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Friend-shoring in migration? Investigating the links between geopolitical fragmentation and global migration

Geopolitical tensions have been on the rise in recent years, sparking discussion about their impact on global trade and capital flows. This study investigates whether shifts in geopolitical indicators coincide with shifts in migration patterns. Using migration flow estimates from 1990 to 2020 and UN voting, a measure of geopolitical distance between countries, we find a clear association between bilateral migration and geopolitics: Migration between countries tends to decrease as they drift apart geopolitically.

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Less migration when geopolitical distance increases

Geopolitics could have a significant impact on global bilateral migration patterns. An increase in geopolitical fragmentation by one standard deviation is associated with a 10% reduction in bilateral migration. Therefore, EU immigration could decline as geopolitical blocs become more fragmented.

Factors determining strength of relationship

Increased geopolitical distance tends to have a greater impact on migration between geopolitical friends than between rivals. The effect is also larger when either the country of origin or destination has a relatively low GDP per capita. By contrast, cultural similarities reduce the impact of geopolitics.

Further research needed

This study is a first attempt to analyze the link between migration and geopolitics. While it does not demonstrate causality, it shows that there is a strong association between geopolitics and migration. As a result, there is a need for further research into this topic.

Abstract

Is there a migration-equivalent to *friend-shoring*, a concept often discussed in the context of global trade and capital flows? Does migration increase between countries that are growing geopolitically closer together and decrease between countries that are drifting apart? Our hypothesis is that geopolitical fragmentation increases the cost of migration, and thus migration increases as countries become geopolitical "friends" and decreases as they become "foes," *ceteris paribus*. We address this hypothesis empirically with Poisson pseudo-maximum-likelihood estimations of migration gravity models with a full set of fixed effects. We use estimated data on global bilateral migration flows (1990–2020) and a UN-voting-based measure of geopolitical distance between countries. Our findings suggest that increases in geopolitical distance between two countries are indeed associated with lower migration between them. The estimated coefficient exhibits nonlinearities – it is stronger (more negative) for geopolitically close countries than for distant ones – and heterogeneities: it is stronger for migrants from relatively poor origins and for migrants moving to relatively poor destinations. We further find that cultural similarities between countries lower the estimated impact of geopolitical distance on migration. We illustrate the magnitude of the estimated coefficient by assessing how further geopolitical fragmentation could change immigration to the EU and find that possible implications are economically sizable.

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1 Introduction

Geoeconomic fragmentation and its implications have garnered significant attention in recent years.[1] At least since the global financial crisis in 2008/09, skepticism about the benefits of global economic integration has grown louder; Brexit and increasing trade protectionism followed. The war in Ukraine highlighted the fragility of the international supply system, prompting many countries to seek greater autonomy. The escalating trade policy disputes and the revival of tariffs are further altering the dynamics of globalization, likely resulting in even greater fragmentation. Not least since the IMF prominently made it a focal point of its flagship reports in April 2023 (IMF, 2023b; IMF, 2023c), the interest and economic research dedicated to understanding the consequences of geoeconomic fragmentation has grown rapidly.

The term geoeconomic fragmentation has been described as a process of a policy-driven reversal of global economic integration, distinct from fragmentation due to preferences or technological changes, and it encompasses all different channels through which countries engage with each other economically: trade, capital flows, migration, international payments, multilateralism etc. (Aiyar et al., 2023). Geoeconomic fragmentation can be seen as an outcome that may be influenced by broader geopolitical dynamics – such as shifting geopolitical alliances or reduced international cooperation. Research on what geopolitical fragmentation can imply for geoeconomic fragmentation has been growing recently. The IMF published analyses that focus on the relationship between geopolitical (dis)alignment between countries and FDI (IMF, 2023b) and trade (IMF, 2023c), respectively, and also how commodity markets are affected (IMF, 2023a; Alvarez et al., 2023). Several studies followed (see Abelianski et al., 2024; Fletcher et al., 2024; Aiyar et al., 2024; Cevik, 2024; D'Orazio et al., 2024), and most recently, the ECB published a report on the

[1]The authors would like to thank Heider Kariem and Jonathan Fitter for excellent research assistance at early stages of the project and Ana Abeliansky and Fabio Rumler for helpful comments and valuable suggestions. This publication is part of a larger project on (de)globalization, the (De)Globalization Monitor (GloMo), conducted at the OeNB's International Economics Section. The project comprises analyses of capital flows and cross-border investment (CapMo), trade (TradeMo) and migration (MigMo).

implications of trade fragmentation for central banks (Attinasi et al., 2025). Overall, the literature finds that geopolitical fragmentation has important implications for bilateral trade and capital flows and commodity markets.

While a large body of literature has analyzed the nexus between trade and capital flows and geopolitical changes, we are not aware of an assessment of the link between international migration and geopolitical fragmentation in this context. It is important to understand how migration dynamics might react to changes in geopolitics, not only to inform labor market and fiscal policy makers, but also due to its relevance for monetary policy. Migration influences labor markets, changes the labor force and can alter wage and price dynamics (see for example Mayrhuber et al., 2025, for a discussion on links to inflation). Our aim is to contribute to the understanding of how geopolitical fragmentation may relate to global migration, an area that remains under-explored. This perspective can offer insights that support the anticipation of changing migration trends.

Recent evidence suggests that global migration dynamics are changing: While migration became increasingly globalized between the 1960s and 1980s, the degree of migration globalization has slowed down more recently (Fitter et al., 2024). Driving forces have not been investigated, however. There are related studies that suggest that globalization and migration are often intertwined, with economic integration fostering migration through trade and investment linkages (Hatzigeorgiou and Lodefalk, 2021; Rapoport, 2016). However, geopolitical fragmentation – characterized by rising protectionism, economic nationalism and political tensions – may disrupt established migration pathways (Talani, 2022; Lewis and Freeman, 2021). Some evidence suggests that geopolitical fragmentation can act as a barrier to mobility, while others argue it may also increase migration pressures by exacerbating economic and political instability (Lewis and Swannell, 2018). While economic openness has historically been associated with migration facilitation (Fernández-Villaverde et al., 2024), restrictive policies and declining cooperation in fragmented geopolitical contexts may hinder labor mobility and exacerbate irregular migration flows. These findings highlight the importance of a nuanced understanding of migration dynamics in a rapidly evolving global landscape.

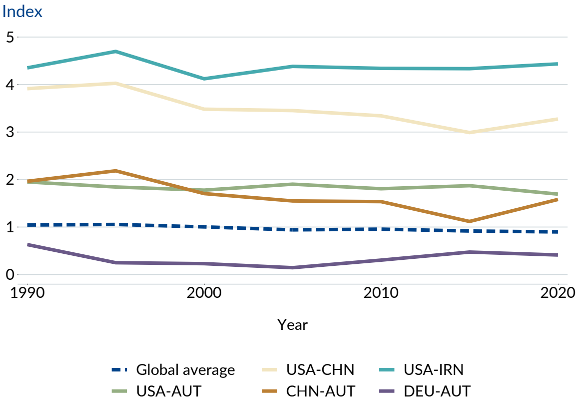
Is there a migration-equivalent to *friend-shoring*, i.e. a relocation of (usually trade or capital) flows from geopolitical foes to geopolitical friends and allies? Does a change in the geopolitical (di)stance between two countries affect the migration flows between them? Does a reduction in geopolitical distance lead to more migration – and vice versa? These questions are at the heart of this study, and given the relevance of migration for both migrant sending as well as migrant receiving countries, addressing them is not only interesting in their own right, but also economically important.

But why *would* international migration react to changes in geopolitical differences between countries? Our hypothesis is that geopolitical fragmentation makes migration more costly: economic connections (e.g. trade, capital flows) among geopolitical "friends" are stronger, institutional cooperation might be closer, media coverage of geopolitical allies might be more extensive and more positive, obstacles might be fewer and networks stronger. For these reasons, we would expect that migration between countries drifting apart geopolitically becomes more difficult and thus decreases, and migration between countries becoming more aligned geopolitically is facilitated and thus increases.

With this hypothesis in mind, we estimate gravity models of global bilateral migration, using Poisson pseudo-maximum-likelihood (PPML) estimators with a full set of fixed effects. We use estimates of global bilateral migration flows (Abel, 2019; Abel and Cohen, 2019) for the period from 1990 to 2020 (for every fifth year) and Ideal Point Distance (IPD), a measure of the similarity of UN General Assembly voting behavior (Bailey et al., 2017), as a proxy for the geopolitical distance between countries. Although we employ high-dimensional fixed effects to lower concerns of omitted variable bias, we cannot rule out reverse

Chart 1

Ideal point distance (IPD) over time



Source: Authors' calculations.

causality influencing our results. We present estimates with a lag of the geopolitical variable instead of its contemporaneous value as a robustness check, but nevertheless want to emphasize that our findings should be interpreted with caution and not as evidence of a causal relationship.

Our findings suggest that an increase in geopolitical distance between two countries is associated with lower migration flows between them, ceteris paribus. This is in line with our hypothesis that geopolitical divergence increases the costs of migrating between countries – and thus lowers migration. The estimated effect is stronger for migrants from relatively poor origin countries and for migrants that move to relatively poor destinations. We further find nonlinearities with respect to the level of geopolitical distance: the closer two countries, the stronger the estimated negative impact on migration of a change in geopolitical distance. When using interaction terms to assess whether the effects differ for the EU as a sending and receiving region of migrants, we find that the coefficient estimate is higher than the global average for immigration to the EU and for emigration out of the EU, while it is insignificant for internal migration within the EU. In order to assess the economic magnitude of the estimated coefficient, we look at changes in predicted migration flows to the EU in response to an increase in geopolitical distance between different geopolitical blocs and find meaningful changes.

The remainder of this paper is organized as follows. Section 2 presents data and descriptive statistics. Section 3 outlines the empirical strategy and section 4 discusses the results. Section 5 provides a scenario analysis and the final section 6 concludes.

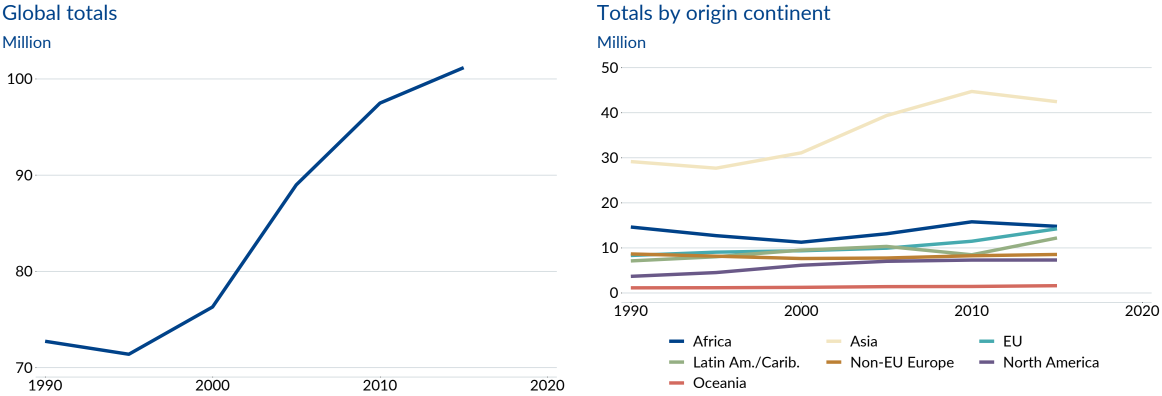
2 Data and descriptive statistics

2.1 Measuring geopolitical fragmentation

Following several recent studies (IMF, 2023b; IMF, 2023c; Aiyar et al., 2024, e.g.), we use the Ideal Point Distance (IPD) by Bailey et al. (2017) to approximate the geopolitical distance between countries. The measure is based on UN General Assembly voting to estimate foreign policy preferences, with the IPD representing differences between countries. Thus, the higher the IPD, the more different are the foreign policy preferences of countries. It is an improvement over the so-called S-Score (Signorino and Ritter, 1999), which measures dyadic voting similarity based on countries' UN General Assembly voting behavior. For the S-Score, UN votes are treated as interval-scaled outcomes, with abstentions being seen as halfway between "yea" and "nay." The S-Score is calculated as the Euclidian distance between every dyad in the UN,

Chart 2

Estimated migration flows over time



Note: All values correspond to 5-year periods where the year indicates the start of the period.
Source: Authors' calculations.

and it equals 1 if countries vote alike in all votes and –1 if they maximally disagree. The IPD improves on the S-Score, as it allows for better intertemporal comparison and corrects for agenda setting, which influences the S-Score.[2]

Table 1 provides summary statistics for the geopolitical distance variable, and chart 1 shows the development of the average geopolitical distance (IPD) since 1990, including examples of bilateral developments.[3] The average IPD over all country-pairs in the sample declined slightly between 1990 and 2020. The country-pair examples show, however, that – masked by the overall falling trend – there are bilateral increases, such as between China and Austria. When allocating countries to three blocs, a western, eastern and a neutral bloc, following Attinasi et al. (2025) (see section 5 for details), we find that the average IPD between eastern and western countries, but also within western countries, has increased somewhat recently. Slight decreases in average IPDs are found for country-pairs within the eastern bloc, and between western and neutral countries. This illustrates that dynamics in IPD are complex and that the moderately falling IPD at the global level masks diverging bilateral developments.

2.2 Bilateral migration flow estimates

It is difficult to find a dataset on migration that has a rather complete global coverage – as advised for gravity estimations (see for example Larch et al., 2025) – and is adequate for our analysis. The UN provides data on global bilateral migrant *stocks* for every fifth year between 1990 and 2020. A major disadvantage of stock data is the "inertia" in this data stemming from the fact that many migrants have migrated years or even decades ago. Hence, in stock data, current migration dynamics are diluted by historic migration movements.[4] This issue can be addressed using data by Abel (2019) and Abel and Cohen (2019)[5], who provide *estimates* of global bilateral migration *flows*. These estimates capture the total number of migrants moving between country-pairs, thus constituting gross flows (as opposed to net differences between inflows and outflows). The estimates are based on UN Migrant Stock data and are provided for every fifth

[2] To see how agenda setting can influence the S-Score, consider the following example: Assume that two countries vote alike in nine out of ten votes. Their similarity index would be 90%. Assume that ten further decisions are tabled, all related to the one vote that the countries disagreed on. Their similarity index would drop to 45%, even though no changes in preferences might have occurred.

[3] In line with the frequency of our migration data, we use 5-year averages, where the year always indicates the start of the 5-year period, e.g. the value for 1990 is the average IPD between 1990 to 1994, the value for 1995 for 1995 to 1999, etc. The value for 2020 refers to the average between 2020 and 2023.

[4] See also Fitter et al. (2024) for further advantages of using flow over stock data.

[5] We use version 6, October 28, 2022.

Table 1
Summary statistics

Variable		Mean	Std. dev.	Min	Max	Observations
Migration flows	overall	2,872.75	31,638.53	0.00	2,911,347.00	N = 169,477
	between		27,262.00			n = 29,820
	within		15,365.16			T = 5.68
IPD (5yr-average)	overall	1.03	0.77	0.00	4.87	N = 169,477
	between		0.73			n = 29,820
	within		0.26			T = 5.68
log(GDP per capita at destination)	overall	8.27	1.53	4.47	11.63	N = 158,491
	between		1.45			n = 29,042
	within		0.49			T = 5.46
log(GDP per capita at origin)	overall	8.21	1.55	4.47	11.63	N = 158,388
	between		1.47			n = 29,079
	within		0.49			T = 5.45
Religion similarity index	overall	0.18	0.25	0.00	1.00	N = 151,826
	between		0.25			n = 26,837
	within		0.00			T = 5.66

Note: Statistics are calculated for the sample used for the basic gravity specification. Interactions with GDP per capita or the religion similarity indicator lower the number of observations. N denotes all observations, n the number of country-pairs, and T the average number of time periods each country-pair is observed.
Source: Authors' calculations.

year, starting in the period 1990–95 through 2015–20.[6] Abel and Cohen (2019) provide six different estimates of global bilateral migration flows and show validation exercises that help to choose the estimates according to the intended use. We use migration flows estimated by the closed demographic accounting method (pseudo-Bayesian), as these estimates exhibit the best performance in validation exercises, in particular when the bilateral dimension of the data is of importance, as in this application. Chart 2 provides descriptive statistics of the migration flow estimates and table 1 summary statistics.

2.3 Further data sources

In addition to the IPD measure and the migration flow estimates, we use the well-known CEPII gravity dataset (Conte et al., 2022) that provides distances between countries and indicators for common language, contiguity, common colonial history as well as a religion similarity measure that we use in the estimations. Data on GDP are taken from the IMF's World Economic Outlook database and data on population figures from the UN World Population Prospects.

3 Empirical strategy

3.1 Specification and fixed effects

Gravity models – well-known for explaining trade flows – are regularly used to estimate determinants of bilateral migration flows (see Poot et al., 2016; Beverelli, 2022, for recent examples). We conduct Poisson pseudo-maximum-likelihood (PPML) estimations (Santos Silva and Tenreyro, 2006) based on the following assumed underlying relationship

$$m_{ijt} = exp\left(\alpha + \beta G_{ijt} + \sum_{k=1}^{K} \gamma^k X_{ijt}^k + \mu_{ij} + \nu_{it} + \xi_{jt}\right) \epsilon_{ijt} \quad (1)$$

where m_{ijt} is the migration flow between origin country i and destination country j in period t, G_{ijt} the

[6] UN migration stock data refer to the mid-points of each year, i.e. to July 1990, July 1995 etc. Consequently, the estimated flows refer to migration flows between July 1990 and July 1995, July 1995 to July 2000 etc.

geopolitical distance between countries i and j in t, X^k_{ijt} are K control variables that vary by specification, μ_{ij} are dyadic (i.e. bilateral) fixed effects, ν_{it} are origin-year fixed effects, ξ_{jt} are destination-year fixed effects, and ϵ_{ijt} is the remaining error term. In all estimations, standard errors are clustered at the country-pair levels. As the dependent variable is migration flows over five-year periods, all explanatory variables are five-year averages based on yearly data.

ν_{it} and ξ_{jt} act as important controls, as they capture crucial macroeconomic developments in origin and destination countries, such as GDP, unemployment, inflation, but also political or institutional developments or events in a given (origin or destination) country and year, such as policy changes, political unrest, wars, natural disasters, regime changes etc. In addition, origin-time fixed effects also are a way of controlling for multilateral resistance to migration (Bertoli and Fernández-Huertas Moraga, 2013; Larch et al., 2025). Known also from the literature of gravity models of trade, multilateral resistance to migration describes the fact that migration between two countries does not solely depend on the characteristics and attractiveness of the two countries, but also on the attractiveness of alternative destinations. Not accounting for it can lead to biased estimates (Bertoli and Fernández-Huertas Moraga, 2013; Beine et al., 2016; Ramos, 2016).

The bilateral fixed effects μ_{ij} control for all country-pair specific effects that are time-invariant, such as bilateral ties between countries, migration history, bilateral policies (to the degree that they are not changing over time), and also the standard gravity variables such as distance, colonial history, common language, common borders etc.

β is the coefficient of interest, and it gives the average (percentage) change in bilateral migration associated with a 1 unit change in geopolitical fragmentation (IPD), ceteris paribus. Given the included fixed effects, what we are holding constant are not only macroeconomic, political and institutional variables in origin and destination countries, but also the country-pair. This means that β tells us, *for a given country-pair*, what change in migration is associated with an increase in IPD between two countries.

In spite of the full set of fixed effects, we cannot rule out that our coefficient estimate is biased due to endogeneity and we emphasize that the estimates must not be interpreted as causal effects. Reverse causality could also introduce a bias: We cannot exclude that migration between two countries influences the geopolitical distance between them. If, for example, more migration leads to lower geopolitical distance between countries, our estimates might capture this relationship, in addition to the effect of interest. In that case our estimates might overestimate the *true* effect. Conversely, if more migration between countries leads to a higher geopolitical distance, our estimate could be biased toward zero, such that we underestimate the impact of geopolitical fragmentation on migration and our estimates are a lower bound of the *true* effect. In order to address this issue, we present our main estimates also with lagged values of the geopolitical fragmentation variable as a robustness check.

3.2 Coefficient heterogeneity

Our dataset covers around 200 countries in the world observed for six five-year periods between 1990 and 2020. β provides us with an estimate of the average relationship between geopolitical distance and migration in the whole dataset. We assume, however, that the coefficient of geopolitical distance could vary in dependence of its own level and of other variables.

Regarding the former, we assume that the relationship between IPD and migration might be non-linear, and not the same for "friends" and "foes." More specifically, we expect that drifting apart geopolitically matters more for countries that are geopolitically close than for countries that are already far apart geopolitically. We test this by dividing the IPD variable in different quantiles and allow the estimated coefficient to vary by quantile and would expect the coefficient estimates to be the most negative for low quantiles.

On the heterogeneity with respect to other variables, we would expect that migration could respond differently to changes in geopolitics depending on GDP per capita in the source and destination countries, respectively. An increase in IPD – and thereby presumably in the costs associated with migrating – should matter less if the origin country is a comparably rich one. Note that with our full set of fixed effects, we even keep constant the country-pair we are looking at. If nothing changes for this country-pair, and only IPD increases, we would expect the migration reaction to be stronger if the origin country is a low-income country. Following the same logic, we would also expect that high-GDP-destination countries would lower the migration-reducing effect of geopolitical fragmentation. When moving to a comparably rich country, the expected return to migration is higher, and costs of migrating are easier to bear. We test this in the data with interactions of IPD with GDP per capita at origin and at destination, respectively, and with a triple interaction of IPD with origin and destination GDP per capita.

We are further particularly interested in heterogeneous effects for EU origin and destination countries and test this in the data with interactions of IPD with (origin and/or destination) EU dummy variables.

Finally, IPD might also play different roles for country-pairs that are culturally very similar than for country-pairs that are culturally very different. We use an index of religion similarity as a proxy for cultural similarity. Our hypothesis is that IPD matters most for countries that are culturally very different from each other. We also test if we find similar results for other proxies for cultural similarity, such as common colonial history or the distance between countries.

4 Results

4.1 Descriptive evidence

We first bring our hypothesis to the data by looking at a plain correlation plot that shows, for the six different time periods in our sample, a simple linear fit between geopolitical distance and bilateral migration for all countries (chart 3). It indicates that for all periods, the geopolitical distance between two countries and the magnitude of migration between them are positively correlated: the higher the geopolitical distance, the higher the migration flows. This is not surprising, however, as many relevant factors that are not accounted for in this correlation dilute the picture. For example, geopolitically distant countries often exhibit sizable gaps in GDP per capita[7], which can partially explain the high migration between them.

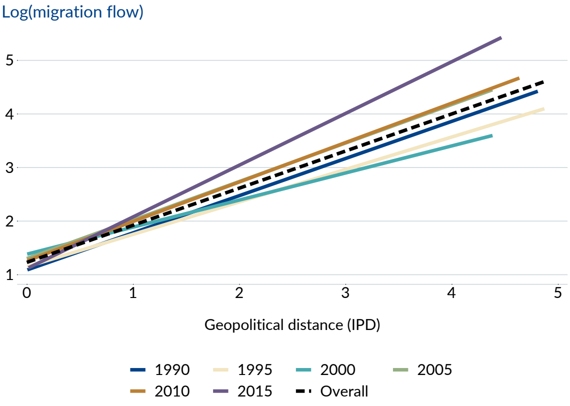
In order to show how the slope of the linear fit changes when different control variables and fixed effects are added, we construct three binned scatter plots[8] with linear fits in chart 4. The top panel of chart 4 shows the unconditional linear fit, just like chart 3, where the slope coefficient is 0.69 (with a p-value of 0.00). The middle panel of chart 4 controls for origin-time and destination-time fixed effects as well as for the following gravity variables: log(distance), contiguity, common language and colonial ties. The fixed effects capture origin- and destination-specific factors that change over time, such as business cycle dynamics (GDP, unemployment etc.), inflation, (unilateral) policy changes, political instability, unrest, wars, natural disasters etc. In fact, one can summarize these as pull and push factors. The slope of the linear fit declines markedly, to 0.24 (with a p-value of 0.00), but it remains positive. Only when bilateral fixed effects are included in addition to the origin-time and destination-time fixed effects (bottom panel of chart 4), the

[7] In our sample, the higher the absolute difference in (log)GDP per capita between origin and destination countries, the higher the geopolitical distance between them. It is not surprising that advanced economies – often "western" countries – and emerging and developing markets – often not associated with the "western bloc" – differ more in their geopolitical stance than countries belonging to the same group. In addition, many advanced economies and emerging and developing countries are also clustered geographically, and similar geography can also entail similar UN voting on certain topics.

[8] For these binned scatter plots, equal-sized bins are created for the values of IPD, and the dots indicate the means of the variables on the x- and y-axis within each bin. The linear fit is based on the full set of observations. See Stepner (2013).

Chart 3

Migration and geopolitical distance: linear fits by period



Source: Authors' calculations.

linear fit turns negative (–0.03, with a p-value of 0.01).

This means that partialling out dyadic fixed effects, i.e. controlling for all characteristics that are specific to a country-*pair* (and constant over time), reverses the sign of the slope coefficient. Econometrically, this implies that not controlling for dyadic fixed effects causes the slope coefficient to be biased due to omitted variables. In such a setting, the IPD variable (wrongly) captures factors that are not accounted for but influence migration decisions (positively). We can think of those factors as *migration facilitators* that caused some routes to become established migration routes, and others not.[9] The world's strongest migration corridors arguably were forged under asymmetric relationships. These include colonial rule, North–South guest-worker agreements and exile from conflict. This increased bilateral migration but at the same time places origin and destination countries at different sides of the UN aisle, with former colonies and other strong labor exporters traditionally having aligned with Soviet or nonaligned voting behavior. In this way, strong migration routes have been established on high-IPD corridors. By introducing bilateral fixed effects we can control – among other things – for exactly this effect: If we *could* explicitly control for the unobserved part of the established routes, they would have a positive impact on concurrent migration, and they would – following the above argumentation – be positively related to geopolitical distance. Failing to control for these established migration routes wrongly attributes their positive migration impact to IPD. And due to the – presumably – positive correlation between geopolitical distance and established migration routes, the bias is positive, i.e. we overestimate the effect of IPD when not controlling for these migration facilitators.

4.2 Gravity estimations

The PPML estimates show that with high dimensional (i.e. origin-destination, origin-time and destination-time) fixed effects, the estimated coefficient of IPD is negative and statistically significant (see column 1 in table 2): an increase in IPD is associated with lower migration, ceteris paribus. An increase in IPD by 1 unit is estimated to lower migration by 13%, ceteris paribus. This leads us to the question of what an increase in IPD by 1 unit *represents*. A 1-unit change in IPD is equivalent to the drop in IPD between China and the USA observed between the mid-1990s and the mid-2010s or to the current difference in IPD between CHN-AUT and DEU-AUT (see chart 1). A 1-unit change in IPD is just above the standard deviation in IPD in our sample, which is roughly 0.77.[10]

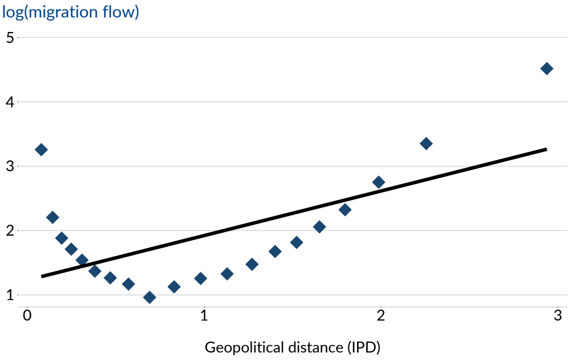
[9] Controlling for typical gravity variables such as distance, common language and colonial ties capture already some of those migration facilitators. This is indicated by the decline in the slope coefficient between the top and the middle panel in chart 4. However, as they do not capture all those contributing factors, the inclusion of bilateral fixed effects makes a large difference.

[10] Hence, an increase in IPD by 1 standard deviation is associated with a 10% reduction in bilateral migration flows.

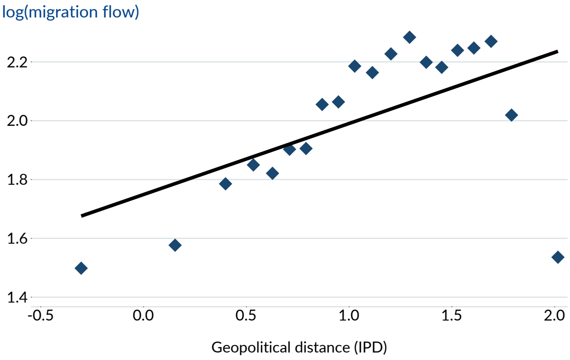
Chart 4

Migration and geopolitical distance: Binned scatter plots and linear fits

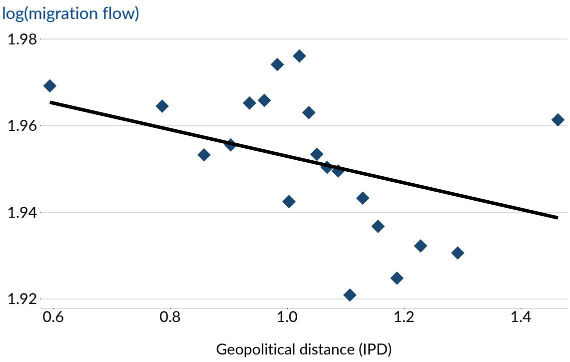
No controls



Origin-year + destination-year FE + gravity controls



Origin-year + destination-year + origin-destination FE



Note: Linear fits are based on full underlying data. No controls (top panel), controlled for gravity variables (distance, contiguity, common language, colonial ties) and origin-year and destination-year fixed effects (middle panel) and controlled for bilateral and for origin-year and destination-year fixed effects (bottom panel).
Source: Authors' calculations.

Table 2

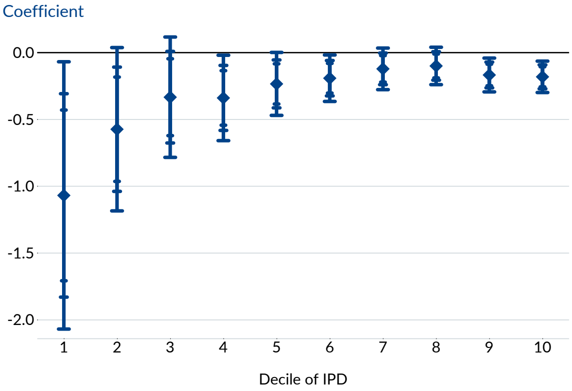
PPML estimations: IPD (1), nonlinearities in IPD (2) and IPD interactions (3)-(6)

	(1)	(2)	(3)	(4)	(5)	(6)
IPD	-0.132*** (-3.26)		-0.736*** (-5.71)	-1.135*** (-6.41)		-0.209*** (-4.13)
IPD 1st quintile		-0.436*** (-2.70)				
IPD 2nd quintile		-0.225** (-2.54)				
IPD 3rd quintile		-0.151*** (-2.80)				
IPD 4th quintile		-0.0864* (-1.85)				
IPD 5th quintile		-0.162*** (-3.78)				
IPD x log(GDP ori)			0.0739*** (5.00)			
IPD x log(GDP dest)				0.115*** (6.03)		
IPD x religion similarity						0.299** (2.40)
IPD x non-EU ori x non-EU dest					-0.0948** (-1.99)	
IPD x non-EU ori x EU dest					-0.211*** (-2.69)	
IPD x EU ori x non-EU dest					-0.315*** (-3.78)	
IPD x EU ori x EU dest					0.336 (1.25)	
Observations	169,477	169,477	162,506	162,162	169,477	151,345

Note: All specifications include origin-destination, origin-year and destination-year fixed effects. Standard errors are clustered at the origin-destination-level. t statistics in parentheses. An x in the variable name indicates interactions. ori and $dest$ are abbreviations for origin and destination countries. $^{*}\ p < 0.1$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$.
Source: Authors' calculations.

Chart 5

Coefficient estimates by IPD deciles



Note: Estimates are obtained using PPML, using origin-time, destination-time and origin-destination fixed effects. Standard errors are clustered at the origin-destination-level. Whiskers indicate 90/95/99% confidence levels.
Source: Authors' calculations.

Coefficient heterogeneity

In the following, we explore coefficient heterogeneity across different dimensions, i.e. we allow the estimated coefficient of the geopolitical fragmentation variable to change with its own level to capture nonlinearities and by groups or values of other variables.

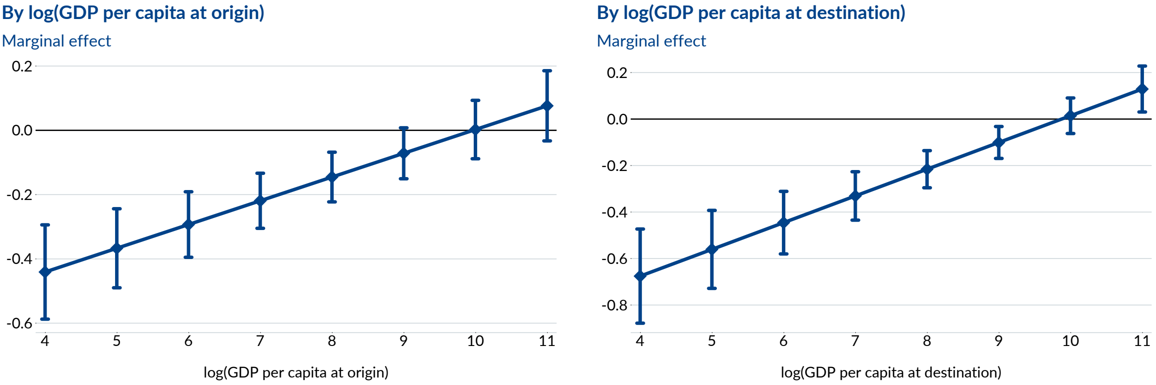
First, we allow the coefficient of IPD to vary for different levels of IPD. We define IPD quintiles, i.e. we categorize the observations in five groups according to their IPD values, each containing 20% of the observations.[11] The estimates in column 2 of table 2 show that coefficient estimates are more negative for country-pairs with low IPDs. This implies that for countries that are geopolitically close, a change in IPD has a stronger estimated impact on migration than the same change in IPD between countries that already have a high IPD. We estimate the same specification allowing the coefficient of IPD to change across deciles, instead of quintiles, and chart 5 summarizes the results. The estimates confirm the same finding: Changes in geopolitical distance appear to matter most for countries that are geopolitically relatively close.

Second, we allow the coefficient to change in dependence of GDP per capita in the origin country, the destination country and both. We find that the coefficient increases (moves closer to zero) with higher GDP per capita in the origin country: the richer the origin countries, the smaller the migration-hampering effect of geopolitical distance (see column 3 in table 2 and the left panel of chart 6 for a graphical representation). Based on the estimates, for over 80% of the observations in our data the effect is negative, i.e. only in less than 20% of observations, the GDP at origin is high enough for the effect to turn positive (insignificantly, thus not statistically significantly different from zero). How does the effect vary by the GDP in the destination country? The estimations show that the higher the GDP per capita in the destination country, the less negative the coefficient, i.e. the weaker the negative impact of geopolitics on migration (see column 4 in table 2 and the right panel of chart 6). This is what we would expect based on our hypothesis, as the associated costs of migrating weigh less when a higher "return" to migration is expected, which is the case if the destination is a high-GDP country. Again, we find that for destinations with the highest GDP per capita in the sample, the estimated coefficient turns insignificant.

[11] The range of IPD in our sample varies between 0.0 and 4.8, but 90% of the country-pairs have an IPD of 2 or lower. For this reason, we did not address nonlinearities by including a square and/or cube of IPD in the regression as in that case the high-IPD-values would get an unduly high weight.

Chart 6

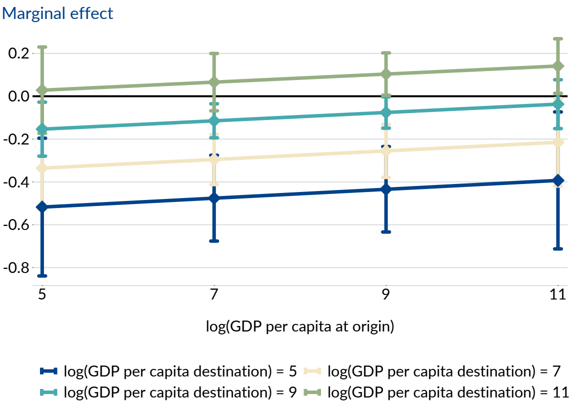
Average marginal effects of geopolitical distance (IPD) by GDP per capita



Note: Marginal effects by log(GDP per capita) at origin (left) and log(GDP per capita) at destination (right), according to specifications 3 and 4 in table 2. Spikes indicate 95% confidence intervals.
Source: Authors' calculations.

Chart 7

Average marginal effects of geopolitical distance (IPD) by GDP per capita



Note: Marginal effects of IPD by log(GDP per capita) at origin and by log(GDP per capita) at destination (triple interaction). Spikes indicate 95% confidence intervals.
Source: Authors' calculations.

When both GDP per capita at origin and at destination are interacted with the geopolitical distance measure (triple interaction, see chart 7 for a graphical illustration), our data suggest that the migration-reducing effect of geopolitical distance is strongest for low GDP origin–low GDP destination corridors. In other words, especially for movements between relatively poor countries, geopolitical distances appear to play an important role. With increasing GDP at either the origin or the destination or both, the negative impact of geopolitical distance on migration gets weaker or geopolitical distance is no longer statistically significant.

Third, we are interested in whether the results for the EU – either as a receiving or sending region of migrants – differ from the global average; this is shown in column 5 of table 2. We (triple-)interact the IPD variable with a dummy variable for an EU origin and a dummy variable for an EU destination. The results indicate that for within-EU migration, geopolitical distance does not seem to matter (is insignificant), but that geopolitical distance matters to a large extent for migration out of and into the EU. The coefficients for EU origin and non-EU destination as well as for EU destination and non-EU origin are more negative than for the global average.[12]

Fourth, we analyze whether geopolitical distance might matter less for countries that are culturally close. We use a religion similarity index as a proxy for cultural proximity (Conte et al., 2022), and assume that this alternative form of proximity might weaken the impact of geopolitical distance. The estimations (see column 6 in table 2) confirm that the higher the religion similarity between two countries, the weaker (closer to zero) the estimated effect of an increase in geopolitical distance. We also test if using other proxies for cultural closeness – colonial ties and geographic distance between countries – lead to similar results. We can confirm that IPD appears to matter more for countries that are geographically distant and that do not have a common colonial history.

In order to address the issue of possible reverse causality – migration influencing geopolitical distance between countries – we present a version of table 2 with the *lag* of the IPD variable (see table A1 in the annex). While we find a somewhat lower estimate for the basic specification in column 1, the estimates remain statistically significant and relevant. In addition, the patterns found for coefficient heterogeneity hold: The higher the impact of IPD among geopolitical "friends," the higher the impact for relatively poor origin and destination countries, respectively, and the higher the impact for migration in and out of the EU. Merely the interaction with cultural similarity is no longer statistically significant.

Robustness

In order to assess the robustness of our results, we add further control variables and use panel fixed effects estimations instead of PPML. Table 3 shows the results, with column 1 setting out the basic specification we discussed above. In columns 2 and 3 we add the ratio of the log populations at origin to destination and the ratio of the log GDP per capita at origin to destination. The findings show that – not surprisingly – the larger the origin countries relative to the destinations, both in terms of population and GDP per capita, the lower the migration flows between the two countries. In other words, controlling for origin and destination country GDP per capita and population, larger gaps in population and GDP per capita in favor of the origins lead to lower migration. Adding both of those additional controls lowers the coefficient estimate of IPD, but it remains negative and statistically significant. In column 4, the log of the bilateral migrant stock is added to control for network effects. Network effects are accounted for by the dyadic fixed effects to the degree that they are constant, but dynamics over time are not captured. As bilateral migrant stock data is available only for a subset of observations, the sample reduces drastically – and there is no sound comparability. However, the estimates suggest a positive effect of networks on migration, and more interestingly, that even when controlling for (dynamic) network effects, IPD is estimated to remain negatively and significantly related to migration.

Columns 5 to 7 show coefficient estimates that are obtained by panel fixed effects estimators, i.e. by least squares estimations. While the magnitude of the estimates differs compared to PPML estimates, the coefficient estimate of IPD is negative and significant. This holds for the fixed effects estimations of the basic specification with the log of migration flows + 1 as dependent variable – to avoid losing observations due to zeros in the migration variable – (column 5), for the inclusion of additional controls (column 6) as well as for using the log of migration flows as dependent variable (column 7, where the number of observations is lowest due to the zeros in the migration variable).

[12] The results are qualitatively similar when instead of EU origin and destinations we use euro area (EA) origins and destinations. The only difference is that for within EA migration, the coefficient of IPD turns positive and significant, indicating that within the EA, there is *more* migration among geopolitically distant countries. EA countries are all relatively similar geopolitically, however, so these results should not be over-interpreted in our view.

Table 3

Robustness: PPML estimations with additional control variables (1)-(4) and panel fixed effects estimations (FE) in (5)-(7)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IPD	-0.132***	-0.132***	-0.0852**	-0.0700*	-0.0549***	-0.0731***	-0.0484***
	(-3.26)	(-3.25)	(-2.29)	(-1.82)	(-6.06)	(-7.30)	(-2.77)
Log(population) ratio		-18.63**	-16.64**	-9.535		-2.011	5.697**
		(-2.39)	(-2.28)	(-1.27)		(-1.42)	(2.03)
Log(GDP pc) ratio			-5.941***	-4.003***		-1.503***	-2.083***
			(-7.42)	(-4.57)		(-8.44)	(-6.72)
Log(migrant stock)				0.219***			
				(10.49)			
N	169,477	169,477	155,519	53,401	212,644	194,346	139,159
Estimation	PPML	PPML	PPML	PPML	FE	FE	FE
Dependent variable	mig	mig	mig	mig	log(mig+1)	log(mig+1)	log(mig)

Note: All specifications include origin-destination, origin-year and destination-year fixed effects. Standard errors are clustered at the origin-destination-level. *t* statistics in parentheses. $^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$
Source: Authors' calculations.

5 Illustration of the magnitude of the estimates

In this section, we aim to obtain a better understanding of the magnitude of the estimated coefficients. We do so by looking at changes in predicted migration flows that our gravity estimations suggest in response to a change in IPD. As the estimated coefficients must not be interpreted as implying a causal effect, this is merely an exercise that simulates how migration flows could change in response to changes in geopolitical distance, under the strong assumption that the correlation in the future remains the same.

For the analysis, we rely on an allocation of countries into one of three geopolitical blocs, following Attinasi et al. (2025): a western (United States-centric) bloc, an eastern (China-centric) bloc and a neutral bloc of nonaligned countries.[13] We then consider two different scenarios, a mild and a severe fragmentation scenario. For the mild fragmentation scenario, we assume that our geopolitical distance measure IPD increases by one country-pair-specific standard deviation for country-pairs that do not belong to the same bloc (i.e. for eastern-western, western-neutral and eastern-neutral country-pairs). For country-pairs belonging to the same bloc, we assume no change in IPD. For the severe fragmentation scenario, we assume a stronger increase in IPD, namely by three country-pair-specific standard deviations.[14]

We apply these fragmentation scenarios to two different specifications in table 2, the basic specification in column 1 (referred to as *basic*) and the specification with EU-specific interaction terms in column 5 (referred to as *EU interactions*).

The findings show that the estimated coefficient implies an economically sizable effect: In the mild fragmentation scenario, immigration to the EU is estimated to drop by around 320,000 – or 2.6% – in a 5-year period. The simulated drop in immigration increases in size when considering the estimations that allow the impact of IPD to differ for EU (origin and destination) countries: In this case, even the mild fragmentation scenario could be associated with a drop in immigration to EU countries by over 500,000 over 5 years, i.e. by approximately 100,000 per year, on average. This means in relative terms that migration could be

[13] See p. 17 in Attinasi et al. (2025) for a map that displays the country allocation.
[14] By using country-pair specific standard deviations instead of overall standard deviations calculated for the full sample we ensure that the shocks to IPD are not disproportionately large for some country-pairs, while being disproportionately small for others.

Chart 8

Estimated change in predicted migration due to geopolitical shocks

Note: The chart shows the change in predicted immigration to the EU by source country for the mild and severe fragmentation scenarios. **Top panels:** The assessment is based on the basic specification, column 1 in table 2. Top left panel shows changes in absolute values over a five-year period (as compared to predicted values for the period 2015–20) for changes smaller than –3,000 in the mild scenario. Top right panel shows relative changes in predicted immigration (change in expected immigration values expressed in percent of the predicted migration values for the period 2015–20) for changes smaller than –5% in the mild scenario. **Bottom panels:** The assessment is based on EU-specific interaction terms, column 5 in the same table: Absolute (bottom left panel) and relative changes (bottom right panel) in predicted migration flows. Panels display source countries with an estimated decline in migration by at least 6,000 (left) or 8% (right) in the mild scenario.
Source: Authors' calculations.

Table 4

Estimated change in predicted migration due to geopolitical shocks

	Basic specification				EU interactions specification			
	Mild		Severe		Mild		Severe	
	Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative
South Asia	-78,429	-4.8%	-223,355	-13.6%	-125,491	-7.5%	-346,749	-20.8%
Western Asia	-54,508	-2.4%	-158,634	-7.0%	-86,351	-3.8%	-246,932	-10.9%
Latin America & Carib.	-52,446	-4.2%	-149,705	-12.1%	-81,269	-6.7%	-225,478	-18.5%
Sub-Saharan Africa	-46,122	-3.5%	-132,789	-10.1%	-73,123	-5.6%	-205,548	-15.7%
North Africa	-36,952	-2.9%	-107,213	-8.4%	-58,697	-4.6%	-167,015	-13.1%
Eastern Europe	-13,802	-2.2%	-39,895	-6.2%	-21,601	-3.4%	-61,100	-9.6%
Southeast Asia	-12,495	-4.0%	-35,926	-11.4%	-19,823	-6.3%	-55,593	-17.7%
Central Asia	-12,004	-4.8%	-34,283	-13.8%	-18,065	-7.6%	-50,131	-21.1%
East Asia	-8,238	-3.8%	-23,560	-11.0%	-13,519	-6.1%	-37,601	-16.9%
Southern Europe	-3,874	-0.7%	-11,375	-2.1%	-6,137	-1.1%	-17,790	-3.2%
Melanesia	-35	-4.4%	-101	-12.6%	-56	-7.0%	-155	-19.4%
Micronesia	-8	-1.6%	-23	-4.6%	-13	-2.5%	-36	-7.0%
Polynesia	-4	-2.2%	-12	-6.4%	-6	-3.5%	-19	-10.1%
Total	-318,920	-2.6%	-916,872	-7.4%	-504,150	-4.1%	-1,414,148	-11.4%

Note: The table shows (absolute and relative) changes in predicted immigration to the EU over a five-year period, by region of origin. Results are for mild and severe fragmentation scenarios and for two different specifications: the basic specification (column 1 in table 2) and the EU interaction specification (column 5). No changes are predicted for Australia and New Zealand, North America, Western Europe and Northern Europe, as all countries in these regions belong to the western bloc and thus no shock in IPD is introduced for them relative to EU countries.
Source: Authors' calculations.

approximately 4% lower than in absence of the shock. In the severe fragmentation scenario, immigration to the EU could drop by 7.4% or more than 900,000 (basic specification) or by more than 11% or 1.4 million (EU-interaction specification) in a 5-year period.

Chart 8 and table 4 display the changes in expected immigration to the EU for shocks to geopolitical distance (IPD) by source countries and source regions. Expected relative changes are highest for source countries/regions that exhibit high standard deviations in IPD. According to the estimates, relative drops in migration would be strongest for Asian and Latin American origins.

6 Conclusion

Motivated by growing economic research on the impact of geopolitical fragmentation on international flows of goods and capital and the lack of studies that investigate the links between migration and such geopolitical shifts, we focus in this study on the relationship between global bilateral migration flows and changes in geopolitical fragmentation of countries. Do we see dynamics that are known as *friend-shoring* when trade or capital flows are concerned, i.e. higher flows among geopolitical friends than among geopolitical foes? Our hypothesis is that geopolitical fragmentation between two countries increases the cost of migrating between them – and thus that fragmentation is associated with lower migration. We bring this hypothesis to the data and estimate gravity models of migration with PPML estimators, using the most-conservative set of fixed effects, namely bilateral, origin-year and destination-year fixed effects.

While we need to interpret our findings with caution, as we cannot rule out reverse causality, we nevertheless find interesting patterns: Our results suggest that increases in the geopolitical distance between two countries are associated with lower migration between them. The estimated effect is nonlinear and higher for geopolitical friends than for geopolitical foes: Fragmentation among allies seems to reduce migration more than a (further) fragmentation among country-pairs that are already distant in terms of geopolitics. Furthermore, the estimated coefficient is higher when either the source or the destination country has a comparably low GDP per capita. This is in line with our hypothesis, as the presumable increase in the cost of migration induced by higher geopolitical fragmentation matters more if the expected return to migration is low (as when migrating to a low-income country) or when the migrants faced low GDP per capita in their home countries (and thus a tighter budget).

As the geopolitical landscape is changing and migration is a topic featuring prominently on policy agendas worldwide, assessing the link between the two not only broadens knowledge on the implications of geopolitical changes in general, but also provides important information on expected changes in migration dynamics that can feed into policy considerations. This study suggests that migration is not merely driven by income and labor market opportunities of migrants, as is often argued, but also relates to shifts in geopolitical relations between countries.

We assess the economic relevance of the estimated coefficients by investigating the changes in expected migration flows associated with further geopolitical fragmentation. Focusing on the EU as an immigration region, we find that according to our estimates, immigration to the EU could drop significantly if geopolitical fragmentation intensifies. The estimates suggest that especially migration from Asian and Latin American origins could decline relative to baseline levels, with Asian origins playing a larger role in absolute terms.

This study is a first attempt to shed light on the under-researched but highly topical link between migration and geopolitical fragmentation. While our analysis does not allow causal interpretations, we find – controlling for a full set of fixed effects – correlations that are in line with our hypothesis and effects that indicate not only statistically significant relationships but also economically meaningful estimates in terms of magnitude. Given these results, we see merit for further research on the inter-linkages between global migration and geopolitical fragmentation.

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8 Annex

Table A1
PPML estimations with lagged IPD variable (L.IPD): IPD (1), nonlinearities in IPD (2) and IPD interactions (3)-(6)

	(1)	(2)	(3)	(4)	(5)	(6)
L.IPD	-0.0865** (-2.51)		-0.699*** (-5.45)	-1.098*** (-7.01)		-0.112*** (-2.77)
L.IPD 1st quintile		-0.515*** (-2.95)				
L.IPD 2nd quintile		-0.244*** (-2.96)				
L.IPD 3rd quintile		-0.121*** (-2.60)				
L.IPD 4th quintile		-0.0842** (-2.02)				
L.IPD 5th quintile		-0.127*** (-3.46)				
L.IPD x log(GDP ori)			0.0725*** (5.05)			
L.IPD x log(GDP dest)				0.115*** (6.62)		
L.IPD x Religion similarity						0.111 (0.92)
L.IPD x non-EU ori x EU dest					-0.0340 (-0.86)	
L.IPD x non-EU ori x EU dest					-0.230*** (-2.95)	
L.IPD x EU ori x non-EU dest					-0.251*** (-3.53)	
L.IPD x EU ori x EU dest					0.128 (0.47)	
Observations	137,350	137,350	133,113	132,810	137,350	129,440

Note: All specifications include origin-destination, origin-year and destination-year fixed effects. Standard errors are clustered at the origin-destination-level. t statistics are in parentheses. An x in the variable name indicates interactions. ori and $dest$ are abbreviations for origin and destination countries. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
Source: Authors' calculations.

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