



En Route: The French Colonial Army, Emigration and Development

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What are the effects of permanent international emigration on the community of origin? If on the one hand emigration implies a loss of human capital and labour force for those left behind, migrants send remittances that can be used to foster economic development back home. In this project, we exploit a historical natural experiment, the deployment of colonial soldiers in Morocco between 1946 and 1956, to estimate the effect of international outmigration on the communities of origin. We find that higher deployment to France during the protectorate induced more international emigration today, a shift from agriculture to services, and more economic development today.

Introduction and Policy Context

In 2020, the stock of international migrants was estimated at 272 million, 3.5 percent of the total population. This represents a 25% percent increase in the proportion of international migrants in the last 20 years with, according to IOM, a faster expected increase in international migration in the next 30 years. As the scale of international emigration rapidly increases, and so do the number of policies regulating international flows of people, it seems paramount to understand its effect on the economy. While several studies have estimated the impact of international out-migration on migrants (McKenzie (2012), Shrestha (2019), Deryugina et al (2018), Nakamura et al (2018)) and the receiving communities, fewer studies have focused on how the sending communities are affected (Khanna et al (2023), Dinkelman (2020)). We exploit a natural experiment induced by the colonial history of Morocco, to estimate the long-term effects of permanent international emigration on the labour market structure and economic development of emigrants' communities.

Between 1830 and 1962, six million Africans served in the French colonial army and were scattered around the world to protect and work for the French Empire. Morocco alone contributed more than 400,000 soldiers between the years of the French protectorate (1914-1956). We focus on the last ten years of French domination in Morocco and digitise historical records to construct a measure of enlistment and deployment of soldiers at the Moroccan municipality level. We exploit the exogenous exposure to France of part of the soldiers, to estimate its effect on emigration to France of the soldiers themselves (after service) and their communities and, on the economic development in these communities in the last Moroccan census (2014).

We estimate that an increase of 10% in the cohort of soldiers deployed to France increases permanent emigration to France by 0.42%. The effect persists for five decades and is more prominent among men than women. We interpret these findings as suggesting that the soldiers deployed to France who decided to emigrate permanently constituted the pioneers of a diaspora that has continued to grow post-independence for several decades. This, in turn, had long-term effects on the communities of origin of the emigrants. Among those currently residing in Morocco, we find a higher propensity to emigrate internationally and a higher likelihood of emigrating internally. We find that the communities of origin did not experience a negative long-term effect from emigration; if anything, we find a positive effect on the left behind, with an associated higher likelihood of moving away from agriculture and working in the private sector instead (services). Furthermore, our preliminary analysis on the data of Senegal and Mali highlights similar patterns.

Although further exploration is needed to disentangle the channels that drive what we observe, we believe this result to be important for three reasons. First, they provide additional evidence of how pervasive and long-lasting the effects of colonialism have been by highlighting part of the effects of an extensive policy such as the French colonial army. Second, they provide important historical background on a currently debated topic in Europe: immigration from Africa to Europe. As European leaders and population decide whether or not to open their borders to the neighbouring African countries, it is important to remember that part of the emigration we keep observing today is a result of the colonial legacy of European countries. Finally, these results contribute to understanding the returns to emigration for the community of origin in the long run, another intensely debated topic with mixed evidence as of now.

Data and Methodology

To estimate the effects of deployment to France during the protectorate on subsequent emigration to France post-independence, and economic development, we use a combination of data sources. First, we measure historical deployment and enlistment in the French Colonial Army at the municipality-by-cohort of birth level, via the digitisation of individual soldiers' records stored in the Archive of Military Personnel in Pau (France). Currently, we have successfully photographed and digitised information on soldiers who were recruited in Morocco, Mali, Senegal, and Burkina Faso. Then, we measure permanent international emigration using the French death records, which contain information on everyone who has died in France from 1990 onwards, including their municipality of birth if they were born abroad. We will use the stock of people born in a Moroccan municipality and cohort, as a proxy for the number of international migrants from that municipality. Finally, we measure economic development using the 10% random sample of the 2014 Moroccan sample and satellite data¹.

To estimate the causal effects of deployment on our outcomes of interest, we rely on the fact that Moroccan soldiers were randomly allocated to battalions that were designed to be interchangeable

¹ Although the analysis for Senegal, Mali, and Burkina Faso is still preliminary, we use the same data sources to measure enlistment, deployment, and emigration. At the moment, we use the DHS to measure contemporary economic development and labour market outcomes.

and would rotate across deployment locations. This feature of the French colonial army determined the quasi-exogenous exposure of Moroccan municipalities (and cohorts) to different deployment locations, on which we will base our estimation strategy. Although soldiers could not choose their battalion of assignment, they could choose whether or not to serve in a conflict-affected area. For this reason, we will focus on estimating the effects of deployment in the three relatively peaceful countries at the time: Algeria, France, and Germany.

In our analysis, we compare patterns of permanent emigration to France in municipalities — and cohorts within municipalities — with different levels of exposure to these three deployment locations. In the first part of our analysis, we implement a within-municipality analysis at the municipality-by-cohort level and estimate the effect of higher exposure to France on emigration to France, on the cohort of soldiers who have been deployed, and then repatriated. In the second part of the analysis instead, we estimate the effect of deployment on long-term outcomes focusing on municipality-level variation. We include in our specification of interest province-fixed effects, historic and geographic controls. Consistent with the arbitrary allocation of troops to deployment locations, we find that deployment is uncorrelated with pre-deployment characteristics of the cohort and the municipality.

Results

The first part of our empirical analysis investigates the effects of deployment to France on the emigration to the *Métropole* of the cohorts of soldiers (France). An increase of 10% in soldiers deployed by cohort increased emigrants for that cohort by 0.42%. We find no effect of deployment to Algeria on emigration to France. The effect is driven solely by the men in our sample, and we find no effects for women of the same cohort. We interpret these results as evidence that exposure to the *Métropole* increased individuals' probability of relocating there once colonial domination was over in 1956. The second part of our analysis explores the effects of deployment on the long-term emigration patterns of the communities of origin of these soldiers.

As long-term outcomes are at the municipality level, we exploit municipality-level variation in military patterns. Our results show that an increase of 1% in the fraction of soldiers deployed to France, keeping everything else constant, increased by 10% the mean the stock of international emigrants born between 1941 and 1990 from that municipality. When we look at the dynamic effects for cohorts born in different decades, we see that the positive effects found for the cohorts of Moroccans born before 1940 — including soldiers — persist for cohorts of Moroccans born after 1940 — hence not including soldiers. This finding is consistent with positive and persistent spillover effects of first migrants on the emigration of community members. We also find positive, but small in magnitude, effects on the emigration of women, although their patterns of emigration lag ten years behind those of men, consistent with spouses following their partners to France.

Finally, we estimate the effect of deployment to France on the economic development in the community of origin. We find evidence of a shift from agriculture to services, with workers becoming more skilled and better off (higher wealth index). On average, we see a lower probability for people to be homeowners and a smaller household size. We also estimate the positive and

significant effects of being internal emigrants. We do not find effects on education, although we find suggestive evidence of positive effects on older cohorts. We interpret our results as indicative that deployment slightly increased economic outcomes for individuals born in the municipality of origin of the soldiers.

Policy Impact and Moving Forward

Our project makes two important contributions to the policy world and broader society.

As international emigration becomes a more common means for people to improve their economic conditions, policymakers in the sending and receiving communities will benefit from rigorous empirical evidence on how international emigration can affect the labour market and economic development of the sending communities. In the introduction to our project, we highlighted two possible ways in which countries of origin can be impacted by outmigration. On the one hand, it can have a negative effect due to the loss of human and physical capital it implies. On the other hand, it could yield a positive impact through incoming remittances². Our results inform policymakers that, in the long run, international outmigration seems to have an overall positive effect on sending communities. Although we view our results as informative, we would like to caution readers about their external validity. If remittances are indeed the means through which the positive effect of emigration emerges in the long run, its replicability will depend on the economic conditions of the migrants.

A second important contribution of this project is the data collection per se. Historical studies on the economics of African countries during and right before colonialism have been inhibited by a lack of systematic and regularly collected data on well-being and development during this period. Having digitised the countries of Morocco, Senegal, Mali, and Burkina Faso, provides us with a unique picture of how the men of these countries looked like between 1900 and 1940. We not only have their anthropometric information but also their occupation, literacy, municipality of birth, and internal emigration status at the moment of enlistment (approximately 21 years old). This dataset is extremely valuable for studying the short-term impact of colonial policies in the case of Francophone Africa, as well as patterns of inequality and the distribution of resources through time in the French colonial empire. In the future, we hope to increase our digitisation to include the other countries of Francophone West Africa, as these data won't only benefit this project but might pave the way to a series of new projects, by several different academics on the economic history of sub-Saharan and North Africa. We believe that this broader project will allow us and future scholars to conduct new historical microeconomic analysis of one of the most economically understudied regions in the world.

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² We acknowledge that several other channels could be at play, but in this report, we focus on these two for simplicity.