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**Keywords :** Trade-migration link, panel data approach, extensive and intensive margin.

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## Migration, Comparative Advantages and Knowledge Diffusion in the EU-Mediterranean region\*

in collaboration with :



CENTRO  
DI ECONOMIA DEL LAVORO  
E DI POLITICA ECONOMICA  
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### 1. Summary

*In this policy brief we report the outcomes of a project which investigates how migration flows between MENA and the EU can impact their trade relations. We explore the link between immigration and emigration with the intensive margin (IM) and the extensive margin of trade (EM). The main novelty is to try to disentangle the knowledge transmissions channels from network and preference effects in relation to migration flows. The analysis is carried out by checking for migration effects on the degree of technology embodied in EU traded goods by considering low, medium and high technology classes. Our results and policy implications are important for harnessing the Euro-Mediterranean Partnership for prosperity, growth and employment and are of relevance to policy-makers dealing with migration policies, trade-negotiators, and for civil society and businesses.*

### 2. Introduction

We focus on people's flows within the Mediterranean region which include EU and MENA and constitute a quite relevant social and economic process, with net benefits for both the origin and destination countries. In 2015 more than 18 million of nationals born in the southern basin of the Mediterranean were living in EU countries, this being one of the most important corridors for people's flows worldwide, which are mainly supported by the nearness of African and European continents and their dissimilar level of wealth and employment opportunities. The rapid increase in immigrant population in the EU is one of the most challenging political and sociological issues today, being also important for its economic consequences (Fargues, 2006).

One of the relevant economic effects is the trade-migration nexus. The role of migrant networks and of proximity have been extensively analysed in the literature. According to many studies, migrants favour international trade by reducing the transaction costs and thus supporting exports (e.g. Foad, 2010; Peridy, 2012; Giovannetti, Lanati and Venturini, 2019). In particular, Southern EU-countries (Italy, Spain, France and Portugal) have shown clear trade creation effects of people's flows arriving to these countries.

The main contribution of our study is to try to extend the analysis to the issue of knowledge spillovers effects. Of all the international factor flows, migration is indeed the strongest knowledge diffusion driver. The labour mobility from MENA region, also needs to be considered as a vehicle of (tacit) knowledge transfer to countries of origin and destination. Surprisingly this issue has not been explored in the context of the EU-MENA migration and trade flows despite significant knowledge transfer and spillovers can be assumed behind the trade effects. We follow a recent literature which has found positive spillovers and incentive-creating effects of migration by creating business opportunities as well as by favouring the circulation and diffusion of knowledge (Miguelez, 2017; Bahar and Rapoport, 2018).

### 3. Approaches and Results

People's flows are very important inside the EURO-MED region, with historical linkages especially between Northern African (NA) and EU MED countries. Europe represents the main destination area for migrants from MENA countries. Almost one out of four migrants from MENA comes to Europe (6,4 million equal to 24.1% in 2015) (UN, 2017).

To look at the extensive margin and at the intensive margin of trade induced by this migration we follow two different methodologies. First, following Hummels and Klenow (2005) (HK) we decompose the share of a country's exports in the world exports into the extensive and intensive margins. Further, we deepen the analysis of trade creation looking at the knowledge transfer issue following Bahar et al. (2014, 2018) (BR). To pursue this analysis, we check whether migrants can explain variations in good-specific productivity, as measured by the ability of countries to export those goods, for products that are intensively exported by the migrants' home/destination countries. We consider the Revealed Comparative Advantage (Balassa, 1965) to construct our variable of interest for the empirical specification when the extensive margin is estimated. When we estimate the effect of migration on the intensive margin, we use the compound average growth rate (CAGR) in the export of product  $p$ . The main question is does international migration from MENA ( $i$  specialized/RCA in  $\pi$ ) to EU ( $j$  specialized/RCA in  $p$ ) shape the comparative advantage of sending and receiving countries?

**The main contribution of our study** is to try to clean our analysis for unrelated to knowledge transmission channels, or to migration being associated with good-specific productivity increases. Even if our focus is on migrants, we also control for trade, which tend to be highly correlated with migration figures. Second, migrant networks could generate lower transaction costs for bilateral trade in specific goods, thus inducing bilateral exports between migrants' sending and receiving countries (Gould, 1994; Rauch and Trindade, 2002; Aubry et al., 2017). To this purpose, we also test the effect of migration on the extensive and intensive margins (at 4-digit SITC product level) of the host country with third countries, excluding countries of origin of migration, in order to isolate the effects of knowledge spillovers from the effect coming from preference/information. In this case, the increase in exports cannot be explained by its bilateral component. Third, if a given country  $c$  receives migrants from countries that are exporters of a given product  $p$ , then there could be a local shift in demand for product  $p$ , assuming changes in aggregate preferences. This shift would also occur in all other countries that similarly received the same type of migrants, thus increasing global demand for product  $p$ . Thus, to satisfy global demand, many countries including country  $c$  could become exporters of good  $p$ . To rule out this possible explanation, we control for the global demand of each good by adding product-year fixed effects. We also add country-year fixed effects, which would control for all country-level time variant characteristics that would make a given country more likely to export and receive migrants at the same time. Finally, even after including these controls, endogeneity concerns might remain. For instance, migrants can decide to relocate to countries with an ex ante understanding of the industries that will flourish in that other location. To consider this possibility and, more generally, to address other concerns of endogeneity, we instrument migration using estimates from a gravity model based on cultural and historic

bilateral variables between the sending and receiving countries of migrants, following Frankel and Romer (1999). To improve the fit between the estimated and actual values we estimate the gravity model using a Poisson pseudo maximum likelihood estimator. After predicting migration stocks, we use the predicted figures as instrument in the following IV 2SLS estimation to provide an exogenous variation in the number of migrants, both from and to partner countries.

We consider different publicly available data sources that include bilateral data on migration and trade. We adopt mainly the United Nations, Department of Economic and Social Affairs. Population Division data “Trends in International Migrant Stock: the 2017 revision” (United Nations database, POP/DB/MIG/Stock/Rev.2017). UN dataset covers a long time period (since 1990), and updates until 2017. In terms of country coverage, it is also the most complete source.

Trade data are from the Observatory of Economic Complexity (OEC website) and they are classified according to the SITC4 REV. 2. For historical SITC classification data (1962 - 2000), the data are from The Center for International Data from Robert Feenstra. For more recent data (2001 - 2017), data are provided by UN COMTRADE. Finally, we use also data from the CEPII Gravity dataset (Head and Mayer, 2014), for variables on bilateral relationships adopted in the estimation of the gravity model.

**We show that international networks of people induce trade growth and change the country specialization as measured by its revealed comparative advantage.** People flows from MENA can be driver of knowledge and can contribute to skill diffusion and productivity growth enhancing productivity shift in specialization. More in detail, we observe that emigrant do not have any impact on trade while immigration from MENA impacts on the intensive margin of EU trade in medium and low-tech products but does not affect the extensive margin.

The analysis also show that immigrants reduce fixed trade costs (larger stocks of immigrants could help firms to overcome start-up and commercialization fixed costs in foreign markets), improving both export participation and intensity of exports. This is shown by measuring the effect of immigration from MENA to EU on the HK extensive and intensive margin of trade which is always positive, while that of emigration from EU to MENA is negative. However, the trade effects of immigration encountered between EU and MENA partners are lower with respect to other partner areas. Besides, the migration induced effect on bilateral trade is higher in low tech than in medium and high tech.

From all our estimations it appears that the trade impact occurs for immigrants while there is no positive effect for emigrants. This is in line with our expectations. Immigrant can transfer information and knowledge through direct interaction while in the case of emigration there is a more indirect process which could happen through return migration or links and communication between emigrants and their co-nationals back home. A negative impact of an increase in emigrant might also be explained with the lower of preferences with respect to the role played by the network of migrants able to reduce the transaction costs of accessing MENA markets.

The lower pro-trade effect that we observe in bilateral EU-MENA trade with respect to trade of EU with other countries can be explained by lower quality and technology import from MENA countries, and by the information and preference effects mostly encouraging activities with low technology content.

As for the impact of knowledge transfer, we find evidence of transfer effects between the two regions focused on the IM while there is no impact on the EM. Knowledge diffusion at the IM might be easier as the fixed costs associated with starting an industry have already been paid for while the lack of evidence of knowledge diffusion at the EM might depend on this being part of a more complex process.

#### 4. Implications and Recommendations

The findings of our analysis provide useful inputs for improving the policy making process in the host countries, especially in the field of migration policy, with the aim of enhancing the understanding of trade creation effects of networks of migrants and the knowledge transfer.

Interdependencies between migration and trade policies pointed out by the results of our investigation are meaningful for migration policies of EU countries, individually and as whole region.

**The first relevant result** is the positive correlation between migration and trade, an outcome which supports three possible explanations: the “information bridge hypothesis”, i.e. the disappearance of certain transaction costs due to migration; the existence of “transplanted home bias” which boosts imports from the origin countries; thirdly, the knowledge transmission effects. It is a **relevant policy recommendation informing public opinion of these positive effects of integration on trade and global connections. This might contribute to influence attitudes towards immigration and discrimination practices.**

Focusing on the third channel, the knowledge transfer effect, which has not been measured in previous studies, we can say that policymakers should care that on the margin more migration may generate trade and put in the narrative of migration policies this spillover effect, which has an economic meaningful size. **The results from our estimations show that a 10% increase in the stock of immigrants from MENA countries (that export a product p and with a Revealed Comparative Advantage higher than 1) is associated with an increase in the export growth rate of EU countries by 0.32 percentage points. This percentage is a little bit lower for products with low-tech products (0.29), and slightly higher (0.41) for products with medium level of technology. It must be noticed that an increase of 0.32 percentage points could be approximated to an increase, for the average European country, of almost 1.5 million of US\$ in the total trade of a given product p.**

**Policy makers should also consider the specific policies which need to be pursued to reinforce the knowledge transmission channel. The diffusion of knowledge is only partly natural and spontaneous, it also depends on: educational policies access to training and to the acquisition of appropriate skills.** It may also be relevant the role of associated institutions looking at migration as a driver of knowledge. Furthermore, to **stimulate higher knowledge transfers, EU migration policy should allow for a more integrated oriented approach as more integrated migrants are more likely to spur knowledge transfers.**

Besides, changes in the comparative advantage are especially meaningful on a policy ground as new comparative advantages or reinforcing existing comparative advantages may **change the pattern of specialization. This potentially may matter economically especially with respect to specific job categories and to specific sectors.**

To have rich and more robust policy implications on these issues some questions are on our research agenda and much more disaggregated data will be used to obtain more detailed policy advices.

First, the analysis would benefit of info about the sector of occupation of migrants and the labour market status. It is reasonable to suppose that if migrants are working in the sector in which the country has comparative advantage, it is more likely to channel the information to the home country about this comparative advantage.

Besides, there is an obvious role of highly-skilled migrants as drivers of marginal effect on extensive and intensive margin especially when it comes to knowledge effects. Hence, the role of highly-skilled migrants would explain if the marginal effect on extensive and intensive margin for a skilled immigrant (emigrant) is larger/smaller than for an unskilled immigrant (emigrant). Characteristics of emigrants in terms of education, and skill might be considered when defining migratory policies. We should also follow the adoption of an ethnic

network approach and test for interactions between the characteristics of migrants and the immigration-induced changes in product and trade patterns in the EU-Mediterranean zone.

\* *The main source of this policy brief is a FEMISE research project (FEM 43-11) titled: « MIGRATION, COMPARATIVE ADVANTAGES AND KNOWLEDGE DIFFUSION IN THE EU-MEDITERRANEAN REGION» co-written with Stefano Iandolo (DISES, University of Salerno) and Erol Taymaz (Middle East Technical University, Turkey, ERF)»*

## References

- Aubry, A., Rapoport, H. and Reshef, A. (2017). 'Migration, FDI and the margins of trade', mimeo, Paris School of Economics.
- Bahar, D., & Rapoport, H. (2018) Migration, knowledge diffusion and the comparative advantage of nations. *The Economic Journal*.
- Bahar, D., Hausmann, R., & Hidalgo, C. (2014). Neighbors and the evolution of the comparative advantage of nations: Evidence of international knowledge diffusion? *Journal of International Economics*, 92(1), 111–123. doi:10.1016/j.jinteco.2013.11.001
- Çağatay, S. and M. Genç (2010), Analyzing the Immigration-Induced Changes in Product Diversity and Trade Patterns: The Case of the EU-Mediterranean-Eastern Europe Zone, in FEM34-30-CP2010.
- Docquier, F., Lowell, and A. Marfouk (2007), «The Brain Drain in Developing Countries», *World Bank Economic Review*, 21:193-218, 2007.
- Fargues P. (2006) The Demographic Benefit of International Migration: Hypothesis and Application to Middle Eastern and North African Contexts, World Bank Policy Research Working Paper 4050, November.
- Foad, H. (2010) "Assimilation and Trade between the Middle East, Europe, and North America", *Review of Middle East Economics and Finance*, 6(2).
- Frankel, J. and Romer, D. (1999). 'Does trade cause growth?', *American Economic Review*, vol. 89(3), pp. 379–99.
- Giovannetti G., M. Lanati and A. Venturini (2019) "Migration and Trade in the Mediterranean", in *Mediterranean Migration and the Labour Markets, Policies for Growth and Social Development in the Mediterranean Area*, Routledge. DOI: 10.4324/9781315150963-6.
- Gould, D.M. (1994), «Immigrant Links to the Home Country: Empirical Implications for U.S Bilateral Trade Flows», *Review of Economics and Statistics*, no. 76 (2), pp. 302-316.
- Head, K. and T. Mayer, (2014), «Gravity Equations: Toolkit, Cookbook, Workhorse.» *Handbook of International Economics*, Vol. 4, eds. Gopinath, Helpman, and Rogoff, Elsevier.
- Hummels, D., Klenow, P.J., 2005. The variety and quality of a Nation's exports. *Am. Econ. Rev.* 95 (3), 704-723.
- Miguélez, E. (2017). Inventor diasporas and the internationalization of technology. *World Bank Economic Review*. doi:10.1093/wber/lhw013.
- Péridy et al. (2012) "Recent migration patterns from MENA countries to the EU: a quantitative assessment and policy implications", in FEMISE project n. 34-01 "The Trade Creation Effect of Immigrants: Characterising Socioeconomic Opportunities Arising From Linkages Between People's And Goods' Flows Inside The Mena Region".
- Rauch, J. E. and V. Trindade (2002) "Ethnic Chinese Networks in International Trade." *The Review of Economics and Statistics*, v. 84, pp. 116–130.
- Valette J. (2018) Do Migrants Transfer Productive Knowledge Back to Their Origin Countries? *The Journal of Development Studies*, 54:9, 1637-1656, DOI: 10.1080/00220388.2017.1333109

## FEMISE MED BRIEF

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*Its main objectives are:*

- to contribute to the reinforcement of dialogue on economic and financial issues in the Euro- Mediterranean partnership, within the framework of the European Neighbourhood Policy and the Union for the Mediterranean,*
- to improve the understanding of priority stakes in the economic and social spheres, and their repercussions on Mediterranean partners in the framework of implementation of EU Association Agreements and Action Plans,*
- to consolidate the partners of the network of research institutes capable of North-South and South-South interactions, while it sets into motion a transfer of know-how and knowledge between members.*

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*The policy brief has been produced with the financial assistance of the European Union within the context of the FEMISE program. The contents of this document are the sole responsibility of the authors and can under no circumstances be regarded as reflecting the position of the European Union.*

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