed for the particular population of interest (children). The survey was designed to retain the child as the unit of analysis, thus while some household-level indicators such as income and assets are included, many of the indicators chosen reflect the unique situation of children in Moldova and Georgia. Table 3 contains the list of dimensions and indicators chosen for measurement of children well-being.

Table 3: Well-being indicators per dimension

EDUCATION
   Child attends school at an appropriate grade
HEALTH
   Child has received all vaccinations
MATERIAL WELL-BEING
    Child is living in non-poor household
COMMUNICATION
   Child lives in a household with a cell phone
PROTECTION
   Child is not abused
EMOTIONAL WELL-BEING
   Child attains a normal score on the Strengths & Difficulties Questionnaire

The educational well-being dimension is measured by school enrolment; **f**or children aged five and six, school enrolment is measured by pre-school attendance, as in both Georgia and Moldova compulsory education starts at the age of seven. Physical health is measured by a child's receipt of the full regime of required vaccinations. This provides an objective instrument of health standard that is comparable between the two countries. Material living standards are measured using average household expenditures per adult equivalent. Children living in households with average expenditures below 60 percent of the median are considered to be deprived. The dimension of protection is measured by whether a caregiver reports repeatedly beating a child as punishment, defined here as child abuse. Communication well-being is measured by access to a modern source of communication, in this case a mobile phone. While this indicator is measured on the household level, it can be expected that children living in households with technologies that facilitate communication will benefit individually from the greater level of connectedness. Finally, emotional well-being is measured for children aged five to 17 by the total difficulties score of the Strength and Difficulties Questionnaire (SDQ), a behavioural screening instrument that uses 25 questions on psychological attributes to identify potential cases of mental health disorder (Goodman, 1997).

B. Methodology

Child well-being was calculated in two steps. First, well-being with respect to each indicator was analysed separately. A child is considered not deprived if s/he meets the established well-being threshold set for a given indicator. Indicator well-being rates *(IWB)* are calculated by counting the number of children who meet the requirement, expressed as a share of all children (Roelen et al., 2011; Roelen & Gassmann, 2012):

$$IWB_x = \frac{1}{n} \sum_{i=1}^{n} I_{ix}$$

where n is the number of children for which the indicator is observable and I_{ix} is a binary variable taking the value 1 if the child *i* has reached the threshold and 0 if the child has not with respect to indicator *x*. The denominator, *n*, differs across indicators depending on the number of actual observations. Indicators observed at household level, such as for monetary well-being, are translated

to all children living in the respective household, assuming equal access and intra-household distribution.

A second step involved building a multidimensional well-being index inspired by the Alkire and Foster (2011) methodology for the measurement of multidimensional poverty. A child is considered to be multidimensionally well if the weighted combination of dimensions is equal to or exceeds 70 per cent of the total, which means in the present case that a child has to do well in at least four out of six indicators to be considered well off. Each domain is assigned equal weight, which facilitates the interpretation of results (Atkinson et al. 2002) but also asserts that each dimension is considered of equal importance. The decision to set the cut-off at 70 per cent of the aggregated indicators follows the cut-off used for multidimensional child well-being indices (Roelen & Gassmann, 2012; Gassmann et al., forthcoming).

The analysis is further expanded to analyse whether child well-being differs according to who migrated within the household. Multivariate analysis is subsequently applied to control and identify other correlates that determine child well-being, such as personal characteristics of the child and regional or household characteristics. Separate binary outcome models are estimated for selected indicators using standard probit models:

$$\Pr(y_i = 1 \mid x_i) = \Phi(x_i \beta), \qquad \text{with } i = 1, \dots, N$$

where y_i is the binary outcome variable, Φ is the standard normal distribution function, x_i is a vector of explanatory variables, and β is a vector of coefficients to be estimated. In this case the dependent variable is the probability that an individual is vulnerable with respect to a specific indicator. In order to assess whether the effect of migration is significantly different between countries, models for each country are estimated separately, and a Wald chi square test is performed to establish if the coefficients indicating migration significantly differ from each. The formula for this statistic can be written as follows:

$$\frac{(b_M - b_G)^2}{[se\,(b_M)]^2 + [se\,(b_G)]^2}$$

Where b_M is the coefficient for Moldova and b_G is the coefficient for Georgia[13]. Differences in the migration coefficients may not always indicate true differences in causal effects, however, if the two models differ in the degree of residual variation (or unobserved heterogeneity). If this is the case, the test would report a misleading result, as the differences in the migration coefficient would be driven by other unobserved correlates that are not included in the model. To correct for potential deviation in residual variation, ordinal generalized linear models (oglm) in Stata are used that estimate heterogeneous choice models that allow for heteroskedasticity for the specified variables (in this case, the country)[14].

The following section describes the results of the multidimensional index. Descriptive statistics for indicator and multidimensional well-being are presented, testing for group differences both within and between countries. On the basis of bivariate analysis, differences in child well-being rates between migrant and non-migrant households are revealed, and the analysis also reveals differences

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[13] Taken from Allison (1999).

[14] For more information on these tests, see Williams (2009) and Allison (1999).

in domain well-being rates between Moldova and Georgia. Results of the bivariate analysis are followed by the outcomes of the multivariate analysis, which assess the effects of migration when taking into account other variables that can help to predict child well-being.

VI.   Results

Table 4 below provides an overview of well-being rates achieved by children in each study country for each indicator and for the total multidimensional well-being index. Well-being rates are expressed for children in migrant and non-migrant households, and differences in outcomes between children in Moldova and Georgia are indicated at the bottom. In Moldova achieved rates of well-being ranged from a low of 57 percent in the domain of material well-being to a high of 96.2 percent within the protection domain. On the total index level, over 77 percent of children can be considered well, which reflects the overall high level of child well-being across the six dimensions. Children in Georgia expressed a similar level of well-being, with over 80 percent considered well on the total index level. Across the different dimensions, children in Georgia achieved the worst outcomes in the domain of physical health, with only 66 percent of children considered well, and the best outcomes in the domain of protection, where 94 percent were considered well.

When looking at the distribution of well-being outcomes across household migration types, surprisingly few significant differences appear. In Moldova significant differences between children of different household types can be observed only in the dimension of education, where children in migrant households achieved lower well-being rates. In Georgia children in migrant households were better off in the single dimensions of education, health, and communication, as well as in the overall multidimensional index, compared to their peers in non-migrant households.

Based on the bivariate analysis, one may be led conclude that migration is an important factor that explains differences in child well-being rates in Georgia to a much greater extent than in Moldova. One potential explanation for this differential impact is that more migrant households in Georgia than in Moldova receive remittances, which are one of the easiest-to-identify ways in which migrants contribute to household well-being. Increased household income coupled with the transmission of knowledge from a migrant abroad have been linked to better nutrition, increased access to consumption items (food, housing rental, clothing, etc.), and increased human capital investment through education (UNDP, 2009). Given differences in migrant selectivity between the two countries, it could also be suggested that the relatively higher level of education of Georgian migrants as well as the lower rate of parental migration may lead to more positive impacts of migration on child well-being.

Across all of the dimensions of well-being, only two—education and emotional well-being—were not significantly different between the two countries.   Children in Georgia appeared to attain higher levels of wellness in the domains of material well-being and communication as well as in the total index, while children in Moldova appeared to attain better well-being outcomes in the domains of physical health and protection. To a certain extent these differences reflect larger contextual features of each country. In the 2012 Human Development Index, for example, Moldova ranked 113 and Georgia 72 of 186 countries._____

Table 4: Domain and multidimensional well-being rates

MOLDOVA	Education		Health		Material		Protection		Communication		Emotional		MWI	
	N	%	N	%	N	%	N	%	n	%	n	%	N	%
Migrant	681	89.2	735	82.6	735	53.9	684	97.2	735	87.4	604	89.6	565	78.7
Non migrant	1136	92.2	1206	80.9	1206	58.4	1113	95.8	1206	85.9	1002	89.4	944	76.8
Total	1817	91.3	1941	81.5	1941	57	1797	96.2	1941	86.4	1606	89.4	1509	77.4
Sig		*												
GEORGIA														
Migrant	1063	94.9	1135	70.3	1135	69.5	967	94.9	1135	96.4	873	91.8	824	86.8
Non migrant	1110	91.5	1164	65.2	1164	67	1068	93.9	1164	91.5	933	90.6	897	79
Total	2173	92	2299	66	2299	67.4	2035	94	2299	92.3	1806	90.8	1721	80.2
Sig		**		**						***				***
Differences between countries in each domain[15]		***		***		**		***						*

Source: authors' calculations based on migration survey. Note: *** p<0.01; ** p<0.05; * p<0.1 significance levels based on chi2 test of independence.

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[15] T-test were calculated to assess whether total domain well being were significantly different between countries.

These rankings reflect underlying differences in income standards: while the average GDP per capita was US $2,975 (2005 ppp) in Moldova in 2011, the average was US $4,826 (2005 ppp) in Georgia. At the same time a higher proportion of people in Georgia than in Moldova lived below both the $1.25 per day poverty line (15.3 percent versus .4 percent) and the respective national poverty lines (24.7 percent versus 21.9 percent)[16] (UNDP, 2013). These trends likely suggest that while the average Moldovan family has fewer financial resources to invest in children, families in Georgia face higher levels of income inequality that may be reflected in migrant selection trends.

To determine the extent to which the migration of a household member affects child well-being when taking into account other relevant covariates, multivariate analysis utilising probit models are more appropriate. In addition to the migration status of the household, other explanatory variables were included that may partially explain indicator well-being outcomes. These include personal characteristics of the child (such as age, sex, or caregiver) and household characteristics like household size, rural/urban locale, number of children, number of adults, and highest level of education attained in the household. Table 5 shows the results of these models. The reduced model contains only the variable for household migrant status, whereas the extended model contains the above-mentioned control variables. Given the focus of the analysis of the role of migration, however, the marginal effects and significance levels of other covariates are not displayed here but can be found in tables 1 and 2 in the annex.

The table displays how the addition of covariates changes the magnitude and significance of the migration variable, and it also confirms some of the results of the bivariate analysis. Based on the multivariate analysis, migration appears to have a more significant effect on the well-being of children in Georgia than in Moldova. While in Georgia children in migrant households are more likely to attain well-being in physical health, communication, and on total index level than children in non-migrant households, in Moldova migration does not appear to correspond to any positive well-being outcomes. Contrary to the bivariate analysis, in both countries migration was linked to lower material well-being rates, which may be at least partially attributed to sample attrition. The negative impact of migration on material living standards in both Moldova and Georgia may also be explained by migrant selectivity. If migration is undertaken in desperation, as a means of providing income to the household in the absence of other employment options, migration would not be expected to correspond to positive material well-being outcomes.

Table 5: Marginal effect of migration status as a determinant of well-being

	Reduced model			Extended model		
Dimension	Moldova	Georgia	Test[a]	Moldova	Georgia	Test
Education	-0.02 (0.02)	0.03 (0.02)	*	0.00 (0.02)	-0.01 (0.02)	
Health	-0.01 (0.02)	0.09** (0.03)	**	-0.03 (0.03)	0.11* (0.04)	**
Material	-0.03 (0.03)	-0.03 (0.03)	**	-0.18** (0.04)	-0.16** (0.04)	
Communication	0.02 (0.02)	0.06** (0.02)	+	0.04 (0.02)	0.08* (0.03)	*
Emotional	0.00 (0.02)	0.01 (0.02)		-0.01 (0.03)	0.01 (0.02)	
Protection	0.01	0.01		0.02 (0.02)	0.01 (0.02)	

[16] Estimated according to surveys conducted in 2005 (UNDP, 2013).

	(0.01)	(0.02)				
MWI	0.06	0.09***	*	0.05	0.12**	
	(0.08)	(0.03)		(0.03)	(0.04)	
Nº Observations	1509	1721		1499	1715	

*Source: authors' calculations based on migration survey. Reported results are average marginal effects (dx/dy) for children living in migrant households. Robust standard errors in parentheses; +p<0.1; * p<0.05; ** p<0.01. Full model in annex. ᵃ Differences between countries in the migration coefficient are significant at a +10% level, *5% level, and **1%level based on Wald chi square test (corrected for unequal residual variation or unobserved heterogeneity).*

In terms of other correlates that affect child well-being (see tables 1 and 2 in appendix), variables like education, household living area, and child age are important determinants of child well-being in both Moldova and Georgia. Who the caregiver is appears to be significant in the dimensions of protection, communication, and material living standards in both countries as well: in Moldova, having a non-parent relative as a caregiver (as compared to a mother) increases the likelihood of belonging to a non-poor household, whereas in Georgia, having a father caregiver decreases the likelihood of being well-off in this dimension. Having an other relative as a caregiver is positively associated with protection, but negatively associated with communication in both countries. Moreover, while the sex of the child does not appear to have a significant effect on well-being in Georgia, in Moldova being female increases the chances of not being abused and achieving emotional well-being. Number of siblings is also more important in Moldova for determining well-being, as a higher number of co-resident children corresponds to decreased chances of attaining material, emotional, educational well-being. In Georgia, this variable only affects material living standards and has, as expected, a negative influence.

VII. Conclusion

Using novel household survey data collected on migrant- and non-migrant households in Moldova and Georgia, the presented analysis has provided one of the first attempts to measure the effects of migration on holistic child well-being in a cross-country, comparative context. By constructing a multidimensional well-being index comprised of six dimensions and comparing the outcomes of children in current- and non-migrant households, several potential implications of migration for the well-being of the "left behind" have been uncovered.

Despite the growing discussion on the potential benefits or costs of migration, particularly for the "left behind", the current study has found a limited impact of household migration status on different domains of well-being. Based on bivariate analysis, household migration status appeared to influence child well-being in Moldova in only one dimension, education, where children in migrant households were found to achieve slightly lower rates of well-being than children in non-migrant households. Household migration status was found to be insignificant once additional confounding variables were included in the multivariate probit model, suggesting that the observed effects could be attributed to other factors such as highest level of education in the household or caregiver type. Children in migrant households in Georgia achieved higher rates of well-being than children in non-migrant households in the domains of education, physical health, communication, and the total multidimensional well-being index. In the multivariate analysis migration status was no longer found

to influence education but was still found to increase the likelihood of a child attaining well-being in the other domains. While in the bivariate analysis migration status did not contribute to significant differences in material living standards, the results of the probit model suggest that having a household member in migration corresponds to a lower probability of attaining well-being in this dimension.

Two important observations should be made about these outcomes. The first is that if migration is found to have any statistically significant effect on child well-being, it is generally positive and relatively low in magnitude: in the extended multivariate probit model, children in migrant households were found to have higher chances of attaining well-being in the significant dimensions by between eight and 12 percentage points. It is interesting to note the relatively higher magnitude of the effect of migration on material well-being, however, where children in migrant households had a lower chance of attaining well-being in this domain by 18 percentage points in Moldova and 16 in Georgia. This could suggest that the products of the migration episode itself are difficult to disentangle from the process by which individuals are selected into migration, as many of the characteristics that may promote an individual into migration (such as low household incomes or expenditures, unemployment, or education level, for example) will also influence child well-being outcomes. The second observation is that migration appears to behave as a very different agent in Moldova and Georgia. While migration was seen to have limited effect on the well-being of children in Moldova, it seemed to bear more consequences for children in Georgia. Given the very different migration trajectories, mobility patterns, and levels of maturity of both migration streams, this is an unsurprising conclusion. What is surprising, however, is the limited role of migration in Moldova, where a great deal of research has focused on the dire consequences of migration for the "left behind".

VIII.   References

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IX. Appendix

Table 1: Determinants of dimension well-being in Georgia. Full model

	education	Health	material	Communication	Emotional	protection
Migrant household	-0.01	0.10*	-0.16**	0.08*	0.01	0.00
	(0.02)	(0.04)	(0.04)	(0.03)	(0.02)	(0.02)
Male	-0.02	-0.02	0.05+	-0.01	-0.03+	-0.01
	(0.01)	(0.03)	(0.03)	(0.01)	(0.02)	(0.01)
Caregiver (ref category: mother)						
Father	0.00	-0.09	-0.17*	0.06	-0.02	-0.00
	(0.05)	(0.06)	(0.07)	(0.04)	(0.04)	(0.04)
Other relative	0.03	-0.07	-0.01	-0.05*	-0.03	0.06*
	(0.03)	(0.04)	(0.05)	(0.02)	(0.03)	(0.03)
Age	0.13**	0.02	0.01	-0.03*	-0.02	-0.01
	(0.01)	(0.02)	(0.03)	(0.01)	(0.02)	(0.01)
Age2	-0.01**	-0.00	-0.00	0.00*	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Urban	-0.00	-0.11**	0.09**	0.07**	0.00	-0.02
	(0.02)	(0.03)	(0.03)	(0.02)	(0.02)	(0.01)
Highest level of education in the household (ref category: higher education)						
upper secondary	-0.05	-0.38**	-0.06	-0.11**	-0.19**	-0.08*
	(0.04)	(0.08)	(0.09)	(0.04)	(0.04)	(0.03)
post secondary	-0.05**	0.03	-0.14**	-0.05**	-0.02	-0.03+
	(0.02)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
Nº siblings	0.01	0.03+	-0.05*	0.00	-0.01	0.01
	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
Nº adults	0.00	0.02*	0.00	0.01	0.01+	0.00
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)

Mig*remittances	0.03	0.03	0.33**	-0.03	0.02	-0.01
	(0.03)	(0.05)	(0.04)	(0.03)	(0.02)	(0.02)
Poverty Status	0.02	-0.01		-0.03*	-0.02	-0.02
	(0.01)	(0.03)		(0.02)	(0.02)	(0.02)
Observations	1705	1705	1705	1705	1705	1705
F stat	6.5	6.2	8.8	6.3	3.1	4.6
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00

Source: authors' calculations. Robust standard errors in italics; +p<0.1; * p<0.05; ** p<0.01.

Table 2: Determinants of dimension well-being in Moldova. Full model

	education	Health	material	Communication	Emotional	protection
Migrant household	0.00	-0.03	-0.18**	0.04	-0.01	0.02
	(0.02)	(0.03)	(0.04)	(0.02)	(0.03)	(0.02)
Male	-0.00	-0.02	-0.01	0.01	-0.04*	-0.03**
	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.01)
Caregiver (ref category: mother)						
Father	-0.04	-0.02	0.05	0.05+	-0.01	-0.01
	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)	(0.02)
Other relative	0.01	-0.04	0.10*	-0.05+	-0.00	0.04*
	(0.02)	(0.03)	(0.04)	(0.03)	(0.03)	(0.02)
Age	0.09**	0.06**	0.02	0.01	0.01	-0.03**
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)
age2	-0.00**	-0.00**	-0.00	-0.00	-0.00	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Urban	-0.01	-0.08**	0.10*	0.22**	-0.01	0.04*

	(1)	(2)	(3)	(4)	(5)	(6)
	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)	(0.02)
Highest level of education in the household (ref category: higher education)						
lower secondary	-0.04+	-0.05+	-0.29**	-0.19**	-0.05+	-0.04**
	(0.02)	(0.03)	(0.04)	(0.03)	(0.03)	(0.01)
upper secondary	-0.02	-0.02	-0.23**	-0.11**	-0.03	0.04
	(0.02)	(0.03)	(0.05)	(0.03)	(0.03)	(0.02)
post secondary	-0.03	-0.02	-0.12**	-0.11**	0.01	0.01
	(0.02)	(0.03)	(0.04)	(0.03)	(0.03)	(0.01)
Nº siblings	-0.02*	-0.01	-0.09**	-0.00	-0.02**	-0.01+
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Nº adults	-0.01+	0.00	0.01	0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Mig*remittances	-0.03	0.03	0.31**	0.03	0.02	-0.03
	(0.02)	(0.03)	(0.04)	(0.03)	(0.03)	(0.02)
poverty status	-0.02	0.01		-0.06**	0.00	0.01
	(0.01)	(0.02)		(0.02)	(0.02)	(0.01)
Observations	1499	1499	1499	1499	1499	1499
F stat	9.0	2.9	13.3	10.6	1.8	5.8
Prob>F	0.00	0.00	0.00	0.00	0.03	0.00

Source: authors' calculations. Robust standard errors in italics; +p<0.1; * p<0.05; ** p<0.01.

Table 3: Determinants of multidimensional well-being

	MDI Moldova	MWI Georgia
Male	-0.04+	-0.03
	(0.02)	(0.02)
Caregiver (ref category: mother)		
Father	0.03	-0.04
	(0.04)	(0.05)
Other relative	-0.02	-0.07+
	(0.04)	(0.04)
Age	0.07**	0.05*
	(0.02)	(0.02)
Age2	-0.00**	-0.00+
	(0.00)	(0.00)
Urban	0.06	-0.01
	(0.04)	(0.02)
Highest level of education in the household (ref category: higher education)		
lower secondary	-0.16**	
	(0.03)	
upper secondary	-0.05	-0.29**
	(0.04)	(0.06)
post secondary	-0.06+	-0.05+
	(0.03)	(0.03)
Nº siblings	-0.04**	0.01
	(0.01)	(0.02)
Nº adults	0.00	0.03**
	(0.01)	(0.01)
Migrant household	0.05	0.12**
	(0.03)	(0.04)
Poverty status	-0.26**	-0.29**
	(0.02)	(0.02)
Mig*remittances	-0.02	-0.04
	(0.03)	(0.04)
Observations	1499	1705
F-stat	20.2	19.2
Prob>F	0.00	0.00

Source: authors' calculations. Robust standard errors in italics; +p<0.1; * p<0.05; ** p<0.01.