

**INTERNATIONAL NETWORK FOR ECONOMIC RESEARCH**

## **Forced migration and food crises\***

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*There is growing concern about the emergence of a global food crisis, but little is known about its economic outreach. This work quantifies the effects of food crises on international forced migration (FIM) relative to internal migration flows using a structural gravity model. Results suggest that even mild food crises tend to increase international forced migration relative to the domestic ones. Severe food crises skew FIM toward less developed countries. Our results are consistent with the fact that food crises tighten liquidity constraints on migration, and that those constraints worsen as food crises intensify. Under more severe food crises, migrants may lack the necessary resources to afford the higher costs of migrating internationally, particularly to a developed nation, thus choosing a developing destination or migrating internally.*

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In May 2022, the cover story of *The Economist* (2022), “The coming food catastrophe”, described a daunting scenario where the war on Ukraine has hit a global food system that was already weakened by Covid-19, climate change, and energy shocks. That same day, the Executive Director of the UN World Food Programme, David Beasley, declared that the Ukraine conflict would be a “declaration of war on global food security” and would “cause famine, destabilization and mass migration in nations around the world”.

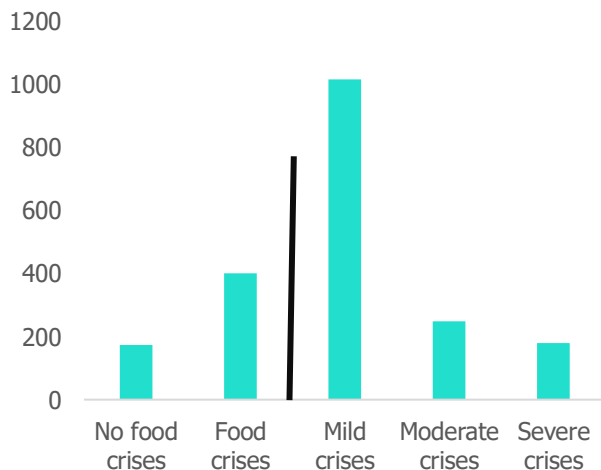
According to the World Food Programme, the population exposed to high food prices and financial difficulties in less than one year has risen to 1.6 billion people. Up to 345 million people are estimated to suffer from acute food insecurity (United Nations, 2022). In the context of 2022 World Food Day, David Beasley warned that “things can and will get worse unless there is a large scale and coordinated effort to address the root causes of this crisis. We cannot have another year of record hunger”.

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\* The views expressed in this paper are those of the authors alone and do not necessarily reflect the views of the Banco de España or Eurosystem. Corresponding author: [marta.suarez-varela@bde.es](mailto:marta.suarez-varela@bde.es).

Food crises, which aggravate poverty and inequality issues in developing countries and poorer households (Artuc et al., 2022), are likely to trigger migration flows. Indeed, the European Commission has expressed concerns about the “huge challenge” posed by migration waves sparked by food shortages. In parallel, the number of applicants for political asylum has increased during the past two decades (Hatton, 2020). The war in Ukraine casts a daunting shadow on European refugees (Becker, 2022).

**Figure 1: Average number of asylum seekers by type of food crisis**



*Source: Own calculations, drawing on data from the FAO's Global Information and Early Warning System and United Nations Refugees Agency.*

In this line, Figure 1 presents the average number of asylum seekers by type of food crises suffered by countries in our analysis during the period 2009-2017 (see Carril-Caccia, Paniagua and Suárez-Varela, 2022). As it can be gathered, countries that suffer from food crises in general, and in particular from mild and moderate crises, are, on average, a source of a larger number of asylum seekers than countries that do not suffer from food crises.

The link between food crises and migration seems clear to policymakers. However, existing studies on international migrations have generally overlooked the role of food crises, with a few exceptions. In our recent study (Carril-Caccia et al., 2022), we aim to understand better the effects of food crises on international migration flows. Is a potential global food crisis expected to trigger mass migrations? Where would those flows be directed?

In order to answer these questions, we apply the empirical framework of the structural gravity model of trade (Baier and Bergstrand 2007; Heid et al. 2021; Yotov et al. 2016) to data on asylum seekers with origin in 114 developing countries and destinations in 155 countries – both developed and developing. In addition, we built a new dataset (available upon request) with detailed data on the characteristics of food crises (e.g. intensity, causes). We processed and categorized the reports and unstructured information provided by FAO's Global Information and Early Warning System (GIEWS). We developed a taxonomy of keywords to measure the impact of a food crisis event, its intensity, and its underlying causes. For consistency with the FAO's classification, we used three levels: i) exceptional shortfall in aggregate food production/supplies (mild), ii) severe localised food insecurity (moderate), and iii) widespread lack of access (severe). Additionally, we distinguish the effect by the level of development of the host country, which is correlated with the level of moving cost.

The standard models of migration flows weigh the payoff of migrating (e.g. higher salaries and well-being) against the costs of moving (e.g. monetary or psychological). Food crises could affect migrations in two opposing ways.

On the one hand, they increase the payoff of migrating since food crises reduce the well-being of the migrant in their country of origin and “push” migrants out of their countries or regions. Additionally, migration insures against natural disasters (Yang and Choi, 2007). On the other hand, since food prices increase during severe food crises, potential migrants may need more resources to cover their immediate food needs, limiting their ability to meet the costs of migrating (Smith and Floro, 2020). Indeed, financial constraints have consistently been found to restrain internal and international migration flows (Angelucci, 2015).

Our results suggest that overall food crises propel international migrations, leading to a substantially higher increase in the number of international forced migrants (75% more) than in the number of internal (i.e., within country) displacements. In the second step, we distinguish between the severity of the crises. We find that mild food crises show the largest impact on the number of international displaced people (relative to internal displacements). In contrast, as the level of food insecurity increases, the positive effects moderate, and the increase in the number of international migrants tends to pair with the increase in internal displacements. This suggestive evidence aligns with the hypothesis that the intensity of food crises correlates with financial constraints on migration. During mild food crises, individuals face fewer financial restrictions for international migration than during severe food crises, so migrants may still be able to afford the higher cost implied by cross-border (international) migrations. On this regard,

Cinque and Reiners (2022) showed that origin-country households tend to experience greater harm from natural disasters when unable to migrate.

When we estimate the effect of food crises by the development level in the host country, we obtain a similar picture. Migration from less to more developed countries is more costly than between less developed countries due to higher travel costs, red tape, and restrictive migration policies. Our findings show that, on the one hand, mild crises have a similar impact on forced migration flows toward developing and developed countries. On the other hand, with severe or moderate food crises, forced international migrants are less likely to move to developed countries. In line with previous results, that could suggest that when food crises are severe, migrants may lack the necessary resources to afford the higher cost of migrating to a developed nation, thus choosing a developing destination.

We also characterised the food crises according to their underlying causes. Food crises driven by more than one cause, which might be expected to last longer or be systemic, prompt larger forced international migratory flows (compared with internal displacement flows). By contrast, crises relating to adverse weather events and disease, usually more transitory, trigger more internal displacement flows. These results suggest that the expected persistence of the food crises might play a role in forced migration.

# Implications

Our analysis shows that overall, food crises propel forced international migration flows to a larger extent than domestic ones. Nevertheless, this effect seems to depend on the intensity of the food crisis and its causes. Policymakers designing policies to mitigate the effects of food crises might find helpful insights in our study to anticipate the coordination across different countries and agencies. For example, focusing efforts within countries during severe food crises and extending them internationally during mild food crises. Additionally, food relief policies that mitigate the severity of a food crisis without stopping it might have the unintended consequence of increasing international migration flows.

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