



Can regular replace irregular migration across the Mediterranean?

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Irregular migration from Africa across the Mediterranean to the EU has become a central policy issue. While the establishment of a Libyan SAR zone and of a Libyan coast guard has lowered the numbers crossing the Mediterranean since mid-2017, there are strong concerns about the sustainability of the current approach and its reliability given the severe political instability in Libya. Due to this state of affairs, increasing legal access to the EU – for study and work purposes – has re-appeared on the European agenda as one potential way to reduce irregular crossing in the future. This comes at a time where legal access to the EU labour markets for African citizens has been steadily reduced. Moreover, actions aimed at streamlining access to existing pathways for legal migration, or opening new ones, can be used as lever in improving cooperation in migration management with countries of origin when it comes to returns and readmissions.

We review the evidence bearing on to what extent increasing legal access via labour migration is effective in reducing irregular migration. While our focus is on irregular crossings of the Mediterranean, we draw on evidence from different world regions. We conclude that increasing legal pathways for migration from Africa to Europe, in itself, will have only a limited effect on the number of people trying to cross irregularly. Substitution can take place only if expansion of legal pathways – tailored to labour market needs and migrant profiles – is envisaged in a comprehensive policy mix including strong enforcement of migration legislation (i.e. control of employers at destination together with border control) and streamlining of recruitment procedures.

The Mercator Dialogue on Asylum and Migration (MEDAM) is a Research Alliance formed by CEPS with the Kiel Institute for the World Economy and the Migration Policy Centre (MPC). The three research institutes join forces here to address the most relevant research questions and pressing concerns arising from asylum and migration in Europe.

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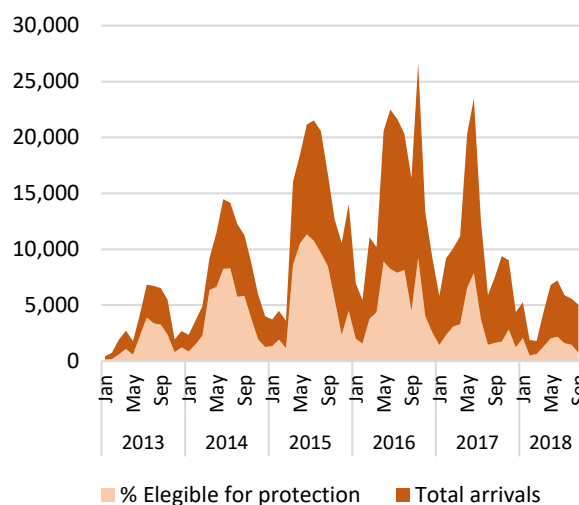
1 Introduction¹

The increasing migration pressure from Africa over the past five years has turned the Mediterranean into a deadly migration route. Reasons and incentives to make the dangerous crossing have shifted over time. More people now undertake the perilous journey in order to achieve better economic and social conditions in Europe. Indeed, from 2016 onwards, people with little chance of obtaining international protection overtook nationals of countries with high recognition rates in total arrivals in the EU (Figure 1).

On the other side of the Mediterranean, the scarce availability of regular opportunities for work migration has significantly reduced the likelihood of ever entering the EU legally for a considerable number of migrants from Africa. Since 2008, the first year for which EU-wide data are available, first time permits for occupational reasons issued to African citizens decreased by more than 65%, from 125,000 to 41,000 in 2017 (Figure 2).

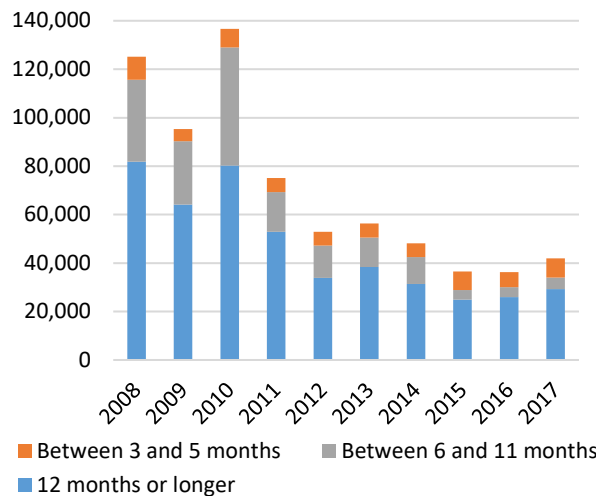
The current situation is untenable and several policy ideas aimed at lowering incentives for irregular migration from Africa to the EU have been put forward in order to improve overall migration management between Africa and Europe. These include: 1) strengthening border controls, 2) tightening entry requirements and asylum policies, and 3) opening up more legal pathways, which should substitute for irregular migration.

Figure 1 Irregular border crossings to the EU by African nationals



Note: The number of irregular crossings by individuals who are non-eligible for protection is calculated by applying the EU-average rates of first instance recognition for the period 2016-17 to irregular crossings by nationals from all African countries. Figures cover all migrations routes as categorised by Frontex.
Source: Own elaboration based on Frontex and Eurostat data.

Figure 2. First time permits for occupational reasons issued to African citizens by the EU28



Source: Own elaboration based on Eurostat.

¹ We thank Nadzeya Laurantsyeva, Matthias Lücke and Tobias Stöhr for many useful comments and discussions on earlier drafts.

While significant steps forward have been taken in the framework of the first two policy options, very little has been done to broaden the scope of labour immigration. Yet, there have been several calls for increasing the number of legal pathways for labour migration to the EU, both for protection – through resettlement – and for work migration (MEDAM, 2018). For instance, the European Commission has been active in setting up pilot projects for work migration with the support of private stakeholders and interested member states (EC 2017, 2018). In the same way, United Nations Secretary-General António Guterres called for the enhancement of legal pathways for regular migration (as well as for regularisation of irregular migrants in the territory of UN member states) (UN, 2017a), and the importance of regular channels for work migration is also underlined in the Global Compact for Safely and Orderly Migration (UN, 2017b).

In this Policy Insight we review the available evidence on the extent to which expanding work and study opportunities² for Africans could help in reducing irregular migration across the Mediterranean.

2 On the link between regular and irregular migration

To what extent can widening opportunities to migrate legally (for work and study purposes) substitute for and thus reduce irregular crossing from Africa to the EU? To answer this question, we draw on available evidence from the existing literature, taking different world regions, types of legal pathways, and methodological approaches into consideration.

2.1 What does the theory tell us?

From a theoretical perspective of maximising utility, expanding the opportunities to migrate regularly can be seen as lowering the costs of regular migration relative to the cost of migrating irregularly. Two main effects on migration can be derived from such a framework: first, some irregular migrants will prefer to migrate regularly (depending on preferences, and profile of expected earnings, which may differ for legal migration), but not all may be able to (depending on, for example, whether their skills are matched to the job offer); and, second, the lower cost of regular migration will induce more people to want to migrate regularly. Hence, expanding legal migration pathways will have a negative effect on the number of people attempting irregular migration, but the size of this effect is unclear and ultimately an empirical question.³

In more elaborate theoretical frameworks, Djajić and Vinogradova (2019), and Auriol and Mesnard (2016) are able to illustrate the effect of different policy instruments in the richer setting of the migration decision-making process. Auriol and Mesnard (2016) combine visa policy (i.e. application fees) with enforcement of migration legislation to estimate the potential role of markets and prices in putting human smugglers out of business. With their parametrisation (for migration in East Asia), the authors find that a 250% increase in the marginal cost of migrating – generated, for instance, by a tightening of border controls – would be necessary to dismantle the smuggling business while keeping migration constant. A 50% decrease in the implicit earnings of irregular migrants driven by, for instance, tightening control of employers would lead to the same result. Moreover, Auriol and Mesnard (2016) show that these costs to curb irregular migration decrease relative to the probability of deportation, thus highlighting the complementarity among these different types of policy

² The focus of this paper is on pathways for work migration and education rather than for humanitarian reasons such as resettlement programmes.

³ This is under the reasonable assumption that a (marginal) increase in regular migration does not affect the number of people initially attempting irregular migration (e.g. via expanding diaspora effects).

measures. The authors' recommendations thus stress the importance of a calibrated use of government funds across different policy interventions – both for the external and internal dimension – aimed at fighting irregular immigration: discrepancies in budgetary terms in favour of border controls over sanctions for employers of irregular migrants and deportation hamper the effectiveness of government migration policy.

These results point to the importance of complementarity between policies in effectively curbing irregular migration, both in terms of border crossings and of the population residing irregularly in the country.

2.2 The (scarce) empirical evidence for the EU

While there are a number of studies looking at how visa and other immigration policies affect regular immigration (e.g. Czaika and de Haas, 2014; Ortega and Peri, 2013), empirical studies looking at the relationship between regular and irregular migration into the EU are relatively scarce.⁴ Czaika and Hobolth (2014) provide one of the few examples related to the EU using a cross-national dataset of asylum applications and short-term visa refusals for 29 European destination countries. Their results show that a 10% increase in the asylum refusal rate increases the number of (apprehended) irregular migrants by 3%, while a 10% increase in short-stay visa restrictions (measured by visa refusal practices) has a stronger impact of around 5%.

These results show that restricting legal access can divert migratory flows towards irregularity. Still this evidence does not imply, first, that the opposite would be true and, second, that widening legal access alone would be enough to decrease irregular crossing. Indeed, it is important to consider synergies with other policy areas (e.g. border control, deportation, control of employers) to understand where and when widening legal access can effectively reduce incentives for irregular crossing.

2.3 Lessons from the US-Mexico border

Complementarity of migration policies has had a significant role in curbing irregular migration at the US-Mexico border over the years. At the same time, single policy interventions did very little by themselves to decrease irregular crossing.

Different studies show how border militarisation (started in 1986) resulted mostly in higher costs, both monetary and humanitarian in terms of an increased death rate, rather than in a significant reduction in irregular crossing into the US (Massey et al., 2016; Gathmann, 2008). Alternatives for re-routing available for migrants on the one side, and the significant wage differential (compensating for additional costs deriving from stricter controls) on the other side are the two main reasons for the insignificant deterrence effect of the border build-up in curbing irregular migration from Mexico (Gathmann, 2008).

⁴ There is a related strand of literature looking at the effect of immigration policies on the composition of the stock migrants (e.g. Czaika and de Haas, 2017).

Moreover, increasing risks and costs coupled with the prospect of never being able to re-enter the destination country made it impossible to plan for short-term and circular migration experiences (Massey et al., 2016), which pushed migrants already present in the US to overstay with respect to their intention.⁵

“[I]n game theory terms, making temporary employment abroad a repeated rather than a one-shot game changes behaviour and aligns it with the intended consequences” Sáez (2013)

Yet, substitution between irregular and regular migration did take place at the US-Mexico border over the last 70 years. Therefore, the question is what factors created the right conditions for substitution to happen in the past?

Clemens and Gough (2018) look at the effects of enlargements and contractions in legal access for Mexicans in the US, as well as at the different levels of enforcement of migration legislation put in place by the US over the years. The analysis covers the years up to 2016 and goes back as far as 1940 with the introduction of the Bracero programme.⁶ Evidence on the substitution between legal and irregular access emerges from the early stages of the programme.⁷ Clemens and Gough (2018) show that apprehensions were growing in step with the number of visas (for low-skill seasonal work) issued during the first part of the programme, while they dropped immediately in the second phase once the number of visas had peaked at more than 400,000.⁸

During the first phase, immigration enforcement was low despite high risk for irregularities: for instance, employers could not re-hire workers because the latter were assigned from a common labour pool. Yet, this did not stop the re-hiring of workers in the black market. In light of this unintended effect, between 1954 and 1955, the US government strengthened enforcement (by means of both deportations and border control) on the one hand, and widened the scope of the programme on the other hand. More precisely, since 1955 US employers could hire named individual workers (rather than via a common pool of workers) and renew contracts directly in the US. Irregular immigration hit a record low in the ten years following these policy changes,⁹ as the latter created the right incentives for employers to hire legally, whereas strict enforcement at the border as well as on work sites lowered incentives to work and hire illegally.

In other words, the mix of stricter enforcement, the adaptation of the programme itself, and a significant number of visas issued, triggered the substitution mechanism between irregular and regular migration.

With the termination of the Bracero programme in 1965, however, legal access for low-skilled Mexicans to the US labour market was almost wiped out: the number of visas dropped from 400,000 per year to close to zero in a matter of five years.¹⁰ Together with lower enforcement and increasing

⁵ de Haas, H. (2011) defines four “substitution effects” in migration patterns that can follow a change in migration policy: spatial substitution (across destination countries); categorical substitution (across different entry channels, either legal or illegal); inter-temporal substitution (in case of future tightening of migration regulations); and reverse flow substitution (when restrictions decrease return migration).

⁶ The Bracero programme was started by the US in 1942 to deal with labour shortages in the agriculture sector generated by the ongoing war. In the end, the programme lasted until 1964, and each year from 1950, it allowed, on average, 300,000 Mexicans to work in the US.

⁷ I.e. prior to 1953 and between 1954 and 1965, the year when the Bracero programme ended.

⁸ Record high since 1940, see Figure A1 in the Annex.

⁹ See Figure A1 in the Annex.

¹⁰ Period 1960-1965 in Figure A1 in the Annex.

demographic pressure from Mexico, a significant increase in irregular migration into the US was recorded in the period following 1965. .

Substitution from irregular to regular migration took place after 2001, once again when the US government boosted enforcement along with offering easier legal access for seasonal work – by facilitating employers’ access to visas and a new fast-track processing option (Clemens and Gough, 2018). Since 2001, irregular migration has decreased significantly after 40 years of a steady rise.

As predicted by the theoretical literature, Clemens and Gough (2018) therefore conclude that the substitution from irregular to regular migration took place when the US government put in place a mix of policies aimed at stepping up both migration enforcement and legal access for (seasonal) work migration.

3 An analysis of the Africa-EU case

This section assesses, to the extent possible given data limitations, whether or not a substitution between irregular and regular migration is taking place in the Africa-EU corridor. We first show a descriptive analysis with trends in (first time) permits issued to African nationals for occupational and educational reasons on one side, and irregular crossing on the other. This descriptive exercise is then supported by an econometric analysis carried out over the same time span (2009-2016) adding additional control variables.

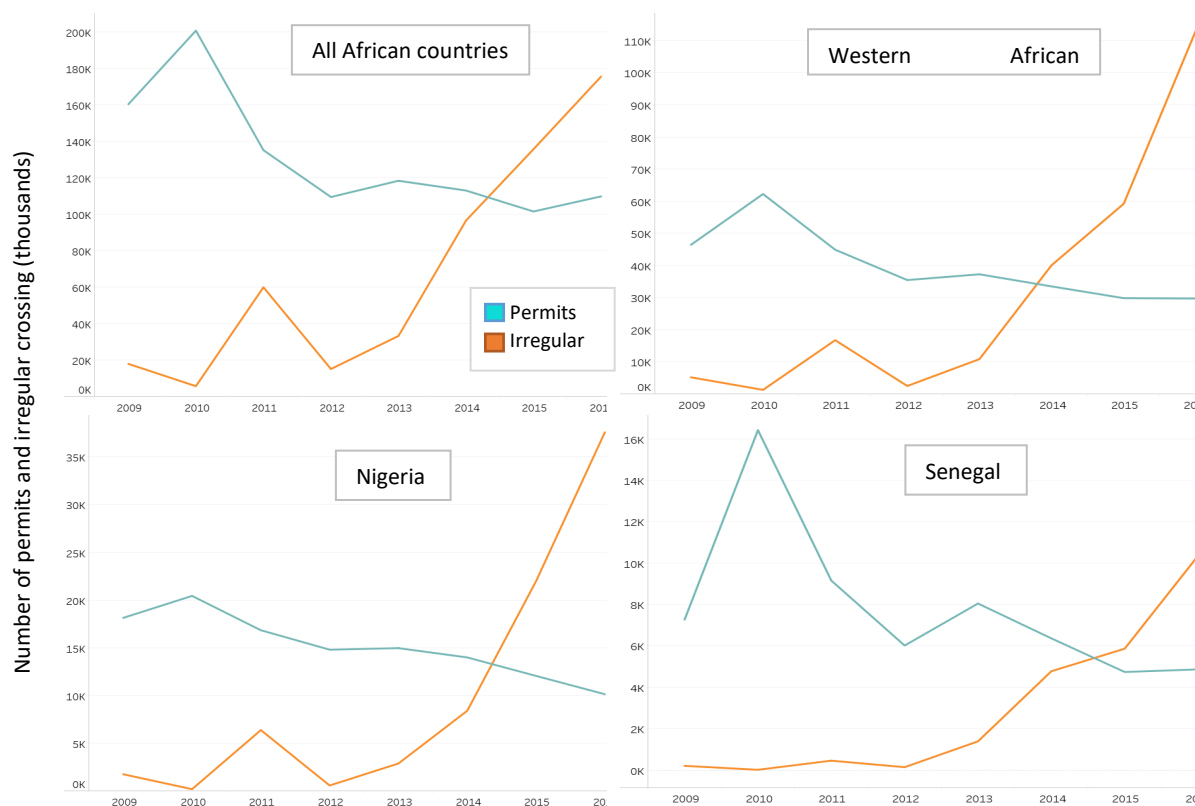
Looking at Africa as a whole, it seems that substitution between the two types of migration from Africa into the EU has been taking place since 2010 (Figure 3, upper-left quadrant). In fact, between 2010 and 2011, 60,000 fewer permits were issued to African citizens for occupational and educational reasons, with the downward trend flattening in the following years. Overall, between 2010 and 2016, the number of permits issued declined by approximately 90,000 units. Over the same period, irregular crossings grew, with a first prominent increase in 2011 (driven most likely by the rise of the Arab spring), then intensifying from 2014 onward and overtaking the number of legal permits issued.

The West African region accounts for the greater part of irregular crossing into the EU from Africa, with the share increasing from one third in 2011 to two thirds in 2016. On the other hand, permits allotted to West African countries in total permits to Africa have decreased from one third in 2010 to one quarter in 2016 (Figure 3, upper-right quadrant). Looking at the main countries of origin of irregular crossing, such as Nigeria and Senegal, shows similar trends, particularly for Nigeria where permits have halved between 2010 and 2016 (Figure 3, lower-left quadrant). On the contrary, substitution did not take place for North African countries, for which the total number of permits in 2016 is still about 50,000 compared with 19,000 irregular crossings. In fact, despite a decrease in the overall number of permits in line with the trend for Africa as a whole, the five North African countries still account for 46% of all permits for occupational and educational reasons issued to African citizens by the EU.

Even though the evidence presented in Figure 3 is based on very basic descriptive analysis, it reflects trends observed in Clemens and Gough (2018) for the US-Mexico case. Moreover, similar trends are also observable within continental Europe when looking at substitution between regular and irregular flows of citizens of non-EU countries (e.g. Western Balkans and Belarus) (see Section A2 in Annex). Poland and Greece represent the two sides of the story: irregular crossing into Poland started decreasing in 2011 when permits allotted to the non-EU citizens concerned began to increase; while irregular crossing into Greece from the Western Balkans grew significantly from 2010 after the marked dip in permits recorded between 2009 (14,000 permits) and 2012 (less than 250). In destination

countries that maintained the number of permits issued constant at low levels, such as Hungary and Romania, irregular crossing kept increasing from 2012.

Figure 3 Evidence of substitution between regular and irregular migration: the case of Africa and the EU



Notes: a) Permits considered are first residence permits for occupational and educational reasons issued by EU 28; b) Irregular crossing covers the three Mediterranean migratory routes (Western, Central and Eastern) as defined by Frontex; c) Western Africa group includes: Benin, Burkina Faso, Cape Verde, Côte d’Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo.

Source: Own elaboration based on Frontex and Eurostat.

In support of the descriptive analysis, an econometric exercise is carried out using a panel dataset with yearly observations of matched total EU and each individual African country’s regular and irregular migration – i.e. first residence permit for occupational and educational reasons and irregular crossings in the Mediterranean (see Section A3 in Annex). In addition, the analysis takes into account other control variables to capture pull and push factors – such as unemployment rates in EU-15, governance indicators, costs for business start-up procedures in the country of origin – and to account for differences in development and size of countries – i.e. GNI per capita and population.

The analysis confirms the main expectation: an increase in the number of permits issued is found to be negatively associated with irregular crossing, even after controlling for several other variables. Moreover, the coefficient is fairly constant across the different specifications, between -0.12 and -0.15, implying that an additional 6 to 8 permits would reduce irregular crossings by one person (see columns 1 and 2 in Table A1 in Annex). Specifying in terms of percentage changes (i.e. in logarithmic form), it emerges that a 1% increase in the number of permits would lead to between 0.47% and 0.51% decrease in irregular crossing. At the mean of our sample, this would translate into, on average, a four to one ration of permits to irregular crossings. (see columns 3 and 4 Table A1 in Annex).

4 What does it mean for EU migration policy vis-à-vis Africa?

What, from the evidence presented so far, especially that on the long experience of migration from Mexico to the US, can be applied to Africa-EU migration?

In comparing Mexico-US migration with Africa-EU migration it is important to keep in mind the differences between the two cases, both in topological and enforcement terms. As opposed to crossing the US-Mexico land border, irregular crossing into the EU from Africa takes place at sea, adding severe operational and humanitarian challenges to border control, but arguably also allowing for more effective border control. On the other hand, control of EU external borders is shared among different sovereign entities with different procedures and approaches to border management. This implies a significant coordination effort and potentially uneven enforcement of border patrolling.

Nonetheless, as argued by Hanson and McIntosh (2016), differences in the demographic and economic characteristics of Africa and EU, as well as access to labour migration, are very similar to those characterising the US-Mexico corridor in the 80s. In fact, in the main countries of origin of irregular

“[T]he era in which immigration levels are rising in a way that can feel out-of-control appears to be coming to an end in the United States, while it seems to be just beginning in the European Union” *Hanson and McIntosh (2016)*

migration to the EU, such as West Africa, the fertility rate is between five and six children per woman today¹¹ and access to labour migration in the EU for Africans is at historical record low.¹²

Yet, compared to Mexico, Africa is of course more populous both in absolute terms and relative to the destination country.

The US experience showed how border control and deportations alone could be challenging and costly to pursue, as well as barely effective when demographic and economic differences (between origin and destination) are so marked that migratory pressure is destined to last for several generations. This may be especially true for those countries of origin in Africa with poor institutional settings and high population growth (MEDAM 2018).

Theoretical and empirical results pointing to a substitution between regular and irregular migration all derive from a mix of policies aimed at strengthening enforcement of migration legislation while offering concrete and sizeable access to legal labour migration, in order to create the right incentives for employers to hire, and migrants to migrate legally. On the contrary, when legal access to labour migration is limited then the risk of *categorical* substitution towards either other legal channels (e.g. family and protection) or irregularity is high. Substitution towards family reunification as well as irregular channels, for instance, happened for destination countries in western Europe after termination of several guest-worker programmes, and also with Maghreb countries (de Haas et al., 2018).

¹¹ In 1980, the fertility rate in Mexico was 4.8. Latest data from World Bank country profiles for Africa report 4.8 children per woman in Senegal, 4.9 in Guinea, 5 in Côte d'Ivoire, 5.5 in Gambia, 5.6 in Nigeria, and 6.1 in Mali. For further information see:

http://databank.worldbank.org/data/views/reports/reportwidget.aspx?Report_Name=CountryProfile&Id=b450fd57

¹² Between 2008 and 2017, first time permits for occupational reasons issued to African citizens by the EU28 have decreased by 66% (83,000 fewer work permits, see Figure 2 above). Irregular migration from Mexico to the US began in 1965 with the termination of the Bracero programme, the only significant legal means of entry for low-skilled Mexicans.

Hence, a policy focusing exclusively on border control may not be effective in curbing irregular migration in the long run as the US-Mexico case has shown.¹³ The plunge in irregular crossing to Italy from Libyan shores since July 2017 shows that tightening border control might be more effective in the Mediterranean than at the US-Mexico land border. Yet, the humanitarian cost in terms of people lost at sea is considerably higher in the Mediterranean. For each year between 2014 and 2018, the Mediterranean was the deadliest migratory corridor worldwide, accounting for between 50 and 60 per cent of all casualties.¹⁴

Our results suggest that relying only on an expansion of legal pathways for labour migration without stricter enforcement of control of both borders and employers in the destination countries is also not a realistic way to substitute irregular with regular migration. For instance, if – as a thought experiment – we take our empirical analysis at face value (i.e. substitution takes place with a ratio of 1:10) and the number of irregular crossings to Italy in the first half of 2017 as indication of the current migratory pressure from Africa,¹⁵ then 1.6 million permits issued by the EU would be necessary to curb irregular migration from Africa. However, this amount would be more than ten times higher than the number of first time permits issued by the EU for occupational reasons to African citizens in 2010, the record year since EU-wide data have been available, with 136,670 permits.¹⁶ Yet, this comparison is only meant to give an idea of the overall magnitude and on the importance of considering other policy elements that could have affected irregular migration and, thus, the extent to which legal opportunities can curb it. The analysis, for instance, did not take into account, among others, changes in enforcement of border controls or bilateral ties with origin countries.

All this suggests that it is naïve to think that either legal migration or border control alone will make a large impact on irregular migration. Hence, what the EU should replicate from the US, instead, is the mix of strict enforcement and targeted access to labour migration during the second phase of the Bracero programme and, recently, with a facilitated access and procedures for US employers interested in hiring Mexican workers on a temporary basis.

In this respect, EU member states (especially those most exposed to migratory pressure) should streamline their bureaucratic procedures so that incentives for hiring irregularly are low. Taking Italy as an example, where a yearly decree (i.e. *decreto flussi*) sets the quota of permits for third-country nationals, only 18,000 of the 30,000 permits foreseen for 2016 were issued, despite 44,000 requests from employers. The main reasons for this failure are the long delay in the publication of the yearly decree as well as that for issuing the permits themselves. These delays make the policy tool ineffective given that the majority of permits requested by employers are for seasonal work in the agriculture sector.¹⁷

Moreover, these kinds of deficiencies – coupled with the significant differences in wages and living conditions between origin and destination countries – create incentives for employers and migrants to operate outside the law, translating into a higher likelihood for exploitation of migrants and for

¹³ Massey et al. (2016), Gathmann (2008), Clemens and Gough (2018).

¹⁴ Missing Migrant Project, more information available at: <https://missingmigrants.iom.int/>

¹⁵ In the first half of 2017, arrivals in Italy by sea were 83,752, which thus gives an estimate of 167,504 arrivals for the entire year against the actual number recorded of 119,369. See UNHCR – Mediterranean Situation, available at <https://data2.unhcr.org/en/situations/mediterranean>

¹⁶ The number of permits estimated would still be eight times higher than the value of 2010 if considering also the 64,093 permits issued for education purposes that year.

¹⁷ Fabio De Ponte and Raphaël Zanotti, 19/07/2017. “Decreto flussi, ecco i dati del flop. Permesso solo a un richiedente su tre”. *La Stampa*. Available at: <http://www.lastampa.it/2017/07/19/italia/cronache/decreto-flussi-ecco-i-dati-del-flop-permesso-solo-a-un-richiedente-su-tre-s7LjRg6zfe4ewml7MI8VyN/pagina.html%20>

negative reactions among citizens of destination countries, fearing unfair competition and objecting to ongoing human rights violations within their territory.¹⁸ A similar situation characterised the first phase of the Bracero programme, when employers were not allowed to re-hire Mexican workers at the end of their visa directly in the US due to a common labour pool policy in the programme. Only by strengthening controls and enforcing deportations together with introducing the possibility for employers to hire named individual workers and renew their contract, were US authorities able to curb irregular immigration, which hit a record low in the ten years following these policy changes.¹⁹

5 Conclusions

To the extent that irregular migration has significant spillovers across EU countries, our analysis has implications for the coordination of EU policy in the areas of border control and extending legal migration possibilities towards African countries.

There is already significant cooperation and direct involvement of EU institutions when it comes to controlling borders along the Mediterranean Sea. Additional EU money is foreseen for controlling external borders in the coming budget period. Since irregular migrants often have northern Europe as their final destination, the case for coordination is fairly strong.

Admitting legal migrants is a member state competence. Given the large differences in structure and needs across European countries, the case for EU competence in this area is much weaker (Barslund and Busse, 2017). However, since several member states are actively recruiting workers outside the EU, there is a case for coordinating this effort centrally with the European Commission as a key actor. In fact, the European Commission has launched targeted pilot projects to widen access for labour migration in the EU, involving the main African countries of origin and member states interested in participating.

One avenue for scaling up these pilot projects would be the establishment of an EU skills and mobility partnership, building on the skill partnership idea of Clemens (2015), and organised as suggested in Barslund et al. (2019). Participation would be voluntary, where member states identify labour shortages and pledge a number of work permits. The European Commission would act as coordinator, identifying possible synergies among needs identified by member states as well as with those of African partners. Professional training would be offered in the origin countries and the cost should be borne by the EU. Offering training at origin would lower overall costs and the final goal would be to train more people than will eventually migrate in order to achieve a sizeable development impact.

Such a scheme would complement the increased focus on border control and help to better manage irregular migration across the Mediterranean.

¹⁸ Examples of such type of violations (also targeting minors) are indeed common in the South of Italy where the economy relies heavily on the agriculture sector. See: Mary Sottile, 15/02/2017. "Immigrati minorenni sfruttati nei campi". *La Sicilia*. Available at: <http://www.lasicilia.it/news/inchieste/62891/immigrati-minorenni-sfruttati-nei-campi.html>; Salvo Palazzolo, 26/08/2017. "Sicilia, allarme lavoro nero sulla vendemmia. Più di cento braccianti irregolari scoperti in un mese". *La Repubblica*. Available at: http://palermo.repubblica.it/cronaca/2017/08/26/news/sicilia_la_vendemmia_del_caporalato_piu_di_cento_lavoratori_in_nero_scoperti_in_un_mese-173866300/

¹⁹ See Figure A1 in the Annex.

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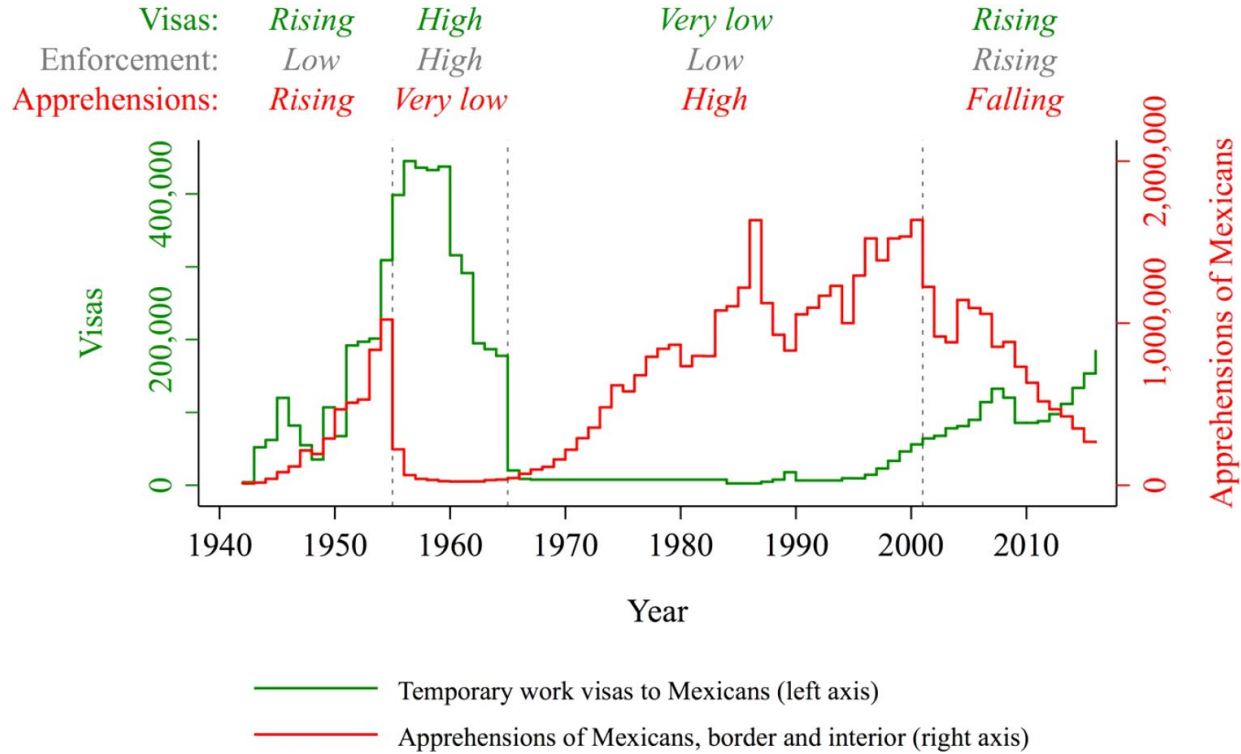
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Annexes

A1. Evidence from US-Mexico case

Figure A1 Regular migration channels have curbed irregular migration at the US-Mexico border – when paired with robust enforcement



Note: “Visas” are low-skill seasonal work visas.
 Source: Clemens and Gough (2018).

A2. Evidence of substitution between regular and irregular migration: the case of Continental Europe



Notes: a) Planned destination country; b) Countries of origin: Albania, Belarus, Bosnia and Herzegovina, FYRM, Kosovo, Montenegro, and Serbia; c) Permits issued for occupational reasons: seasonal workers and other remunerated activities; d) Irregular crossing is based on people detected and refused at the border.

Source: Own elaboration based on Eurostat.

A3. Econometric analysis of the Africa-EU case

The panel dataset covers all African countries for the period 2009-2016, for which figures on irregular crossing and permits issued are available for each nationality. We do the analysis within a fixed effects framework with number of crossing and permits issued entered both in normal (1) and logarithmic form (2):

$$Irregular\ crossing_{i,t} = \beta_0 + \beta_1 Permits_{i,t} + \beta_2 Governance_{i,t} + \beta_3 X_{i,t} + \alpha_i + \gamma_t + \varepsilon_{i,t} \quad (1)$$

$$Log\ of\ Irregular\ crossing_{i,t} = \beta_0 + \beta_1 Log\ of\ Permits_{i,t} + \beta_2 Governance_{i,t} + \beta_3 X_{i,t} + \alpha_i + \gamma_t + \varepsilon_{i,t} \quad (2)$$

Where, the dependent variable *Irregular crossing* is given by the number of people crossing the Mediterranean along one of the three routes identified by Frontex (i.e. Central, Western or Eastern Med); *Permits* is the explanatory variable of interest and captures the number of first permits issued by the EU for occupational or educational reasons (Eurostat); *Governance* is a vector including different governance indicators of countries of origin; *X* is a vector including control variables; α is the

country-specific time-invariant effect and ϵ is the residual part of the error term. Subscripts i and t refer to country and time respectively. Year fixed effects are included as well (γ_t). When it comes to the logarithmic form of both *Irregular crossing* and *Permits* in equation (2), one unit has been added to both variables before taking the logarithm so not to lose observations reporting a zero.

As regards the *Governance* vector, we use the Worldwide Governance Indicators (WGI) from the World Bank, which is entered in the equation both once as overall score (column 1 and 3 of Table A1 below) as well as broken down into their different components (column 2 and 4 of Table A1 below):

- Worldwide governance indicators (WGI) (scale -2.5 to +2.5)
(<http://info.worldbank.org/governance/wgi/#home>):
 - Voice and Accountability;
 - Political Stability and Absence of Violence/Terrorism;
 - Government Effectiveness;
 - Regulatory Quality;
 - Rule of Law;
 - Control of Corruption;
 - Overall (average of the six indicators);

As regards vector X including the other control variables, it accounts for differences among countries in terms of size and development, as well as for the labour market needs at destination using unemployment rate in the EU-15. Specifically, vector X is defined as follows:

- World Development Indicators:
 - GNI per capita, PPP (constant 2011 international \$);
 - Log of Population, total;
 - Cost of business start-up procedures (% of GNI per capita).
- Eurostat:
 - Unemployment rate of active population (average EU15).
- Worldwide Governance Indicator for Libya.

Table A1 Substitution between regular and irregular migration

VARIABLES	(1) Irregular Crossing (WGI overall)	(2) Irregular Crossing (WGI components)	(3) Log of Irregular Crossing (WGI overall)	(4) Log of Irregular Crossing (WGI components)
<i>Permits</i>	-0.152*** (0.0565)	-0.124** (0.0575)		
<i>Log of Permits</i>			-0.512** (0.258)	-0.469* (0.261)
<u><i>World Governance Indicator</i></u>				
Overall	1,575 (1,305)		0.379 (0.573)	
Voice & Accountability		1,796* (956.6)		0.0168 (0.420)
Political Stability & Absence of Violence/Terrorism		126.6 (616.6)		0.337 (0.271)
Government Effectiveness		-1,096 (1,381)		-0.132 (0.612)
Regulatory Quality		-297.3 (1,364)		-0.880 (0.591)
Control of Corruption		2,557** (1,286)		1.028* (0.562)
Rule of Law		-1,147 (1,521)		-0.440 (0.668)
<u><i>Other control</i></u>				
Libya WGI overall	-612.2 (1,706)	-296.9 (1,747)	-0.567 (0.739)	-0.653 (0.757)
Unemp. Rate (EU15)	-382.5 (428.5)	-349.4 (426.5)	-0.153 (0.188)	-0.144 (0.189)
Cost of business start-up procedures	1.095 (2.422)	0.833 (2.445)	-0.000162 (0.00106)	-0.000369 (0.00107)
GNI per capita	-0.0121 (0.230)	0.0112 (0.231)	-0.000354*** (0.000100)	-0.000360*** (0.000101)
Log of Population	11,506 (7,320)	12,476 (7,573)	7.009** (3.178)	6.726** (3.281)
Constant	-177,727 (117,036)	-193,555 (121,091)	-101.9** (50.57)	-98.18* (52.28)
Observations	345	345	345	345
R-squared	0.159	0.187	0.444	0.456
Number of cit	51	51	51	51
Country Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
R-squared (within)	0.159	0.187	0.444	0.456
F-test	4.446	3.759	18.74	13.67

Note: Testing with the Ibrahim Index of African Governance (IIAG) instead of the World Bank Governance Indicator does not affect the main results, both in terms of coefficient estimate and significance. We further tested a linear model with lagged depended variable (using a system dynamic GMM estimator) and a negative binomial model in absolute levels. Both models led to similar qualitative results.

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1