Rising Food Prices and Poverty in Latin America and the Caribbean

Effect of Ukrainian invasion

Contents

Summary

Rapid increases in food prices raise concerns about the potential impact on people's lives, especially on the poverty levels and welfare of the most vulnerable. Understanding the impact of exogenous shocks, their location, and the characteristics of the most affected population, is fundamental for the design and implementation of policy responses to mitigate their effects.

Previous periods of increases in food prices have resulted in large increases in extreme poverty. Between 2006 and 2008, the price of rice increased by 217 percent, wheat by 136 percent, and maize by 125 percent, among others (ALNAP, 2008. As a result, it is estimated that an extra 155 million people were pushed into extreme poverty worldwide (de Hoyos, R.E. and Medvedev, D., 2011). It is estimated that in Latin America

and the Caribbean poverty increased in this period by 4.3 percentage points of 21 million people (United Nations, 2011).

The current conflict between Russia and Ukraine combined with other factors such as increased demand from Asia is already affecting food and other commodity prices worldwide. Russia and Ukraine represent 28.5% of the world's wheat exports , and Russia is currently the third oil producer in the world and the leading exporter of fertilizer . Therefore, the conflict between Russia and Ukraine is expected to continue to rise the food prices and affect vulnerable population, particularly households with low food basket substitution power. The most recent figures from the FAO food price index show an increase of around 20% from a year ago and an increase in the cereal price index of around 15% from a year ago. The FAO also warns of the risk of further increments of food prices from 8 to 22% (FAO, 2022). This policy brief presents a toolkit to simulate the impact of the increase in food prices caused by the Ukraine war on poverty levels for XX countries in Latin America and the Caribbean (LAC) over 2022. We simulate the impact of poverty levels by adjusting the national poverty lines according to the projection of price increases of key food items (grains, breads, cereals, and meats). This simulation also considers the revised growth projections of countries and accounts for the share of national producers of these essential food items.

An increase of 20% in the prices of all food items except for meats , together with the revised growth projections of the IMF for LAC countries will result in an average increase in moderate poverty of 1.6 percentage points and a 1.8 percentage point increase in extreme poverty on average, resulting in 9.5 million additional poor in the region. Some countries will be more affected than others. This will depend on four key factors: (a) the composition of the poverty basket in each given country, (b) the income-distribution of household income pre-crisis, (c) the impact of the crisis on growth prospects and (d) the share of food producers in each country. In our simulations, the countries that will be more affected will be Guatemala, Mexico, and Nicaragua.

Compensating the loss of purchasing power could be costly. A naive transfer large enough to compensate all families below the moderate poverty line to achieve pre-crisis income levels (and therefore, pre-crises moderate poverty levels) would cost 1.3 billion US$ monthly to the region (0.4% of GDP).

A tool to simulate the effects on poverty in LAC. The forces at play.

The toolkit simulates the impact of the increase in food prices caused by the Ukraine war on poverty levels for 24 countries in Latin America and the Caribbean (LAC) over 2022. Departing from the last available poverty level data in each country (see appendix for details), we adjust poverty lines to reflect the changes in prices, while simultaneously increasing household income in line with the revised GDP growth projections. To reflect the fact that some countries will benefit from the crisis because they are producers of the affected goods, we allow the simulation to shield these population from the increases in prices. Below a detail explanation of these channels.

- Changing poverty lines. We simulated the direct effect through the increase in food prices by increasing the poverty lines of the countries in the region. The adjustment is made by impacting each country's poverty line by the percentage that each commodity represents in the poverty line. For example, if there is an increment of 20% in the price of wheat and wheat represents 20% of the basket used to calculate the county's poverty line, the increment in the poverty line is of 4%.

- Impact of growth on poverty. We account for the aggregate impact of growth on poverty. For this we used growth forecasts published by the IMF into the simulations (the latest version being the data for April of 2022). This channel will generate variation across countries, as the commodity shocks will impact countries differently depending on whether they are net commodity exporter and importers. The assumption for simulating GDP growth on poverty was that all incomes in the country grow at the same rate as GDP growth. While the distribution of growth tends to vary depending on which years are being analyzed, the assumption seems to be backed by World Bank measurements of growth distribution curves except for the bottom decile. For the bottom decile in the region growth has tended to be less beneficial than for the rest.

- Share of producers in countries. Similarly, within countries we account for the fact that some households benefit from increases in prices by applying the same rate on increment that is applied to the poverty line to households that are involved in agricultural activities as self-employed or as employers. That is, we considered that there is no pass-through effect to employees in the sector.

There are important caveats to be considered when interpreting the results of these simulations. We currently assume that increases in international prices are fully passed through to observed household prices. We do not consider substitution effects among the products consumed by a household for practical reasons since these in turn would trigger (likely) smaller increases in prices of substitute goods or hangs in income caused by changes in food prices through agricultural wages. We do not analyze consumption patterns at the micro level since most surveys used do not have detailed information on consumption.

This toolkit is designed to simulate several scenarios. Our baseline scenario considers an increase of 20% in the prices of all food items except for meat, in line with the most recent forecasts from the FAO (see annex), the April 2022 IMF growth projections and we assume that local producers are shielded from price increases. We allow for changes in the goods that are affected by prices inflation (all products, all but meat, grains bread and cereals and only grains) as well as the size of the shock, from 10% to 50% increase in prices. We also allow the user to turn off the impact of growth on poverty and whether producers are affected or not by the prices increases. By turning off these two channels our simulations reflect the direct impact of increases in prices on poverty lines.

Results

In our baseline scenario, moderate (extreme) poverty will increase by 1.6 (1.8) percentage points, increasing the number of people below moderate poverty line in 9.5 million. The effect of the simulation is larger on extreme poverty because the extreme poverty line is mostly made up of food prices so the increase will be larger compared to the moderate poverty line. The relatively small effect is due to the combination of the GDP growth effect and the effect of the increase in food prices which act in different directions. Among the countries that are expected to be hit the hardest are Guatemala, Nicaragua, Mexico, Ecuador, and Honduras, all of them with poverty rate increases of more than two percentage points in extreme poverty. A naive transfer large enough to compensate all poor households in a way that would help them be in a situation similar to that before the crisis would cost 1.3 billion US$ monthly to the region. (0.4% of GDP). This outlook is particularly worrisome after the efforts made by countries in the region to support households in the face of COVID-19. Efforts to help households cope with the Pandemic cost 3.5% of GDP in 2020 and the growth forecasts are expected to slow down from 6.2% in 2021 to 2.1% in 2022.

A more extreme scenario in which inflation keeps going up and reaches 50% would be dramatic. It would mean that poverty rises by 7.6 percentage points and extreme poverty by 7.7 points. Adding a staggering 44 million people into (moderate) poverty and costing 4.5 billion monthly to compensate households (1.15% of regions GDP).

The distribution of the effect in our baseline scenario by country can be seen in Figure 1 below. A more complete view of different inflation scenarios can also be seen in Figure A1 in the Annex.

We invite you to run your own scenarios using the simulation tool developed by the IDB.

https://bid-data.shinyapps.io/scl_policy_simulation/

Policy Lessons from the 2008 food price crisis and he COVID-19 Pandemic

In 2008 in LAC, some countries were able to adjust their existing conditional cash transfer (CCT) programs to help the poor cope with food price increases, among them Jamaica, Brazil, Chile and Mexico. Mexico's Oportunidades CCT program increased its monthly transfer amount by M$120 (about $10) per household in 2008 to compensate its beneficiaries for losses in purchasing power during the economic downturn due to the global financial crisis since 2008. Jamaica approved an increase in the individual cash subsidies from

J$530 to J$650 and an expansion of the total number of Program for Advancement through Health and Education (PATH) beneficiaries from 245,000 to 360,000 beginning in June 2008. Brazil increased the basic benefit of Bolsa Familia in July 2008 by eight percent and the transfer per child by 13 percent. The latter was in marked contrast with the measures taken during the COVID-19 pandemic in 2020 – 2021 when more than 100 new transfers programs where implemented (Tejudo et al. 2021) in the region to cope against the temporary systemic shocks. Subsequent evaluations of the measures taken in 2008 showed that while the response was not large enough to fully protect the poorest, it did ameliorate the impact of the price increases for them .

Other measures were taken to limit the impact of the increase in food prices. While some countries were able to scale up safety net programs delivering both cash and in-kind support to families, countries used a mix of other measures. Many countries in 2008 resorted to a combination of export restrictions, liberalizing imports, removing sales taxes, providing fertilizer subsidies.

Since then, countries have developed the capacity to react more efficiently in the face of income shocks. During the COVID-19 pandemic countries were better prepared, and many more used their social registry information systems to identify potential people affected (among other tools such as web-based application forms) and reach out with cash transfers (Costa Rica, Honduras, Colombia, and the Dominican Republic for example).

Scaling up social programs was generally deemed to be more efficient, and, in particular, unconditional cash transfers, but they need to be closely indexed to food prices and be adjusted accordingly. Other measures like export restrictions caused more harm than good2 as they were one of the causes of the price increase in the first place. However, some other measures like tariff reductions did show some positive effects . Some in kind transfers were found to have had positive impacts (school meals in Nicaragua for example), however cash transfers have been more efficient , food transfers have been found to cost 20% of the cost of the transfer vs 2.4% with cash.

One of the concerns during the 2008 food price crisis was that temporary measures such as temporary increases or one-off transfers could become permanent. Some of the transfers that were put in place during 2008 did in fact become permanent features of programs (in Mexico for example). During the COVID-19 pandemic however it was possible to implement temporary transfers without creating expectations from the population. One of the recommendations for this was to have a good communication strategy making the rules of the transfer clear to the population.5

Distributional impacts within countries matter. It is also important to consider gender sensitivity to make sure there is no unequal distribution of transfers within the household. Anecdotal evidence found greatest consumption losses falling on women and girls1, 2, CCTs however have a culture of providing transfers to women in the household. Food producing households, (but not the entire population) may have received some benefits from the food price crisis but the net effect is harder to measure as input prices such as fertilizer also went up and it is not clear how much of the protection was passed through to employees in food producing industries. Accurate market analysis, estimations of the amounts to be given need to consider large heterogeneity between and within countries and urban and rural areas.2

Today, the region has better instruments to compensate households for income shocks. The recent COVID-19 pandemic taught us that when there are no safety net tools present, new technologies can be used to react fast to help poor households but at the cost of less efficiency in targeting and accountability of who receives what. There is no substitute for building strong well informed social safety nets with adequate governance before a new crisis hits.

Policy options for the present crisis

The food price crisis represents an important challenge to countries in our region, but it is different to the COVID-19 situation in that there is no large-scale shutdowns of the economy so the policy options can be more targeted. At the same time, the population in need of support goes beyond people currently registered in social programs as in many cases coverage is insufficient to cover even the pre-crisis households in extreme

poverty, for example the coverage of CCT programs in the region is approximately of 65%, and the coverage of the moderately poor is of 42%. We also need to take into account the new poor created by the pandemic who mostly have not been included into CCT programs.

Using the existing programs. One option would be to do as Mexico, Jamaica and Brazil did and expand benefits to existing beneficiaries of cash transfers, this can be done quickly and would likely reach those households most in need of help, however the transfer would run the risk of becoming permanent (not necessarily a bad thing in programs in which the benefit has eroded due to past inflation) and there would be under coverage of poor households.

Use the existing installed capacity but with new programs. Another option is to use the information available in social registries and provide a transfer to larger group of households (i.e. all households in the registry that are below the poverty line). This will include those households already in social programs and those outside of social programs. Existing payment mechanisms can be used (bank accounts when available for example) for those enrolled in the programs and simplified methods can be used for those not enrolled (like the type of PIN numbers that were used in Guatemala for example). Reaching a larger group than current beneficiaries through a new transfer would not be as fast as reaching existing beneficiaries but would reach a wider population and would be easier to control in the medium term (would not become permanent as was the case in many countries that delivered a one-time transfer during COVID-19).

In kind transfers and other options. As it was previously discussed, in kind transfers can be an option and can reach people in need, however in similar scenarios in kind transfers are less efficient and hence would reach less households or deliver smaller benefits for the same budget. This option needs to be linked to any efforts done on the supply side with the agricultural sector. Whatever the options chosen the region is better prepared this time to face a crisis like the one we had in 2008, it is up to us to choose the right instruments and use the crisis as an opportunity to make our social protection systems even stronger.

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Detailed Methodological Annex

Data Preparation

Harmonizing household surveys

Household surveys are the instruments used to analyze poverty and inequality. In this project, the first step was to work on creating a harmonized household-level data set for 25 countries in the region. The list of countries, household surveys, year of data collection and sample sizes are reported in Table 1 of the Annex.

Income and consumption

Given that the objective is to analyze the impact of price variation on national poverty rates, it was essential to replicate and harmonize its construction across all countries in the region. To achieve this, the main preprocessing work was the reconstruction of each country's official per capita income/consumption methodology. In Latin America, most countries use household income to measure poverty rates against a welfare line. However, some countries prefer per capita consumption, arguing that consumption fluctuates less over time than income, keeping results more comparable over time (IDB, 2018). This is the case for countries such as Suriname, Barbados and Peru.

When official per capita income is not available the harmonized variables calculated by the SCL team are used.

Poverty lines

In order to replicate the official poverty of each country, it is also necessary to use the official poverty thresholds. To define them, most countries use the concept of the basic food and non-food basket. On the one hand, the basic food basket establishes the minimum economic threshold to satisfy food needs based on the consumption habits of households in each country; if a family is below this threshold, it is defined as extremely poor. On the other hand, the non-food basic basket adds non-food components to the basic basket; this threshold is used to identify the population living in poverty.

Due to lack of information, it was not possible to replicate all the national poverty figures. in these cases, international poverty lines were used. To make the lines comparable with the national income of the year of the survey they are adjusted and deflated with the Consumer Price Index (CPI) and the Purchasing Power Parity - PPP.

Equation (1) is used to calculate the countries' monthly international poverty lines per person for international poverty lines. In this line, PPP data are from the World Bank's World Development Indicators (WDI), and CPI data are from the International Monetary Fund's (IMF) World Economic Outlook (WEO) database.

$$lp_{ci} = (lp * \frac{365}{12}) * [PPP_{2011} * \frac{PCI_{year_i}}{PCI_{2011}}]$$

Household Food Basket Composition

In order to focus the price increase on specific commodities, we consider the relative weight of each component in the basic food basket. We use the Economic Commission for Latin America and the Caribbean' (CEPAL, acronym in Spanish) Basic Food Basket. They use the Expenditure Household Surveys to obtain the expenditure and the consumer of the household. In this line, the CEPAL generates the Basic Food Basket choosing a limited number of products that represent the consumption of households.

The products are initially classified into 14 categories: 1. Grains; 2. Bread and cereals; 3. Legumes; 4. Vegetables (greens or vegetables); 5. Roots and tubers; 6. Fruits; 7. Sugars; 8. Fats and oils; 9. Milk and dairy products; 10; 10. Meat, poultry, fish, seafood, and eggs; 11; 11. Non-alcoholic beverages; 12. Alcoholic beverages; 13. Food products not previously specified; 14. Meals and beverages outside the home. In the dataset, they report the quantities and the calories per capita (CEPAL, p. 49, 2018)

Identification of food-producers

As part of the simulation exercise, we assume that the effects of the market imbalance caused by the invasion have had a heterogeneous impact on the economic sectors. Therefore, as a first approximation, we consider the food-production sector.

In this subsection, our goal is to identify within the household and employment surveys those individuals who produce food or who otherwise perform tasks closely linked to the agricultural sector (whether they have agriculture as their main or secondary activity). First, we identified all workers who are business owners or self-employed. From this group, only those in the agricultural sector are identified. As a result, we have a column that gives values equal to 1 to employers and self-employed who belong to the agricultural sector and 0 to the rest.

GDP Growth

Rising food prices could affect real household incomes, at the same time, the economic growth of countries also has the potential to affect them directly and indirectly. (Laborde et al., 2019). To control for this effect, we use the International Monetary Fund (IMF) economic growth projections for the year 2022. In this phase of the project we impact the income of all households in each country with the same weighting.

Poverty lines adjustment

The simulation of increases in the poverty line works by adjusting the proportion of the poverty line that is composed of the commodities in each country that were affected by the price spike according to the following formula:

$$povertyline\Delta_{country_i} = povertyline_{country_i} * (1 - \omega_{country_i}) + povertyline_{country_i} * \omega_{country_i} * (1 + shock\_weight)$$

Figure A1. Distribution o changes in poverty for different changes in prices in all food except for meat.

Tables and figures

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Table 1

Country	year	Survey	National poverty lines	Official income/consumption	Income/Consumption
ARG	2020	Permanent Continuous Household Survey (EPHC acronym in Spanish)	Yes	Yes	Monthly income
BHS	2014	Labor Force & Household Survey	No	No	Monthly income

Country	year	Survey	National poverty lines	Official income/consumption	Income/Consumption
BLZ	2007	Labor Force & Household Survey	No	No	Monthly income
BOL	2020	Household Survey (ECH, acronym in Spanish)	Yes	Yes	Monthly income
BRA	2020	Brazilian National Household Sample Survey (PNADC, acronym in Potuguese)	Yes	No	Monthly income
BRB	2016	Labor Force & Household Survey	Yes	No	Monthly consumption
CHL	2020	National Socioeconomic Characterization Survey (CASEN, acronym in Spanish)	Yes	Yes	Monthly income
COL	2020	Large Integrated Household Survey (GEIH, acronym in Spanish)	Yes	Yes	Monthly income
CRI	2021	National Household Survey (ENAHO, acronym in Spanish)	Yes	Yes	Monthly income
DOM	2020	Continuous National Labor Force Survey (ENCFT, acronym in Spanish)	Yes	Yes	Monthly income
ECU	2020	National Survey on Employment Unemployment and Underemployment (ENEMDU, acronym in Spanish)	Yes	Yes	Monthly income
GTM	2014	National Survey of Living Conditions (ENCOVI, acronym in Spanish)	Yes	Yes	Annual expenditure
GUY	2019	Labour Force Surveys (LFS)	No	No	Monthly income
HND	2019	Permanent Multipurpose Household Survey (EPHPM, acronym in Spanish)	Yes	Yes	Monthly income
JAM	2018	Survey of Living Conditions (SLC)	Yes	Yes	Monthly income
MEX	2020	National Household Income and Expenditure Survey (ENIGH, acronym in Spanish)	Yes	Yes	Monthly income
NIC	2014	Living Standard Measurement Survey (EMNV, acronym in Spanish)	Yes	Yes	Monthly consumption
PAN	2019	Multipurpose Survey (EHPM, acronym in Spanish)	Yes	No	Monthly income
PER	2020	National Household Survey (ENAHO, acronym in Spanish)	Yes	Yes	Monthly consumption
PRY	2020	Permanent Continuous Household Survey (EPHC acronym in Spanish)	Yes	Yes	Monthly income
SLV	2020	Multipurpose Household Survey (EHPM, acronym in Spanish)	Yes	Yes	Monthly income
SUR	2017	Survey of Living Conditions (SLC)	No	No	Monthly consumption
TTO	2015	Continuous Sample Survey of Population (CSSP)	No	Yes	Monthly income
URY	2020	Continuous Household Survey (ECH, acronym in Spanish)	Yes	Yes	Monthly income
VEN	2021	National Survey of Living Conditions (ENCOVI, acronym in Spanish)	No	No	Monthly income