

COORDINATING WITH THE PETROL SECTOR TO ENHANCE EARLY WARNING

Preventive and shock-responsive adaptation of the food-basket cost
February 2023

ALESSIA VOLPE
INDEPENDENT CONSULTANT
VOLPEA@TCD.IE



SCOPE OF THE ANALYSIS

For far too long humanitarian actors and coordination mechanisms have witnessed sharp price variations of core commodities without the capacity to forecast them. While to date some Cash and Vouchers Working Groups (e.g., Afghanistan) established mechanisms to continue monitoring and adapt transfer values in a timely manner, information are still made available weeks after the shock occurred. The analysis aims to provide them with one possible approach to forecasting such sharp shocks, allowing them a margin of few days to prepare and adapt. Ultimately, having systems in place to quickly amend transfer values is aimed to preserve beneficiaries' purchase power in the local markets and the broader markets' functionality.

Thus, **this paper investigates the interlink between petrol and food costs**, which although part of the common knowledge has been rarely explored thoroughly within the humanitarian sector, and it **calls for cooperation with the petrol companies operating in crisis-affected countries for better monitoring and forecasting**.

Furthermore, it is acknowledged that adapting transfer values is not an easy task for humanitarian actors, but through early warning mechanisms there could be sufficient buy in at Cash Working Groups' level to raise concerns to donors, or more easily there could be ground to discuss and adopt a temporary top-up approach, until the prices stabilize.

METHODOLOGY AND LIMITATIONS

This brief is based exclusively on **secondary data available through trusted sources**. However, harmonized open-source data are not available for neither petrol prices nor food prices globally. In order to ensure accuracy, data were triangulated across different platforms for country-level data. The five case studies (i.e., Kenya, Lebanon, Afghanistan, Cameroon, and Nigeria) were selected in order to provide the reader with a variety of geographical and contextual situations, in the attempt to prove that a correlation between petrol and food prices exists. In terms of data availability challenges:

- Petrol and crude oil prices are not necessarily available in a timely matter
- Food prices vary at country level, depending on the basket of commodities assessed. In countries affected by humanitarian crises, some sources rely on the national-level Minimum Expenditure Baskets (MEB), for others it is a broader list of items. Where possible, the primary data source used was the Food Price Index, which is a composite indicator measuring the average of five commodity group price indices (e.g., Cereal, Vegetable, Dairy, Meat, and Sugar) weighted by the average export shares of each of the groups over the historical records of 2014-2016.
- Market monitoring data are often retroactive (i.e., changes over the 30 days prior to data collection), leading to delayed messaging at the expenses of Early Warning efforts.

Further analysis and a more in-depth look into such data is needed in order to develop a functioning early warning mechanism for spikes in food security at country-level, as working in close collaboration with the petrol sector may provide humanitarians with a 3-5 days margin to adjust operations and deliveries.

DEFINITIONS

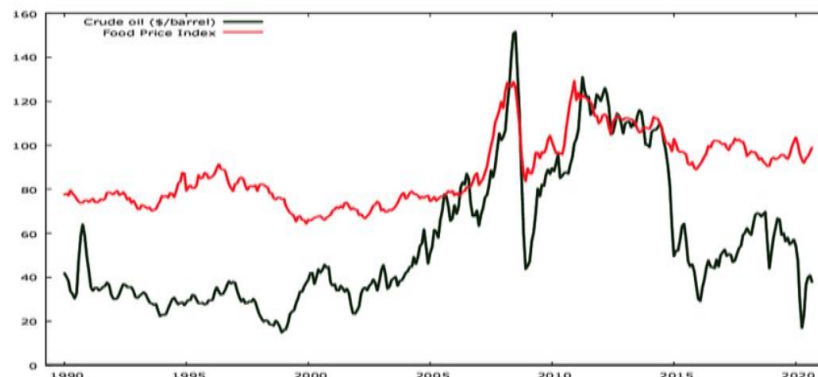
Cash and Voucher Assistance (CVA), also referred to as Cash-Based Interventions, Vouchers, or Cash transfers: it refers to assistance provided in the form of physical money or electronic-transfers. Depending on the modality, there may be restrictions and/or conditionalities applied.

Early warning: it refers to systems and monitoring exercises in place to warn humanitarian actors and coordination mechanisms in place about the increased likelihood of something to occur, particularly for what it concerns hazardous events or events that may affect people's well-being, their levels of needs, or their capacity to access resources in the immediate future.

Shock-responsiveness: normally, the humanitarian sectors talks about “*shock-responsiveness*” in relation to Social Protection systems. However, shock-responsiveness in this case refers to the ability of the humanitarian actors and coordination systems in place to anticipate the effect of shocks and to scale up and/or to adapt to accommodate the consequent needs of the targeted population groups or communities. This differs from **Anticipatory Action**, which rather aims to predict such shocks and forecast the effects prior to their occurrence.

PETROL AND FOOD

Figure 2: Historical analysis between the price of crude oil and Food Price Index (Ronan M. et al., 2020)



Historical analysis and correlations prior to the COVID-19 outbreak reiterate the importance of monitoring variations of petrol price, aiming to, where possible, anticipate inflations for core commodities distributed or intended to be covered as part of the humanitarian assistance. Food price sudden changes indeed play a pivotal role for the development and adaptation of the transfer value of the Food Basket for Cash for Food and Multi-Purpose Cash Assistance (MPCA). The interlink between these two is dictated by the fact that increases in petrol prices can impact both the cost and availability of food commodities in local markets.

- Transportation and distribution costs in country, leading to higher costs for distributors and suppliers.
- Production costs at producer level, particularly where farmers need to power tractors or other equipment.
- Import/export, where countries that are dependent on imports, as it increases the cost of importing food, making it more difficult for governments to meet the needs of their population.

Furthermore, should the increase in production or transportation costs rise too sharply or above certain thresholds, food producers and distributors may be less likely to transport certain foods over long distances, leading to reduced availability in remote and rural areas, where incidentally vulnerabilities tend to be more prevalent. Moreover, should farmers not be able to afford the cost of fuel to power tractors and equipment, the harvest can be compounded for the entire season, and as a consequence food availability and its price.

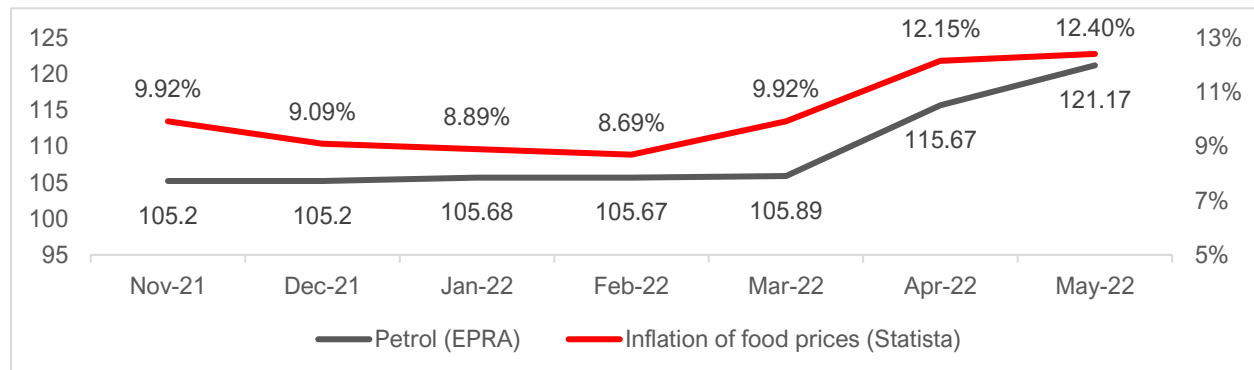


Should humanitarian actors receive up-to-date information on this matter and intervene in a timely manner with Cash and Voucher Assistance (CVA) and/or transportation top-ups, beneficiaries' capacity to access core food commodities would not be impaired. Rather, currently the analysis appears to be retroactive, with routine market monitoring assessing changes in the 30 days or three months prior to data collection, depending on the country. This led, in a number of occasions, to discuss price changes days or weeks after the spike, and beneficiaries' households purchase capacity has already been reduced.

CASE STUDIES

KENYA

Figure 3: Kenya, analysis of petrol prices and inflation on food items (EPRA and Statista, 2022)



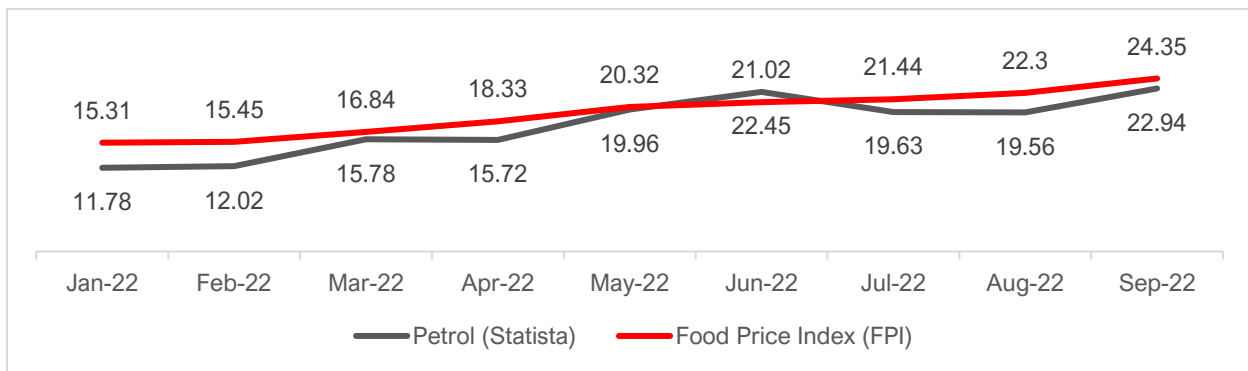
In Kenya, it was possible to notice a **good correlation between petrol prices and the percentage of inflation on food commodities across the first half of 2022**. The sharp increase observed after March, reportedly, was due to a shortage of fuel countrywide, as there were delays

in the payment of subsidies to the oil marketers. This led to the marketers decision to not import or to re-export to other countries.

Having a strong link between the sectors, this sharp increase could have been forecasted with some level of advance, and possible mitigation measures could have been set in place to reduce the erosion of purchase power of HHs for the price rise period.

LEBANON

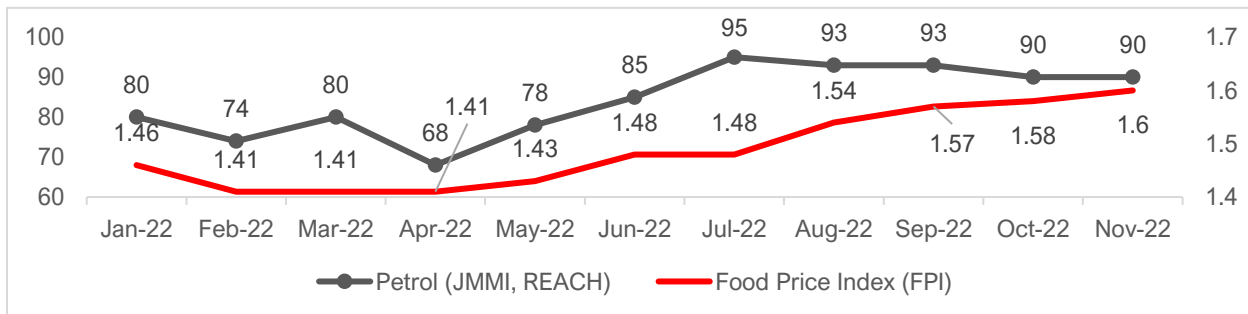
Figure 4: **Lebanon** analysis of petrol prices and inflation on food items (Statista, 2022 and FPI)



The analysis over Lebanon prices also shows a clear correlation as the Kenya example, with the spike registered in June may be due to the peak of a political crisis. Further investigations on Lebanon were conducted by Mercy Corps' Lebanon Crisis Analytics Team (LCAT), which had similar results on the analysis part.

AFGHANISTAN

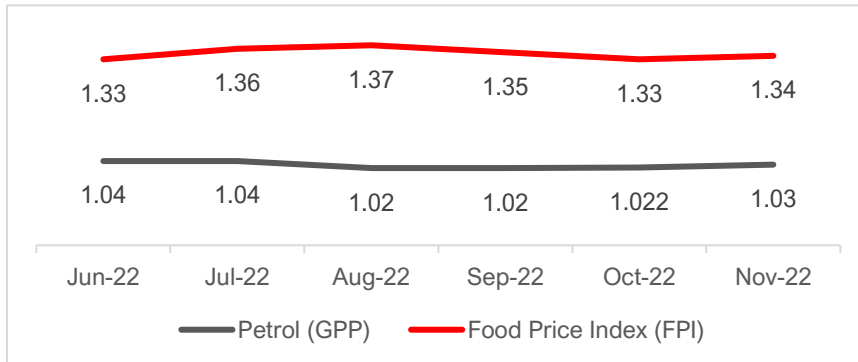
Figure 5: **Afghanistan** analysis of petrol prices and inflation on food items (JMIMI and FPI, 2022)



In Afghanistan, similar trends, although less obvious, were spotted in both petrol prices and FPI in 2022, in spite of the political crisis, natural disasters, political external factors, and the decision to import petrol from Iran over the course of the first quarter (March 2022) following the shortages. The spikes reported in petrol prices recorded in March and July are to be further investigated.

CAMEROON

Figure 6: **Cameroon** analysis of petrol prices and inflation on food items (GPP and FPI, 2022)

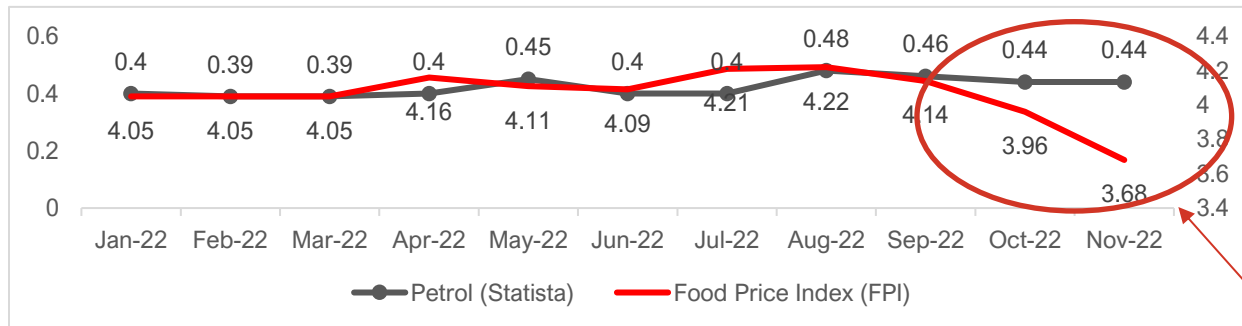


The example of Cameroon is again a clear reflection of how petrol and food prices are somehow interlinked. For what it concerns the trends in prices, there has been no variation between June and November 2022, neither for food prices nor for petrol ones.

However, it needs to be considered that data available for Cameroon only covered the duration of six months, allowing limited triangulation and cross-checking over a more extended timeframe.

NIGERIA, THE UNANSWERED QUESTION

Figure 7: **Nigeria** analysis of petrol prices and inflation on food items (Statista and FPI, 2022)



The example of Nigeria offers an outlier in this study, with food prices plummeting between October and November 2022, in spite of the stability of the petrol cost. This could be justified with the floods and related humanitarian aid in-kind distributions during late October and early November, and it still highlights the need for country-level analysis and cooperation with the oil sector in order to have reliable, comprehensive, and up-to-date information. Yet, this remains an assumption rather than a sure and triangulated justification for the sudden divergence of costs. What happened in the Nigerian petrol sector around September 2022?

CONCLUSIONS

Indeed, forecasting food-price shocks through coordination with the petrol sector is not a mistake-free science. The Nigeria case further proves it. However, **this paper does not call for immediate amendments, but rather using the petrol price data**, more timely and accurate than humanitarian standard market monitoring, **to forecast possible sudden shocks. This could provide humanitarian actors and coordination systems** (e.g., Cash Working Groups) **with a margin of few days to activate discussions and preventive measures**, if needed. Ultimately, this is done for preserving beneficiaries' purchase power in the local markets, and for the sake of their food security.

Furthermore, it is important to note that **the effect of petrol prices increases on food commodities may vary depending on the country and the specific characteristics of the government subsidies, infrastructure, and local food industry**. Some countries implement caps or controls on the price of petrol to help keep prices stable and affordable for consumers (e.g., by setting a maximum price or by providing subsidies to offset some of the cost of fuel). In those countries with limited/no subsidies and sharp price variations, an increase in food prices may compound people's capacity to afford food and other necessities. Changes in this regard may affect low-income and already vulnerable households more than others.

Due to a combination of policy tightening, worsening financial conditions, and sanctions, not only it was witnessed a sharp increase in oil prices over 2022, but significant disruption to Russia's exports may occur in the short term because of the price cap and Russia's reaction to it. Global food and fuel price shocks linked to the war in Ukraine are set to last until at least the end of 2024 and raise the risk of "*stagflation*". Thus, according to recent data on petrol prices forecast globally, should inflation on food commodities continue following similar trends it is possible to assume that the countries with an expected rise on petrol prices above 17 percent (i.e., Türkiye, Egypt, Pakistan, Kenya, Zimbabwe, and Palestine) should be under close watch together with those countries currently facing large-scale humanitarian crises with no petrol-related data available.

While this preliminary study has methodological limitations dictated by data availability, it remains clear that a link between the petrol and food prices exists, and it could open up discussions around an unprecedented cooperation amongst the two sectors to enhance early warning and Anticipatory Action implementation at country level. Thus, humanitarian actors operating in these countries are recommended to:

- Start engaging with companies operating in the petrol sector working in the country,
- monitor petrol price variations regularly, depending on data available, and
- be prepared to adjust transfer values of the Food Basket or provide top-ups accordingly.



REFERENCES

- FAO (2023). [Food Price Index](#)
- Global Petrol Prices (2023). [Internal Database](#)
- Mercy Corps (2023). [Lebanon Crisis Analytics Team \(LCAT\)](#)
- REACH Initiative (2022). Joint Market Monitoring Initiative
- Statista, database (2023). [Fuel and Energy Price Index Worldwide](#)
- Trading Economics forecast data base (2022). [Petrol prices trends 2023-2024](#)
- World Bank microdata database (2022). [Monthly food price estimates by product and market](#)
- ALPER, Fındık Özlem (2018). Petroleum prices, food prices and inflation relationship: findings of structural var analysis.
- Bernhard Dalheimer, Helmut Herwartz, Alexander Lange, The threat of oil market turmoils to food price stability in Sub-Saharan Africa, *Energy Economics*, 10.1016/j.eneco.2020.105029, 93, (105029), (2021).
- Nakhle C. (2023). Oil markets: An early peek into 2023 <https://www.gisreportsonline.com/r/oil-2023/>
- Roman, Monika & Górecka, Aleksandra & Domagała, Joanna. (2020). The Linkages between Crude Oil and Food Prices. *Energies*. 13. 6545. 10.3390/en13246545.
- Shon Ferguson, David Ubilava, Global commodity market disruption and the fallout, *Australian Journal of Agricultural and Resource Economics*, 10.1111/1467-8489.12497, 66, 4, (737-752), (2022).
- Zhige Wu, Alfons Weersink, Alex Maynard, Fuel-feed-livestock price linkages under structural changes, *Applied Economics*, 10.1080/00036846.2021.1965082, 54, 2, (206-223), (2021).
- World Bank (2022). Commodity Markets Outlook report, October 2022 <https://openknowledge.worldbank.org/bitstream/handle/10986/38160/CMO-October-2022.pdf>