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Working Paper

Are human rights and economic well-being substitutes? Evidence from migration patterns across the Indian states

Frankfurt School - Working Paper Series, No. 163

Provided in Cooperation with:

Frankfurt School of Finance and Management

Suggested Citation: Libman, Alexander; Herrmann-Pillath, Carsten; Yadav, Gaurav (2011) : Are human rights and economic well-being substitutes? Evidence from migration patterns across the Indian states, Frankfurt School - Working Paper Series, No. 163, Frankfurt School of Finance & Management, Frankfurt a. M.

This Version is available at:

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**Are Human Rights and Economic
Well-Being Substitutes? Evidence
from Migration Patterns across the
Indian States***

Alexander Libman, Carsten Herrmann-Pillath and Gaurav Yadav

April 2011



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* The paper has been presented at the conference of the Public Choice Society in San Antonio in March 2011. The authors appreciate the valuable comments of the participants of the conference. All mistakes remain our own.

Abstract

The aim of the paper is to study the relation between the demand for human rights and for economic prosperity. It analyzes the demand not, as it is often done in the literature, from the “voice” perspective (political activity), but rather looks at the “exit” perspective (migration patterns). Given the difficulties associated with identification in international samples we study the intra-national migration in a federation with significant economic and political differences between states – India. The paper finds that quality of human rights protection and economic well-being are substitutes when determining the patterns of migration: lower number of human rights violations acts as a “pull” factor for individual states only if the income per capita is small enough; increasing economic well-being political regimes seem to be able to “buy acceptance” of the lower quality of human rights. The results are robust to various specifications and estimation approaches.

Keywords: democracy, human rights, economic well-being, Indian states, migration

JEL classification: D72, D78; O43

ISSN: 14369753

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1 Introduction

The interrelation between the economic development and the democratization has been actively discussed in the economics and political science literature. As early as Lipset (1959) argued that economic well-being (and, generally speaking, economic modernization) is likely to contribute to the democratization. The empirical studies so far remain controversial in spite of the significant proliferation of the empirical literature and advancements in terms of uncovering the causal mechanisms and various robustness checks (see Wucherpfennig and Deutsch 2009 for a systematic review of the literature). However, this work mostly focuses on the *democratization as such*, rarely disentangling the *outcomes* of this process and the *demand* for democratization, i.e. whether democratization is preferred by the population (for a given level of costs associated with the political change). Democratic *transition* is not necessarily a function of the popular *demand* for democracy and may be just “unintended” outcome of bargaining over rents and resources (as, for instance, in the model of Acemoglu and Robinson 2001), but the importance of the popular acceptance of democratic values and thus demand for democracy has been repeatedly emphasized in the literature (see e.g. Granato et al. 1996 for a debate on this topic). The history is full with examples of democratization projects, which failed rather because of the absent demand of the people (willingly voting for prospective autocrats) then because of the absence of the democratic institutions: the Second Empire in France, the Third Reich in Germany or the Russian Federation under Vladimir Putin may represent examples of this trend.

The effects of the economic prosperity on the *demand* for democracy, however, at least ex ante seem to be ambiguous. On the one hand, higher income and higher standards of living may cause greater interest in (and provide greater opportunities for) the political participation (which in many instance is prohibitively expensive for the excessively poor brackets of society, see also Frey 1971). Therefore increasing well-being could enhance the demand for democracy. On the other hand, higher income makes the opportunity costs for fighting for democracy higher. In addition it, generally speaking, may outweigh (in the eyes of the population) the benefits of political democracy. A further questionable aspect is the interrelation between democracy and stability of property rights: while Ben-Yishay and Betancourt (2007) point out that at least civil liberties and private property are strongly interrelated, other aspects of democratic politics may enhance redistribution and populist economic policies. The historical experience is also mixed: the stability of fast-growing autocracy in China and the success of the de-democratization in the period of high oil prices in Russia have partly been attributed to the ability of these governments to “buy” the support of the population through relatively high growth rates – although there is a lot of speculation going on regarding the persistence of this equilibrium. In some cases autocrats seem to deliberately exploit this trade off: in March 2011, while addressing his people, king of Saudi Arabia Abdullah explicitly thanked his subjects for keeping the stability of the state (in the environment of significant turbulences in the Arab world), and declared an increase of the minimal wages and unemployment benefits. On the other hand, the public protests in Bahrain in February-March 2011 could indicate that “buying support” strategy may have limited success.

Obviously, in a cross-country study demand for democratization is difficult to measure explicitly. One approach could be associated with survey techniques directly or indirectly asking about satisfaction with and preference for democracy, which have been actively applied for various countries and cross-country samples (e.g. Bratton and Mattes 2001; Inglehart 2003; Evans and Whitfield 2009; among others). An alternative could be to attempt to infer the “re-

vealed preferences” from public behavior, assuming a certain level of consistency of individual decisions. Minier (2001) attempts to do so by looking at the pro-democratic political movements, and concludes that the probability of their occurrence in non-democracies does increase with income, but up to a certain threshold. However, even this variable partly reflects not just the demand, but also the political pressure preventing democratic movements to occur. However, while the major part of the literature in this endeavor focuses on the democratization studying the “voice”, i.e. political activity within a country or a sub-national jurisdiction, there is an alternative factor to be taken into account: the “exit”, or the movement of the population between countries and regions determined by the economic and political differences.

In this case the preferences of individuals are “revealed” through their migration decision, which may take democracy into account (or ignore it). One could question the “power” of exist to influence the *democratic transition* (although many autocracies, most prominently the Soviet Union in the 1970-1980s, have been concerned with the threats of emigration); there are also additional complexities caused by the interaction of “voice” and “exit” (Hugh-Jones 2007) and further effects of interjurisdictional competition on economic policy (Vanberg 2000). However, if the key question is the *demand* for democracy, looking at the “exit” decisions may be valuable. Unlike “voice”, “exit” is rarely “strategic” in a sense that migrants expect their country of destination (or origin) to change through their migration decision. In some cases people do migrate with explicit willingness to “change” their target country, as it has been, for example, for the European colonists in North America or for the early Jewish migration to Palestine and Israel. However, in many cases one is safe to say that migrants take the economic and political conditions at their destination “as given” and expect them to remain unchanged independent on the migration flows.¹

On the one hand, as “voice” in the struggle for democracy, “exit” is associated with costs (both unavoidably caused by migration – transportation, learning, adjustments to the new cultural environment etc. – and also determined by the restrictive policies of the domestic and foreign countries), which the individuals may be facing in their choice of the “optimal” country of residence. Thus, controlling for these costs and further characteristics of the countries, one should be able to observe the relative importance of democracy and other factors (for example, economic well-being) for the migration decisions and infer the demand for democracy. In many cases, however, migration is also influenced by the “pressures” of the “supply side” of political regimes: both in the country of origin (through restrictions on exit) and in the target country (through immigration rules). In most developed countries immigration from the developing world (which in many cases represents the movement of the population from the non-democracies to democracies) is severely restricted. The movement from developed to developing countries, on the other hand, is very small, what may be caused (and most likely is caused) by both income gap and gap in political liberties. Legal restrictions (and the opportunity to avoid them) may cause serious frictions in the migration flows.

However, if one were able to find a setting where the governments had no direct means of restricting migration and, on the other hand, there were significant differences in the political regimes and civil liberties, one could indeed hope that the migration flows represent the pure “demand for democracy” controlling for other factors. Although in the international environ-

¹ Even more, migrants could under-estimate the strategic consequences of migration on their target and origin countries.

ment this setup is obviously absent (integrated areas like the EU or US-Canada are homogeneous in terms of their political regimes), one could be interested to consider the *intra-national* movements of the population and political regime variation. On the one hand, although many countries impose intra-national restrictions on the free movement of people, they are rarely as severe as though routinely created on the international level (and if they are, there are usually strong enforcement gaps). On the other hand, while it has been rarely studied in economics, the political regimes of most countries exhibit a significant level of internal political differentiation: for most federations in the developing world “isles of autocracy” or more democratic jurisdictions are rather rule than an exception. Examples studied in the literature include most Latin American countries (Brazil, Mexico and Argentina), but also Russia and India (see introduction to McMann (2006) for a survey). Even in the developed world the existence of variations in the level of democracy within a state are not rare (Gel'man 2010). Hence, under these conditions one could infer the demand for democracy by observing the movement of the population. In addition, the intra-national heterogeneity regarding other factors, although possibly high, is certainly lower than on the international level; hence, it may be possible to expect lower impact on the confounding factors of the unobserved heterogeneity from the econometric perspective and also lower costs of migration, which would allow the preferences for democracy and civil liberties to manifest themselves more clearly (see also general discussion in Snyder 2001).²

This paper is an attempt to apply this strategy by analyzing the determinants of the migration flows across the Indian states. There are several factors explaining the choice of the case study. Given a significant differentiation in terms of income levels across India, there may be a strong economic rationale determining the migration. However, in addition, there does exist a variation of Indian states in terms of power balance in local political systems (Harris 1999), electoral accountability (Besley and Burgess 2002), human right violations (Beer and Mitchell 2006), and even politico-economic systems (the example of the state of West Bengal ruled by the Communist party for several decades is illustrative from this point of view, see Chen and Sil 2007).³ Thus, we obtain substantial variation of both explanatory variables we are interested in, which makes the study possible. A decisive argument in favor of India is that this country is not just characterized by a variation of sub-national political regimes, but also provides us with quantitative variables making the measurement of these regimes possible – a feature, once again, absent in many federations with regional variation of political systems. A further argument in favor of the Indian case is that we also have information on the intra-national cross-regional migration: these data are unavailable for many developing countries (for which the question of variation of sub-national political systems is relevant).

In this paper we go for a rather narrow aspect of democracy, looking merely at the protection of the human rights. The choice of this variable is motivated by two factors. First, the quanti-

² A further often occurring problem is that the democracy and well-being in international samples are correlated and attract migrants – particularly, the OECD countries. There is of course also partly significant voluntarily migration to the non-democratic countries, like Russia and UAE, yet the problem is more significant than on the sub-national level, where the association between human rights and income is not so clear and, what is even more important, is not perceived in an unambiguous fashion by the migrants as in the international samples.

³ Many aspects of this variation are informal, i.e. related rather to political practices than to written law; however, the significant role of informal differences is also typical for cross-country comparison of political regimes (where non-democracies often “imitate” formal institutions of democracy without accepting their content).

tative data on human rights violations in Indian states are available and have been reported by a *federal* institution (National Human Rights Commission), what makes the values for individual states more reliable. Even more important, looking just at one aspect makes the theorizing about the “demand for human rights” somewhat easier, since it removes several additional uncertainties associated with the broader concepts of “democratization”. One should bear in mind that the willingness of individuals to “give up” basic human rights “in exchange” for economic wealth is likely to be smaller than for, for example, political freedoms (e.g. right to vote),⁴ since human rights violations *directly* affect the everyday life of each individual and can be extremely costly. Thus, we subject the possibility of a substitution relation between (this aspect of) democracy and economic well-being to an “extreme case” test.

The findings of this paper suggest that the human rights and economic well-being can in some sense be perceived as substitutes by the migrants – and that at least in the Indian case the impact of the economic conditions is somewhat more robust. We show that rich states attract migrants almost regardless of the human rights; on the other hand, the reduction of number of human rights violations matters only if the target state of migration is poor; if the income per capita goes up, negative effects of human rights violations on migration are absent. Thus, our results cautiously suggest that in some sense the “exchanging the growth for human rights strategy” implemented by some autocrats in the world and aspired by even a larger number of dictators may work.

This paper is related to two literatures. The first is, as mentioned, the studies of the impact of economic modernization on democratization. The second (surprisingly small one) looks at the impact of democracy on the international migration. Several papers so far have looked at the role of democracy and human rights for the international migration flows. Karemera et al. (2000) for the immigration to North America show that the deficit of democracy in the origin country strengthens emigration, and Solimano (2003) for Argentina, reversely, that the deficit of democracy discourages immigration. Narayan and Smyth (2005) for the time series for Fiji demonstrate that in the long run both changes in income and in the level of democracy granger-cause migration, though the effect is difficult to interpret. Rotte and Vogler (1998) for Germany and Acupan and Agbola (2007) for the Philippines focus their attention on the negative consequences of the non-democratic regimes creating barriers for emigration, yet this is exactly the dimension we hope to exclude by looking at a sub-national sample. However, to our knowledge, no research has been done on the *interaction* of income and various aspects of democracy (including human rights) as potential driving forces for the migration – hence, this paper could fill this gap.⁵ Furthermore, while there has been some (rather old) research published on the determinants of migration between Indian states (Greenwood 1971), to our knowledge, no papers so far have explored the comparative analysis of economic and political determinants of migration.

The paper proceeds as follows: section 2 presents our main model and data; section 3 summarizes the key results; section 4 reports the main robustness checks; and section 5 extends our analysis by taking linguistic and geographic distance between Indian states into account and looking at non-linear effects of income and human rights. Section 6, finally, concludes.

⁴ For a individual aware of the low probability of being pivotal in mass elections or the “swing voter curse” (Feddersen and Pesendorfer 1996), decision to give up voting rights could actually be rational.

⁵ Obviously, human rights violations have a certain effect on the refugee migration (Schmeidl 1997), yet it is outside of the scope of this paper.

2 Model and data

Basically, we estimate a gravity equation for the inter-state migration in India. The dependent variable is the number of migrants from one state to another. The data on the interregional migration has been published by the Institute of Applied Manpower Research as a cross-section for migration between 15 larger states in 1999-2000. That gives us more than 200 individual data points, thus making statistical analysis feasible. Unfortunately, the data is available only for a subset of Indian states and territories; what is a certain limitation of our analysis. However, 15 states included in our study cover the lion's share of the Indian territory. The only large state not included in this study is Jammu and Kashmir, which obviously is significantly different from the rest of India due to the Indo-Pakistani conflict. *Figure 1* represents the states covered by our analysis.

We regress the migration flow from state A to state B on economic characteristics of both states, political characteristics of both states and their interaction terms. There are also a number of **control variables**. In order to account for the magnitude of the migration, we always include the *population* of both target and origin states as reported in the 2001 census. A further control included in all regressions is the *geographical distance*, measured as the highway distance between two state capitals.⁶ In a number of specifications we also control for the *common language* as a factor of migration, as well as for the interaction between the linguistic and the geographical proximity. Language is extremely important for India due to high heterogeneity of this country. The linguistic proximity is captured by a dummy, which is equal to one if both states belong to the same linguistic group and zero otherwise. The groups we apply in this paper are the simplest possible ones: we divide India into the Indoaryan and the Dravid zones.⁷ (and also use a different methodology as a robustness check, as it will be reported in what follows).

⁶ We acknowledge the fact that for large distances in India railroad distance could be more appropriate, however, for short and medium distances highway transportation dominates; both distance measures ought to be highly correlated and hence have little impact on our results.

⁷ Of course, once again, it simplifies issues, since the linguistic and ethnic differentiation in India goes far beyond that, however, still reflects a certain level of cultural and linguistic proximity between states, which is likely to influence the migration behavior. Further disaggregation will most likely lead to declaring each state a separate "language zone", thus making the analysis impossible (and indirectly assuming that the differences between states are so large that there should be no linguistic effects in the interstate migration whatsoever). Some states are considered as belonging to both Indoaryan and Dravid linguistic zones.

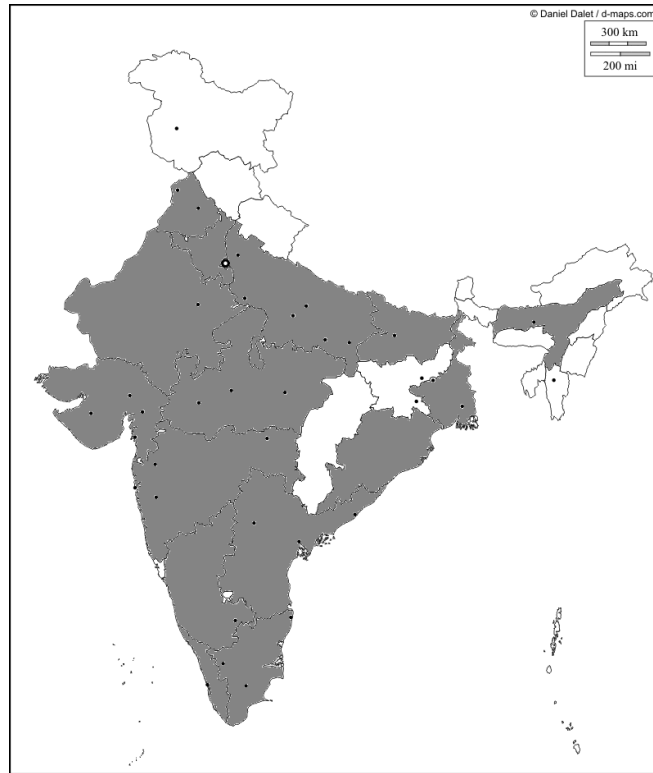


Figure 1: Territory of India covered by our analysis (states included in the study are marked grey)

In order to check for the **economic dimension**, we include the income per capita of the target state and the origin state into account. The **political dimension** is captured through controlling for the number of human rights violations complaints coming from each state, as reported by the Human Rights Commission. This variable is, of course, not flawless: for instance, the number of complaints does not necessarily coincide with the actual human rights violations (and, even more, can be reported strategically, for example, if the complaints procedure as such is costly or if the government of the state can influence the reporting). However, it seems to be an interesting way to analyze the sub-national political variation between Indian states, which has also been used in the literature (see Beer and Mitchell 2006). As the *Figure 2* shows, the variables are somewhat correlated (high income associated with a lower number of violations), but the correlation is not too large to make an econometric study impossible due to the multicollinearity problem.

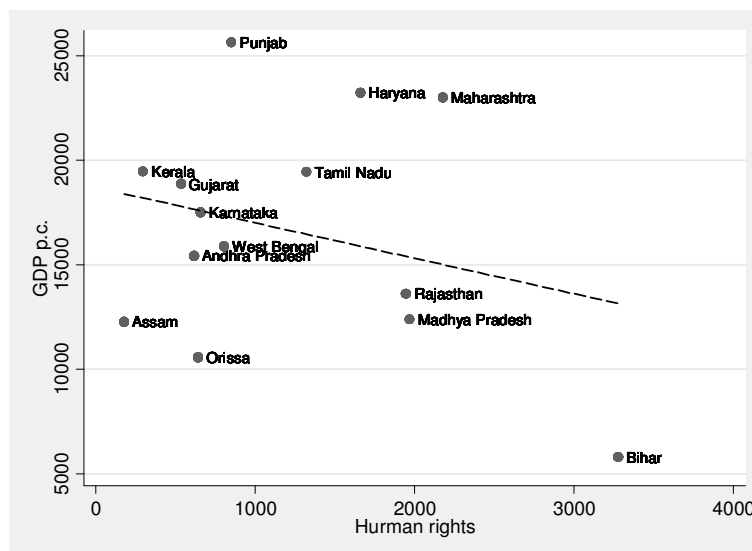


Figure 2: Human rights violations and income per capita of Indian states. Note: Uttar Pradesh excluded (an extremely high number of the human rights violations reported)

The main estimation is done in the OLS; we will, however, use the TSLS estimator to solve the problem of endogeneity, when it arises, as it will be discussed in what follows. There are also several further robustness checks and modifications to the specification, as well as different estimation techniques, which will be presented in the next section. The details on the dataset and the summary statistics are included in Appendix A.

3 Main results

The main results of the estimation are reported in Table 1. Consider first the role of political and economic determinants of migration. Without the interaction term, the results seem to be straightforward: migration is driven exclusively by the economic considerations and, specifically, those of the target state (origin state does not matter). Richer states seem to act as “magnets” attracting the mobile labor force. Human rights violations are insignificant (specification (2)). The situation changes dramatically, however, if one includes the interaction effect in the regressions (specifications (3) and (4)). In this case it is the income per capita, which is insignificant; one obtains a significant and negative effect of the human rights violations in the target state and a positive and significant interaction term. So, from that point of view it looks like human rights violations and economic performance act, at least, to some degree, as substitutes.

The effect becomes more clear, if one takes into account the fact that in the regressions with interaction terms standard errors are also different across the sample and plots the marginal

effects of the income conditional on the human rights violations and human rights violations conditional on income as determinants of migration flows (for the specification (3)). *Figure 3* represents the marginal effect of the human rights violations. As one can clearly see, the effect is almost always significant; if the level of income per capita in the target state is small, large number of human rights violations has a strong negative effect on the immigration. If income goes up, the effect becomes smaller and eventually insignificant; however, for very high income one in fact observes even a *positive* effect of the human rights violations on the migration inflow. This is an interesting observation, which requires a further discussion. On the one hand, it is possible that one simply deals with a statistical artifact (resulting from the distribution of the variables), which should not be over-interpreted. On the other hand, it is also possible that a large number of human rights violations is interpreted differently for rich and poor states. In a rich state large number of *reported* violations could in fact indicate a *better* protection of human rights from the respective institutions, which could be more active or devoted to their task. Then a positive effect observed in the data is clear. In the poor states, on the contrary, large number of violations seems to be interpreted in the “direct” sense as *worse* protection of human rights.⁸

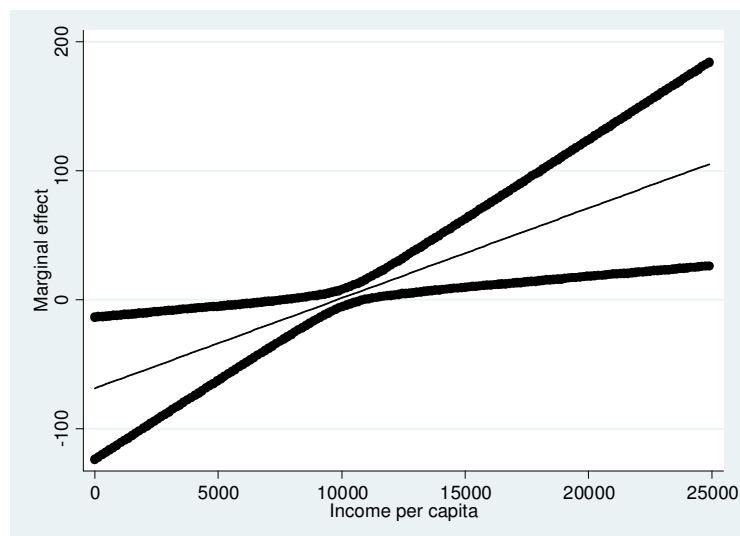


Figure 3: Marginal effects of the human rights violations conditional on income per capita in the target state

Anyway, a rich state seems to be able to “afford” to violate human rights and still be attractive for migrants. As for the conditional effect of the income (*Figure 4*), it is almost always positive and significant; so, in this case economic factors have a positive impact on migration re-

⁸ Since the state of Uttar Pradesh is an outlier in our sample with a very large number of the violations of human rights, we have also re-estimated all regressions (1)-(4) without this state, and found identical effects.

regardless of the situation with the human rights. To conclude, human rights do matter for migration, but only if the state is poor.⁹

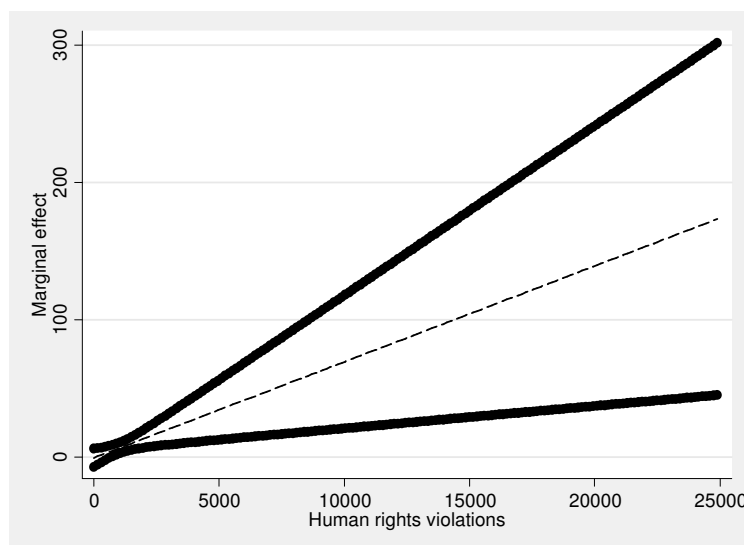


Figure 4: Marginal effects of the income conditional on human rights violations in the target state

We also expand our analysis by looking at further confounding factors. Particularly, we re-estimate specifications (3) and (4) adding as further controls unemployment (per 1000 people) in both target and origin states. Labor market is obviously an extremely important factor of domestic migration (as well as of the international one). Our main results (for the human rights violations and their interaction term for the target state) do not change, however, proving the robustness of our findings.¹⁰

One could argue that it is not entirely correct to treat the dependent variable in our regressions as continuous. As a matter of fact, migration represents a discrete decision by an individual, and therefore the dependent variable is rather a count variable (although very large number of migrants makes the treatment of this variable possibly appropriate). It means that the OLS may be non-applicable for the problem of this paper. That is why we also re-estimated our model using negative binomial regressions (Table 2, regression 8). A disadvantage of this approach is that the interaction terms, which are central for our analysis, face significant diffi-

⁹ One should point out that we control for population of both states anyway, so our main results show the effect of human rights violations increase for a constant population (*ceteris paribus*). However, as a robustness check, we replace total number of human rights violations by the human rights violations per capita (and also construct a respective interaction term). In this specification (regression (3)) we obtain significant and *positive* effect of human rights violations in the origin state, and significant and *negative* effect of the interaction term for the origin state. Thus, we once again confirm the substitution relation between human rights and well-being, just not for the target, but for the origin state – our main message remains unchanged.

¹⁰ Data for unemployment are for 1999-2000 and have been published by the Indian official statistics in the NSS report no.455.

culties in terms of interpretation, if non-linear estimation techniques are used (Ai and Norman 2003). Nevertheless, the significances and the signs of the coefficients relevant for our study do not change, so there are at least no obvious contradictions to our findings.¹¹

4 Robustness checks

4.1 Specifications of gravity model

In what follows we report a number of robustness checks for our main findings. We concentrate ourselves to the discussion of main effects of *Table 1*. The first modification is based on the adjustments of the gravity model. Our initial gravity model has been mostly empiristic in nature, and thus ignored several problems actively debated particularly in the international trade literature, where this type of modeling found its key application. As the first step, we introduce in our models the remoteness index, which is based on the need to account for the relative attractiveness of each origin-destination pair. In the trade literature remoteness index is defined for each country i as its “average” income-weighted distance to and from all other trade partners (see Andersson 2011). Remoteness of state i is defined as:

$$R_i = \sum_{j \neq i} \frac{d_{ji}}{Y_j},$$

where d is distance, and Y either income (for remoteness based on income) or human rights violations (for remoteness based on human rights violations). In our case, since the model looks at two possible sources of “gravity” (income and human rights), in the first modification we apply, respectively, two remoteness indicators: one income-weighted and one human rights-weighted. We have calculated these two indicators and added them to our regressions. As the results for the specifications (5) to (7) show, the interaction terms and the human rights violations indicators hold their sign and significance.

However, the remoteness index has also been actively criticized for being a highly questionable and primarily a-theoretical measure of what should be called multilateral resistance. There are several approaches to modeling multilateral resistance in the literature. One implies on structural modeling and estimation of the non-linear models: this is problematic for us, since it would involve very strong theoretical assumptions on migrants’ behavior regarding well-being and human rights (which we, unlike the trade studies, cannot borrow from the literature). Some more recent work (Baier and Bergstrand 2009) also suggest a different approach, which adds to the state-specific multilateral resistance a further effect of a “world resistance” in a way allowing estimating the regressions using simple OLS (in this case re-

¹¹ We also estimated a Poisson regression, and obtained significant and negative effect of the number of human rights violation in the target state and significant and positive interaction term (hence, the result at least does not contradict our expectations). However, the goodness-of-the-fit test is highly significant indicating the presence of over-dispersion; hence, using the negative binomial estimator is appropriate.

ferred to as BV-OLS).. This is the approach which will be employed in what follows. For this purpose we first transform our model in a way usual in the international trade gravity regressions by taking logs of all dependent and independent variables (with the exception of common language dummy), and replacing the interaction terms between original variables by the interaction terms between logs (Table 2, specification 11).¹² The results completely confirm our previous regressions, although the interpretation of the conditional marginal effects is more difficult with logs.¹³ In the next step we modify the variables representing migration costs (distance, common language dummy and their product) in line with the BV-OLS approach of Baier and Bergstrand (2009). Specifically, after correction for the multilateral and world trade resistance, each costs variable b_{ij} is defined as:

$$b_{ij}^{new} = b_{ij} - \left(\sum_j \frac{b_{ij}}{N} + \sum_i \frac{b_{ij}}{N} \right) + \sum_j \sum_i \frac{b_{ij}}{N^2},$$

where N is the number of states in our analysis. Our results, however, remain robust (specification 12).

4.2 Spatial autocorrelation

A recent development in the analysis of gravity models involves using the tools of spatial econometrics. The advantage is that this approach allows taking spatial interdependence in the flows into account. This is also an estimation approach we look at in this paper as a further robustness check. For the spatial econometrics specifications the key element is the definition of the distance matrix. We follow LeSage and Pace (2008) in this respect. They suggest using the following approach: first, one presents the data in the “origin-centric way” (i.e. sorted according to the origin state and then destination state). Then for n states one constructs a matrix W containing inverse distances (in our dataset we can use the standard highway distances to the power of minus one¹⁴). For the gravity equations (where one has n^2 observations of the dependent variable with n number of states in our sample) we apply one of three spatial matrices: the “origin-based” matrix $I_n \otimes W$, the “destination-based” matrix $W \otimes I_n$ and the combination of those $W \otimes W$.

Thus, we proceed as follows. First, we add to our sample 15 observations, corresponding to pairs of states A and B, where A and B coincide (this is necessary for the reasonable application of the spatial matrix described above). We set migration for all these pairs equal to zero, as well as distance. Simply re-estimating regression (3) for this sample still yields a significant and negative impact of human rights violations in the target state and significant and pos-

¹² We also use the simplest possible approach and drop the observations for the state pairs with zero migration and with zero distance (e.g. capitals directly in front of each other).

¹³ On the other hand, a concave transformation (like that using logs) is helpful to assess the impact of outliers on our analysis, which seems to be marginal or absent.

¹⁴ For the states Haryana and Punjab, which have capitals located in the immediate vicinity of each other, we set the entry of the matrix to be equal to 1, i.e. larger than for all other dyads of states.

itive interaction term. Then we re-estimate the regression applying each of three spatial matrices defined above. In each case we estimate both spatial lag and spatial error models (thus one obtains six regressions overall).¹⁵ However, we find no changes in terms of sign and significance for the variables we are interested in. Both spatial lag and spatial error (ρ and λ) terms are insignificant regardless of the spatial matrix we use. Therefore one can conclude that our results are robust to incorporating in the regressions further forms of spatial interdependence.

4.3 Endogeneity

So far the analysis ignored the potential endogeneity problems in the estimation. While the geographical distance is clearly exogenous, and the reverse causality problem for the population and language are unlikely to be very pronounced (even the largest migration flows do not affect population of the Indian states in a way that it changes significantly and, specifically, changes its linguistic composition – the Indoaryan and the Dravid zones have remained in the present shape almost for millennia), the reverse causality is obviously possible for the economic and political variables. Hence, it becomes necessary to apply the two-stage least squares techniques and to look for the instrumental variables. The results of the TSLS are reported in Table 2, specifications (9) and (10), instrumenting for the income per capita, human rights violations and their product in both states. As the instruments we use the lagged income of the year 1990-1991, the share of the population participating in the federal elections (Lok sabha elections), as well as number and share of literate individuals in both states and their various products (necessary to capture the interaction terms; details are reported in note to Table 2).

¹⁵ Results are available on request

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Table 1: Determinants of interstate migration in India, 1999-2000, dep. var.: number of migrants from one state to another, people

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
Income per capita origin	-1.116 (2.159)	-0.831 (2.235)	2.088 (2.702)	0.416 (2.667)	-2.078 (2.823)	-4.101 (3.390)	-4.853 (3.225)
Income per capita target	10.662*** (2.882)	10.597*** (2.728)	-0.695 (3.397)	-2.368 (3.200)	-5.090 (3.472)	-4.653 (3.749)	-6.081 (3.800)
Human rights violations origin		6.486 (4.586)	23.761 (17.767)	14.089 (17.139)	5.523 (17.804)	-6.772 (17.794)	-8.509 (17.708)
Human rights violations target		-1.356 (3.826)	-68.605** (28.146)	-78.276*** (27.148)	-87.830*** (28.653)	-88.307*** (31.348)	-92.581*** (31.448)
Income * Human rights violations origin			-0.002 (0.002)	-0.001 (0.002)	-0.000 (0.002)	0.001 (0.002)	0.001 (0.002)
Income * Human rights violations target			0.007** (0.003)	0.008*** (0.003)	0.009*** (0.003)	0.009*** (0.003)	0.009*** (0.003)
Common language				408,840.937*** (75,088.503)	351,724.775*** (72,065.967)	318,987.975*** (72,619.014)	298,423.052*** (70,611.107)
Geographical distance	-111.815*** (15.739)	-113.906*** (15.554)	-109.877*** (16.170)	55.457* (28.771)	0.689 (28.407)	2.879 (30.002)	-24.047 (29.017)
Common language dummy * distance				-193.162*** (33.116)	-162.984*** (32.192)	-149.023*** (31.877)	-137.441*** (30.910)
Population origin	0.002** (0.001)	0.001 (0.00)	0.001* (0.000)	0.001** (0.000)	0.001*** (0.000)	0.002*** (0.001)	0.002*** (0.001)
Population target	0.002*** (0.001)	0.002** (0.001)	0.001* (0.001)	0.001** (0.001)	0.002** (0.001)	0.002** (0.001)	0.002** (0.001)
Remoteness income origin					98,108.696*** (28,780.559)		51,660.670 (35,900.144)
Remoteness income target					104,338.598*** (35,308.688)		89,585.463*** (32,839.844)
Remoteness human rights origin						10,860.948*** (3,772.576)	9,746.360** (4,312.763)
Remoteness human rights target						6,316.554** (3,120.763)	3,744.430 (3,034.849)
Constant	-61,665.146 (112,113.975)	-29,828.598 (107,739.339)	84,422.632 (81,207.265)	-268,170.667** (121,320.065)	-435,004.309*** (139,139.341)	-718,604.825*** (194,444.625)	-738,329.356*** (197,152.754)
No. obs.	210	210	210	210	210	210	210
No. states	15	15	15	15	15	15	15
R ²	0.383	0.398	0.43	0.464	0.488	0.497	0.509

Notes: robust standard errors in parentheses. * significant at 10% level, ** significant at 5% level, *** significant at 1% level.

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Table 2: Determinants of interstate migration in India, 1999-2000, robustness checks, dep. var.: number of migrants from one state to another, people

	(8) Negative binomial	(9) TSLS	(10) TSLS	(11) OLS	(12) BV-OLS
Income per capita origin	0.000 (0.000)	7.055 (11.849)	1.164 (11.837)	2.609 (2.485)	1.511 (2.344)
Income per capita target	0.000 (0.000)	4.044 (3.726)	1.701 (3.586)	-2.574 (2.470)	-3.961* (2.384)
Human rights violations origin	0.000 (0.000)	50.184 (68.321)	17.877 (67.841)	3.570 (3.084)	2.252 (2.884)
Human rights violations target	-0.000*** (0.000)	-49.797* (27.821)	-63.369** (27.776)	-5.121* (3.009)	-6.759** (2.881)
Income * Human rights violations origin	-0.000* (0.000)	-0.005 (0.007)	-0.001 (0.007)	-0.375 (0.328)	-0.217 (0.306)
Income * Human rights violations target	0.000*** (0.000)	0.005* (0.003)	0.006** (0.003)	0.549* (0.321)	0.740** (0.306)
Common language	2.569*** (0.917)	-10,609.414 (27,464.202)	423,997.589*** (77,914.649)	14.448* (7.969)	3.691 (9.080)
Geographical distance	-0.000 (0.000)	-114.765*** (19.707)	60.819* (35.473)	-0.455 (1.031)	-2.021* (1.188)
Common language dummy * distance	-0.001*** (0.000)		-197.986*** (35.814)	-1.900* (1.043)	-0.505 (1.180)
Population origin	0.000*** (0.000)	0.001 (0.001)	0.001 (0.001)	0.810*** (0.247)	0.993*** (0.253)
Population target	0.000*** (0.000)	0.002** (0.001)	0.002*** (0.001)	1.301*** (0.225)	1.469*** (0.215)
Constant	8.244*** (1.118)	-80,576.847 (218,164.828)	-382,649.885* (204,196.415)	-26.152 (31.112)	-12.735 (30.661)
No. obs.	210	210	210	200	200
No. states	15	15	15	15	15
R²				0.646	0.647
F-stat first stage (income origin)		216.74***	262.58***		
F-stat first stage (income target)		507.32***	540.36***		
F-stat first stage (human rights origin)		7.25***	8.28***		
F-stat first stage (human rights target)		17.91***	17.46***		
F-stat first stage (interaction term origin)		9.00***	9.93***		
F-stat first stage (interaction term target)		21.22***	20.41***		
Hansen J		4.590	2.431		
Logs of population, migration, distance, human rights violations and income	No	No	No	Yes	Yes

Notes: robust standard errors in parentheses. * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Instrumented variables are income per capita target and origin, human rights violations target and origin and respective interaction terms. Instruments are lagged income target and origin, share of participants of federal elections target and origin, number of literate individuals target and origin, product of income lagged and share of literate individuals target, of income lagged and share of participants at federal elections target, and share of literate individuals target

The logic of the instruments is the following. As for the lagged income, the approach is straightforward and similar to what is often found in the literature. A 10-year lag seems to be appropriate to ensure exogeneity of instruments. The federal elections participation is chosen because of the following reasons: on the one hand, election participation as such is very likely to be correlated with the political regime in the region and, specifically, affect the ability of the state governments to violate the human rights (which is probably higher if the electorate is more passive). On the other hand, however, the participation in the *federal* elections should not be directly related to the migration decision: even if an individual declares her willingness to move to another state, she still remains within the jurisdiction of the federal government and therefore the decision to vote (or to not) on the federal level should remain the same. Finally, the literacy is among the strongest predictors of the human rights violations found in the literature (see Beer and Mitchell 2006). The econometric properties of instruments are fine: they are not significant in the second stage, if included in the specification of regression (9), provide high F-statistics in the first stage (higher than 10 in most cases, and, particularly, for all significant variables), and the Hansen J is insignificant suggesting that in this over-identification scenario one can be sure that even if just one instrument is exogenous, all other are as well.

Basically, the results reported confirm the predictions of the OLS estimations: all effects for the human rights violations and the income per capita survive. If one includes the common language dummy and the interaction term for this variable in the TSLS regressions, the results are still the same. Hence, one can at least hope that the results are unlikely to be driven by the reverse causality, although the usual caveats as for the imperfect instruments should be considered in this case as well.

5 Extensions

While the previous section has convincingly provided us with the main answer to the question this paper does explore (human rights violations can be substituted for income per capita, but income attracts migrants regardless of the human rights violations), it is possible that the shape of relation we have assumed so far is unable to capture the whole complexity of interrelations between two variables in question. This is exactly the issue we are going to explore in this section. First, we will look at the substitution effect we established so far, and try to understand whether there are further non-linear effects observed in our sample. Second, we will closely examine the proxy for costs of migration introduced so far (i.e. distance and, partially, language dummy) and introduce several modifications in this respect.

5.1 Non-linearity of income and human rights violations

A possible modification of our analysis is to introduce further non-linearity in the impact of human rights and income on migration. It is possible, for instance, that the marginal effect of human rights violations on migration depends not just upon the income per capita in the state, but also upon the number of human rights violations themselves. Specifically, it is possible that the sensitivity to the human rights violations (or to the changes of income) depends upon the number of human rights violations individuals observe. For very few violations, for example, people could simply “disregard” them and make their migration decision independent of the human rights situation (taking an international example, even if the, say, Sweden outperforms Germany in terms of human rights protection, it is unlikely to matter for a migrant for a developing country choosing his target). On the other hand, the sensitivity could be lost for very large numbers of violations. Overall, these effects are likely to be present if migrants’ decisions are based on “general picture” and simplification of information, what is a reasonable assumption from the behavioral economics point of view (where the fact that individuals “simplify” the information they obtain from the real world when they make decisions is a well-established fact).

Unfortunately, in this case it is easy to lose the tractability of analysis; now both the marginal effects *and* the significance levels depend on two parameters (both income per capita and number of human rights violations reported). Furthermore, since our sample is not very large, it is possible that all effects we obtain are driven by a handful of states and thus we could end up over-interpreting our findings. Hence, we restrict ourselves to two modifications. *Appendix B* reports the quantitative findings; here we concentrate on graphical analysis of sign and significance of the effect in line with Brambor et al. (2006). First, we introduce non-linearity in the human rights violations, keeping the effect of income per capita linear. Then the specification include income per capita, human rights violations, square of human rights violations and the interaction terms between income and human rights violations and income and squared human rights violations. Main results are reported in *Figures 5* and *6*.

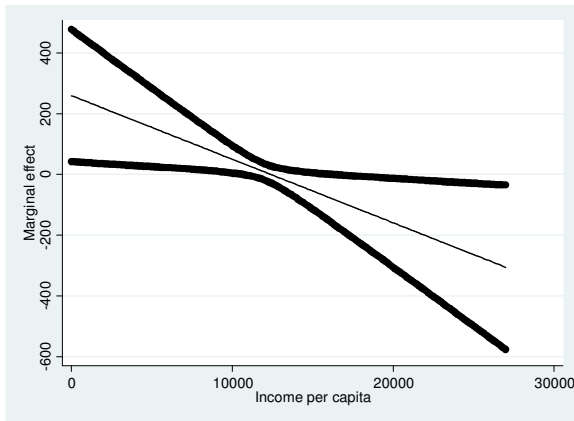
Now we obtain significant effects (at least, partly) for both target and origin states. For the origin state, we report a significant and positive effect of human rights violations only for poor states and states with a small number of violations. Thus, first of all, human rights violations “push” migrants away only if the state is very poor, providing substantial evidence for the main claim of this paper. But, on the other hand, if the number of human rights violations is very large, they have no “push” effect. One could hypothesize that people “get used” to the human rights violations, which therefore do not support migration. Of course, one should be very cautious while generalizing this result for other countries: even the highest number of human rights violations in India is much lower than in some other parts of the world (but then one is entering the problem of refugee migration, which is, as mentioned, outside of the scope of this paper). As for the target state, we still find the effects reported in the previous section, but only for states where the number of human rights violations is high enough. Otherwise, the effect is reversed. For very poor states with a very small number of violations one actually obtains a positive marginal effect, but this effect should be present only for states with the number human rights violations reported below ca. 1000 and income per capita below roughly 10,000 INR, and there is not a single state in our sample satisfying these conditions; we are dealing with purely counterfactual evidence, which should be treated with extreme caution. A more reliable piece of evidence is that a marginal increase of human rights violations in states,

which are relatively rich and have reported very few violations before, is likely to “scare” migrants. Once again, it is not surprising: it may be related to “overly optimistic” expectations migrants have regarding these states, which therefore suffer severely even for very small number of violations.

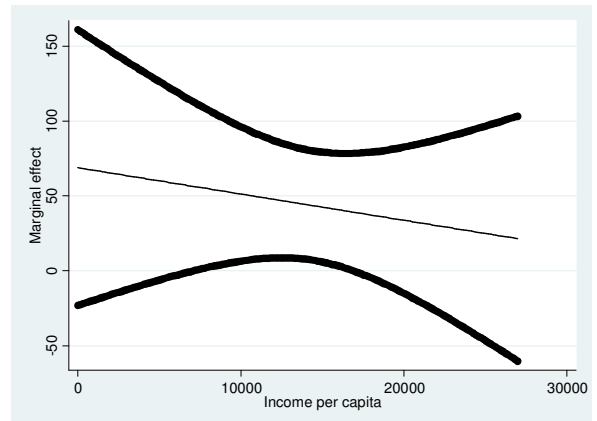
Another specification we test includes the squared income per capita (and the respective interaction terms). *Figures 7 and 8* summarize our findings. For the target and the origin state the effect of income per capita in terms of sign and significance never depends upon the level of human rights violations; our main claim about the substitution effect going only one way is therefore supported. For the target state we find that income per capita attracts migrants only if it is high enough (and there is no effect if income per capita is relatively small). It may reflect the cognitive biases we have discussed above: smaller variations in income are ignored by the migrants. In the same way, for the origin state the negative effect of income (the larger the income, the smaller the migration) is present only for states which are sufficiently poor. For very rich states we get an even (marginally significant) positive effect of income on migration, but this effect is driven just by three states in our sample and may be associated, for instance, with the fact that in rich states mobility of people is higher (recall that we do not distinguish temporary and permanent migration).

Therefore, almost all our results clearly survive the introduction of further non-linearity. However, they seem to be driven by particular segments of our sample; the sensitivity of people to changes in human rights and income is indeed different depending upon whether their level is high or low.

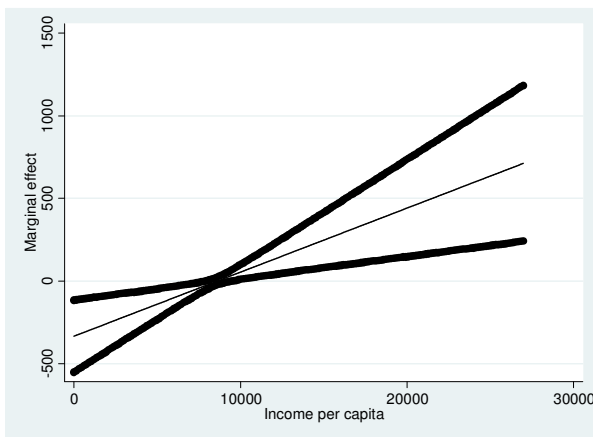
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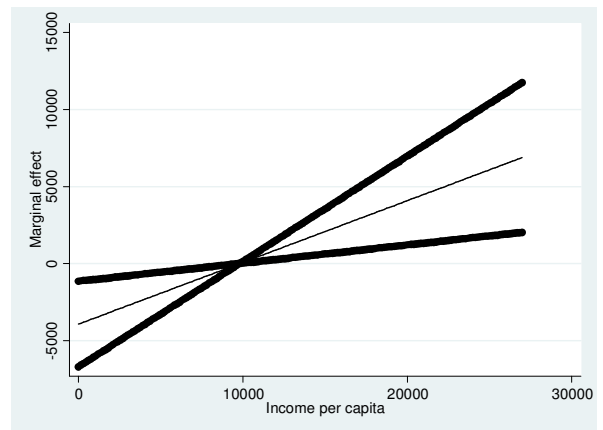
Human rights violations = 200



Human rights violations = 1100



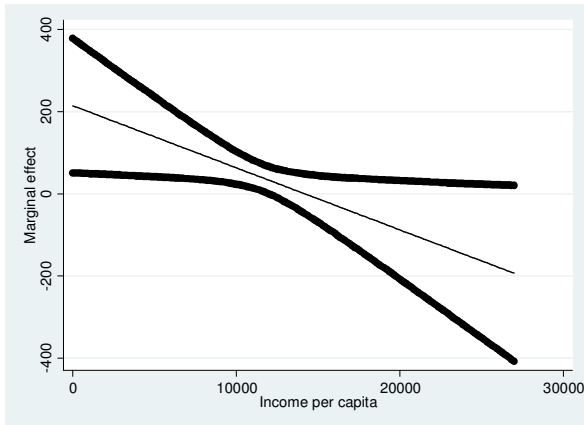
Human rights violations = 3000



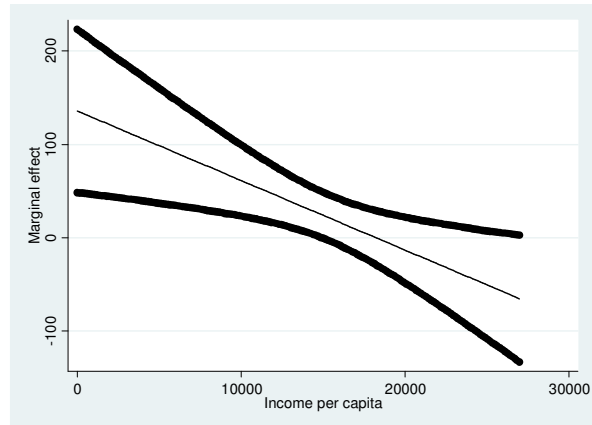
Human rights violations = 20000

Figure 5: Marginal effects of the human rights violations conditional on income per capita and the initial level of human rights violations in the target state, specification (C2)

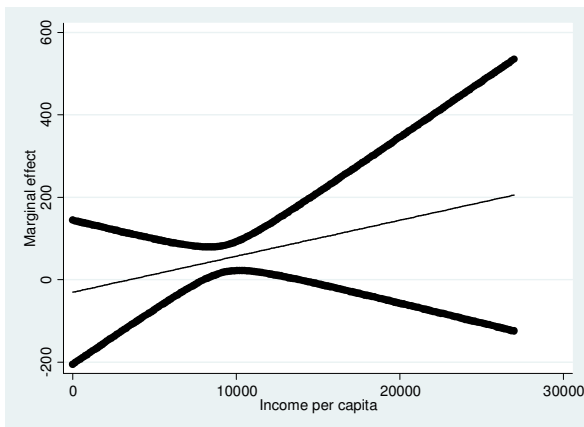
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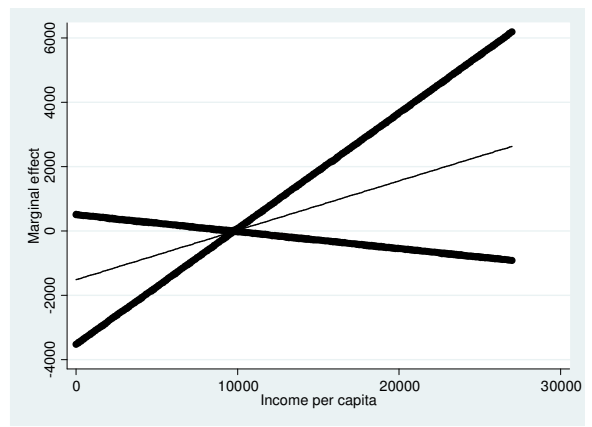
Human rights violations = 200



Human rights violations = 1100



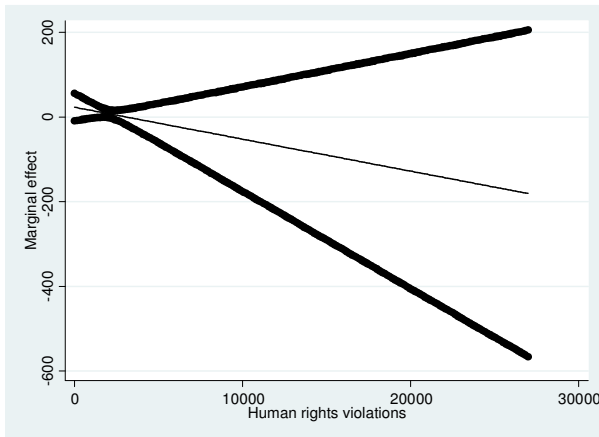
Human rights violations = 3000



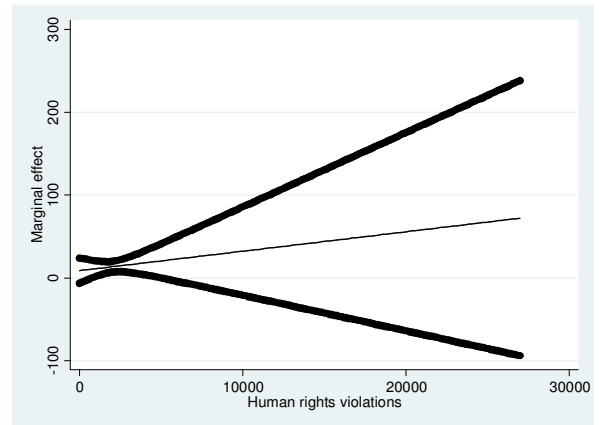
Human rights violations = 20000

Figure 6: Marginal effects of the human rights violations conditional on income per capita and the initial level of human rights violations in the origin state, specification (C2)

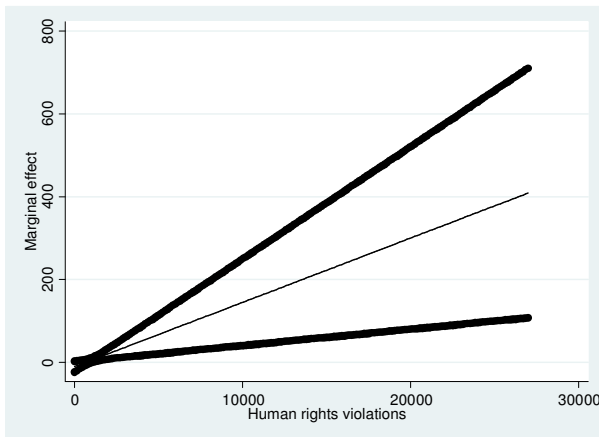
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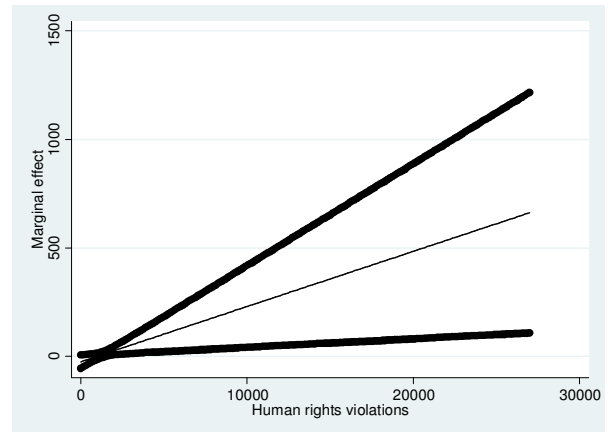
Income per capita = 6000



Income per capita = 12000



Income per capita = 20000



Income per capita = 26000

Figure 7: Marginal effects of the income per capita conditional on human rights violations and the initial level of income per capita violations in the target state, specification (C4)

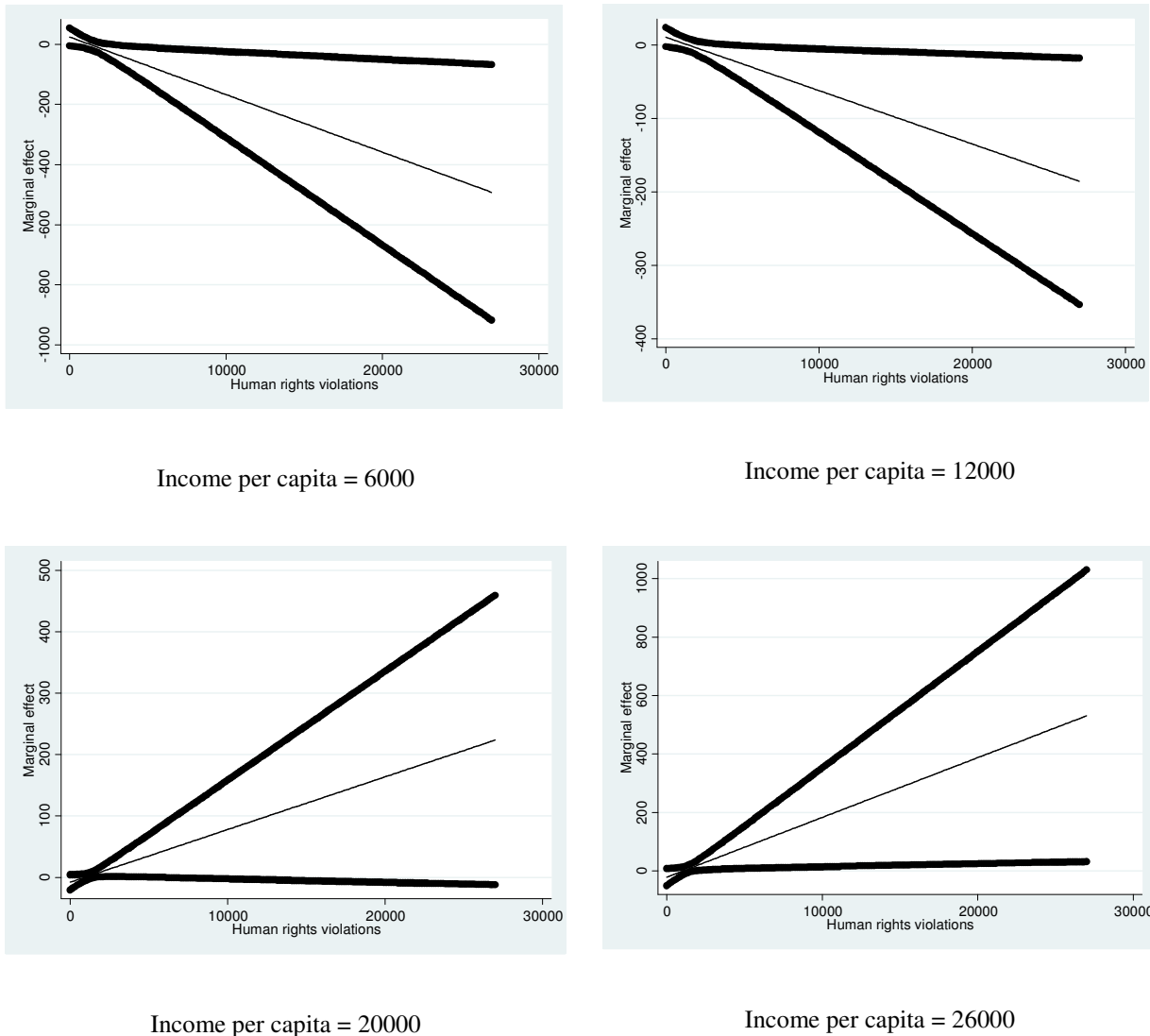


Figure 8: Marginal effects of the income per capita conditional on human rights violations and the initial level of income per capita violations in the origin state, specification (C4)

5.2 Migration and the linguistic factors

One of the key reasons for choosing a sub-national sample for our analysis was, beyond the absence of severe internal migration restrictions, limited heterogeneity of unobserved factors associated with the migration costs. India is, however, an example of a country with very strong internal cultural and ethnic differences: in a society still under way to the modernization it may actually create a significant limitation to the migration flows. In addition, India is also a large country in terms of territory, what, combined with the imperfect quality of transportation infrastructure, can also increase the costs of internal mobility. One has to control for both factors while establishing the results of this paper. Furthermore, geographical distance

and language as such may interact with each other as determinants of migration. This is an interesting question we want to approach in this section.¹⁶

To start with, if one does not control for language, geographical distance has an expected strong and significant negative impact on the migration flows. Simply adding the common language dummy does not change the result, and the common language remains insignificant. However, if one simultaneously adds the common language dummy and the interaction term, once again, the outcomes of the regressions differ dramatically. In the specification (4) of *Table 1* the geographical distance just marginally significant and even positive. Language dummy is positive, highly significant and very large in quantitative terms (belonging to the same linguistic zone adds *ceteris paribus* another 400 thousand migrants to the interstate flows). Finally, the interaction term is highly significant and negative. Thus, one can claim that the language does increase the migration flows between states, but only if they are relatively close to each other geographically. The result is robust to various controls (see *Appendix C*); we obtain the same sign and significance in negative binomial (once again, with important caveats mentioned above). The analysis of the marginal effects is in fact even more interesting: as soon as the distance goes up, the effect of the language decreases and eventually becomes even negative and significant (see *Figure C1* in the *Appendix C*).¹⁷

Our main goal remains, however, to look at whether language does somehow influence the interaction between the political and economic factors. It is possible, for instance, that the perception of politics and economy is somehow “clouded” or “made clearer” through the presence of common culture and language. Indeed, if one includes further interaction terms between language, income and human rights, they are quite often significant, though the results change somewhat over different specifications. In order to make the correct inference, we include the “full” set of all pairwise and triple interaction terms (see Brambor et al., 2006) and plot the conditional marginal effects for origin and target states and for states within the same linguistic zone and between different zones (*Figure 9*). There are no significant results, with just one exception: we once again obtain conditional effect of migration almost identical to *Figure 3* for the target state, but only for the migrants within the same linguistic zone. Thus, human rights matter only for (probably) relatively less costly migration decisions within the same linguistic zone; moving to different zone; if costs of migration are very high, migrants ignore the aspect of human rights. However, one should not over-interpret these results, since they are not stable to a different definition of the common linguistic zones.¹⁸ So, the cautious interpretation should be that the migration costs incurred by cultural differences do affect the “weighting” of the “own” and “foreign” human rights violations in the decision of the migrant, but the exact effect is not robust.

¹⁶ The role of linguistic and cultural proximity as a factor supporting migration has been well established in the literature (see e.g. Belot and Ederveen 2005 or Fafchamps and Shilpi 2009).

¹⁷ As a further robustness check we apply a different linguistic map of India, which comes from Compare Infobase. Here we basically split the Dravid zone into different linguistic units (usually encompassing just one state), as well as replace the Indoaryan zone by the explicit Hindu zone (which is smaller). The rule is that the states are attributed to the same zone if at least 25% of the population of each state speak the same language (however, most of them have a clear linguistic majority of more than 70%). There are however no qualitative changes in our results (*Table C1*), though the quantitative size of some effects shifts a little (although the overall economic significance of the common language effect is unchanged).

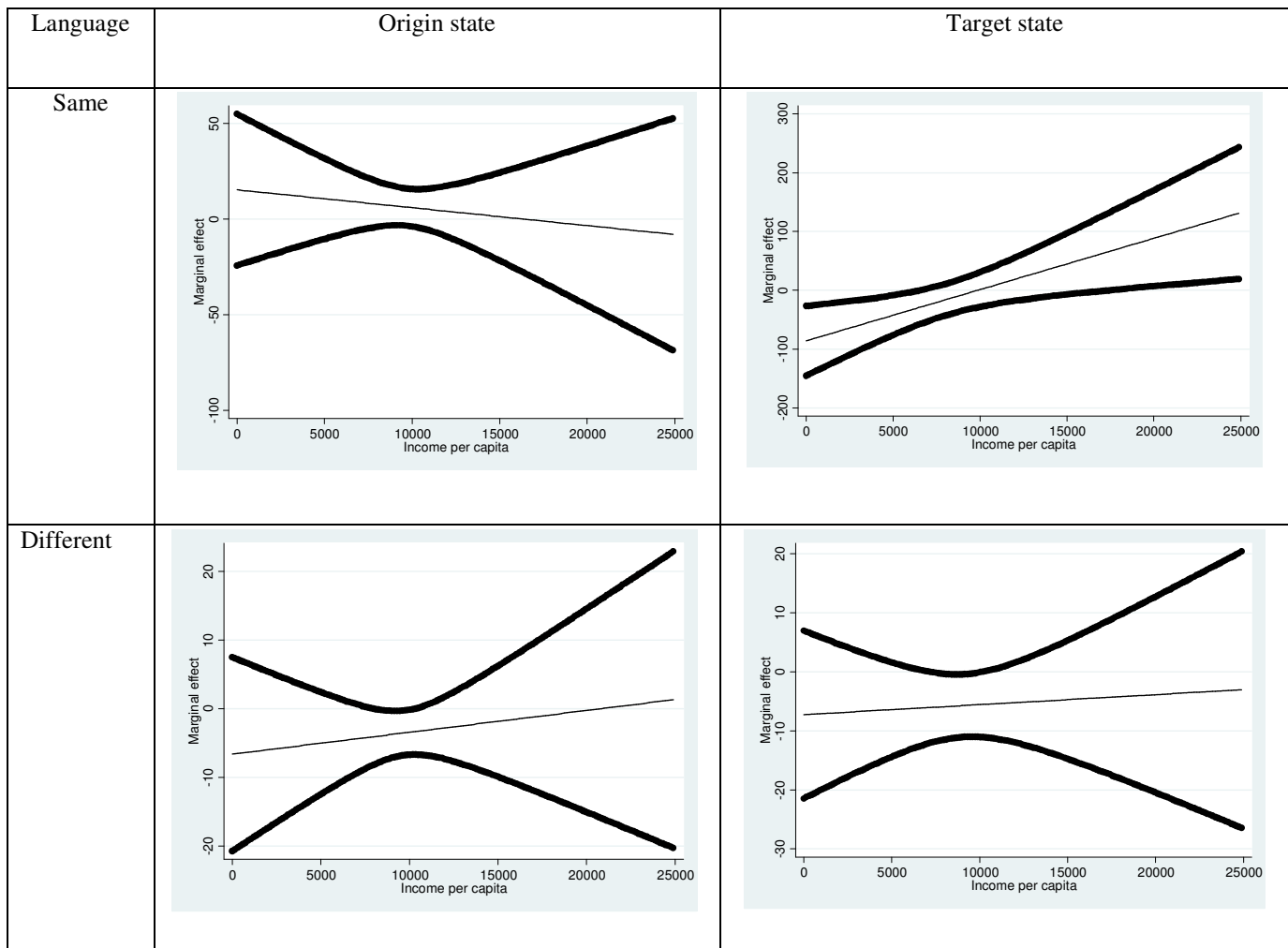


Figure 9: Marginal effects of the human rights violations on the inter-state migration for identical or different linguistic zones, controlling for common language and its interaction with distance)

6 Conclusion

The objective of the study was by looking at the migration flows between Indian states to examine the substitution relation between the demand for human rights and for economic well-being. We have shown that high income works fine substituting for human rights in the eyes of the migrants; human rights matter only if they cannot be over-compensated by income. The opposite is not true: effect of income is independent of the human rights (at least in terms of sign and significance). Our findings have been sustained in the instrumental variable estimation, suggesting the limited impact of reverse causality, and also in a number of further modifications adjusting for modern approaches to the gravity modeling. The effect is influenced by

¹⁸ Using the definition from the previous footnote, we find significant negative effect of the number of violations on migration for small income and significant positive effect for large income in the target state only for the migration into a different linguistic zone.

the linguistic differences between states, but, if it remains significant, it is qualitatively the same. Furthermore, we find that the effects of human rights violations on migration depend also upon the level of human rights violations themselves: people “get used” to high number of violations (which therefore do not act as “push” factors) and are more sensitive to increase of violations in rich states, where originally no violations have been reported. In the same way, the “pushing” effect of low income is present only in poor states, and “pulling” effect of high income in rich states; however, the effect of income in terms of sign and significance never depends on the number of human rights violations.

Thus, our study suggests that an exchange of well-being for human rights may in fact be attractive for the people. Using human rights, as discussed can be interpreted as an “extreme case test”, since this is probably an aspect of democracy an “ordinary” citizen can appreciate most and will be most unlikely to give up. It makes our findings particularly strong. It is important to clearly indicate the place of our work in the existing literature. It does not contradict the well-established result that more stable democracies are observed in rich countries. We merely claim that if facing a choice between the advancements of democracy and economic well-being people could decide to “sacrifice” human rights. Therefore in rich countries, where this trade-off is absent, democracy has higher chances of survival. In poor countries, on the other hand, democratic consolidation will face significant difficulties, as will the mobilization for democracy in fast-growing and/or rich autocracies. Once again, democratic transition could be caused by the bargaining and fighting over rents and resources rather than “preferences” for democracy (as it has been quite often observed in oligarchic societies “slowly” moving towards enfranchising the majority of population and establishing better protection of property rights – the constitutional history of several European countries could serve as an example) and therefore be independent of preferences of individuals. However, the stability of these transitions may be questionable, and their voters may be more prone to support populist anti-democratic movements.

The study acknowledges its limitations. First, two usual caveats should be mentioned: on the one hand, the external validity of any country-specific study can be doubted, and, on the other hand, the instrumentation strategy used is not flawless. As for the first remark, one should notice that in an international setting with the predominance of strict border controls in rich and democratic countries, interpreting the migration flows as a proxy for the “demand for democracy” is difficult: one may significantly under-estimate the preferences for democracy, or may face difficulties with disentangling demand for human rights and for economic well-being. On the other hand, it is possible that our result hold just for relatively poor countries (as India), and in rich societies people will be ready to sacrifice part of their well-being for better protection of human rights (although one should recognize that the problem of choice between democracy and economic prosperity is more important for developing than for developed nations). Nevertheless, even under these restrictions the paper seems to generate interesting observations, potentially contributing to the general discussion on the interrelation of democracy and economic growth.

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Appendix A: Data and summary statistics

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Table A1: Description of variables

Variables	Period	Definition	Source
Common language	NA	A dummy variable which takes value 1 when there is a common language between states and 0 otherwise.	2001 Census Report
Distance	NA	Highway distance between the capital cities of two states, km	Mapsofindia official site.
Human rights violations	1999-2000	Number of Complaints of Human Rights Violation in a state	Annual Report, National Human Rights Commission
Literacy	2001	Number of literate people in a state	Office of the Registrar General and Census Commissioner, India
Migration	1999-2000	Number of people born in state A and who have been living in state B for less than a year.	Institute of Applied Manpower Research Yearbook 2003
Participation in federal elections	1999	Share of the eligible individuals participating in the federal-level elections, %	Statistical Report on General Elections 1999, Vol. 1, Election Commission of India
Per capita income	1999-2000, 1990-1991	Average income a person receives in a state, INR	Central Statistical Organisation, India
Population	1999-2000	Total population of a state	2001 Census Report.
Share of literate	2001	Number of literate per 1,000 people of the state's population	Office of the Registrar General and Census Commissioner, India

Table A2: Summary statistics

Variable	No. obs.	Mean	St. dev.	Min	Max
Common language	210	0.83	0.38	0.00	1.00
Distance	210	1523.12	707.78	0.00	3426.00
Human rights violations	210	2927.20	6495.91	178.00	26978.00
Income per capita lagged	210	4932.60	1602.57	2660.00	8318.00
Income per capita	210	16188.80	5389.82	5786.00	25631.00
Literacy	210	33981640	17739030	12225040	77770270
Migration	210	108762.90	204318.60	0.00	1617400.00
Population	210	60176930	34687540	20382000	160851000
Share of participants in the federal elections	210	61.22	7.78	47.03	75.05
Share of literate	210	538.51	91.85	397.78	812.74

Appendix B: Non-linear effects of income and human rights violations

Table B1: Determinants of interstate migration in India, 1999-2000, dep. var.: number of migrants from one state to another, people

	(B1) OLS	(B2) OLS	(B3) OLS	(B4) OLS
Income per capita origin	6.317* (3.267)	13.822** (5.346)	-18.653 (14.145)	38.558 (23.797)
Income per capita target	-0.736 (3.269)	18.004*** (6.708)	-9.995 (11.436)	37.767 (26.043)
Income per capita squared origin			0.001 (0.000)	-0.001 (0.001)
Income per capita squared target			0.000 (0.000)	-0.001 (0.001)
Human rights origin	83.976** (40.232)	231.729** (93.531)	20.588 (17.438)	217.712** (93.200)
Human rights target	-68.486** (29.784)	301.576** (126.084)	-70.222** (29.283)	94.253 (88.487)
Human rights squared origin	-0.001* (0.001)	-0.044 (0.028)		
Human rights squared target	-0.000 (0.000)	-0.106*** (0.039)		
Income per capita * Human rights origin	-0.004 (0.002)	-0.017** (0.008)	-0.002 (0.002)	-0.031** (0.014)
Income per capita * Human rights target	0.007*** (0.003)	-0.025** (0.011)	0.007** (0.003)	-0.017 (0.013)
Income per capita * Human rights squared origin		0.000 (0.000)		
Income per capita * Human rights squared target		0.000*** (0.000)		
Income per capita squared * Human rights origin				0.000** (0.000)
Income per capita squared * Human rights target				0.000* (0.000)
Geographical distance	-105.718*** (15.534)	-109.297*** (15.388)	-107.629*** (16.058)	-118.851*** (16.864)
Population origin	0.000 (0.000)	0.000 (0.000)	0.001** (0.000)	0.000 (0.000)
Population target	0.001* (0.001)	0.001 (0.001)	0.001* (0.001)	0.001 (0.001)
Constant	-8,872.542 (88,983.338)	-310,179.902** (137,739.673)	291,170.283** (122,264.126)	-411,655.244 (268,760.021)
No. obs.	210	210	210	210
No. states	15	15	15	15
R²	0.443	0.463	0.440	0.454

Note: see Table 1

Appendix C: The role of linguistic factors

Table C1: Determinants of interstate migration in India, 1999-2000, dep. var.: number of migrants from one state to another, people

	(C1) OLS	(C2) OLS	(C3) OLS	(C4) OLS
Income per capita origin	-0.903 (2.287)	-1.053 (2.231)	-1.201 (2.204)	-1.286 (2.140)
Income per capita target	10.526*** (2.810)	10.376*** (2.776)	10.577*** (2.971)	10.492*** (2.939)
Hurman rights violations origin	6.450 (0.636)	5.055 (4.618)		
Human rights violations target	-1.392 (0.802)	-2.788 (3.772)		
Common language	-10,697.559 (27,181.933)	389,950.530*** (73,981.378)	-12,994.043 (27,262.559)	402,326.074*** (72,258.772)
Geographical distance	-117.110*** (19.374)	41.450 (27.913)	-115.742*** (19.630)	47.327* (28.500)
Common language dummy * distance		-179.155*** (32.962)		-185.130*** (31.447)
Population origin	0.001 (0.000)	0.001** (0.000)	0.002** (0.001)	0.002** (0.001)
Population target	0.002** (0.001)	0.002** (0.001)	0.002*** (0.001)	0.002*** (0.001)
Constant	-13,145.357 (133,395.910)	407,935.358*** (150,644.185)	-40,859.604 (139,952.560)	433,015.368*** (157,904.537)
No. obs.	210	210	210	210
No. states	15	15	15	15
R²	0.398	0.427	0.383	0.415

Notes: see Table 1

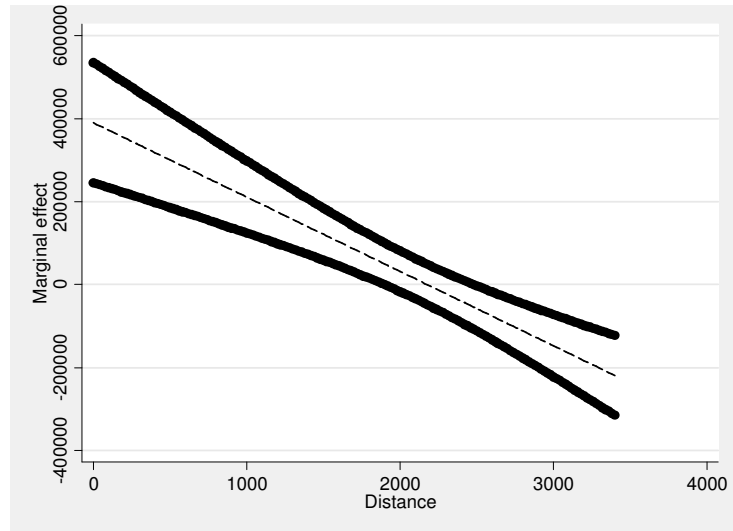


Figure C1: Marginal effect of being in the same linguistic zone conditional on distance, specification (B2)

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