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Does Migration Foster Exports? An African Perspective

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DOES MIGRATION FOSTER EXPORTS? AN AFRICAN PERSPECTIVE

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NON-TECHNICAL SUMMARY

Standard trade literature tends to view migration and trade as substitutes. In that framework, either workers migrate to satisfy foreign demand or foreign demand is satisfied by trading goods and services. There is a growing literature, however, emphasizing that migrant networks facilitate bilateral economic transactions by disseminating their preferences for goods from their country of origin and/or by removing informational and cultural barriers between hosts and origin countries (Rauch and Casella, 2003 among others). In this case, migration would reduce transaction costs associated with trade and may be a complement rather than a substitute to trade. African products might particularly suffer from large informal trade barriers stemming from the relatively weak legal institutions present in African countries and from inadequate and limited information about international trading opportunities in these countries. We can thus wonder whether African emigration, that has significantly increased since the 1990's, can stimulate African exports.

By using a gravity model, this paper studies the effect of African migration on African exports. It adds on the existing literature by controlling for endogeneity issues (that allow us capturing the causal effect of migration on trade) and by disentangling what could be the underlying reasons for migration fostering trade in Africa.

We find overwhelming evidence of a pro-exports effect of migration from Africa. Our results suggest that in Africa, one additional migrant creates about 2800 dollars (a year) in additional exports for his country of origin. We also find that the trade enhancing effect of migration in Africa can be partly explained by the weakness of institutions in the continent and that this effect is particularly important for the exports of differentiated products.

This paper also shows that intra-African migration promotes intra-African trade, especially when migrants settle in non-bordering countries and in countries that are not ethnically close from their country of origin. These results emphasize the fundamental role played by migrants in mitigating significant barriers to trade in Africa: cultural and informational costs as well as the lack of confidence between different ethnic groups.

ABSTRACT

This paper assesses the impact of migration on export performances. In particular, it highlights and helps understand how African migrants foster African trade. Relying on a new dataset on international bilateral migration recently released by the World Bank spanning from 1980 to 2010, we estimate a gravity model that deals satisfactorily with endogeneity. Our results first indicate that the pro-trade effect of migration is especially large for African countries and that this finding can be partly explained by the substitution relationship between migrants and institutions (the existence of migrant networks compensating for weaker contract enforcement, for instance). This positive association seems to be particularly important for the exports of differentiated products. Moreover, focusing on intra-African trade, we find that the pro-trade effect of African migrants is larger when migrants are established in a more geographically and ethnically distant country. All these findings highlight the ability of African migrants to help overcome some of the main barriers to African trade: the weakness of institutions, information costs, cultural differences and lack of trust.

JEL Classification: F10; O15; O24

Key Words: International Migration, Trade, Africa, Ethnicity

EFFET DES MIGRATIONS SUR LES EXPORTATIONS : UNE PERSPECTIVE AFRICAINE

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RÉSUMÉ NON TECHNIQUE

La littérature classique du commerce international tend à considérer la migration et le commerce comme des substituts : la demande étrangère peut être satisfaite par les exportations ou par la migration de travailleurs. Les nouvelles théories soulignent cependant que les migrants peuvent faciliter les échanges commerciaux bilatéraux en diffusant leurs préférences envers les biens provenant de leurs pays d'origine et/ou en réduisant les barrières informationnelles et culturelles entre pays de destination et d'origine (Rauch et Casella, 2003 entre autres). Dans ce cas, la migration peut être un complément plutôt qu'un substitut aux échanges commerciaux.

Les barrières informelles aux échanges sont particulièrement fortes pour les produits africains en raison du peu d'informations disponibles sur ces produits et, plus généralement, du fait de la faiblesse des cadres institutionnels de la plupart des pays d'Afrique. Dans ces conditions, on peut s'attendre à ce que l'impact de l'émigration africaine sur les exportations africaines soit particulièrement significatif. C'est ce que nous cherchons ici à mesurer.

A partir d'une base de données bilatérales sur les stocks internationaux de migrants récemment mise à jour par la Banque mondiale, nous estimons par un modèle de gravité l'effet de l'émigration africaine sur les exportations africaines. Notre contribution à la littérature existante est double. Elle consiste d'abord à dégager une relation causale entre les migrations et les exportations, grâce à la correction que nous apportons au biais d'endogénéité, non traité dans les analyses antérieures. Nous nous attachons ensuite à distinguer les conditions favorisant le lien entre migration et commerce au sein de l'Afrique.

Nos résultats révèlent un effet positif et significatif des migrations africaines sur les exportations africaines, un migrant additionnel permettant la création d'environ 2800 dollars d'exportations supplémentaires pour son pays d'origine. Cet effet est particulièrement important pour les exportations de biens différenciés. Nous trouvons que l'effet positif des migrations sur les exportations africaines peut en partie être expliqué par la relative faiblesse des institutions sur ce continent, la présence de réseaux de migrants permettant de compenser l'effet négatif de la faiblesse institutionnelle sur les exportations.

Cet article montre ensuite dans quelles conditions les migrations intra-africaines sont les plus à même de promouvoir un commerce intra-africain particulièrement faible. Il ressort que l'effet des migrants sur les exportations est d'autant plus important que les migrants s'établissent dans des pays non frontaliers et dans des pays dont les groupes ethniques sont nettement distincts de ceux des pays d'origine. Ces résultats soulignent le rôle fondamental joué par les migrants dans la réduction des barrières commerciales, diminuant à la fois les coûts informationnels, les différences culturelles et les faibles niveaux de confiance préexistants entre groupes ethniques différents.

RÉSUMÉ COURT

Cet article s'intéresse à l'effet des migrations sur les exportations. Plus précisément, il étudie l'effet des migrations de travailleurs africains sur les exportations africaines ainsi que les conditions permettant de favoriser le lien entre migration et commerce au sein de l'Afrique. A partir d'une base de données bilatérales sur les stocks internationaux de migrants récemment mise à jour par la Banque mondiale, nous estimons un modèle de gravité qui corrige les problèmes d'hétéroscédasticité, les biais de sélection et surtout d'endogénéité des analyses antérieures. Nos résultats révèlent tout d'abord un effet positif et significatif des migrants africains sur les exportations africaines. Nous montrons que ce résultat peut s'expliquer par le fait que, dans l'échange bilatéral, les migrants pallient la faiblesse des institutions de leur pays d'origine. De plus, il apparaît que l'effet favorable des migrations sur le commerce intra-africain est d'autant plus important que les migrants sont installés dans un pays non frontalier de leur pays d'origine. Enfin, nos résultats indiquent que les migrants africains permettent de compenser l'effet négatif des disparités ethniques sur les flux commerciaux intra-africains.

Classification JEL : F10, O15, O24

Mots-clefs : Migrations internationales, Exportations, Afrique, Ethnicité

DOES MIGRATION FOSTER EXPORTS? AN AFRICAN PERSPECTIVE[1]

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INTRODUCTION

While the neo-classical theory of international trade, based on the Heckscher-Ohlin model, predicts substitution between international migration and international trade, a growing empirical literature has evidenced that migrant networks facilitate bilateral economic transactions. This pro-trade effect can operate through the dissemination of migrants' preferences for goods from their country of origin, the removal of informational and cultural barriers between host and origin countries (Rauch and Casella, 2003) and/or through the facilitation of contract enforcement in weak institutional environments (Greif, 1993). Migration would then reduce transaction costs associated with trade and serve to complement to trade.

Although African trade has significantly grown over the last decade, African exports still represent a negligible portion of global exports.[2] African products suffer from significant trade barriers, both formal (time to export, transportation difficulties) and informal stemming from the relatively weak legal institutions present in African countries, as well as from limited and inadequate information about international trading opportunities in these countries. Hence, given the large increase in African migration, one might wonder whether these movements in population, by reducing the main obstacles to African trade, may have stimulated African

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The views expressed in this paper are those of the authors and do not necessarily reflect the opinions of the institutions to which they belong.
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[2] According to WTO's data, in 2012 merchandise exports from Africa represented only 3.5% of world merchandise exports.

exports.[3] While the broad literature examining the pro-trade effect of migration has mainly focused on specific developed countries, the aim of this paper is to investigate the relationship between the stock of African migrants and exports from African countries. Moreover, to better understand this relationship in the case of Africa, we examine whether African migrants can help overcome some of the constraints to African trade: the weakness of institutions, information costs, cultural differences and lack of trust.

This paper contributes to the literature on migrant networks in several ways. First, because African countries are particularly affected by institutional weakness, it tests the pro-trade effect of migration, identified mainly in the literature for developed countries, in the case of African countries. Second, an instrumental variable (IV) estimator is used to explicitly take the problem of endogeneity into account (previous empirical research has mostly treated migration as exogenous). The bilateral instruments employed include: the existence of a bilateral social security agreement between two countries, the lagged share of migrants from the origin country who live in the host country and the difference in life expectancy between the two countries. Finally, this paper examines the underlying reasons that may explain why and by what mechanisms African migration fosters African trade (both international and intraregional trade).

To carry out this study, we rely on a new dataset on international bilateral migration recently released by the World Bank for the years 1980, 1990, 2000 and 2010. This dataset is the first to cover such a long time span and to include every country in the world. Our findings point first to a substantial positive effect of the African Diaspora on African exports that is higher than the average effect of migration on exports at the world level. This could be partly explained by the prevalence of, on average, weaker institutions in Africa, since we also find that the weaker the countries of origin's institutions, the more migrants contribute to trade. Second, our findings show a stronger effect in the case of differentiated goods, suggesting the role played by migrants in reducing information costs. Moreover, the positive effect of African Diaspora on intra-African exports appears to be stronger when migrants are established in geographically and ethnically distant countries. As a brief, this paper empirically shows that African migrants represent an efficient tool to reduce trade barriers that hamper African trade, namely: enforcing contract issues, high information costs and cultural barriers.

The remainder of the paper is organized as follows. Section 1 describes the patterns of African migration and exports. Section 2 reviews the literature. Section 3 presents the data and the empirical methodology. Results are discussed in Section 4. Finally, we conclude.

[3] The number of migrants from Sub-Saharan Africa in the OECD countries increased by nearly 80 percent during the 1990s (Lucas 2006).

1. AFRICAN MIGRATION AND EXPORTS: AN OVERVIEW

1.1. African migration

Between 1980 and 2010, the population of African migrants in the world has more than doubled[4] and reached about 30.6 million in 2010 (according to the latest available information on bilateral migrants provided by the World Bank). However, despite this sharp increase in migration from African countries, the population of African migrants represented barely 3 percent of Africa's total population in 2010. At the same time, African migrants represented only 17 percent of the total population of migrants from the developing world (by comparison, migrants from Asia represented a third of all migrants from developing countries). In view of the significance of undocumented migration within Africa and given the lack of official data in many African countries, this figure is likely to be significantly underestimated.[5]

African countries are affected differently by emigration. As evidenced in Ratha et al. (2011), emigration rates are particularly high in countries that have suffered from conflicts, e.g. Eritrea and Liberia, or in countries with a small population, such as Cape Verde, Sao Tome, or Lesotho. Moreover, World Bank's data suggest also that, Egypt, Morocco, Burkina Faso, Algeria and Zimbabwe were the top five African emigration countries in 2010, representing 12.4 percent, 10.5 percent, 4.8 percent, 4.2 percent and 3.9 percent of all African emigrants, respectively.

Turning to destination countries of African migrants, two main stylized facts emerge: their destination countries are not very diversified and most African migrants remain on the continent rather than migrating to other regions. France still appears to be the most attractive destination for emigrants from Africa (almost 10 percent of total emigrants from Africa in 2010), ahead of Côte d'Ivoire, Saudi Arabia and South Africa (see Appendix A, Figure A.1, and Table A.1). In 2010, about half of international migrants from African countries still lived in Africa. Almost all migrants from Swaziland, Niger and Lesotho have settled in other countries on the continent (97 percent, 97 percent and 99 percent of migrants, respectively). The countries in Africa attracting most migrants in 2010 were Cote d'Ivoire, South Africa and Burkina Faso (Ratha et al., 2011). Their attractiveness might be explained either by higher wages and work opportunities or by their direct access to the sea. This tendency of African migrants to move within the African continent is verified all along the period studied. We note, however, that the share of African migrants who stay in Africa has decreased steadily over time (from 59 percent in 1980 to 51 percent in 2010), while the attraction exerted by Europe, the second most popular destination for African migrants, has remained stable over the same period (at around 28 percent). We observe, nevertheless, a slow diversification of

[4] In this paper we focus on international African migration, namely inter-country movements of people within the continent, as well as movements from the continent towards the rest of the world.

[5] About half of African migratory flows are intra-continental and most of them are informal and not included in national official statistics (Ratha et al, 2011).

African migrant destinations (for example, a slightly growing share of African migrants, mainly from North Africa, is going to Middle East countries).

1.2. African exports

Easterly and Reshef (2010) documented the recent success of African countries in enhancing remarkably their exporting capacities. The Direction Of Trade Statistics' data (DOTS, IMF) indicate an increase in the annual average rate of African export growth, with a surge over the last decade. African exports grew annually, on average, by 2.6 percent in the 1980s, by 8 percent in the 1990s, and by 15 percent in the 2000s. Despite this significant increase, African exports (totaling US$450 billion in 2010) still represent a small share of global exports. Indeed, in 2010, Africa provided only 3.5 percent of global exports.

The destinations of African exports have shifted over time with the share of African exports headed for OECD countries decreasing from 86 percent in the 1980s to 60 percent in 2010 (see Appendix A). In parallel, the share of African exports to emerging countries rose from about 4 percent in 1980 to 25 percent in 2010. The level of intra-African trade is rather limited but has grown significantly, expanding by 11 percent every year on average over the period 1980-2010. As a result, in 2010, African countries were exporting 11 percent of their products within Africa.

A large share of African exports is composed of primary commodities that are homogeneous products. Indeed, in 2000, according to Rauch's classification (1999), about 60 percent of African exports were goods traded on organized exchanges (classified as homogenous goods), 20 percent were products with reference prices (classified as intermediate), and only 20 percent of exports could be considered as differentiated products. This pattern especially applies to African exports destined for non-African countries. For intra-African trade, however, the types of traded goods are slightly different, with a smaller share of homogeneous traded goods and about 35 percent of the exports being differentiated products.

2. REVIEW OF THE LITERATURE

Results of the empirical literature examining the migration-trade nexus provide strong evidence in support of a pro-trade effect of migration. Most empirical papers testing the relationship between migration and trade focused on single-anchor developed countries and few analyses considered global bilateral datasets. However, papers focused on the specific export-enhancing effect in the context of developing countries are very uncommon.

Several studies assessed the influence of immigration on exports and imports of specific developed countries. Gould (1994) conducted a study on the United States, Head and Ries (1998) on Canada, Murat and Pistoresi (2009) on Italy, Girma and Yu (2002) on the United Kingdom, Peri and Requena-Silvente (2010) on Spain, Briant et al. (2009) on French regions and Bastos and Silva (2012) on Portugal using firm-level data. They all found a significant positive effect of the stock of immigrants on trade performance of these developed host

countries. Bacarreza et al. (2006) is one of the few studies examining the trade-migration nexus in the case of a developing country: Bolivia. Their findings evidenced a positive and significant effect of Bolivian immigration and emigration on Bolivian trade, with a larger magnitude for Bolivian emigration.

A number of other studies underlined the impact of a specific Diaspora on bilateral trade. For example, the Chinese network has been found to considerably increase bilateral trade (Rauch and Trindade, 2002). Conducting the same analysis, Felbermayr et al. (2011) found that the Chinese network leads to a more modest amount of trade creation and that the three most relevant trade creation networks after the Chinese are Moroccan, Polish and Turkish. Another type of studies makes use of global bilateral migration. Felbermayr and Jung (2009) considered a South-North gravity model and established a positive trade effect between southern and northern countries. Questioning the pro-trade effect of migrants, Parsons (2012) found that migration had a positive effect only on northern exports to the South. Finally, using cross-section data, Tadesse and White (2013) showed that African migrants significantly promote African trade. However, their empirical approach does not control for the possible endogeneity of migration and they do not analyze the mechanisms through which African migrants promote African trade.

A strand of the literature on the migration-trade nexus has participated in the shedding light of mechanisms through which migration affects trade, especially their ability to mitigate some of the main informal barriers to bilateral trade.

A broad strand of literature emphasized the importance of good-quality institutions, especially in exporting countries, to favor international trade (Anderson and Marcouiller, 2002; Berkowitz et al., 2006). In particular, mechanisms of arbitration are required to settle possible disputes between traders and insure contract enforcement. Greif (1989, 1993) and Rauch (2001) theoretically established that ethnic networks, that hold the threat of an informal sanction from the community, can promote trade contract enforcement and international trade. Thereby, migrant networks would compensate for the lack of good institutions. Few papers have empirically showed that migrants can offset the trade-inhibiting effect of institutional weakness. Dunlevy (2006) found, for example, that the higher the level of corruption in the country of origin, the stronger the positive association between immigrants and bilateral exports of the American States. Similarly, in the case of France, Briant et al. (2009) confirmed that the pro-trade effect of migrants is more salient when they come from a country endowed with weak institutions.

Another decisive factor for international trade is access to information and several studies evidenced the trade-restraining effect of information cost (Harris, 1995; Fink et al. 2005, among others). Rauch and Casella (2003) emphasized that migrant networks could promote bilateral trade by providing information on market risks or business opportunities and connecting economic agents. As argued by Rauch (2001), migrant networks may, for example "help producers of consumer goods to find appropriate distributors". Combes et al. (2005), Girma and Yu (2002), Head and Ries (1998), Felbermayr and Toubal (2012),

empirically identified the reduction in information costs as one of the relevant mechanisms through which migration affects trade.[6] This information channel is facilitated by the migrants' knowledge of the language, the functioning of institutions and legal framework of both their host and home countries. A few studies evidenced the role of migrants in reducing trade costs associated to cultural distance. For example, focusing on the U.S., Dunlevy (2006) showed that the pro-trade effect of immigration increases with the "language distance" between the foreign born and the natives. His results confirmed that, in this specific case, migrants served to bridge cultural gaps between the U.S. and their trading partners. Moreover, using different proxies of cultural distance, Tadesse and White (2010) found that the stock of immigrants living in the United-States reduces the trade- inhibiting effect of cultural distance with trading partners.

Because informal trade costs may be particularly high in Africa, we argue in this paper that migrants' ties to their home country may play a crucial role in promoting African trade.

3. THE EMPIRICAL ANALYSIS

3.1. The empirical model

The first objective of the empirical exercise consists in estimating the association between migration and exports in the case of African origin countries by properly controlling for the endogeneity bias. We also examine the role played by the quality of institutions in the Diaspora-trade relationship to assess whether it can be an explanation of the pro-trade effect of African migrants (since African countries are generally endowed with weaker institutions). Finally, because intracontinental trade is very limited in Africa, we investigate the conditions that could enhance the pro-trade effect of African migrants on intra-African trade. In particular, we test the ability of migrants to promote trade more efficiently when they offset informational costs, cultural differences, and distrust.

To do so, we start estimating a log-log gravity model of exports augmented with the logarithm of the stock of emigrants from each country of origin as an additional control variable, as expressed below:

$$lnX_{i,j,t} = \alpha_1 lnMigr_{i,j,t} + \alpha_2 YPC_{i,t} + \alpha_3 YPC_{j,t} + \alpha_4 D_{i,j} + \alpha_5 CD_{i,j} + \alpha_6 FTA_{i,j,t} + \mu_i + \mu_j + \delta_t + \varepsilon_{i,j,t} \quad (1)$$

where $X_{i,j,t}$ is exports from origin country *i* to host country *j* at year *t*[7]; $Migr_{i,j,t}$ represents the number of migrants of country *i* living in country *j;* $D_{i,j}$ is the geographical distance between country i and j; $CD_{i,j,t}$ is a set of dummies measuring cultural proximity between countries i and j (the presence of a common language, a common colonial past, a common border,

[6] Note, however, that Felbermayr and Toubal (2012) and Head and Ries (1998) found that migrants serve more to promote demand for home products than to decrease transaction costs.

[7] For the sake of simplicity, we will omit the t indices in the remainder of the article.

colonial ties) ; $FTA_{i,j,t}$ takes into account the existence of trade agreements between countries i and j. To control for unobserved heterogeneity between countries both exporters and importers fixed effects are included (μ_i and μ_j) and the vector δ_t contains a full set of year-specific dummies. To control for the multilateral trade resistance of importing and exporting countries, whose importance has been underlined by Anderson and Van Wincoop (2003), we rely on the method proposed by Baier and Bergstrand (2009). They showed using Monte Carlo simulations that adding theory-consistent simple log-linear terms into the gravity equation can robustly account for multilateral resistance. These multilateral resistance terms are calculated for the usual bilateral trade cost determinants, namely distance, contiguity, colonial ties, common colonial past, common language and free trade agreement.[8] Finally, $\varepsilon_{i,j,t}$ denotes an i.i.d error term.

3.2. Econometric issues

An important issue is the endogeneity bias that may arise due to measurement errors, omitted variables[9] or potential reverse causality between the dependent variable, exports from country i to country j, and our variable of interest, emigration from country i to country j. Indeed, migration is mostly driven by differences in opportunities and living condition between countries. Since trade influences these differences, it is likely to affect migratory flows. Markusen and Zahniser (1999) showed that increasing trade can promote economic growth and job creation in the involved countries and thereby diminish the economic reasons for people to migrate. However, introducing migration costs to the Heckscher-Ohlin-Samuelson model, Lopez and Schiff (1998) explained that trade can also help people afford migration costs and thereby favor migratory flows.

In order to identify the causal effects of migration on trade, we need to find good instruments for bilateral migration (variables influencing bilateral migration but not bilateral trade, except through bilateral migration). They should vary both in time and by country pairs in order to be strongly related to bilateral migration and so as not to be dropped after the inclusion of country-fixed effects.

The instrumental variable approach has been rarely used in the large migration-trade literature. Briant et al. (2009) and Combes et al. (2005) stand as an exception and used as instrument the lagged stocks of migrants. In related literature on the effect of migrant networks on foreign direct investments, Javorcik et al. (2011) proposed original instruments, but most of them do not change over time and are specific only to the migrant's country of

[8] The multilateral resistance terms defined by Baier and Bergstrand (2009) take the form: $MR_{ijt}^{V} = (\sum_{k=1}^{N} \theta_{kt} V_{ikt}) + (\sum_{m=1}^{N} \theta_{mt} V_{mjt}) - (\sum_{k=1}^{N} \sum_{m=1}^{N} \theta_{kt}\, \theta_{mt} V_{kmt})$ where θ_{kt} is country *k*'s share in the world GDP in year *t*. The multilateral resistance corrected terms correspond to each variable V minus MR_{ijt}^{V}.

[9] Parsons (2012) underlined the potential endogeneity bias arising from omitted bilateral variables that explain both trade and migration and include country pair fixed effects as an attempt to control for it.

origin.[10] Their only time-varying instrument is a measure of the importance of the existing network of migrants.

Our first instrument measures the existence of a network by the share of migrants from *i* living in country *j* with respect to the total of migrants from *i* in the whole world 10 years earlier.[11] Indeed, a large literature has provided evidence that community networks, by reducing migration costs, positively influence the decision to migrate (Winters et al. 2001; Munshi 2003; Beine et al. 2011). We called this first instrumental variable $Network_{ij}$.

Our second instrument, $BSSA_{ij}$, is a dummy equal to one if a bilateral social security agreement exists between the two countries. Bilateral social security agreements provide the portability of social security entitlements for migrants residing in the partner country. The total number of bilateral social security agreements has significantly increased worldwide: in our whole database, the total number of bilateral social security agreements has grown from 369 in 1980 (counting only one agreement by pair of countries) to 710 in 2010. In 1980, 36 of total bilateral social security agreements signed worldwide included at least an African country. In 2010, 275 of them have been concluded with an African country (whose 111 have been signed between two African countries). The access of migrants to social protection in the host country and the portability of social security entitlements provided by these agreements may promote bilateral migratory flows and influence the migrants' willingness to return home (thereby affecting the stock of migrants).

Finally, Borjas (1999) showed that the importance of welfare benefits in the destination country significantly influences location decisions made by migrants. Because of the weakness of data on public expenditures in Africa, we used as a third instrument the difference in life expectancy between country i and country j, $LifeDiff_{ij}$, considering that it can approximate the "welfare magnet effect" evidenced by Borjas (1999)[12].

Finally, given the large prevalence of zero trade flows in our dataset, which are undefined when converted into logarithms, we use also the Poisson estimator to take into account the information provided by the zero trade flows. The Poisson Pseudo Maximum Likelihood estimator was identified by Santos Silva and Tenreyro (2006) as an efficient way to deal with the zero trade flows in gravity models. Results of Poisson estimates are presented in robustness checks.

[10] Their instruments are the costs of acquiring a national passport in the migrants' country of origin, distance to the European Union, presence of a US military base in the migrant's country of origin 20 years earlier, a dummy indicating whether the migrant's country of origin allows its citizens to hold dual citizenship. The inclusion of origin-country fixed effects in the estimation would therefore make impossible the use of these variables as instruments.

[11] We resort to migration stocks of the year 1970 from the World Bank database to construct the instrumental variable for the stock of migrants in year 1980.

[12] Several studies suggest however that this welfare magnet effect might not be the principal determinant of immigrants' location choices (see for instance Zavodny, 1999 or Kaushal, 2005)

3.3. Variables and data

The data on migrant stocks, our variable of interest, were obtained from the newly released global bilateral migration dataset of the World Bank. This database is described in Özden et al. (2011) and is the most comprehensive database on bilateral migration available at present.[13] In this database, the World Bank relies on the foreign-born condition to define an international migrant. Bilateral exports data were drawn from the Direction of Trade Statistics (DOTS) of the International Monetary Fund. As control variables we include traditional variables of distance and cultural proximity coming from the CEPII distance database.[14] In addition, we add a dummy equal to one if there is a trade agreement between the two countries (a bilateral agreement or a belonging to a common regional trade agreement). The variable comes from the CEPII Gravity dataset that we updated until the year 2010.[15] Data giving information about the existence of a bilateral social security agreement has been drawn from *Natlex*, the database of national labor, social security and related human rights legislation published by the ILO's International Labor Standards Department.[16] Finally, data on life expectancy difference between countries has been built from the World Development Indicators (2012).[17] Appendix B presents the definition and source of variables and descriptive statistics are summarized in Appendix C. Our sample includes 195 countries, 52 of which are in Africa, and as many trading partners over the years 1980, 1990, 2000 and 2010.

4. RESULTS

4.1. World versus Africa: migrants as a substitute for weak institutions

We begin our analysis by estimating the equation (1) on the entire world. To assess the distinctive effect of African migrants, we add an interaction term indicating whether migrants originated from the African continent or not (*Migrants_ij*Africa_i*). If the trade creation effect is more important for African countries, we expect the coefficient associated with the interaction term *Migrants_ij*Africa_i* to be positive and statistically significant. The corresponding results are presented in Table 1.

[13] Available at www.worldbank.org/prospects/migrationandremittances

[14] For details see http://www.cepii.fr/anglaisgraph/bdd/distances.htm

[15] For details see http://www.cepii.fr/anglaisgraph/bdd/gravity.asp.

[16] Available at http://www.ilo.org/dyn/natlex/natlex_browse.details

[17] Available at http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2012

Table 1 - Impact of Diaspora on Exports

VARIABLES	(1) Ln(Exports)	(2) Ln(Exports)	(3) Ln(Exports)	(4) Ln(Exports)
	OLS	IV-OLS	OLS	IV-OLS
Migrants_ij (log)	**0.155*** **	**0.0513***	**0.214*** **	**0.455*** **
	(21.65)	**(1.692)**	**(15.05)**	**(5.725)**
Migrants_ij (log)*Africa_i	**0.0244***	**0.125*** **		
	(1.953)	**(4.904)**		
Migrants_ij (log)*Institutions			**-0.0138*** **	**-0.0506*** **
			(-4.641)	**(-7.951)**
Institutions			0.126***	0.321***
			(4.872)	(8.281)
GDP_i (log)	0.913***	0.927***	0.949***	0.919***
	(23.94)	(24.41)	(18.37)	(17.20)
GDP_j (log)	0.483***	0.522***	0.581***	0.587***
	(13.99)	(14.55)	(12.12)	(11.72)
FTA	0.239***	0.247***	0.200***	0.214***
	(5.794)	(5.871)	(4.541)	(4.500)
Distance (log)	-1.201***	-1.342***	-1.245***	-1.104***
	(-46.67)	(-27.09)	(-44.04)	(-9.216)
Contiguity	0.340***	0.415***	0.354***	0.109
	(4.144)	(4.469)	(4.009)	(0.613)
Common colony	0.543***	0.649***	0.429***	0.328***
	(8.022)	(8.634)	(5.806)	(2.753)
Colony 1945	1.212***	1.377***	0.978***	0.716***
	(11.41)	(11.32)	(8.379)	(3.295)
Common language	0.321***	0.400***	0.388***	0.274***
	(7.179)	(7.388)	(8.074)	(2.812)
Constant	-20.23***	-20.74***	-21.00***	-16.53***
	(-29.33)	(-29.81)	(-24.81)	(-25.06)
MR terms	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Importer and Exporter FE	yes	yes	yes	yes
Sargan (p-val.)		0.174		0.277
Underidentification test (Kleibergen-Paap p-val.)		0.000		0.000
Observations	31,207	31,207	23,279	23,279
R-squared	0.748	0.745	0.766	0.761

*Note*s: Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Observations are clustered by country-pair. In column 2, we instrument both the endogeneous variable *Migrants_ij* and the interactive variable *Migrants_ij*Africa_i* with our instruments and the interactive terms of each instrument with *Africa_i*. In column 4, we resort to the same technique.

The first column suggests, with the OLS estimator, a mean positive and statistically significant effect of Diaspora from country *i* established in country *j* (*Migrants_ij)* on exports from *i* to *j*, all over the world. This effect appears even larger in the case of migrants originating from Africa since the coefficient of the interaction term for migrants coming from Africa is significantly positive. All the control variables exhibit the expected sign. The level of GDP of both the source and the origin markets are positively linked with exports. A large distance between country-pairs is associated with a significantly lower value of trade. The contiguity between countries, the share of a common language, the existence of former colonial ties and the existence of free trade agreements are positively related to trade. In column 2, estimations results with the instrumental variable technique (IV-OLS) are presented. The statistical tests confirm the validity of our instruments. The underidentification test of Kleibergen–Paap confirms that our instruments are strongly correlated with the endogeneous variable, namely *Migrants_ij* and *Migrants_ij*Africa_i*. Moreover, we do not reject the null hypothesis of the Sargan over-identification test which means that our instruments are valid. The coefficients on our variables of interest remain positive and significant, confirming that migrants have a positive effect on exports, which is especially large in the case of African exports. This result might be related to the fact that African products suffer from especially large trade barriers that can be overcome by migrant networks, namely relatively weak legal institutions and limited and inadequate information about international trading opportunities.

Given the importance of good institutions to promote trade (Anderson and Marcouiller, 2002; Berkowitz et al., 2006) and the low quality of institutions in Africa, we expect the potential role of migrants to act as a substitute for weak institutions, emphasized by Greif (1993) and Rauch (2001), to be particularly relevant for Africa. Greif (1993) and Rauch (2001) suggested that migrant networks can help alleviate contract enforcement issues, since the use of networks can reduce opportunistic behavior. Migrant networks, by building trust or acting as its substitute, can thus especially favor exports in countries with weak legal institutions. To test this hypothesis, we include in the estimation an interaction term between migrants and the quality of institutions in origin countries. One of the main impediments to trade might be the existence of a weak mechanism of arbitration in exporting countries to settle disputes between traders. Therefore, we rely on the law and order index from the International Country Risk Guide (ICRG) as a measure of institutional quality, which assesses the strength and impartiality of the legal system and the popular observance of the law.

The results are presented in columns 3 and 4 of Table 1. Column 3 exhibits results from the OLS estimator, which suggest a mean positive and statistically significant effect of Diaspora from country *i* established in country *j* ($Migrants_{ij}$) on exports from *i* to *j* all over the world. The coefficient associated with the interaction term highlights that the positive effect of Diaspora on trade decreases in conjunction with the quality of institutions of the origin country. It suggests that the pro-trade effect of migrants is particularly strong in fostering exports for countries with a weak institutional quality, revealing a substitution relationship between Diaspora and institutional quality. This result is confirmed in column 4, after controlling for the potential endogeneity bias with the instrumental variable technique.

Interestingly, for all estimators we find a value for the institutional quality threshold beyond which the Diaspora stops fostering trade that exceeds the maximum of the law and order index in our sample, suggesting that, whatever the quality of institutions, migrants have a pro-trade effect.

Given the relatively low quality of institutions in Africa[18], the particularly large pro-trade effect of African migrants can thus be partly explained by the role of migrants to act as a substitute for good institutions. The finding that migrants stimulate exports and that their export-enhancing effect grows in proportion to the weakness of institutions in exporting countries, highlights the contract enforcement channel through which the African Diaspora is promoting African exports.

4.2. The export-enhancing effect of African migrants

We then turn to the sample of the 52 African origin countries and their 195 commercial partners in the world to further investigate the migration trade relationship in the case of African countries for both all exported goods and differentiated goods.

The results of the estimation of equation (1) on this sample are presented in Table 2. From columns 1 and 2, with the OLS and IV-OLS estimators, we see that there is a positive and significant relationship between African migrants and total African exports. Since our results hold after controlling for the potential endogeneity bias, the identified relationship between migration and exports could be considered as causal, with African migrants stimulating African exports. The impact is quantitatively important for African countries. Indeed, according to column 2, a one-percent increase of the stock of African migrants living all over the world raises the exports of African countries by a coefficient of 0.178 percent. Given that, for the year 2010, the mean value of bilateral African migration in our sample is 16770.4 migrants and the mean value of African exports is 194.97 million dollars, our result implies that one additional migrant creates about 2100 dollars a year in additional exports for his country of origin.[19] This order of magnitude is comparable to the results found by Felbermayr and Jung (2009), who evidenced a trade-creating effect of US$ 2700 for the year 2000 of one additional migrant.

[18] According to descriptive statistics, the average level of institutional quality in African countries is substantially lower than the world average. On a scale from 0 to 6, the world average of the law and order index from the ICRG database is 3.72, whereas the average value for African countries is only 2.8.

[19] 0.178 x (1/ 16770.4) x 194 965 700 ≈ US$2100.

Table 2 - Impact of African Diaspora on African Exports

	All goods		***Differentiated Goods***	
	OLS	IV-OLS	OLS	IV-OLS
	(1)	(2)	(1)	(3)
VARIABLES	Ln(Exports)	Ln(Exports)	Ln(Exports)	Ln(Exports)
Migrants_ij (log)	**0.0993*** **	**0.178** **	**0.114*** **	**0.202*** **
	(5.184)	**(2.344)**	**(6.852)**	**(3.187)**
GDP_i (log)	0.927***	0.932***	0.787***	0.808***
	(9.241)	(9.403)	(7.352)	(7.661)
GDP_j (log)	0.0776	0.0247	0.223**	0.146
	(0.708)	(0.208)	(2.054)	(1.200)
FTA	0.386***	0.338***	-0.0490	-0.121
	(3.532)	(2.909)	(-0.432)	(-0.992)
Distance (log)	-1.327***	-1.175***	-1.463***	-1.301***
	(-14.35)	(-7.096)	(-17.75)	(-9.234)
Contiguity	1.148***	0.966***	0.881***	0.653***
	(5.905)	(3.889)	(4.906)	(2.729)
Common colony	0.252*	0.243*	0.633***	0.654***
	(1.792)	(1.750)	(5.141)	(5.339)
Colony 1945	1.203***	0.990***	0.988***	0.765***
	(5.044)	(3.383)	(4.599)	(2.844)
Common language	0.517***	0.422***	0.478***	0.368***
	(4.214)	(2.752)	(4.450)	(2.774)
Constant	-11.96***	-12.51***	2.597***	-4.614***
	(-11.15)	(-11.73)	(3.176)	(-4.655)
MR terms	Yes	Yes	Yes	Yes
Year FE	yes	yes	yes	yes
Country FE	yes	yes	yes	yes
Sargan (p.-val.)		0.491		0.433
Underidentification test (Kleibergen-Paap p-val.)		0.000		0.000
Observations	6,151	6,151	5,601	5,601
R-squared	0.583	0.581	0.617	0.615

Notes: Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Observations are clustered by country-pair.

As detailed in Section 2, a large share of African exports is constituted of homogeneous goods. However, given that information provided by the Diaspora is more needed for the trade of differentiated products than for the trade of homogeneous ones, which are traded on organized exchanges, the pro-trade effect should be prominent for non-homogeneous goods (Rauch and Trindade 2002). We will thus asses the size of the export-enhancing effect of African migrants on differentiated goods.

Rauch (1999) established a classification of internationally traded goods in three groups: those traded on organized exchanges, those not traded on organized exchanges but possessing reference prices, and all the other. For disaggregated values of exports we rely on BACI, the CEPII international trade database at the product level, constructed by Gaulier and Zignago (2010). By aggregating exports according to Rauch's classification, we obtain for each country the value of its exports of differentiated products (those not traded on organized exchanges) to each of its commercial partners for the years 1980, 1990 and 2000.[20]

From the results presented in columns 3 and 4, we see that the export-enhancing effect of African migrants is particularly important in the case of differentiated goods. This result confirms the role of migrants in bridging the information gap between trading countries.

4.3. African migrants' as a way to overcome barriers to intra-African trade

Since most of African migrants settled within Africa and because intracontinental trade is not well developed, we investigate in this section the underlying explanations of the export-enhancing effect of African migrants in the case of intra-African trade.

We thus assess the relevance of two channels through which African migrants may favor exports: the existence of both a trusting relationship and cultural similarities between migrants and their communities of origin and the reduction of information costs. Indeed, beyond the contract enforcement channel, migrants can play an active role in channeling information both about trading opportunities and about the reputation of the trading partners thus overcoming trade barriers. Hence, we analyze whether the pro-trade effect is enhanced when migrants settle in a country whose ethnic groups are different from their own or in a more distant country.

Focusing on trade between Niger and Nigeria, Aker et al. (2010) found that common ethnicity across the Niger-Nigeria border promote trade flows between the two countries (through a reduction of the border effect on price dispersion). Belonging to the same ethnic group can promote trade through cultural similarities (Guiso et al. 2009) and trusting relationships (Greif 1993). Since fixed trade costs are higher in culturally distant countries, migrants should produce a larger effect on exports in this case (Peri and Requena-Silvente, 2010). Migrants should thus especially favor trade in countries which are ethnically different because of lower cultural similarity and less established trusting relationships.

To empirically examine whether the Diaspora-trade relationship depends on ethnical proximity between the trading partners, we introduced in equation (1) an interaction term between migrants and difference in ethnicity among country pairs. Given that our measure of ethnicity difference is for African countries, we focus on the intra-African sub-sample with 52 African origin countries and 52 African destination countries. To measure ethnicity difference

[20] In this section we cannot refer to the year 2010, because the version of BACI that we use does not contain trade flows for that year.

for each country pair, we use data on ethnic families drawn from Murdock (1959), who distinguishes fifteen distinct ethno-linguistic families in Africa. In some countries, only one large ethnic family is present, whereas several of them are present in other countries. Moreover, we use Fearon's (2003) data on the proportion of the population belonging to each ethnic group. Using information from the CIA's World Factbook, the Encyclopedia Britannica, the Library of Congress Country Study and from national sources, Fearon (2003) proposes a list of 822 ethnic groups in 160 countries that represent at least one percent of the country population in the early 1990s. We aggregate these ethnic groups into the fifteen large ethnic families proposed by Murdock (1959) to obtain data on the share of the population in each country belonging to each of the fifteen ethnic families. Our measure of ethnic difference corresponds thus to average share of population belonging to ethnic families that are different within each country pair, as follows:

$$EthnicDiff_{ij} = \frac{1}{2}(\sum_{e}^{m} S_{ei} + \sum_{f}^{n} S_{fj})$$

where ij represents a country pair, e (respectively f) is an ethnic family that is present only in country i (respectively j) and their total number is m (respectively n). S_{ei} (respectively S_{fj}) is the share of the population belonging to ethnic family e (respectively f) in the population of country i (respectively j) .

The results are presented in Table 3, both with the OLS and IV-OLS estimators (columns 1 and 2). According to the statistical tests reported in the table, we cannot reject the validity of our instruments. In column 2, the estimated coefficient on the interactive term between migrants and ethnic difference is positive and significant. This result indicates that the greater the ethnic difference between the migrants' countries of origin and destination, the greater the positive effect of migrants on exports from their origin country to their destination. The coefficient of Migrants is not significant, revealing that there is no effect of migrants on exports when the variable EthnicDifference is equal to zero (however, this is the case only for 2% of the country pairs in our sample).

Next, we assess the relevance of the information channel in the case of intra-African trade. Dunlevy (2006) underscored the fact that migrant networks are especially important when it is more costly to obtain information about trading opportunities. Given that informational barriers and search costs are higher the higher the geographic distance between two countries, we will test the hypothesis of whether the pro-trade effect of migrants is greater when they settle in more distant countries. To this end, we estimate the equation (1), augmented by the interaction term between migrants and distance on the same sub-sample of intra-African exports.

Table 3- Impact of the African Diaspora on intra-African exports

	OLS	IV-OLS	OLS	IV-OLS
	(1)	(2)	(3)	(4)
VARIABLES	Ln(Exports)	Ln(Exports)	Ln(Exports)	Ln(Exports)
Migrants_ij (log)	**0.0267**	**-0.0111**	**-0.373***	**-1.155*****
	(0.579)	**(-0.104)**	**(-1.725)**	**(-2.867)**
Migrants_ij*Ethnic Diff	**0.0673**	**0.230*****		
	(1.170)	**(2.857)**		
Migrants_ij*Distance			**0.0579****	**0.194*****
			(2.067)	**(3.656)**
Ethnic Difference	-0.898**	-1.736***		
	(-2.358)	(-3.684)		
GDP_i (log)	0.674***	0.661***	0.661***	0.621***
	(4.005)	(3.540)	(3.990)	(3.676)
GDP_j (log)	0.261	0.219	0.251	0.109
	(1.408)	(1.145)	(1.370)	(0.588)
FTA	0.328**	0.280*	0.289**	0.0819
	(2.292)	(1.866)	(2.025)	(0.534)
Distance (log)	-1.654***	-1.571***	-2.139***	-2.375***
	(-9.839)	(-6.486)	(-9.668)	(-6.545)
Common colony	0.865***	0.438**	0.320	0.200
	(3.970)	(2.541)	(1.580)	(0.967)
Common language	0.477**	0.525***	1.034***	0.383*
	(2.244)	(3.091)	(4.695)	(1.820)
Contiguity	0.571***	0.964***	0.690***	1.009***
	(2.829)	(3.917)	(3.568)	(3.688)
Constant	-12.33***	-9.132***	-13.45***	-13.81***
	(-6.711)	(-4.941)	(-7.514)	(-7.350)
MR terms	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Country FE	yes	yes	yes	yes
Sargan (p-val.)		0.798		0.116
Underidentification test (Kleibergen-Paap p-val.)		0.000		0.000
Observations	1,881	1,881	1,899	1,899
R-squared	0.605	0.601	0.600	0.573

Notes: Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Observations are clustered by country-pair. We instrument both the endogeneous variable *Migrants_ij* and the interactive variable *Migrants_ij*Ethnic Difference* with our instruments and the interactive terms of each instrument with *Ethnic Difference*.

Results are presented in Table 3 in columns 3 and 4. We first note both that the standard variables used in gravity-model estimations exhibit the expected signs and the various statistical tests support the validity of our instruments in the IV-OLS estimation.

Second, turning to the variables of interest, we see that the coefficients on *Migrants* are negative and significant but the interaction term between *Migrants* and the log of *Distance* is positive and significant. Given that the net effect of migration on exports is the addition of the coefficient on *Migrants* and of the coefficient on *Migrants*log(Distance)* interacted by the distance, the effect of migrant stock on exports turns positive for values of the log of distance larger than 5.95. Beyond this threshold value, the positive effect of African migration on intra-African exports is larger the more the origin and destination countries are distant. Except for the 13 pairs of countries (representing about 1% of country-pairs in our sample) that have a distance lower than the threshold, migrants have thus a positive effect on intra-African trade which is especially large when they settle in countries far away from their origin countries where information is relatively more costly to obtain. This result therefore highlights that one additional channel through which African migrants may promote African exports is through the reduction of information costs that they permit.

Thus, the results reported in Table 3 appear very supportive of our hypothesis that migration is an excellent way of extending trade between countries that do not trade much together due to ethnic differences or large informational costs.

4.4. Robustness checks

In Table 4, we perform several robustness checks, to test whether our major result with respect to the export-enhancing effect of African migrants holds. First, we vary the set of instruments, using only two of them, namely Network and BSSA, in column 1. In column 2, we correct for the multilateral trade resistance by including time-varying country-fixed effects, instead of using the Baier and Bergstrand (2009) method, in the IV-OLS estimation. Last, given the large prevalence of zero trade flows in our dataset, which are undefined when converted into logarithms, we use the Poisson Pseudo Maximum Likelihood estimator in its IV form to take into account the information provided by the zero trade flows and to verify the robustness of our estimates.

The estimations show that our results are robust with respect to these various robustness checks, which confirm the positive and significant causal relationship between African migrants and African exports.

Table 4 - Impact of African Diaspora on African Exports – robustness (different sets of instruments and inclusion of time-varying-country fixed effects)

	IV-OLS	IV-OLS	IV-PPML
	(1)	(2)	(3)
VARIABLES	Ln(Exports)	Ln(Exports)	Exports
Migrants_ij (log)	**0.175****	**0.137****	**0.182****
	(2.291)	**(0.0661)**	**(0.0753)**
GDP_i (log)	0.929***		0.867***
	(9.459)		(0.0585)
GDP_j (log)	0.0152		0.597***
	(0.129)		(0.119)
FTA	0.325***	0.331**	0.591**
	(2.815)	(0.135)	(0.233)
Distance (log)	-1.178***	-1.289***	-0.495**
	(-7.099)	(0.151)	(0.219)
Contiguity	0.980***	0.823***	-1.037***
	(3.929)	(0.224)	(0.372)
Common colony	0.235*	0.349***	0.294
	(1.698)	(0.134)	(0.453)
Colony 1945	0.981***	0.963***	1.094***
	(3.338)	(0.287)	(0.375)
Common language	0.428***	0.431***	-0.742***
	(2.807)	(0.139)	(0.151)
Constant	-12.40***	8.260***	
	(-11.74)	(1.492)	
MR terms	yes	no	yes
Year FE	yes	yes	yes
Country FE	yes	yes	no
Country x year FE	no	yes	no
Sargan (p-val.)	0.614	0.231	
Underidentification test (Kleibergen-Paap p-val.)	0.000	0.000	
Observations	6,204	6,596	10,437
R-squared	0.580	0.630	0.113

Notes: Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Observations are clustered by country-pair.

CONCLUSION

This paper assesses whether the African Diaspora promotes African exports, what drives the effect, and in which cases this impact is amplified. Diasporas, dispersed all over the world, can serve a crucial informational role to ease informal trade barriers by providing information on market risks and opportunities. This trade facilitation effect might be especially important for African countries whose products might be unknown and where institutions are weak.

Using a new dataset on international bilateral migration recently released by the World Bank for the years 1980, 1990, 2000 and 2010, and controlling for the endogeneity bias with an instrumental-variable technique, our results suggest that migrant networks have a positive effect on bilateral exports, that is larger in the case of African exporters. The effect appears particularly important for the exports of differentiated products. This large export-enhancing effect of African migrants can be partly explained by the existence of weaker institutions in Africa for which migrants' networks compensate, fostering trade despite the low institutional quality.

Focusing on the sub-sample of intra-African trade, the pro-trade effect of migrants was found to be particularly strong for exports to countries which are ethnically and geographically distant, highlighting the important role played by migrants in both information cost reduction and mitigation of cultural differences and distrust.

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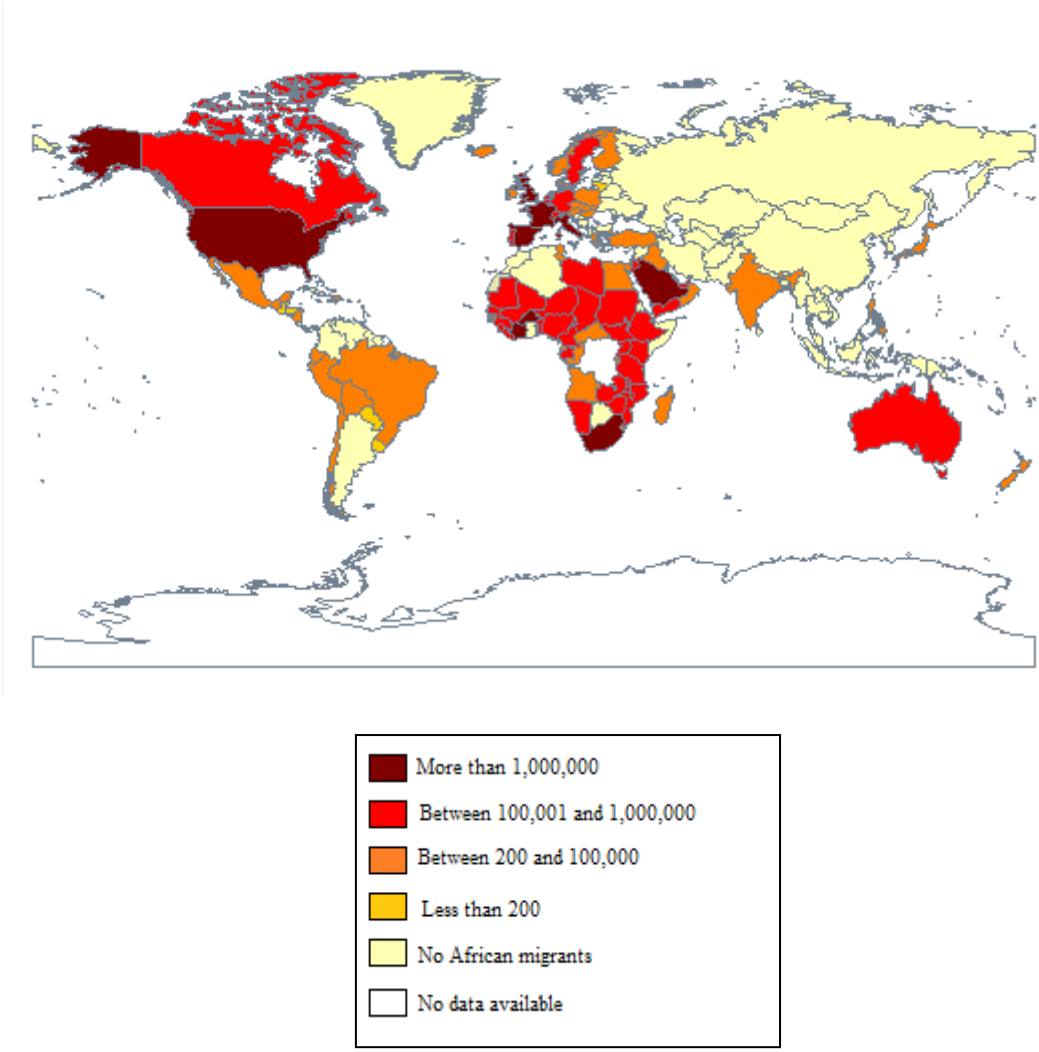
APPENDIX A - FEATURES OF AFRICAN MIGRATION AND AFRICAN TRADE

Figure A.1. - African migrants in the world in 2010



APPENDIX A - CONTINUED: FEATURES OF AFRICAN MIGRATION AND AFRICAN TRADE

Table A.1. - Destination of African emigrants as a percentage of all emigrants (2010)

Developing countries						High Income countries
Africa	East Asia and the Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East	South Asia	All regions
50.7	*0*	*0*	*0.1*	*6.3*	*0*	*42.9*

Table A.2. - Destination of African exports by region as a percentage of total exports

	Total *in millions of USD*	Africa	East Asia and the Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East	South Asia	High Income countries	Total
1980					(in %)				
Total exports	**58 684**	**3.6**	**0.7**	**2.8**	**2.03**	**0.3**	**0.5**	**90**	**100**
differentiated goods	4 737	5.6	3	0.8	1.1	0.5	3.3	85.8	100
1990									
Total exports	**66 902**	**8**	**1.1**	**2.2**	**1.2**	**0.7**	**1.1**	**85.7**	**100**
differentiated goods	9 054	6.7	3.1	1.5	0.8	1.4	5.7	80.7	100
2000									
Total exports	**136 181**	**9.1**	**4.3**	**2.2**	**3.3**	**0.6**	**4.3**	**76.2**	**100**
differentiated goods	17 300	9.5	3	0.7	0.9	1.1	6.4	78.4	100
2010									
Total exports	**448 903**	**10.9**	**13.9**	**2.2**	**3.4**	**1**	**6.6**	**62**	**100**
differentiated goods	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

APPENDIX B - VARIABLE DEFINITION AND SOURCES

Variable	Definition	Source
Dependant variables		
$Exports_{ij}$	Total value of exports of the country *i* to the country *j*, millions of US$	DOTS (IMF)
$DiffExports_{ij}$	Variable constructed based on Rauch (1999) classification of goods with exports flows disaggregated by product in thousands of US$	BACI (CEPII) Gaulier and Zignago (2010) Available at http://www.cepii.fr/anglaisgraph/bdd/baci.htm
Control variables		
$Migrants_{ij}$	Stock of migrants from country *i* living in country *j*	Global bilateral migration database of the World Bank, available at http://data.worldbank.org/data-catalog/global-bilateral-migration-database (for 1980 to 2000) and at www.worldbank.org/prospects/migrationandremittances (for 2010)
$GDPC_i$	Per capita gross domestic product of country *i*, current million US$	World Development Indicators (2012)
$GDPC_j$	Per capita gross domestic product of country *j*, current million US$	
$Distance_{ij}$	Geographical distance between the largest cities of *i* and *j* weighted by the proportion of the city's overall country population, km	CEPII distance database available at http://www.cepii.fr/anglaisgraph/bdd/distances.htm
$Contiguity_{ij}$	1 for countries sharing a border	
$Common\ colony_{ij}$	1 for pairs in colonial relationship post 1945	
$Colony\ 1945_{ij}$	1 for common colonizer post 1945	
$Language_{ij}$	1 for countries sharing a common official language	
FTA_{ij}	1 for countries having a regional or bilateral trading agreement in force	Dataset available at http://www.worldtradelaw.net/fta/ftadatabase/ftas.asp
$Law\ and\ order_j$	An index of law and order ranging from 0 to 6, where a higher number indicates a better system of law and order.	ICRG database available at http://www.prsgroup.com/ICRG.aspx
Instrumental variables		
$BSSA_{ij}$	Dummy variable equal to 1 if a social security agreement has been signed between country *i* and country *j*	NATLEX's database (ILO) available at http://www.ilo.org/dyn/natlex/natlex_browse.home and author's computation
$Network_{ij}$	Share of migrants from *i* living in country *j* 10 years ago	Global bilateral migration database of the World Bank and author's calculation
$LifeExp_{ij}$	Difference in life expectancy between country *i* and country *j*	World Development Indicators (2012) and author's calculation

APPENDIX C - DESCRIPTIVE STATISTICS

Variable	Observations	Mean	Std. Dev.	Min	Max
Sample of all countries in the world					
$Exports_{ij}$	31207	640.847	5380.043	0	289850
$Migrants_{ij}$ (log)	31207	5.191	3.058	-0.600	16.269
$GDPC_i$ (log)	31207	8.136	1.598	4.541	11.566
$GDPC_j$ (log)	31207	8.296	1.673	4.541	11.566
$Distance_{ij}$ (log)	31207	8.503	0.902	4.100	9.886
$Contiguity_{ij}$	31207	0.043	0.203	0	1
$Common\ colony_{ij}$	31207	0.089	0.285	0	1
$Colony\ 1945_{ij}$	31207	0.020	0.142	0	1
$Language_{ij}$	31207	0.196	0.397	0	1
FTA_{ij}	31207	0.140	0.347	0	1
$Law\ and\ order_j$	23279	3.905	1.514	0	6
$BSSA_{ij}$	31207	0.101	0.301	0	1
$LifeDiff_{ij}$	31207	3.796	0.340	-0.01	4.533
$Network_{ij}$	31207	0.016	0.072	0	0.983
Sample of 52 African origin countries and 195 destination countries					
$Exports_{ij}$ (all goods)	6151	79.598	600.429	0.001	28506.8
$Exports_{ij}$ (differentiated goods)	5601	16788	120532.2	0.006	5496952
$Migrants_{ij}$ (log)	6151	5.163	3.055	-0.463	14.169
$GDPC_i$ (log)	6151	6.496	1.017	4.541	9.903
$GDPC_j$ (log)	6151	8.358	1.825	4.541	11.566
$Distance_{ij}$ (log)	6151	8.346	0.847	5.088	9.869
$Contiguity_{ij}$	6151	0.075	0.263	0	1
$Common\ colony_{ij}$	6151	0.182	0.386	0	1
$Colony\ 1945_{ij}$	6151	0.023	0.151	0	1
$Language_{ij}$	6151	0.326	0.469	0	1
FTA_{ij}	6151	0.131	0.338	0	1
$BSSA_{ij}$	6151	0.058	0.234	0	1
$LifeDiff_{ij}$	6151	3.425	0.456	-0.009	4.340
$Network_{ij}$	6151	0.021	0.078	0	0.901
Sample of 52 African origin countries and 52 African destination countries					
$Exports_{ij}$	1881	20.066	101.936	0	2077.96
$Migrants_{ij}$ (log)	1881	6.074	3.291	0	14.08
$GDPC_i$ (log)	1881	6.359	0.900	4.541	9.903
$GDPC_j$ (log)	1881	6.343	0.929	4.541	9.903
$Distance_{ij}$ (log)	1881	7.523	0.789	5.088	8.987
$Contiguity_{ij}$	1881	0.242	0.428	0	1
$Common\ colony_{ij}$	1881	0.457	0.498	0	1
$Language_{ij}$	1881	0.569	0.495	0	1
FTA_{ij}	1881	0.326	0.469	0	1
$Ethnic\ Difference_{ij}$	1881	0.538	0.377	0	1
$BSSA_{ij}$	1881	0.119	0.324	0	1
$LifeDiff_{ij}$	1881	3.841	0.237	2.797	4.340
$Network_{ij}$	1881	0.045	0.109	0	0.901

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