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The role of internal and international relative deprivation in global migration

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- analyse migration as part of broader global change
- contribute to new theoretical approaches
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Abstract

This paper analyses the role of internal (within-country) and international (bilateral and global) relative deprivation and absolute deprivation in international migration. It is argued that these three forms of relative deprivation need to be simultaneously taken into account in order to advance our theoretical understanding of the complex drivers of migration processes. Empirical analysis based on 2000 global migrant stock data suggests that absolute deprivation constrains emigration while international relative deprivation and internal relative deprivation in destination countries fuel migration. The effect of internal relative deprivation in origin countries is small and rather ambiguous. The results highlight complex and often counter-intuitive ways in which relative and absolute deprivation affect migration. The paper suggests that it would be unfounded to expect that decreases in international and internal relative and absolute deprivation will lead to massive reductions in the volume of international migration.

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Introduction

International migration is often seen primarily as a function of distance and income differentials between countries. Although there can be no doubt that these factors matter a lot, a brief glance at global migration patterns reveals that migration cannot be satisfactorily comprehended by such factors alone. It is hardly surprising that most migrants move from countries with on-average lower income levels to countries with on-average higher income levels. Although the truism holds that most people move in search of better lives, and although much migration does indeed occur from comparatively poorer to comparatively wealthier countries, the largest flows do not typically occur along the largest income and opportunity gradients. Furthermore, the poorest countries do not typically have the largest emigration flows. Finally, significant reverse migration occurs from wealthier to poorer countries and between countries with similar average levels of development.

This complex and sometimes counter-intuitive character of international migration patterns can only be explained if we go beyond comparing country averages in GDP per capita or some other income measure. We can do this in two ways. First, it is important to broaden our view from income to opportunity differentials. Potential migrants are likely to look at factors other than (perceived) expected income gains and lifetime earnings in a variety of geographical locations. These factors are likely to include perceived and real differentials in security from violence, political stability, political and civic freedoms as well as social security and the quality and costs of education, health care and public services. This shows the need to simultaneously consider other important development indicators which are also likely to shape migration behaviour (de Haas, 2010). Based on Sen's (1999) capabilities approach, we can argue that, taken together, all these factors will determine the extent to which people can enjoy substantive freedoms to live the lives they have reason to value. It would therefore be more appropriate to represent migration as a basic response to perceived *opportunity* or development differentials. Jointly, these factors shape opportunity structures in a large range of potential migration origins and destinations. Flows of information will shape people's awareness and perceptions about opportunity differentials in their current country of residence and a limited range of potential destination countries, which will subsequently shape their migration aspirations, intentions and, eventually, behaviour.

Second, it is important to go beyond country averages by assessing the *internal* structures of societies, economies and labour markets in origin and destination countries, and investigating how they jointly shape migration flows. Two crucial factors here are the segmentation of labour markets as well as economic inequality. Both factors are recognized in the literature to play a major role in driving migration processes, but are not often systematically incorporated into an empirical test of international migration processes. In addition to international income and other opportunity differentials, we need to simultaneously take into consideration (1) how cross-country differences in structure and segmentation of labour markets and skill profiles of populations affects migration levels; (2) how relative deprivation of social groups (2a) *within* and (2b) with regards to the income distribution in other countries affects migration levels and, last but not least, (3) how absolute deprivation or poverty and other lack of (e.g. political) freedoms might *constrain* people from migrating. This paper explores how these three forms of deprivation simultaneously affect international migration processes.

1 Background

Labour market segmentation and increasing levels of education and occupational specialization partly explain why we can expect significant labour migration within and between countries even in the absence of large income differences. Labour markets are not homogeneous but typically segmented (Castles and Miller 2009; Massey et al. 1993; Piore 1979). The level of complexity and segmentation of labour markets tend to increase with the level of economic development, a process which is also closely associated with concomitant increases in educational levels and occupational specialization (de Haas 2009). This drives people to migrate, mainly within but also across national borders in order to optimize the match between skills and labour market demand. Within a neoclassical framework, and if we consider migration as a human capital investment (Sjaastad 1962; Becker 1962), migration decisions will be guided by people's perceptions of present discounted value of lifetime monetary and non-monetary benefits in other geographic locations. People are then expected to migrate when they assess that the lifetime benefits of migrating outweigh the costs of the migration investment. This explains why migration is more common among younger and more educated people. Younger migrants have longer periods over which to reap the returns on the migration investment. In addition, more specialized professions requiring a higher education appeal to geographically larger labour markets. For instance, while the labour markets for medical doctors and academics are national and often international, those of factory workers or cashiers tend to be local or regional.

In particular, migration economists have explored the role of income inequality and relative deprivation in origin countries in determining individual propensities to migrate. The new economics of labour migration (Stark 1984; Stark and Taylor 1991) identified relative deprivation as one of the main migration motives, arguing that a major difference between the relative deprivation approach and the welfare function approach is that, in the utility approach, the marginal utility of income is a function of income alone and hence does not depend on the income of others (Stark and Yitzhaki 1988). The new economics of labour migration (NELM) questioned the idea that income has a constant effect on utility across socio-economic settings – a set increase in income means the same thing to a person regardless of his or her position in the income distribution (Massey et al. 1993; Stark et al. 1988; Stark and Yitzhaki 1988; Stark and Taylor 1991).

NELM hypothesizes that people and households migrate not only to improve income in absolute terms, but also to increase income *relative* to other households. Stark, in particular, has argued that migration propensities will be positively correlated with inequality in the origin societies, and negatively correlated with inequality in the destination societies. A number of micro-level empirical tests have confirmed the hypothesis that relative deprivation does increase migration propensities in sending communities (Bhandari 2004; Quinn 2006; Stark and Taylor 1989; Stark and Taylor 1991).

However, it is important to observe that relative deprivation is only likely to play a significant role in explaining migration if the returns on migration are high and if income reference group substitution (from the origin to the destination society) is unlikely (Stark and Taylor 1991). As long as transnational ties remain strong and migrants remain focused on origin communities, the main reference group is likely to be the origin community. This is an important explanation for the fact that migrants are willing to accept low-paid

'dangerous, dirty and demeaning' jobs that natives typically refuse. Although income earned by migrants in low-skilled and often irregular jobs in construction, agriculture, industry or domestic work is low by Western standards, it is often many times what migrants would have been able to earn in origin countries, substantially raising their socio-economic status in origin communities (cf. McKenzie and Gibson 2010). For instance, a survey conducted in a Moroccan emigration region indicated that international remittances averaging around US$250 per month allowed migrant households to double their incomes (de Haas 2006). As long as the origin community or society remains the main reference group, migrants will be willing to perform low-paid work that is downgrading in the eyes of natives.

We can hypothesize that low-skilled migrants from traditional communities will consider origin communities as their reference group more seriously and more persistently than more highly skilled and comparatively wealthier migrants will, who are less relatively deprived in the first place, and for whom reference group substitution is likely to occur faster as they integrate more easily. However, in the longer term, reference substitution is likely to take place also for lower skilled and culturally more distinct migrants, which explains why the second generation often refuse to do the same jobs their parents would have accepted.

So far, the literature has considered the role of international income and other opportunity differentials separately from the role of relative deprivation within origin communities. Survey-based empirical tests focus on the effect of relative deprivation *within* sending communities and internal (Bhandari 2004; Quinn, 2006) or international migration to one particular destination country (Stark and Taylor 1989; Stark and Taylor 1991). While these studies have yielded extremely valuable insights, their micro-level focus implies that they could not *simultaneously* study the effect of relative deprivation between and within sending and receiving locations on migration propensities.

This is unfortunate, as both forms of inequality can be considered as a form of relative deprivation, and, in the same vein, it seems somehow unrealistic to assume that reference groups are situated either in the origin or destination country. It seems reasonable to assume that most migrants maintain social ties in both origin and destination countries and therefore can have multiple reference groups in both societies. In order to bring more precision to the debate we aim to go beyond the observation that both forms of relative deprivation as well as absolute deprivation play a 'certain' but unspecified role, by developing hypotheses on their specific role and relative importance.

In order to increase our understanding of the complex role of relative deprivation in migration, it seems useful to make an analytical distinction between *internal* (within-country) and *international* (between countries or within global national income rankings) relative deprivation and to simultaneously analyse their role in explaining international migration. Depending on the unit of analysis, internal relative deprivation refers to the position that individuals or income groups have within the income distribution of their sending communities and countries, respectively. Bilateral relative deprivation refers to the position of individuals or income groups in the origin country with respect to the income distribution of the (potential) destination country. The crucial point is that internal and international relative deprivation can be assumed to play their roles *simultaneously* and to reinforce each other. However, their relative effects on migration are likely to differ across different income groups.

We can also hypothesize that migration would still occur even without international relative deprivation because of internal relative deprivation, and vice versa. This means that international relative deprivation is a sufficient condition for international migration to occur, but not a necessary one. Groups which feel internally deprived can still be expected to migrate even in a (very hypothetical) world without international relative deprivation; that is, where all countries have identical average income or development levels. Similarly, internal relative deprivation is a sufficient, albeit not necessary, condition for international migration. If relative income distributions of all countries in the world were similar, migration would continue as long as international relative deprivation persists. Beyond these separate effects, we can expect that internal and international relative deprivation are positively interlinked leading to a 'double deprivation' of individuals in lower income quintiles, and can therefore be expected to reinforce each other.

In order to achieve a comprehensive account of the role of deprivation in migration and a methodologically valid way of assessing the specific role of relative deprivation, we also need to integrate *absolute* deprivation (or poverty) into the analysis. It is well established that absolute deprivation in the form of absolute income poverty and the deprivation of other substantive freedoms might constrain people from moving. This is particularly likely to play a constraining role in very poor countries. For instance, a recent survey in Burkina Faso indicated that long-distance international migration, which generally involves high costs and risks, is mainly accessible for relatively wealthy households (Wouterse 2008). In addition, education can initially spur migration. The highly educated have greater capacities ('human capital') and access to technology (e.g. job websites) enabling them to explore employment and general livelihood opportunities (e.g. education, health care, social security) in other places and other countries. Educated migrants are also likely to have a greater capacity to adapt to receiving societies.

In addition, we can hypothesize that education goes along with the broadening of 'mental horizons' and changing concepts of the 'good life', increasing life aspirations. As long as such aspirations among populations rise faster than improvements in socio-economic conditions in origin countries would allow them to achieve these aspirations, we can hypothesize that this will increase aspirations to migrate in order to better match aspirations and concrete possibilities for personal advancement (de Haas 2010). Migrants are therefore also likely to go to places and countries which not only offer the best instantaneous advantages, for instance in the form of better wages, but also the best opportunities for upward socio-economic mobility for them and their children. This might attract (particularly skilled) migrants to countries with high levels of inequality, where higher returns on human capital and business investments may be expected.

These factors can explain the paradox that social and economic development in the poorest countries tends to coincide with increasing emigration, as increases in income, education and individual freedoms tend to loosen constraints on movement while simultaneously increasing migration aspirations. As long as significant origin–destination opportunity gaps remain, this will result in take-off emigration. According to relative deprivation theory, such take-off migration would be spurred even more if development coincides with increasing income inequality.

The application of a capabilities framework to the analysis of migration might also help us explain the, perhaps counter-intuitive, finding that a lack of political freedoms appears to be *negatively* associated with emigration rates (de Haas 2010). Although political

repression is likely to increase migration *aspirations*, repression also tends to coincide with higher emigration restrictions such as exit visas and financial and bureaucratic obstacles to obtaining passports (McKenzie 2007), which decrease *capabilities* to migrate, and the latter effect may well be stronger than the former (de Haas 2010). Autocratic states tend to have a higher capability to constraint emigration than democratic states do, as freedom of emigration is a fundamental human right.

In sum, we can hypothesize that (1) internal and (2) international relative deprivation as well as (3) absolute deprivation all play a significant role in explaining international migration. It has also become clear that we can only properly assess their role if these three forms of deprivation are simultaneously taken into account. The crux is that while they are obviously interrelated, the different forms of relative and absolute deprivation might have rather opposite effects on migration, which partly explains why international migration is rarely a mere function of distance and income (or other opportunity) differences, and highlights that these different dimensions of 'developmental' factors can have rather counter-intuitive effects on migration. For instance, while increasing within-country inequality might increase relative deprivation and, hence, migration aspirations among the poor, if this goes along with increasing absolute poverty, they might actually be less capable of moving. At the same time, increasing absolute poverty is also likely to coincide with increasing international deprivation. So, the question remains: what is the precise role of these three forms of deprivation in explaining migration, what is their relative weight, and how do they interact?

The empirical part of this paper will further explore the role of internal and international relative deprivation in explaining international migration by analysing migration data drawn from the World Bank/University of Sussex *Global Migrant Origin Database*. This fills a certain gap in the literature. While most analyses of relative deprivation and migration have drawn on micro-level survey data, they have largely remained separate from macro-level analyses of international migration determinants that focus on average income gaps (Liebig and Sousa-Poza 2004; Stark et al. 2009). Unfortunately, such studies do not generally take into account income distributions within *and* across countries as proxies of relative deprivation. To our knowledge, there are no empirical studies which *simultaneously* consider the role of internal (within countries) and international (between countries) relative deprivation as well as absolute deprivation. There is no empirical work that systematically explores the effects of relative deprivation at national level on aggregate outflows and inflows as well as bilateral (country-to-country) flows for a global cross-section of countries.

The initial tests of the relative deprivation hypothesis by Stark and Taylor (1989; 1991) are survey-based, micro-level tests of the role of relative deprivation at community level, whereas this test focuses on relative deprivation at country level. Ideally, one would like to simultaneously test the effect of community and country-level forms of relative deprivation. This would require uniform survey datasets across a wide range of countries, which are unfortunately not available. We need to emphasize that this severely limits comparability of these two types of tests, and that different effects of community and national level relative deprivation are not necessarily incompatible or logically inconsistent. In addition, the cross-sectional nature of the data prevents us from making firm causal inferences. Future improvements in historical migration and inequality data will hopefully

enable us to compile panel datasets to further explore the role of relative deprivation in international migration processes.

2 Empirical analysis

2.1 Methodology and data

Availability of the unique large-scale *Global Migrant Origin Database*, compiled by the University of Sussex and the World Bank, makes the following empirical analysis possible. This database contains bilateral (dyadic) migration stock estimates for 226 countries and overseas territories, derived from the bilateral migration matrix created by the University of Sussex (Parsons et al. 2005). This original database uses data primarily from national censuses around the year 2000, but also population registers and some other secondary sources, to compile bilateral stock data for 162 countries. For the remaining 64 countries, for which censuses were not available or had no information, bilateral stocks were estimated and later updated (Ratha and Shaw 2007). In the following, we use the last available version of the database.[1]

These data reflect the bilateral stocks of migrants around the year 2000. This approximates net bilateral flows of migrants over the preceding one to two decades and is therefore an appropriate proxy for long-term past trends of bilateral migration. Based on this bilateral migration matrix, we use two alternative compilations of the migration stock variables: first, we calculate total emigration stocks (total numbers of citizens living abroad) for all 226 countries, and second, bilateral migration stocks, for each country pair. However, constraints on the availability of data for some independent variables only allows us to include a maximum of 177 countries in our analysis of total emigrant stock, and about 144 countries for bilateral migration stock generating about 20,000 observations.

Our main interest is to identify the relevance of internal and international relative deprivation as determinants of the global migration pattern. For this purpose we construct three different measures of relative deprivation. They are distinct in their definition of the comparative reference group.[2] The concept of relative deprivation was originally developed for individuals perceiving deprivation with respect to other members of their reference group– and this is also the community level at which Stark and Taylor (1989; 1991) situated their analysis. This paper applies the concept of relative deprivation to entire countries as well as to each of the five income quintiles of a country's populations. We assume for each individual of an income quintile an income per capita according to the quintile's average income. We further assume that an individual perceives 'relative deprivation' with respect to individuals belonging to higher income quintiles either within the same country or with respect to individuals with a higher per capita income (in purchasing power parity) of other, potential destination, countries.[3] We therefore modify the original definition of relative deprivation by assuming that individuals experience internal relative deprivation if they do

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[1] www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html
[2] For an overview on reference group formation, see e.g. Runciman 1996.
[3] The authors admit that the definition of 'relative deprivation' is somewhat narrow and uni-dimensional because it focuses only on monetary income and ignores other sources for feelings of relative deprivation such as social deprivation or ethnic and political discrimination. Our choices were driven by data limitations and future analyses should try to include other forms of, non-pecuniary, deprivation.

not belong to the wealthiest quintile of that country; the level of relative deprivation is determined by the average income of the quintile the individual belongs to as well as the mean excess income of all higher income quintiles.

We define international relative deprivation on a global level as well as on a bilateral level. On the global level, a country (i.e. its entire population) is relatively deprived if the income per capita is lower than that of the richest country in the world (which is Bermuda in our dataset). The level of global relative deprivation of a country is calculated as the share of world population living in countries with a higher per capita income times the population-weighted mean excess income of this wealthier part of world population. According to our definition, bilateral relative deprivation only exists if the income per capita in the lowest income quintile of the sending country is lower than the average income per capita of the highest income quintile in the destination country. We calculate the level of bilateral relative deprivation for each income quintile of the sending country as the share of the destination country's population with a comparatively higher quintile income per capita times the mean excess income per capita of these richer income quintiles in the destination country. Consequently, the level of bilateral relative deprivation of each income quintile in a sending country depends on the share of population in the destination country with higher incomes and their respective mean excess income.

All measures of relative deprivation are based on GDP per capita in 2000, measured in constant 2005 US dollars and purchasing power parity (PPP), drawn from the World Bank (2009). In our analysis of total emigration stocks, the two measures capturing global and internal relative deprivation are specified as follows. First, the level of *Global Relative Deprivation* of country i, RD_i^{global}, is based on a comparison of its per capita income $\bar{y}_i$ with the countries with a higher per capita income according to the following formularization:

$$RD_i^{global} = \int_{\bar{y}_i}^{\bar{y}^{max}}[1 - F(z)]dz = [1 - F(\bar{y}_i)] \cdot E(z - \bar{y}_i | z > \bar{y}_i) \qquad (1)$$

This measure defines country i's level of relative deprivation as the share of world population living in countries with a higher income per capita than that of country i times the (population-weighted) mean excess income per capita of these richer countries. This means that the global level of relative deprivation of a country decreases if, *ceteris paribus*, (i) this country improves its rank on a global income per capita scale; or (ii) the average income gap towards the wealthier countries declines, or (iii) the share of world population living in wealthier countries diminishes.

Second, *Internal Relative Deprivation*, $RD_{qi}^{internal}$, is calculated separately for all five income quintiles q={1,…,5} based on the respective mean quintile income $\bar{y}_{qi}$ in country i:

$$RD_{qi}^{internal} = \int_{\bar{y}_{qi}}^{\bar{y}_{5i}}[1 - F(z)]dz = \left[1 - F(\bar{y}_{qi})\right] \cdot E(z - \bar{y}_{qi} | z > \bar{y}_{qi}) \qquad (2)$$

This specification yields the level of relative deprivation for each income quintile in country i with respect to the country's population. Hereby, internal relative deprivation of income quintile q is calculated as the share of the country's population that is wealthier than this income quintile (i.e. 0 per cent for the wealthiest quintile and 80 per cent for the poorest income quintile) times the mean excess income per capita of the wealthier income quintiles. Internal relative deprivation of individuals does decrease if the total income gap between the average income of the quintile they belong to and all higher income quintiles declines.

According to this definition, the individuals of the highest income quintile are internally not deprived. Additionally, we calculate the level *Total Internal Relative Deprivation*, RD_i^{total}, as the aggregation of internal relative deprivation across all five income quintiles (i.e. across the total population):

$$RD_i^{total} = \sum_{q=1}^{5} RD_{qi}^{internal} \tag{3}$$

This measure of total internal relative deprivation proxies the overall degree of income inequality within a country and is distinct from alternative inequality measures such as the Gini coefficient.[4] For our fourth measure of relative deprivation, *Bilateral Relative Deprivation*, we determine the level of relative deprivation of each income quintile in sending country i with respect to the income levels and distribution in destination country j. Therefore, the level of bilateral relative deprivation of income quintile q in country i, $RD_{qi}^{bilateral}$, is calculated as the share of population in destination country j that has a higher income per capita than the respective income quintile in the origin country i times the mean excess income per capita of the wealthier income quintiles in the destination country j:

$$RD_{qij}^{bilateral} = \left[1 - F(\bar{y}_{qj})\right] \cdot E(\bar{y}_{qj} - \bar{y}_{qi} | \bar{y}_{qj} > \bar{y}_{qi}) \tag{4}$$

Hence, the level of bilateral relative deprivation of an income quintile in the origin country decreases, if, *ceteris paribus*, (i) the share of population in the destination country with a higher income decreases, or (ii) the average income gap between the origin country's income quintile and all wealthier income quintiles in the destination country does decrease.

The analysis of the different types of relative deprivation is supplemented by the levels of absolute deprivation. Instead of controlling for this by using only absolute GDP per capita levels, we use the broader UNDP's human development index (HDI) as a composite indicator reflecting the absolute deprivation in the dimensions of health (life expectance at birth), educational attainment (literacy), and living standard (income per capita). We expect this to have a positive effect on total and bilateral migration stocks; the easing of resource constraints by the availability of human and physical capital is well established in the migration literature (Martin and Straubhaar 2002) and, as we argue above, education and improved access to information is likely initially to also increase migration aspirations in various ways.

Furthermore, we control for the human-rights situation in terms of violations of physical or personal integrity rights carried out by a state or its agents (Wood and Gibney, 2010), which can be considered as an important non-economic form of deprivation. This is expected to be an important driver of forced emigration out of fragile and failed states. On the other hand, disrespect for human rights might also impede people from moving out, which makes the effect potentially ambiguous. For instance, autocratic states quite often impose exit visas or constrain the issue of passports. We use annual data provided by the *Political Terror Scale* (PTS) and calculate a ten-year average for the 1990s.[5] The PTS distinguishes five levels of political terror and violence ranging from 'Countries under a secure rule of law, people are not imprisoned for their views, and torture is rare or

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[4] The formal derivation of the relationship between total internal relative deprivation and the Gini coeffient is provided by Stark 2006.
[5] We accessed the database on 15 September 2010, www.politicalterrorscale.org/download.php.

exceptional. Political murders are extremely rare.' (level 1) to 'Terror has expanded to the whole population. The leaders of these societies place no limits on the means or thoroughness with which they pursue personal or ideological goals.' (level 5).

For the bilateral stock regression models, we use three different types of dyadic variables that control for different dimensions of a bilateral relationship. First, geographical *Distance*, defined as the distance in kilometres between the two capital cities by using the great circle formula (Mayer and Zignago 2006), captures the classic idea of gravity models about the increasing travel costs and decreasing flow of migration-relevant information and thus people with an increasing distance between source and destination countries. Furthermore, we expect higher bilateral stocks of migrants when two countries have had a colonial relationship for a relatively long period of time including substantial participation of the (former) colonizer in the governance of the colonized country (Mayer and Zignago 2006). A positive effect of former colonial ties is expected for both sides of this dyadic relationship, as such countries are more likely to have cultural, linguistic, religious as well as institutional and economic ties through trade, investment, military, and development cooperation as well as past migration.

Second, we control for contiguity by using a dummy variable set to one if the two countries share a *Common border*. Data for these three time-invariant bilateral variables stem from CEPII, the Centre d'Etudes Prospectives et d'Informations Internationales.[6] Third, from the same source we retrieved the data for the geographical *Country size* measured in square kilometres.[7] Finally, and since we are estimating gross migration stock, we have to control for population in both sending and receiving countries. Obviously, this variable accounts for a large proportion of the variance of the migration flows. As Kim and Cohen (2010) observe, the population might be highly correlated with country size for both origin and destination countries. Our check for collinearity among the independent variables by calculating variance inflation factors (VIFs) reveals that the mean VIFs do not exceed 4, and none of the independent variables has a VIF above 8. Consequently, we consider multicollinearity not to be a serious concern in all model specifications.

We test two types of empirical models and both of them are log-linear. First, the model specifications on total emigration stocks include the following independent variables:

$$\ln(M_i) = \beta_0 + \beta_1 \ln(Global\ RD_i) + \beta_2(Total\ Internal\ RD_i)$$
$$+ \beta_{3q} \ln(Quintile\ Internal\ RD_i) + \beta_4(Political\ terror_i) + \beta_5 HDI_i$$
$$+ \beta_6 Country\ size_i + \beta_7 \ln(Population_i) + \varepsilon_i$$

Second, we adjust and extend this model on total migration stocks by adding some variables that might particularly influence the bilateral migration pattern:

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[6] We accessed the CEPII database on 15 September 2010, www.cepii.fr/anglaisgraph/bdd/distances.htm.

[7] We interpret the Country size variable as average internal distance. Hereby, the gross country area is adjusted by a transformation (Country size $= \frac{2}{3}\sqrt{area/\pi}$) to reduce the so-called 'illusionary border effect' (see Head and Mayer 2002).

$$\ln\left(M_{ij}\right) = \beta_0 + \beta_{1q}\ln\left(Quintile\ Internal\ RD_i\right) + \beta_{2q}\ln\left(Quintile\ Bilateral\ RD_{ij}\right)$$

$$+ \beta_3 Political\ terror_i + \beta_4 Political\ terror_j + \beta_5 HDI_i + \beta_6 HDI_j$$

$$+ \beta_7 Country\ size_i + \beta_8 Country\ size_j + \beta_9\ln\left(Population_i\right)$$

$$+ \beta_{10}\ln\left(Population_j\right) + \beta_{11}Distance_{ij} + \beta_{12}Colony_{ij}$$

$$+ \beta_{11}Common\ border_{ij} + \varepsilon_{ij}$$

where the origin country i and the destination country j are identified by subscripts. In the following we present the results and an interpretation of the effects of the different types of relative deprivation on the global migration pattern.

3 Results

Table 1 reports the results for the total emigration model, whereas Table 2 displays the specifications of the bilateral migration model. The results suggest that relative deprivation plays a rather ambiguous role in both types of migration stock aggregations. We find that countries with higher levels of human development have larger emigrant stocks, giving support to the hypothesis that reductions in absolute deprivation release constraints on outward mobility and that more developed societies are generally more migratory. We also find that global relative deprivation has a certain positive effect, but this effect is comparatively small[8] and insignificant in the model specifications where relative internal deprivation is included. This seems to indicate that global relative deprivation is an abstract concept that does not appeal to people's real-life imaginations. In other words: it is not so likely that people migrate because of their relative deprivation *vis-à-vis* the wealthier 'rest of the world', but that (sub-)populations in other countries are more likely reference groups. This seems a reasonable assumption to make, and our findings appear to support this.

Table 1: Log-linear estimation: relative deprivation and total emigration

DV	Total emigration					
IV	(1)	(2)	(3)	(4)	(5)	(6)
Global RD	0.119*	0.092	0.074	0.086	0.088	0.095
	(1.66)	(0.82)	(0.65)	(0.77)	(0.80)	(0.89)
Total Internal RD		-0.331*				
		(1.73)				
Internal RD (1st Q)			-0.380*			
			(1.88)			
Internal RD (2nd Q)				-0.301		
				(1.57)		
Internal RD (3rd Q)					-0.291	
					(1.65)	

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[8] According to the first model specification, a (hypothetical) reduction of global inequality, measured by the global level of relative deprivation, by about 10 per cent would *ceteris paribus* reduce the global emigration stock of about 175 million people (in the year 2000) by about 1.2 per cent, i.e. about 2 million migrants.

Internal RD (4th Q)						-0.266
						(1.65)
Political terror	0.118	0.136	0.135	0.145	0.147	0.148
	(1.21)	(1.28)	(1.27)	(1.37)	(1.39)	(1.40)
HDI	2.607**	4.311**	4.605**	4.195**	4.108**	3.95**
	(4.53)	(4.05)	(4.06)	(3.95)	(4.16)	(4.33)
Country size	-0.859**	-0.550	-0.562	-0.558	-0.547	-0.542
	(2.23)	(1.42)	(1.46)	(1.45)	(1.42)	(1.40)
Population	0.734**	0.711**	0.711**	0.701**	0.697**	0.696**
	(13.09)	(10.83)	(10.90)	(10.68)	(10.58)	(10.52)
VIF (mean)	1.90	4.20	3.88	3.76	3.40	3.05
No. of observations	172	143	143	142	142	142
R2 adj	0.656	0.661	0.662	0.654	0.655	0.655

Note: *,** significant at a 10%, 1% level. t-statistics in parentheses. Emigration, RD and population variables are natural logs.

In comparison, total internal relative deprivation in the origin country has a negative effect on total emigrant stocks (Table 1). This would imply that a (hypothetical) internal redistribution of income with the consequence of a reduction of the overall level of internal relative deprivation would, *ceteris paribus*, rather increase the emigrant stocks. This result supports some recent micro-evidence on the negative relationship between internal relative deprivation and out-migration from India (Czaika 2010). There is no straightforward interpretation of this result, but it might well reflect that high levels of relative deprivation also mean that larger shares of populations will be absolutely deprived, which constrains them from moving. National averages such as HDI scores do not capture such distributional dimensions of income and other resources. A decomposition of total internal deprivation into separate income quintiles shows that internal relative deprivation has a somehow smaller effect for the richer income quintiles of the population and that this effect is only significant for the two lowest income quintiles.

Furthermore, increasing levels of internal relative deprivation of the relatively poor tend to reduce emigration propensities by more than when wealthier parts of a population are experiencing higher relative deprivation, which can be explained by the insignificant relevance of absolute deprivation for higher income groups. However, this effect is not very robust and, as we will see, it is not significant in the bilateral models (Table 2). Furthermore, as expected, higher levels of political terror are positively associated with emigrant stocks, although the coefficients are not significant.

Interestingly, disaggregation of total outflows into bilateral outflows (see Table 2) turns the effect of internal relative deprivation within origin countries around and also becomes stronger and more significant as we move up national income hierarchies. This change in the sign reflects the sensitivity of the effect of internal relative deprivation for different model specifications and further highlights the difficult interpretation of these apparently conflicting results. At best, we can say that the role of relative deprivation in

emigration is ambiguous, and this deserves to be further explored in future research using improved datasets.

In contrast to this ambiguous effect of internal relative deprivation in origin countries, inequality in destination countries measured by the level of internal relative deprivation clearly increases the bilateral stock of migrants. It is unlikely that reverse causality in terms of systematically higher internal relative deprivation levels of destination countries with larger immigrant stocks explains most of this effect; the fact that the average global migration rate is only about 3 per cent with a significant share of high-skilled migrants does not imply that immigration makes the income distributions of destination countries deteriorate.

Table 2: Log-linear estimation: internal relative deprivation and bilateral migration

DV	Bilateral migration					
IV	(1)	(2)	(3)	(4)	(5)	(6)
Total Internal RD (origin)	0.052					
	(1.54)					
Total Internal RD (dest)	0.570**					
	(15.73)					
Total Bilateral RD	0.077**					
	(9.03)					
1st Q Internal RD (origin)		0.038				
		(1.05)				
1st Q Internal RD (dest)		0.655**				
		(17.18)				
1st Q Bilateral RD		0.077**				
		(8.46)				
2nd Q Internal RD (origin)			0.057*			
			(1.70)			
2nd Q Internal RD (dest)			0.566**			
			(15.77)			
2nd Q Bilateral RD			0.081**			
			(9.93)			
3rd Q Internal RD (origin)				0.058*		
				(1.84)		
3rd Q Internal RD (dest)				0.533**		
				(15.72)		
3rd Q Bilateral RD				0.071**		
				(9.14)		
4th Q Internal RD (origin)					0.064**	
					(2.18)	
4th Q Internal RD (dest)					0.473**	
					(15.06)	
4th Q Bilateral RD					0.064**	
					(8.60)	
5th Q Bilateral RD						0.065**
						(11.26)
Political terror (origin)	0.039**	0.043**	0.039**	0.049**	0.058**	0.068**
	(2.03)	(2.26)	(2.06)	(2.63)	(3.13)	(3.68)

Table 2: Log-linear estimation (continued)

Political terror (dest)	-0.591**	-0.575**	-0.587**	-0.593**	-0.599**	-0.588**
	(32.14)	(31.15)	(31.99)	(32.31)	(32.53)	(31.54)
HDI (origin)	3.037**	2.952**	3.064**	3.111**	3.118**	3.450**
	(15.13)	(13.53)	(15.24)	(16.43)	(17.60)	(28.96)
HDI (destination)	-3.596**	-4.046**	-3.573**	-3.275**	-2.830**	-0.427**
	(18.40)	(19.11)	(18.30)	(17.81)	(16.41)	(3.42)
Country size (origin)	0.024	0.025	0.042	0.058	0.070	0.143**
	(0.33)	(0.34)	(0.57)	(0.80)	(0.96)	(1.98)
Country size (dest)	0.939**	0.951**	0.940**	0.939**	0.947**	1.196**
	(12.92)	(13.13)	(12.93)	(12.88)	(12.98)	(16.60)
Population (origin)	0.610**	0.607**	0.610**	0.605**	0.600**	0.591**
	(49.82)	(50.07)	(50.10)	(49.70)	(49.31)	(50.10)
Population (dest)	0.837**	0.828**	0.835**	0.839**	0.841**	0.790**
	(70.42)	(70.09)	(70.23)	(70.15)	(69.83)	(66.78)
Distance	-0.194**	-0.192**	-0.194**	-0.195**	-0.195**	-0.189**
	(55.51)	(54.87)	(55.62)	(55.72)	(55.66)	(53.62)
Colony	2.607**	2.602**	2.606**	2.598**	2.598**	2.674**
	(21.05)	(21.02)	(21.06)	(20.97)	(20.94)	(21.41)
Common border	3.068**	3.088**	3.055**	3.066**	3.082**	3.216**
	(30.66)	(30.88)	(30.54)	(30.65)	(30.81)	(31.88)
VIF (mean)	3.20	3.50	3.15	2.94	2.71	1.77
No. of observations	20,016	20,016	20,016	20,016	20,016	20,158
R2 adj	0.541	0.541	0.541	0.541	0.539	0.530

Note: *,** significant at 10%, 5% level. Migration, RD and population variables are natural logs.   t-statistics in parentheses.

Thus, it seems that inequality in destination countries rather attracts immigrants: inequality does not necessarily only signal social injustice, but can also signal social mobility and opportunities to climb the social and economic ladder. It is important to realize here that absolute income gaps between the lowest and highest income quintiles, and thus the levels of internal relative deprivation, are much higher for wealthier and more developed countries (see Table 3). More developed countries offer much higher internal economic opportunities for absolute income gains and generally higher returns to human capital if social mobility is possible. It is however plausible to assume that social and economic penetrability (upward mobility) in wealthier countries is at least not lower than in less developed countries. Therefore, we can argue that inequality and high levels of internal relative deprivation attract rather than deflect potential migrants. Next to relative deprivation in the origin country, absolute deprivation in terms of lower levels of human development with regards to health, education and economic standards seems to play an important role in constraining emigration and possibly also reducing migration aspirations.

Surprisingly, bilateral immigration stocks are not higher for destination countries with higher levels of human development. This seems counter-intuitive. However, a large degree of destination country development is already captured by the bilateral relative deprivation measure, and destination HDI might capture other, non-measured factors, such as the fact that wealthier nations tend to have more restrictive immigration policies and, perhaps, better mechanisms for external (border) and internal (institutional) migration controls, although this remains speculative and further analysis would be required.

For all income quintiles of the origin countries, bilateral relative deprivation has a positive effect on emigration. This corroborates the above observation that migrants are more likely to engage in bilateral (country-to-country) comparisons instead of comparing their income with an abstract idea of global excess wealth. A hypothetical reduction of bilateral relative deprivation by 10 per cent would on average decrease bilateral stocks of migrants by about 0.7 per cent, i.e. by about 1.2 million migrants. Hereby, bilateral relative deprivation of upper income quintiles seems to contribute less to overall emigration than the relative deprivation of lower income quintiles.

This result amends the previous finding about the likely effect of an internal redistribution of income. Thus, we can conclude that if a government would unilaterally change its internal income distribution by transferring income from the richer parts of its population to the poorer ones (for instance, through a tax reform), as a consequence this country should not necessarily expect lower emigration propensities of its population. However, if all major migration countries would level out their internal income distribution without changing average income, all countries are likely to reduce their emigration flows by reducing bilateral relative deprivation levels.

The other control variables show a clear pattern of explanation. Human-rights violations and political terror seem to be strong immigration deterrence factors, while the apparent expulsion effect of political terror on emigration is stronger if we simultaneously control for relative deprivation of higher income quintiles. We can think of at least two explanations for this effect: first, relatively rich and more educated people are 'positively selected' as targets for state aggression or simply more likely or more suspected to be politically active, and second, rich people might value their personal liberties and security comparatively higher than their (already relatively high and more taken-for-granted) economic well-being and standing. Security, therefore, can perhaps be considered as a 'luxury good' with a relatively high income elasticity which is, *ceteris paribus*, more demanded by wealthier people. However, the origin country effect of this variable is much smaller than the destination country effects, which might reflect the idea that the 'expulsion effect' is partly counterbalanced by the fact that human-rights violating countries also tend to put higher constraints on free mobility.

Table 3: Income gaps between lowest and highest income quintiles

HDI level	No. of countries	Average income 1st Quintile	Average income 5th Quintile	Average income gap
<0.6	44	439.17	4443.39	4003.69
0.6-0.7	57	579.96	6773.53	6193.57
0.7-0.8	92	937.80	9506.59	8568.79
>0.8	56	7362.11	43594.41	36232.30

Note: Based on own calculations.

Our controls for geographical proximity, common border and colonial links have the expected signs and high significance. Country size has low explanatory power on the origin side, but all the more on the destination side. The geographical size of the sending country, which can be a proxy for the effect of internal migration as an alternative for international emigration, does only show a weak effect for total emigrant stocks, primarily when controlling for global relative deprivation (Table 1). Although migration is no longer

dominated by settlers and colonists, geographical size of destination countries has a positive effect on international migration.

Conclusion

We have analysed the effect of internal and international relative deprivation on the global migration pattern. We find that international migration does not necessarily decrease when opportunity differentials are reduced across national boundaries. Economic and human development within sending regions need not necessarily reduce, and may actually increase international migration.

Our results imply that economic redistribution within countries with a rather unequal income distribution can have two effects: it may weakly increase emigration and more strongly reduce immigration. This needs some explanation. By definition, redistribution leads to lower levels of total internal relative deprivation, but at the expense of relative deprivation levels for the richer income quintiles, which might increase their aspirations to migrate. Since the upper quintiles often have a higher migration propensity, this might lead to a reallocation of the potential emigrants in favour of the relatively rich and lead to a net increase in total emigration.

On the other hand, through reducing total relative deprivation in destination countries, a compression of the income distribution reduces the attractiveness for potential immigrants from the (relatively mobile) upper tail of a sending country's income distribution. Beyond this, redistribution reduces bilateral relative deprivation, which may diminish the aspirations for improving well-being by migrating. Consequently, national policies and economic transformations that alter the income distribution do not only change the relative deprivation pattern (and thus, the incentives to migrate) of their own population but also that of the populations in the sending countries. National policies that affect the distribution of income (and other 'capabilities') will influence international migration independent of their effects on the per capita income. The combination of absolute deprivation (human development, economic well-being), internal relative deprivation and international relative deprivation determine the overall effect on bilateral and global migration flows.

These results highlight that the role of internal (within-country) and international (bilateral and global) relative deprivation and absolute deprivation need to be simultaneously taken into account in order to advance our understanding of the complex interplay of these important drivers of international migration processes. The empirical tests seem to confirm the idea that absolute deprivation constrains emigration while international relative deprivation and internal relative deprivation in destination countries fuel migration. The effect of internal relative deprivation in origin countries is small and more ambiguous.

Building on the debate about the effects of redistribution on global inequality (e.g. Bourguignon et al. 2009), this paper suggests that it would be unfounded to expect that decreases in international and internal relative and absolute deprivation will lead to massive reductions in the volume of international migration, as is quite often assumed in public and academic debates. The results highlight complex and often counter-intuitive ways in which relative and absolute deprivation affect migration. While they are obviously interrelated, the different forms of relative and absolute deprivation might have rather opposite effects

on migration, with unexpected results. For instance, it is often assumed that take-off economic growth in sub-Saharan African countries will reduce emigration pressures. However, while rapidly increasing average income levels and concomitant decreases in absolute deprivation may decrease international relative deprivation (potentially decreasing migration aspirations), growing wealth may also massively release constraints on international mobility, and if take-off economic growth coincided with increasing income inequality and relative deprivation, this may fuel take-off emigration.

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Annex

Table A1: Descriptive statistics

Variable	Definition	Mean	St.Dev.	Min	Max
Total emigration	Natural log of total emigration stock in 2000/2001.	12.020	2.290	3.332	16.309
Bilateral migration	Natural log of bilateral migration stock in 2000/2001.	2.837	2.836	0	16.049
Global RD	Natural log of relative deprivation measured on a country level. Reference group: world.	8.059	1.414	-1.800	9.149
Total Internal RD	Natural log of sum of quintile relative deprivation. Reference group: origin country.	9.234	1.096	6.300	11.258
Internal RD (1st Q)	Natural log of relative deprivation of lowest income quintile. Reference group: origin country.	8.255	1.136	5.359	10.882
Internal RD (2nd Q)	Natural log of relative deprivation of second lowest income quintile. Reference group: origin country.	7.949	1.087	5.019	9.986
Internal RD (3rd Q)	Natural log of relative deprivation of third lowest income quintile. Reference group: origin country.	7.649	1.073	4.709	9.646
Internal RD (4th Q)	Natural log of relative deprivation of second highest income quintile. Reference group: origin country.	7.232	1.059	4.302	9.255
Internal RD (5th Q)	Natural log of relative deprivation of highest income quintile. Reference group: origin country.	0	0	0	0
Bilateral RD (1st Q)	Natural log of relative deprivation of lowest income quintile. Reference group: destination country.	7.298	2.999	0	10.837
Bilateral RD (2nd Q)	Natural log of relative deprivation of second lowest income quintile. Reference group: destination country.	6.671	3.486	0	10.641
Bilateral RD (3rd Q)	Natural log of relative deprivation of third lowest income quintile. Reference group: destination country.	6.155	3.779	0	10.637
Bilateral RD (4th Q)	Natural log of relative deprivation of second highest income quintile. Reference group: destination country.	5.573	4.006	0	10.635
Bilateral RD (5th Q)	Natural log of relative deprivation of highest income quintile. Reference group: destination country.	4.029	4.203	0	10.626
Political terror	Average levels of political violence and terror that a country experienced in the 1990s based on a 5-level terror scale with '1' indicating a low and '5' a high level of political terror.	2.473	1.110	1	5

Table A1: Descriptive statistics (continued)

HDI	Composite index measuring development by combining indicators of life expectancy, educational attainment and income, ten-year average for 1991–99.	0.725	0.170	0.336	0.968
Country size	Average internal distance of a country, calculated according to the formula $\frac{2}{3}\sqrt{area/\pi}$.	180.439	229.778	0.532	1554.244
Population	Natural log of population, ten-year average for 1991–99.	14.724	2.685	7.601	20.956
Distance	Geographical distance (in 1000 kilometres) between the two capital cities.	8.405	4.680	0.995	19.951
Colony	Dummy set to one if the two countries have had a colonial relationship for a relatively long period of time.	0.010	0.098	0	1
Common border	Dummy set to one if the two countries share a common border.	0.013	0.112	0	1