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# Migration and a “Marshall Plan with Africa”

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## Abstract

Will financial assistance in the context of a “Marshall Plan with Africa” reduce migration flows from Africa to EU countries? Our analysis of migration flows from 53 African to 28 EU countries in the period from 1996 to 2017 suggests that the answer to this question is “no”. Consistent with the economic literature our results suggest that emigration is lower when emigration countries are either quite poor or when they are more advanced. By helping African countries to strengthen the rule of law and develop their financial sector, EU countries could make a better contribution to reducing the “root causes” of migration than by pumping money into Africa in a “Marshall Plan with Africa”.

## Zusammenfassung

Wird Finanzhilfe im Rahmen eines "Marshallplans mit Afrika" die Migrationsströme aus Afrika in die EU-Länder verringern? Eine Analyse der Migrationsströme von 53 afrikanischen in 28 EU-Länder im Zeitraum 1996 bis 2017 zeigt, dass die Antwort auf diese Frage "nein" lautet. In Übereinstimmung mit der Literatur deuten die Ergebnisse darauf hin, dass die Auswanderung geringer ist, wenn Auswanderungsländer entweder sehr arm oder weiter fortgeschritten sind. Die Europäische Union könnte zur Verringerung der "Fluchtursachen" einen besseren Beitrag leisten, indem sie afrikanischen Ländern hilft, die Rechtsstaatlichkeit zu stärken und ihren Finanzsektor zu entwickeln, anstatt in einem "Marshallplan mit Afrika" Geld dorthin zu pumpen.

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In order to reduce the “root causes of migration” the German Ministry of Economic Cooperation in 2017 developed a “Marshall Plan with Africa”. The title of the project refers to an initiative of the US Government taken in 1948 to assist Europe financially in the reconstruction of its economy from the ruins of World War II. Between April 1948 and December 1952 a total of about USD 14 billion was given to European countries, with USD 1.4 billion going to Germany. The idea of the “Marshall Plan with Africa” today is to channel official and private money to the continent so as to improve living standards and reduce incentives for emigration. However, past experience with development aid has shown that capital flows to developing countries are not a sufficient condition for improving living standards. Hence, the expectation that financial assistance in the context of a “Marshall Plan with Africa” will reduce migration flows from Africa to EU countries is questionable. Against this background, the present paper attempts to identify key drivers for migration from Africa to the EU and investigates, whether more investment from the EU in African countries can contribute to a reduction of emigration.

### **Drivers of migration**

The economic literature distinguished between “push” and “pull” factors driving migration.<sup>2</sup> “Pull” factors include the gap in living standards between the country of origin and destination, the number of migrants already residing in the country of destination, common languages, common historical experience and commercial ties through trade. “Push” factors include economic instability in the form of high inflation and unemployment as well as low potential growth due to weak institutions. But there are also financial constraints to migration, such as low incomes or travel costs over long distances.

In the following we estimate a model explaining migration from African countries to the European Union with push and pull factors, migration costs and bilateral investment flows from EU countries to the African countries. Our sample includes the data from 53 African and 28 EU countries for the period from 1996 to 2017. We employ a Poisson Pseudo-Maximum-Likelihood (PPML) estimator for the pooled time series and cross country (panel) regression.<sup>3</sup> To obtain elasticities between the dependent and independent variables we transformed variables into natural logarithms wherever possible. We also included country-specific dummy variables in our equation.

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<sup>2</sup> For a survey of the literature see Rudolph Matete, “Do private and public investments from European countries deter migration from African countries?” unpublished manuscript, 23 May 2019.

<sup>3</sup> See Matete (2019) for a detailed description of the data and the estimation method.



## Empirical estimates

The results of our regressions are given in Table 1. We started by regressing bilateral migration flows on bilateral investment flows (column 1). The investment variable enters the equation with a positive sign and is statistically significant at the 1 percent level of error probability. This equation suggests that an increase in investment flows from EU country  $i$  to African country  $n$  raises emigration from African country  $n$  to EU country  $i$ . This is contrary to our expectations and the intention of the “Marshall Plan with Africa” to reduce migration by inducing more investment from EU countries in African countries. However, the regression equation has a low overall fit as measured by an  $R^2$  of only 0.2. Hence, we need to extend the equation by including other determinants of migration in order to check whether the result is robust.

For the first extension we included a “pull” variable in the form of the number of migrants from African country  $n$  already residing in EU country  $i$ . The result reported in column (2) of Table 1 suggests that this is an important factor explaining migration flows. A one percent increase in the number of migrants from country  $n$  already residing in country  $i$  raises the ratio of emigrants from  $n$  to  $i$  relative to the total population by 0.2 percent. The fit of the equation is now much better. The value of the coefficient for investment flows is still positive and statistically significant. But its value has dropped to close to zero, suggesting that a one percent increase in investment flows from country  $i$  to country  $n$  raises the migration rate from  $n$  to  $i$  by only 0.01% (which is an “economically insignificant” amount). It seems that the investment variable in the estimation equation reported in column (1) picked up pull effects created by the closeness of the relationship between emigration and immigration countries, which are better captured by the stock of migrants already residing in the destination country of emigrants.

In the next step we added more variables, which in the economic literature are expected to pick up push and pull factors. The unemployment rate of young people (aged 15 to 24 years) is often seen as a push factor for emigration. However, it enters the equation in column (3) with a negative coefficient, which is statistically significant. How can it be that an increase in the unemployment rate for young people reduces emigration (albeit by a small amount)? We suspect that this variable picks up the financial constraints to emigration. The higher the rate of unemployment of young people, the poorer is the country and the less able its residents are to afford the cost of travel to better places. The ratio of GDP per capita in the immigration country to GDP per capita in the emigration country is often regarded as a pull factor and hence its coefficient should enter the equation with a positive sign



(meaning that the higher GDP per capita is in the immigration country the more attractive is it to go there). However, this variable enters equation (3) with a statistically significant coefficient with a high negative value. Thus, the variable could pick up the fact that higher per capita incomes in the African countries make journeys to Europa more affordable.

The ratio of money (cash, sight, savings and time deposits as included in the aggregate M2) to GDP is used as a proxy of financial development in the emigration country and expected to enter the equation with a negative sign. This is indeed the case. Moreover, the value of the coefficient is large, suggesting that a higher level of financial development has an economically significantly dampening effect on emigration. Intense trade between two countries could be an indication of close relationships, which could have a positive impact on migration flows. And indeed, trade flows enter the equation with the expected positive sign and are statistically and economically significant. On the other hand, inflation in the emigration country could be expected to indicate economic instability and hence raise emigration rates. However, this variable enters the equation with a statistically significant negative coefficient. Although the value of the coefficient is small (and hence the variable economically not significant), we interpret this variable to pick up financial constraints to emigration. High inflation is often associated with low real incomes, which reduce the possibility to emigrate.

In the estimation equation in column (4) we add a number of variables picking up the strength of past and present relations between emigration and immigration countries. Specifically,  $\ln(\text{Dist}_{ni})$  is the logarithm of a variable measuring the geographical distance between the emigration and immigration country. It enters the equation with a negative sign, unsurprisingly indicating that distance is a barrier to migration.  $\text{Colony}_{ni}$  is a dummy variable taking the value of 1 when the emigration country  $n$  was a colony of immigration country  $i$  before the year 1945. This variable enters equation (3) with a statistically significant negative coefficient, indicating that past colonial relationships deter migration between the two countries.  $\text{Comlang\_off}_{ni}$  and  $\text{Comlang\_ethno}_{ni}$  are dummy variables taking the value of 1 when a common language is spoken officially or by at least 9 percent of the total population in the two countries. Both variables enter the equation with a statistically significant positive coefficient, suggesting that common languages like the stock of migrants already residing in the immigration country exert pull effects on emigrants.  $\text{Colony}_{ni}$  and  $\text{Comcol}_{ni}$  are dummy variables taking the value 1 when country  $n$  was a colony of  $i$  post 1945 and whenever



it was a colony of  $i$ . Both variables enter the equation with statistically significantly positive coefficients, reaffirming the importance of historical relationships between emigration and immigration countries. The negative coefficient of the dummy variable picking up only pre-1945 colonial relationships suggests that the effects of past closer relationships fade of time.

Finally we added a variable measuring the quality of institutions to the estimation equation. We chose an indicator measuring the strength of the rule of law provided by the World Bank. This indicator enters the equation in column (5) with a statistically significantly negative coefficient, suggesting that emigration is lower the better the rule of law is in a country. However, the value of the coefficient is fairly small, and although the index enters the equation not in logarithmic form its influence on the emigration rate is moderate (as the index can take values only between plus and minus 2.5).

In comparing equations in columns (1) to (5) we note that coefficients of variables change only little when we add more variables and that the fit gradually improves. Thus, the equation in column (5) is the most econometrically efficient estimation equation for explaining determinants of migration between country pairs  $n$  and  $i$ . Our take-aways from this equation are:

- Cultural and economic relationships (measured by migrant stocks, geographical distance, common languages, and trade flows) play a very important role for migration flows between African and EU countries.
- An increase in GDP per capita in African countries relative to EU countries raises emigration, because travel becomes more affordable.
- High inflation and high unemployment of the young reduce the possibility for emigration.
- A strong rule of law and a high degree of financial development reduce the push factor for emigration.
- Investment flows from European Union to African countries do not reduce migration flows from Africa to the EU. On the contrary, our results suggest that they increase migration at the margin by strengthening economic relations.



## **Conclusions**

The purpose of this paper was to answer the question of whether financial assistance in the context of a “Marshall Plan with Africa” will reduce migration flows from Africa to EU countries. Our analysis of migration flows from 53 African to 28 EU countries in the period from 1996 to 2017 suggests that the answer to this question is “no”. To the contrary, bilateral investment flows tend to raise migration flows on the margin as they add to the strength of the relationship between emigration and immigration countries, which is a key factor for migration flows. Consistent with the economic literature our results suggest that emigration is lower when emigration countries either are quite poor or when they are more advanced. By helping African countries to strengthen the rule of law and develop their financial sector, EU countries could make a better contribution to reducing the “root causes” of migration than by pumping money to Africa in a “Marshall Plan with Africa”.



**Table 1: Econometric estimates of the drivers of migration**

Estimation method	(1)	(2)	(3)	(4)	(5)
	$\ln(\text{EMrate}_{in,t})$ PPML	$\ln(\text{EMrate}_{in,t})$ PPML	$\ln(\text{EMrate}_{in,t})$ PPML	$\ln(\text{EMrate}_{in,t})$ PPML	$\ln(\text{EMrate}_{in,t})$ PPML
$\ln(\text{Investments}_{ni,t-1})$	0.136*** (0.00381)	0.0104*** (0.00367)	0.0101*** (0.00393)	0.0130*** (0.00400)	0.0143*** (0.00408)
$\ln(\text{MigStock}_{in,t-1})$		0.245*** (0.00396)	0.234*** (0.00482)	0.227*** (0.00563)	0.229*** (0.00569)
$\ln(\text{Unemployment}_{n,t-1})$			-0.0290** (0.0128)	-0.0333*** (0.0126)	-0.0453*** (0.0130)
$\ln(\text{GDP}_{i,t-1}/\text{GDP}_{n,t-1})$			-0.773*** (0.0928)	-0.715*** (0.0942)	-0.774*** (0.0927)
$\ln(\text{M2}/\text{GDP}_{n,t-1})$			-0.570*** (0.132)	-0.742*** (0.134)	-0.555*** (0.131)
$\ln(\text{Trade Openness}_{n,t-1})$			0.244*** (0.0278)	0.237*** (0.0271)	0.212*** (0.0276)
$\text{Inflation}_{n,t-1}$			-0.00254*** (0.000975)	-0.00180* (0.000983)	-0.00253** (0.000991)
$\ln(\text{Dist}_{ni})$				-0.0842*** (0.0212)	-0.0652*** (0.0213)
$\text{Colony}_{45_{ni}}$				-0.321** (0.152)	-0.329** (0.157)
$\text{Comlang\_off}_{ni}$				0.133** (0.0591)	0.111* (0.0607)
$\text{Comlang\_ethno}_{ni}$				0.162** (0.0645)	0.140** (0.0658)
$\text{Colony}_{ni}$				0.627*** (0.0984)	0.648*** (0.0998)
$\text{Comcol}_{ni}$				0.348*** (0.0400)	0.392*** (0.0410)
$\text{Rule of Law}_{n,t-1}$					-0.0856*** (0.0156)
Constant	0.962*** (0.0109)	-1.010*** (0.0357)	-0.957*** (0.138)	-0.145 (0.237)	-0.185 (0.237)
$a_n, a_{it}$	X	X	X	X	x
N	5,263	3,079	2,710	2,710	2,708
R-squared	0.201	0.620	0.654	0.666	0.671

Notes: The estimation period is between the years 1996-2017. Standard errors are in parenthesis, are heteroskedasticity robust and clustered by year. Significance level at 1%, 5%, and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.



**Table 2: List of countries used in the estimation**

<b>List of European countries</b>	<b>List of African Countries</b>	
Austria	Algeria	Madagascar
Belgium	Angola	Malawi
Bulgaria	Benin	Mali
Croatia	Botswana	Mauritania
Cyprus	Burkina Faso	Mauritius
Czech Republic	Burundi	Morocco
Denmark	Cameroon	Mozambique
Estonia	Cape Verde	Namibia
Finland	Central African Republic	Niger
France	Chad	Nigeria
Germany	Comoros	Rwanda
Greece	D.R. of the Congo	Sao Tome and Principe
Hungary	Republic of the Congo	Senegal
Ireland	Cote d'Ivoire	Seychelles
Italy	Djibouti	Sierra Leone
Latvia	Egypt	Somalia
Lithuania	Equatorial Guinea	South Africa
Luxembourg	Eritrea	Sudan
Malta	Ethiopia	Swaziland
Netherlands	Gabon	Tanzania
Poland	The Gambia	Togo
Portugal	Ghana	Tunisia
Romania	Guinea	Uganda
Slovakia	Guinea-Bissau	Zambia
Slovenia	Kenya	Zimbabwe
Spain	Lesotho	
Sweden	Liberia	
United Kingdom	Libya	



**Table 3: List of variables in the estimation equations**

Variable	Short Description	Source
<b>Dependent Variable</b>		
$\ln(\text{EMrate}_{in,t})$	Bilateral flows of emigrants over total population of country of origin	OECD - International Migration Database
<b>Explanatory Variables</b>		
$\ln(\text{Investments}_{ni,t-1})$	Bilateral Investment in form of guarantees, syndicated loans, shares in collective investment vehicles, credit lines and direct investment in	OECD Sustainable Development Finance Unit Database
$\ln(\text{Investm} * \text{Unempl}_{ni,t-1})$	Interaction variable of bilaterla investment and youth unemployment	
$\ln\left(\frac{\text{M2}}{\text{GDP}}_{n,t-1}\right)$	Ratio of money base over GDP per capita	World Development Indicators, World Bank
$\ln(\text{Trade Openness}_{ni,t-1})$	Trade flows in current US\$ from destination to origin	World Development Indicators, World Bank
$\text{Dependency}_{n,t-1}$	Age Dependency Ratio, calculated as the total population aged less than 15 or over 64,divided by those of working age	World Development Indicators, World Bank
$\text{Unemployment}_{n,t-1}$	Number of youth unemployed workers at the country of origin, calculated as the share of youth unemployed as % of the labour force	ILO
$\ln(\text{Dist}_{ni})$	Weighted Distance (variable in CEPII dataset : <i>distw</i> )	CEPII
$\ln(\text{Population}_n)$	Population at country of origin, total (in 1000)	World Development Indicators, World Bank
$\text{Colony}_{45}_{ni}$	Dummy =1 for pairs in colonial relationship pre1945	Ortega and Peri Dataset, 2013
$\ln(\text{GDP}_{i,t-1}/\text{GDP}_{n,t-1})$	Ratio of GDP per capita expressed in PPP constant US \$ (2011 prices)	World Bank
$\ln(\text{MigStock}_{in,t-1})$	Stock of migrants born in country n and resident in country i	Ortega and Peri (2013), OECD-International Migration Database
$\ln(\text{GDP}_{n,t-1})$	GDP per capita expressed in PPP constant US \$ (2011 prices) at country of origin	World Bank
$\text{Comcol}_{ni}$	Dummy =1, if countries have common colonizer post 1945	CEPII
$\text{Comlang\_ethno}_{ni}$	Dummy =1, if a language is spoken by at least 9% of the population in both countries	CEPII
$\text{Comlang\_off}_{ni}$	Dummy=1, for common official or primary language	CEPII
$\text{Rule of Law}_{n,t-1}$	Index ranging from -2.5 to 2.5 with higher value indicating better rule of law	World Development Indicators, World Bank
$\text{Colony}_{ni}$	Dummy =1, if country pair ever in a colonial relationship, 0 otherwise	CEPII



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