

# IRAQI FOOD PRICES

Within a Global Context and the Role of  
the Public Distribution System (PDS)



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Programme

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\* \_ The findings, interpretations and conclusions expressed herein are those of the authors and do not necessarily reflect the views of WFP.

## INTRODUCTION

Over the three year period 2020-2022, the global economy and associated global trade flows, experienced significant disruptions with profound effects on global food and energy prices. These were brought about by two main events: the COVID-19 pandemic and the Ukraine-Russian war. The emergence of the COVID-19 pandemic, in early 2020, and the sequence of lockdowns to contain the pandemic, initially led to severe economic slowdowns, that were ultimately followed by strong economic rebounds as most of the world adapted to COVID-19. In February 2022, the magnified existing inflationary pressures, ultimately led to

significant economic slowdowns as central banks worldwide raised interest rates to contain inflation<sup>1</sup>. The combined net effects of these disruptions were that overall food and energy prices increased over the three-year period of 2020-2022, with higher energy prices contributing to increases in retail consumer food prices, and ultimately further intensifying inflationary pressures. The resultant socio-economic shocks had major effects on consumers worldwide, and in particular on the most vulnerable populations, with significant negative consequences on their ability to meet essential needs.

In Iraq, the economic effects of these disruptions were exacerbated by the dependence on oil prices. Oil export revenues accounted for approximately 90 percent of government revenues in 2017-2022<sup>2</sup>, and the Government of Iraq plays a major role of in the economy as the largest formal employer and driver of the non-oil economy. Essentially, any shift in oil prices influences government revenues and it directly impacts the real economy. Specifically, the crash in oil prices in 2020 led to a significant drop in government oil revenues and expenditures, and ultimately to a contraction of 11.2 percent in non-oil GDP in 2020. The recovery in oil prices in 2021, and their strong rises in 2022 led to increases in government revenues and expenditures, ultimately led to non-oil GDP economic rebound of 4.7 percent in 2021, followed by continued growth in non-oil GDP estimated at 1.5 percent in 2022, and a projected 4.4 percent in 2023<sup>3</sup>. The expansionary federal budget for 2023-2025, will likely fuel economic growth further<sup>4</sup>.

By mid-2023, both global food and energy prices were substantially lower than their March-April 2022 price peaks. However, prices remained mostly higher than pre-pandemic levels and crucially inflation has become more entrenched<sup>5</sup> -

a direct consequence of earlier higher energy and food prices leading to higher costs in other sectors such as wages, rents, etc and these price rises tend to be mostly permanent. Consequently, impacting vulnerable populations' living standards<sup>6</sup>.

1. The economic analysis in this section is based on the author's prior works on Iraq, as well his research and observations of the global factors that affect Iraq such as demand for oil, food prices and so on. Supporting external material is available at.

(1) IMF World Economic Outlook.: <https://www.imf.org/en/Publications/WEO>

(2) IMF Iraq Country Reports. <https://www.imf.org/en/Countries/IRQ>

(3) World Bank- Iraq reports. <https://www.worldbank.org/en/country/iraq>

(4) Iraqi Ministry of Finance. <http://mof.gov.iq/Pages/MainMof.aspx>

2. Annual budget data for 2017-2022 from the Ministry of Finance. <http://mof.gov.iq/obs/ar/Pages/default.aspx>

3. Data shared by Commission of Statistics and GIS.

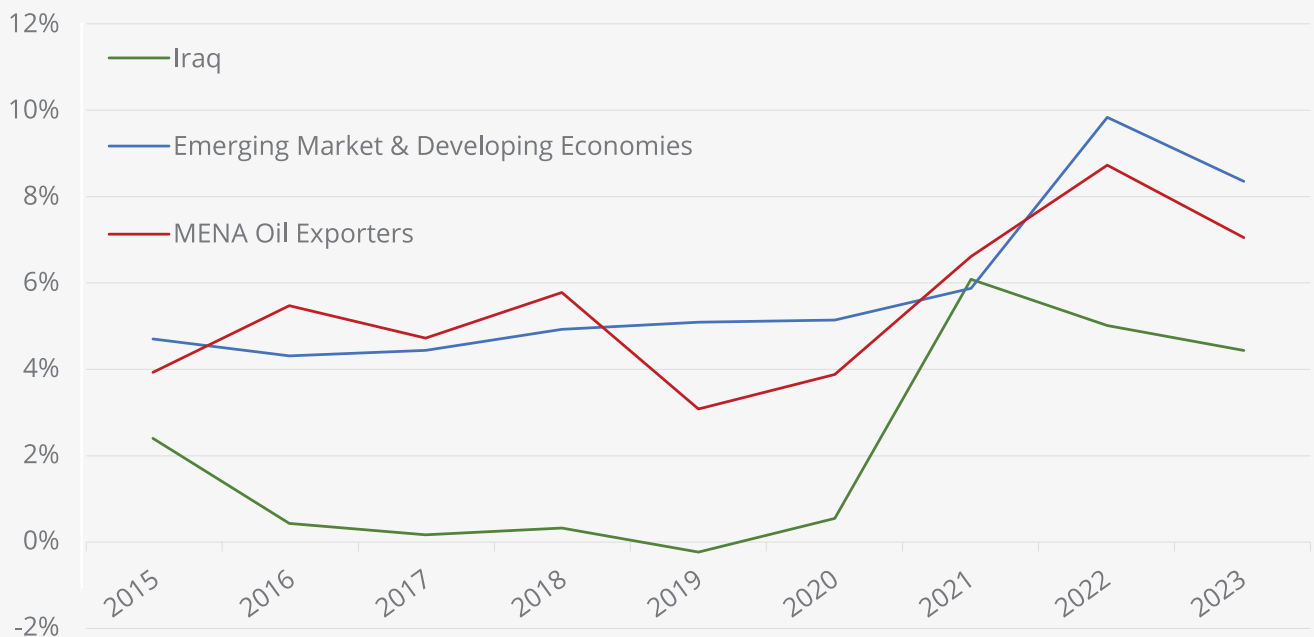
4. Ahmed Tabaqchali, "Debt and the Ides of March: An Overview of Iraq's 2023 Federal Budget Proposal", LSE Middle East Centre, May 8, 2023. <https://blogs.lse.ac.uk/mec/2023/05/08/debt-and-taxes-of-what-can-we-be-certain-in-iraqs-2023-federal-budget/>

5. "Entrenched Inflation Vs. Transitory Inflation - What's The Difference? What Are The Signs?", Forbes, November 12, 2022.

<https://www.forbes.com/sites/qai/2022/11/12/entrenched-inflation-vs-transitory-inflationwhats-the-difference-what-are-the-signs/?sh=74d24bbd3848>

6. "While inflation has decreased by late 2023, i.e., prices increased much more slowly than before. As such, higher prices have become permanent, and so the cost of living crisis persists for many of the vulnerable members of society.



**FIGURE 0: INFLATION IN IRAQ VS COMPARABLE ECONOMIES**

Iraq's inflationary trends followed similar patterns as those observed globally over 2020-2022. However, Iraq's inflationary levels, were still lower than those of comparable economies. Iraq's period of low and stable inflation between 2015 to 2020 (see Figure 0) was disrupted in 2021 when it increased to 6.1 percent compared to 2020, caused mostly by the 23 percent devaluation of the IQD versus the USD in December 2020. However, this was a period in which inflation in comparable economies, such as MENA Oil Exporters increased to 6.6 percent.

Moreover, in 2022, Iraq's inflation was 4.9 percent which was lower than comparable economies as Emerging Market & Developing Economies' inflation was 9.8 percent and that of MENA Oil Exporters at 8.7 percent (Figure 0)<sup>7</sup>.

Iraqis, as citizens of a major oil exporter and a net food importer, have both benefited from higher oil prices and suffered from permanently higher food prices, but not in equal measures. On the one hand, as discussed higher oil revenues have enabled the government to pursue expansionary fiscal policies, fuelling economic growth with positive spill over effects for the population at large. On the other hand, while domestic food prices have increased in-sync with global food prices, nevertheless the pass-through has been mitigated by government policies and actions, as argued by the IMF<sup>8</sup> through the prevalence of administered prices, and food and fuel subsidies. With the effectiveness of these actions in mitigating the pass-through of global food price increases being heavily influenced by the government's oil revenues.

Key among the food subsidies is the Public Distribution System (PDS), which covers around 95 percent of the Iraqi population. Food rations delivered through the PDS, have largely acted as a safety net for

7. Data for Figure 0 is taken from the IMF World Economic Outlook April 2024 database. "Inflation rate for 2015 for Iraq has been provided by CSGIS"

8. IMF Iraq Country Report no 23/75 for 2022. <https://www.imf.org/en/Publications/CR/Issues/2023/02/03/Iraq-2022-Article-IV-Consultation-Press-Release-and-Staff-Report-529146?cid=em-COM-123-46074>

most, in particular the most vulnerable members of the population. High oil revenues in 2021 and 2022, led to larger allocations to the PDS, and consequently to a consistent and full distribution of all food commodities in the PDS basket – which allow it to function as intended and in the process mitigate the pass-through of global food price increases. The data provided by the Ministry of Finance in its 2023 budget proposal shows continued high allocations are planned for 2023; and reflects the effects of oil revenues on the allocations to social welfare, including the PDS in 2020-2023 (table 1).

**TABLE 1: Public Distribution System**

Selected Social Welfare (IQD bn)	2020	2021	2022	2023
Public Distribution System, (PDS)	795	1,433	6,993	4,662
Wheat & Rice Imports	258	2,552	3,600	2,500
Farmers Support	245	275	963	768
Oil Revenues	55,955	96,622	154,039	102,967

Source<sup>9</sup>, note: 2023 figures are projections.

The larger allocations in 2022 were due to the combination of spending of one-twelfth of 2021 appropriations – the one-twelfth rule as no budget was passed for 2022 – and the Emergency Food Bill in June 2022, which was effectively a supplementary budget. By reviewing price changes of Iraqi foods, and food groups, within the context of changes in global food prices over 2020-2022, this paper aims to investigate the role that the PDS social protection scheme might have

played in mitigating food inflation in the country. The paper is divided in two parts: the first reviews Iraqi food price increases in the context of global food price increases by considering local and global baskets, and then extends this to food groups and the second section looks at the role that the PDS plays in mitigating the pass-through of global food price increases to domestic prices through focusing on four key staples, i.e., wheat flour, rice, vegetable oil and sugar.

## IRAQI AND GLOBAL FOOD PRICE CHANGES

This part compares a proxy for a global food basket, as well as the individual food groups, and compares them to a comparable domestic food basket and food groups, in order to assess Iraqi food prices in a global context. Global food baskets and food groups are based on the UN Food and Agricultural Organization (FAO) data, while domestic food prices are from data<sup>10</sup> of retail prices of 23 essential food items collected by the UN World Food Program (WFP)<sup>11</sup>. Moreover, data from the Iraqi Food Consumer Price Index and its food group aggregates produced by the Commission of Statistics and Geographical Information Systems (CSGIS)<sup>12</sup> are used to complement the food price data collected by WFP.

9. Proposal federal budget for 2023 by the Council of Ministers (CoM)  
<http://iraqieconomists.net/ar/wp-content/uploads/sites/2/2023/04/Budget-bill-2023-complete-with-tables.pdf>  
 Ministry of Finance, open budget data.  
<http://mof.gov.iq/obs/ar/Pages/obsDocuments.aspx>

10. <https://www.fao.org/about/en/>  
 11. <https://www.wfp.org/countries/iraq>

The team tracks the most frequently bought items within each category to ensure that the prices tracked are representative of what most of the population buys.  
 12. <https://cosit.gov.iq/ar/stat-index/index-number/cpi>.

## PRICE OF GLOBAL FOOD BASKET<sup>13</sup>

The FAO's Food Price Index (FFPI)<sup>14</sup> is used as a proxy for a basket of global food prices. Essentially, the FFPI is a measure of international prices for a basket of traded (exported) agricultural commodities and consists of the average of five commodity group price indices weighted by the average export shares of each of the groups in 2014-2016. These five group price indices are:

1. the FAO Cereal Price Index, compiled from the International Grains Council (IC) wheat price index, the IC Maize Price Index, the IC Barley Price Index, and the FAO All Rice Price Index,
2. the FAO Vegetable Oil Price Index, consisting of 10 different oils,
3. the FAO Dairy Price index, consisting of four dairy products: butter, cheese, skimmed milk powder, and whole milk powder,
4. the FAO Meat Price Index, consisting of four meat types: bovine, pig, poultry and ovine,
5. and the FAO Sugar Price Index, from the International Sugar Agreement prices.

### METHODOLOGY

To understand the impact of global and domestic food price inflation on an average household's food expenditure, the steps taken are outlined below:

#### Selection of proxy for an average Iraqi household's monthly consumption of essential foods (Iraqi Food Basket)

The WFP monitored Food Basket is chosen as it is a diversified food basket constructed for WFP's cash assistance programmes. Food items included in the baskets are elected such that it meets the macronutrient and caloric requirements for an average household in Iraq and takes in consideration food availability and preferences.

### Calculation of cost of food basket

To estimate the total cost of the basket, the cost of individual food items is summed up. WFP's food price monitoring data have been used to estimate the national average cost of each food item.

#### Comparison of the cost of the Iraqi food basket with Iraqi Food CPI

The trends in the change in the cost of the food basket are additionally compared with the Iraq Food Consumer Price Index and its subcomponents for different food groups (e.g. staples, fruits and vegetables etc.). to get a picture of the wider economy.

**TABLE 2: Adjusted WFP Food Basket (denoted by \*) vs the original**

WFP Food Basket		WFP* Food Basket		Notes
Components	Monthly Ration (kg/l)	Components	Monthly Ration (kg/l)	
Wheat Flour	6	Wheat Flour	7.5	
Rice	4.5	Rice	4.5	
Oil	0.9	Oil	0.9	
Lentils	1.2			
Salt	0.15			
Sugar	0.99	Sugar	0.99	
Bread (Khoboz)	1.5			
Chicken	0.9	Chicken, Beef, Lamb	0.3	of each
Potatoes	0.6			
Milk	0.24	Milk	0.12	
		Milk Powder	0.12	Converted to liquid
Cheese	0.25	Cheese	0.25	

13. All data are as of March 2023, and unless otherwise indicated, are sourced from WFP, FAO, and CSGIS.

14. FAO Food Price Index, <https://www.fao.org/worldfoodsituation/foodpricesindex/en/>

15. WFP, "Iraq: Annual Country Report 2022", March 02, 2023. <https://docs.wfp.org/api/documents/WFP-0000147960/download/>

## Comparison of cost of Iraqi food basket with global prices:

To compare the cost of the Iraqi Food Basket to global food prices, the FAO Food Price Index (explained in Box 1) is used (Table 2). Since the FAO Food Price Index has selected food items only, the Food Basket is adjusted to match these food items and food groups. The different food groups within the FAO Food Price Index are weighted by the average global export shares of each food group to provide a proxy for global average consumption. The Iraqi Domestic Food Basket is similarly weighted by the composition of the food items within the adjusted WFP food basket to act as a proxy of for the average Iraqi consumption of these items.

### Creation of an index and re-basing

To allow for easy and observable comparisons, the cost of the Iraqi food basket is converted into an index,

referred to as the WFP\* Food Basket Index. The WFP\* Food Basket Index and the FAO Food Price Index have been rebased with November 2020 as the starting point i.e. normalised to 100 in November 2020. November 2020 is chosen as this was the month prior to the devaluation of the Iraqi Dinar by 23percent compared to the US Dollar. It should be noted that comparisons between Iraqi domestic and global food prices, as constructed here should be taken in context.

### Limitations:

Firstly, Iraqi food prices (from both WFP and CSGIS data) are retail prices, which include retail costs such as transportation (to and within Iraq), custom taxes, distribution, storage, electricity, wages, and other retail costs; while the FAO Food Price Index reflects internationally traded food prices and does not include almost all the retail costs imbedded within Iraqi food prices. As such, changes in Iraqi

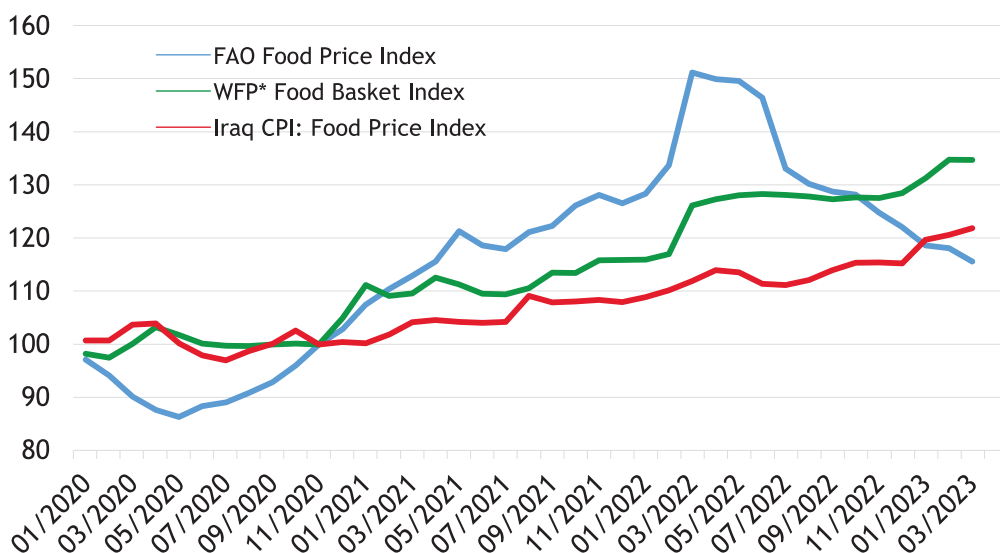
## THE FIVE WAVES

Using the FAO Food Price Index (figure 1) it can be seen that between January 2020 to March 2023, global food prices had five major waves of price changes<sup>16</sup>:

- I. The first wave was marked by sharp price declines between Jan 2020 – May 2020
- II. The second wave was marked by price increases between May 2020 – Jul 2021
- III. The third wave was marked by price increases between Jul 2021 – Jan 2022
- IV. The fourth wave was marked by steep price increases between Jan 2022 – Mar 2022
- V. The fifth wave was marked by price declines following the peak in Mar 2022 – Mar 2023

**FIGURE 1: IRAQ FOOD PRICE INDICES VS. FAO FOOD PRICE INDEX**

Rebased to 100 in November 2020



<sup>16</sup> The division into five waves is not so neat, as there two other waves of much shorter duration, i.e., declines in May 2020-July 2020, and in November 2021 and December 2021. However, it was decided for the sake of clarity to include these two short waves within the other waves.



food prices will also reflect changes in retail costs as well – especially energy prices given their feed through to other retail costs – which would influence overall retail food price changes.

Secondly, food items in the FAO indices are for unprocessed/raw foods, while the Iraqi food basket contains processed foods. For instance, the FAO Cereal Price Index includes wheat prices, but the Iraqi baskets contain wheat flour, which in theory should reflect wheat price increases, but with a time-lag as well as reflecting other costs involved in the converting wheat to wheat flour such the electricity used in wheat mills, as well as costs of packaging and transporting the flour. However, irrespective of these limitations, these comparisons are essential as they put the trends of Iraqi domestic food prices increases in the context of the trends of rising global food prices, especially the extent and speed of the pass-through of increasing global food process to domestic food prices, all of which puts Iraqi food changes in context.

Each of these waves broadly corresponded to major events as consequence of the two extraordinary events, that shapes global food and energy prices, but with time lags reflecting differences in each country's experience worldwide, and the associated disruptions to global supply chains.

The major events are:

- **Wave I** (Jan 2020 – May 2020): marked by sharp price declines, broadly corresponded with the initial onset of COVID-19, first in China in early 2020 and worldwide in March 2020 onwards, and the onset of the first global lockdown, earlier in China, from March

2020 onwards;

- **Wave II** (May 2020 – Jul 2021): marked by price increases, broadly corresponded with the final weeks of the the first global lockdown, followed by the emergence from this global lockdown in the summer of 2020, and then the second wave of COVID-19 infections (delta variant of COVID-19);

- **Wave III** (Jul 2021 – Jan 2022): marked by price increases, broadly corresponded with the emergence from the second global lockdown, that was less synchronised than the emergence from the first global lockdown, and the resumption of world economic growth;

- **Wave IV** (Jan 2022 – Mar 2022): marked by steep price increases, broadly corresponded with the rise in tensions over Ukraine in January 2020, with prices peaking in the immediate aftermath of Ukraine-Russia war; and

- **Wave V** (Mar 2022 – Mar 2023): marked by price declines, broadly corresponded with the time period post the initial peak in prices in March 2022 as fears over global food supplies subsided with the UN brokered Ukraine-Russia agreement on allowing the resumption of food exports from both countries, and consequently as global food supplies proved to be far more resilient than initially feared.

Using the Iraqi Food Price indices (WFP\* Food Basket Index, and the Iraqi CPI Food Price Index in figure 1), it can be seen that Iraqi food prices underwent two different price actions during the waves I-V.

The first price action was that the Iraqi Food Price indices increased in synch with global food prices increases during waves II-IV, but their increases were less than global food price increases during

**TABLE 3: Iraq Food Price Indices vs. FAO Food Price Index**

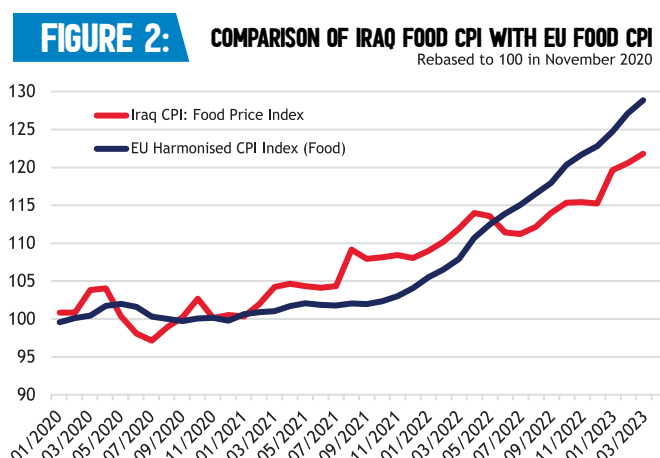
	Period	WFP* Food Basket Index	Iraq CPI: Food Price Index	Global: FAO Food Price Index
		% change in index		
Wave I	Jan 2020 – May 2020	3.6%	-0.5%	-11.1%
Wave II	May 2020 - Jul 2021	7.5%	4.0%	36.7%
Wave III	Jul 2021 - Jan 2022	6.0%	4.5%	8.9%
Wave IV	Jan 2022 - Mar 2022	8.8%	2.8%	17.8%
Wave V	Mar 2022 – Mar 2023	6.8%	8.9%	-23.6%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 - Nov 2020	-1.8%	-0.2%	15.9%
Post-Devaluation	Nov 2020 - Apr 2021	12.6%	4.6%	15.6%

the same periods (figure 1, table 3) – even though retail costs imbedded in these prices increased during these waves. As such supporting the argument made by the IMF that the pass-through to Iraqi food prices was muted by the PDS, fuel and other subsidies. The role that the PDS might have played reviewed in more detail in the second section of this piece. Worth noting that in wave II the WFP\* Food Basket, and Iraq's Food CPI increased by 7.5 percent, and 4.0 percent respectively, while the FAO Food Index increased by 36.7 percent even though halfway during this wave (i.e., in December 2020) the IQD was devalued by 23 percent against the USD. This last observation is repeated for food groups and individual food items in this section and the next section. While the second price action was that Iraqi food prices have mostly increased during waves I and V in which global prices declined sharply (Figure 1 and table 3). This is most likely due to the observation made earlier that Iraqi food prices (both WFP Food Basket Index and Iraqi Food CPI,) are retail prices, which include retail costs such as transportation (to and within Iraq), custom taxes, distribution, storage, electricity, wages, and other retail costs whose increases would have outweighed the decline in raw food prices. This trend can be seen in other parts of the world, in that food retail prices have continued to increase even though global food prices have declined sharply as can be observed by comparing the changes of Iraqi Food Price Index with that of the EU Harmonised CPI Index (Food) <sup>17</sup>.

This index measures inflation in Eurozone and

the European Union. While, the two indices reflect very different parts of the world yet both retail food prices reflect the same types (but different percentages) of retail costs that impact retail food prices and thus serves to explain why retail food prices increased while global food prices decreased.

A third price action for Iraqi consumer prices during waves I-IV, worth noting but not the subject of this piece, is that following the 23 percent devaluation of the IQD versus the USD in December 2020, Iraqi food prices increased sharply immediately following the devaluation with price increases peaking around April 2021, and then declining until July 2021 – with the April peak reflecting the maximum extent of the effect of devaluation on local prices. However, WFP\* Food Basket Index, and the Iraqi CPI Food Price Index increased by 12.6 percent, and 4.6 percent respectively during this period – with both increases less than the 15.6 percent increase in the FAO Food Price Index during the same period (figure 1, and table 3).



**TABLE 4:**

**Comparison of Iraq CPI Food Price Index with EU Harmonised CPI Food Price Index**

	Period	EU Harmonised CPI Index (Food)	Iraq CPI: Food Price Index
		% change in index	
Wave I	Jan 2020 – May 2020	2.5%	-0.5%
Wave II	May 2020 - Jul 2021	-0.2%	4.0%
Wave III	Jul 2021 - Jan 2022	3.7%	4.5%
Wave IV	Jan 2022 - Mar 2022	2.3%	2.8%
Wave V	Mar 2022 – Mar 2023	19.6%	8.9%
<b>IQD Devaluation in December 2020</b>			
Pre-Devaluation	May 2020 - Nov 2020	-1.8%	-0.2%
Post-Devaluation	Nov 2020 - Apr 2021	1.6%	4.6%

17. Source: Both indices peaked by early 2023, and then went sideways, i.e., stayed at elevated levels. Supporting the argument that while prices increased at much lower levels, yet higher prices have become permanent.  
Eurostat. [https://ec.europa.eu/eurostat/databrowser/view/PRC\\_FSC\\_IDX\\_custom\\_3513786/bookmark/?lang=en&bookmarkId=002935d0-f1d1-4419-9699-db9e2c48ced6](https://ec.europa.eu/eurostat/databrowser/view/PRC_FSC_IDX_custom_3513786/bookmark/?lang=en&bookmarkId=002935d0-f1d1-4419-9699-db9e2c48ced6)

## COMPARISON OF IRAQI AND GLOBAL PRICES BY FOOD GROUP

Prices of global food groups (cereals, edible oil, dairy, meat, sugar) are compared to their equivalents in Iraq, using the same methodologies used earlier for the food baskets, the same time frames, and subject to the same constraints in applying comparisons, i.e., Iraqi food prices are retail prices with a number of embedded costs that are not included in the FAO food group prices. Most of the five waves discussed earlier are observed for each global food group (obtained from the FAO Food Price Index), as well as the corresponding price actions of individual Iraqi food groups (obtained from the Iraqi CPI, and the WFP retail price monitoring). However, differences emerge between the groups reflecting the different sensitivity of each of the Iraqi food groups to global price prices, which in turn is directly related to the amounts of local production, and the import dependency ratio –i.e., imports as a percentage of total

consumptions– of each of these food groups in any given year. Crucially, weather and the availability of water in any given year have direct consequences on domestic food production and the volumes of imports needed to satisfy domestic consumption, and ultimately on the sensitivity of domestic food prices to global food prices. This sensitivity has been increasing in the last few years, as a function of the recent droughts and extreme water shortages, which have continuously decreased the areas available for planting and cultivation, leading to domestic production declines and thus to more imports. Moreover, the government, in particular its subsidy policies, and its financial conditions (table 1), have an effect on the economics of domestic production and thus play a role on the amount local production in any year, and thus on the import dependency ratio, and ultimately on sensitivity to global food price changes.

### CEREALS

FAO Cereal Price Index is used as a proxy for global cereals prices, which is compiled from the International Grains Council (IC) wheat price index, the IC maize price index, the IC barley price index and the FAO All Rice Price Index. Two cereal indices are used as proxies for domestic cereal consumption: the first is the “cereals and their products” subset from the Iraqi Food CPI index as composed by the CSGIS; while a cereal basket is created from the WFP retail price monitoring for wheat, rice, and bulgur. Weights are used to reflect food consumption with 40 percent for wheat, 40 percent rice and 20 percent for bulgur.

**TABLE 5**

**Comparison of Iraq and Global Cereal Price Indices**

	Period	Iraq Cereals Retail Price Index	Iraq CPI: Cereals & their products Index	Global: FAO Cereals Price Index
		% change in index		
Wave I	Jan 2020 – May 2020	3.2%	0.3%	-2.7%
Wave II	May 2020 - Jul 2021	4.9%	1.1%	28.8%
Wave III	Jul 2021 - Jan 2022	11.3%	3.6%	11.4%
Wave IV	Jan 2022 - Mar 2022	8.5%	1.7%	21.0%
Wave V	Mar 2022 – Mar 2023	7.1%	4.6%	-21.7%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 - Nov 2020	-2.5%	-0.6%	17.2%
Post-Devaluation	Nov 2020 - Apr 2021	12.6%	1.7%	9.9%

FIGURE 3

## Comparison of Iraq and Global Cereal Price Indices

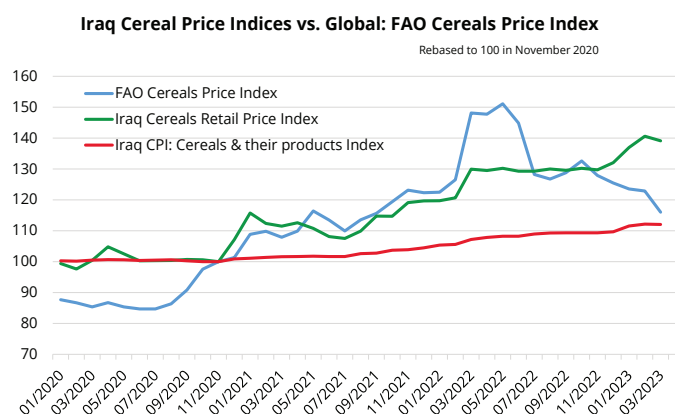
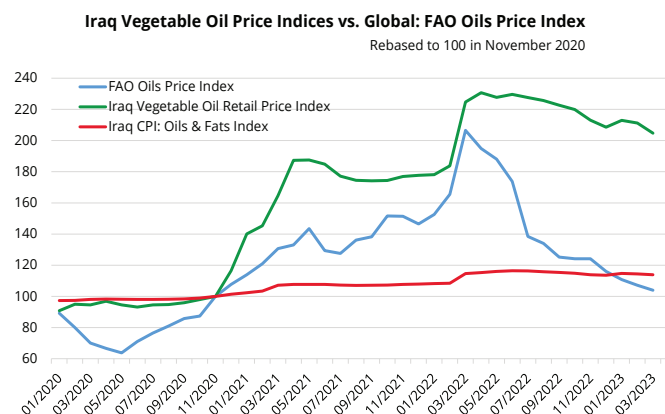


FIGURE 4

## Comparison of Iraq and Global Vegetable Oil Price Indices



## EDIBLE OILS

The FAO Oils Price Index is used as a proxy for global edible oils prices, which consists of 10 different oils. Two edible oil indices are used as proxies for domestic consumption: the first is the “oils and fats” subset from the Iraqi Food CPI index as composed by the CSGIS, while a vegetable oil price index is created from the retail price for vegetable oil.

TABLE 6

## Comparison of Iraq and Global Vegetable Oil Price Indices

	Period	Iraq Vegetable Oil Retail Price Index	Iraq CPI: Oils & Fats Index	Global: FAO Oils Price Index
		% change in index		
Wave I	Jan 2020 – May 2020	4.2%	0.9%	-28.5%
Wave II	May 2020 - Jul 2021	87.3%	9.3%	99.9%
Wave III	Jul 2021 - Jan 2022	0.5%	0.9%	19.6%
Wave IV	Jan 2022 - Mar 2022	26.2%	5.9%	35.4%
Wave V	Mar 2022 – Mar 2023	-8.9%	-0.6%	-49.7%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 - Nov 2020	5.7%	0.8%	56.8%
Post-Devaluation	Nov 2020 - Apr 2021	87.4%	8.8%	33.0%

Of all the food groups analyzed in this report, edible oils had a high pass through rate. Overall, increase in domestic prices of edible oil were higher compared to global prices, however, it must be noted that the reverse was true in Waves II-IV. This can be attributed to the very high sensitivity to global vegetable oil prices with imports accounting for 98 percent of consumption (as of the latest data for 2018<sup>18</sup>). Similarly, and in contrast to all the other Iraqi food groups, domestic price increases for edible oils prices increased significantly in the period post devaluation. Likely, exaggerating the effects of this sensitivity has been the limited PDS vegetable oil distributions in early-mid -2020 (figure 10).

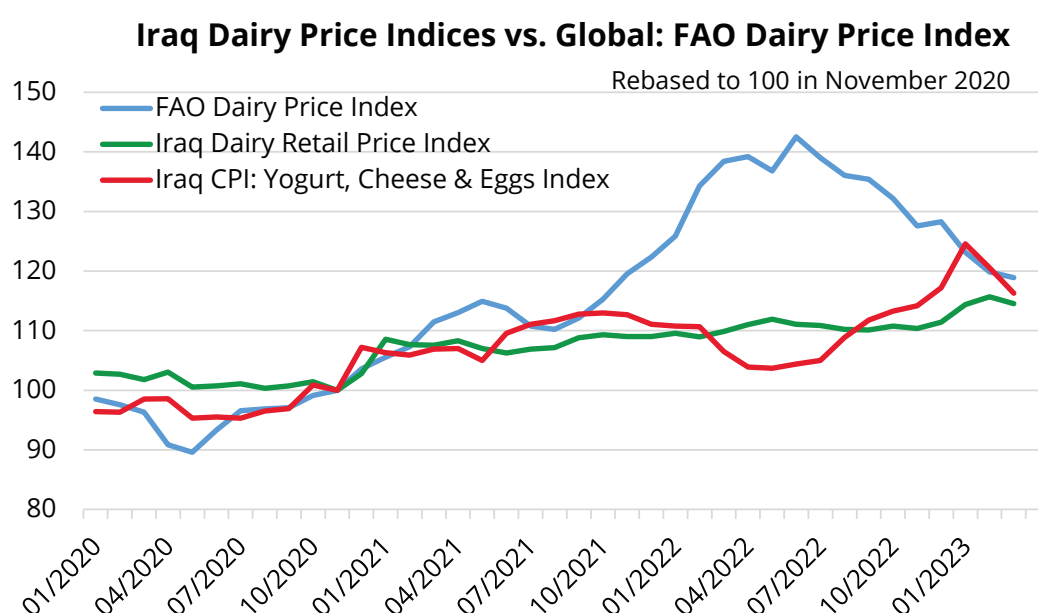
18. <https://docs.wfp.org/api/documents/WFP-0000136993/download/>



## DAIRY

The FAO Dairy Price Index is used as a proxy for global dairy prices, which consists of four dairy products: butter, cheese, skimmed milk powder, and whole milk powder. Two dairy indices are used as proxies for domestic dairy consumption: the first is the “yogurt, cheese and eggs” subset from the Iraqi Food CPI index as composed by the CSGIS; while a dairy basket is created from equal weights for WFP retail prices for milk, milk power (after converting it to liquid), and cheese.

**FIGURE 5** Comparison of Iraq and Global Dairy Price Indices



**TABLE 7** Comparison of Iraq and Global Dairy Price Indices

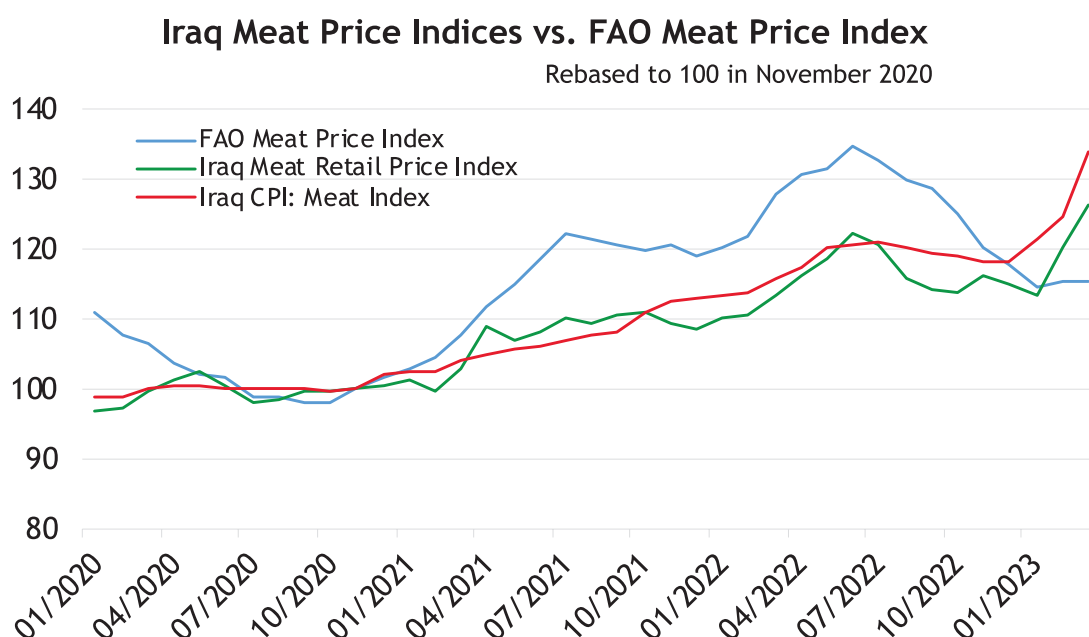
	Period	Iraq Dairy Retail Price Index	Iraq CPI: Yogurt, Cheese & Eggs Index	Global: FAO Dairy Price Index
		% change in index		
Wave I	Jan 2020 – May 2020	-2.3%	-1.1%	-9.1%
Wave II	May 2020 - Jul 2021	6.3%	16.5%	23.6%
Wave III	Jul 2021 - Jan 2022	2.5%	-0.3%	13.6%
Wave IV	Jan 2022 - Mar 2022	0.3%	-3.9%	10.0%
Wave V	Mar 2022 – Mar 2023	4.3%	9.2%	-14.1%
IQD Devaluation in December 2020				
Pre-Devaluation	May 2020 - Nov 2020	-0.5%	4.9%	11.6%
Post-Devaluation	Nov 2020 - Apr 2021	8.3%	7.0%	13.0%

## MEATS

The FAO Meat Price Index is used as a proxy for global meat prices, which consists of four meat types: bovine, pig, poultry and ovine. Two meat indices are used as proxies for domestic meat consumption: the first is the “meat” subset from the Iraqi Food CPI index as composed by the CSGIS; while a meats basket is created from equal weights for WFP retail prices for beef, lamb, and chicken.

**FIGURE 6**

### Comparison of Iraq and Global Meats Price Indices



**TABLE 8**

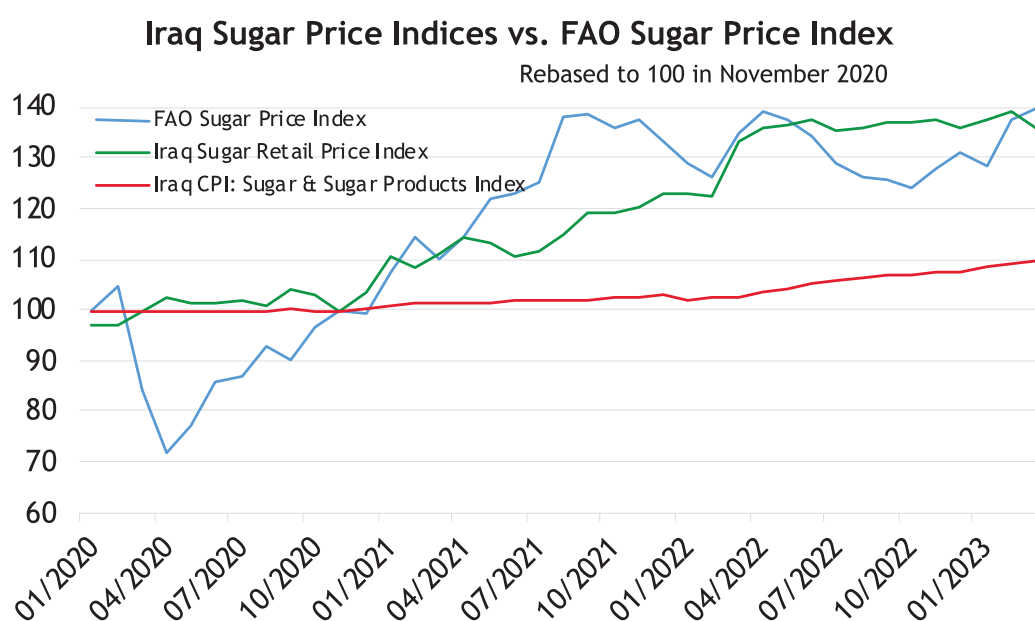
### Comparison of Iraq and Global Meat Price Indices

	Period	Iraq Meat Retail Price Index	Iraq CPI: Meat Index	Global: FAO Meat Price Index
		% change in index		
Wave I	Jan 2020 – May 2020	5.9%	1.7%	-7.9%
Wave II	May 2020 - Jul 2021	7.3%	6.4%	19.6%
Wave III	Jul 2021 - Jan 2022	0.0%	6.0%	-1.7%
Wave IV	Jan 2022 - Mar 2022	2.8%	2.3%	6.4%
Wave V	Mar 2022 – Mar 2023	11.4%	15.6%	-9.6%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 - Nov 2020	-2.6%	-0.5%	-2.2%
Post-Devaluation	Nov 2020 - Apr 2021	9.1%	4.9%	11.8%

## SUGARS

The FAO Sugar Price Index is used as a proxy for global sugar prices, which is the index form of the International Sugar Agreement price. Two sugar indices are used as proxies for domestic sugar consumption: the first is the “sugar and sugar products” subset from the Iraqi Food CPI index as composed by the CSGIS, while a sugar price index is created from the WFP retail sugar price.

**FIGURE 7** Comparison of Iraq and Global Sugar Price Indices



**TABLE 9** Comparison of Iraq and Global Sugar Price Indices

	Period	Iraq Sugar Retail Price Index	Iraq CPI: Sugar & Sugar Products Index	Global: FAO Sugar Price Index
		% change in index		
Wave I	Jan 2020 – May 2020	4.3%	0.2%	-22.5%
Wave II	May 2020 - Jul 2021	9.9%	2.1%	61.5%
Wave III	Jul 2021 - Jan 2022	9.8%	0.1%	2.8%
Wave IV	Jan 2022 - Mar 2022	8.3%	0.5%	4.7%
Wave V	Mar 2022 – Mar 2023	2.4%	6.5%	3.6%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 - Nov 2020	-1.6%	0.0%	29.0%
Post-Devaluation	Nov 2020 - Apr 2021	14.4%	1.7%	14.2%



# THE PUBLIC DISTRIBUTION SYSTEM AND THE ROLE IT PLAYS IN DOMESTIC FOOD PRICES

## INTRODUCING THE PUBLIC DISTRIBUTION SYSTEM

The Public Distribution System (PDS)<sup>19</sup>, is a universal non-contributory social transfer programme, enacted in the 1990's following widespread food shortages after the imposition of sanctions on the country.

The PDS provides in-kind transfers through food rations to nearly every household in Iraq at negligible cost to the recipients. During the sanction era, the PDS played a crucial role in meeting the minimum caloric needs of the population, and throughout the last few decades of conflict and instability acted as an important safety net for the poor, and thus has been among the key tangible benefits delivered by the state. In 2012, it reached 99 percent of the poor and 95 percent of the non-poor, accounting for 70 percent of the caloric consumption of the bottom 40 percent of households and for 45 percent of the caloric consumption of the richest quintile<sup>20</sup>.

Moreover, in 2012, the value of PDS-sourced food accounted for 30 percent of food expenditure and 16 percent of total expenditure of the poorest decile<sup>21</sup>.

Under the PDS, eligible recipients receive ration cards entitling them to fixed quantities of selected commodities in proportion to the size of the household. The food basket initially consisted of ten items, but that has shrunk over the years to essentially four staples which are wheat flour, rice, sugar, and vegetable oil. This trend was

reversed in July 2021, as the government changed the items and allocations under the PDS food basket to include: 1 kg of sugar, 9 kg of wheat flour, 3kg of rice, 0.3kg of tomato paste, and 1 kg of legumes (beans, lentils, or chickpeas)<sup>22</sup> and 1 litre of cooking oil per person<sup>22</sup>. Moreover, the current government has increased and improved the items in the PDS for those under social welfare and those with limited incomes<sup>23</sup>. Taken together, (brown) wheat flour, rice, vegetable oil and sugar account for almost 98 percent of total ration expenditures of a hypothetical representative household<sup>24</sup>. This has likely affected the allocations of these four items in the PDS basket, and as such the analysis in this section focuses on these four ration items in assessing the effects of the PDS on domestic prices.

This section looks at whether PDS distribution was impacted by changes in domestic and global prices. The analysis uses PDS distribution data from 2020 to 2022, provided by the Ministry of Trade, and Iraqi and Global price indices for the four main items of the PDS i.e. wheat flour, rice, edible oil and sugar. The Global price indices are obtained from the FAO Price Index, while the Iraqi price indices are obtained from the WFP retail monitoring, for the period January 2020 to March 2023.

19. Data on PDS is data is largely based on reports issued by the US Department of Agriculture (USDA)'s Foreign Agricultural Services (FAS). Reports include general world reports as well Iraq specific reports.

<https://www.fas.usda.gov/regions/iraq>

[https://www.fas.usda.gov/data/search?reportspercent5B0percent5D=report\\_regionspercent3A374](https://www.fas.usda.gov/data/search?reportspercent5B0percent5D=report_regionspercent3A374)

20. WB (2020). Iraq's Universal Public Distribution System - Utilization and Impacts During Displacement

It should be noted that country consumption patterns and preferences, experience changes over time, yet these changes are long in the making and as such consumption patterns observed in 2012 are largely unchanged.

21. Ibid.

22. The US Department of Agriculture (USDA)'s Foreign Agricultural Services (FAS): <https://www.fas.usda.gov/regions/iraq>

This source is further corroborated by statements from the Ministry of Trade in January 2023 regarding the changed nature of the basket.

"A new statement from Ministry of Trade regarding the food basket: increasing the items for two tranches", NasNews, January 14, 2023: <https://www.nasnews.com/view.php?cat=100324>

23. "Ministry of Trade issues directives regarding the delivery of food items with the PDS", NasNews, January 14, 2023: <https://www.nasnews.com/view.php?cat=100324>

24. The assumption that these represent a hypothetical representative household is based on the findings of the Iraq Household Socio-Economic Survey 2012 (IHSES 2012), which while undertaken over 10 years ago nevertheless reflects consumption patterns whose change is very gradual and thus still useful today. The IHSES covered roughly 25,000 households and was designed to be representative at the governorate (provincial) level. The survey collected detailed data on all aspects of household income and expenditure and a wide variety of socioeconomic indicators (World Bank, 2013). There were 13 ration products among the food ration: rice, brown wheat flour, white wheat flour, children's food, powdered milk, vegetable fat, vegetable oil, dry white beans, chick-peas, lentils, sugar, salt, and tea. The top 4, were brown wheat flour (36 percent), sugar (26 per cent of total ration expenditure), vegetable oil (22 per cent) and rice (14 per cent) for a total of 98 percent



## THE PUBLIC DISTRIBUTION SYSTEM EFFECT ON DOMESTIC FOOD PRICES

The PDS influences domestic prices indirectly, through its effects on the prevailing supply and demand dynamics for the food rations that it provides<sup>25</sup> – an effect that varies according to the frequency, consistency, and completeness of the ration distributions<sup>26</sup>. These in turn, are heavily influenced by the government's financial position (i.e., its oil revenues), the budget's status (i.e., whether a budget has been enacted for a given year, as well as the timing of the budget's enactment) – all of which play a part in the allocations for funds to the PDS, and other payments that effect the availability of produce in the country such as farmer support, imports of wheat and rice (table 10); and ultimately on domestic food prices.

Moreover, the effects of the PDS on domestic prices also stems from its twin role as an agricultural subsidy scheme controlling the local production of wheat and rice, and in purchasing this production at administratively set prices for the PDS basket. Furthermore, the weather, and the availability of water, play a role in the functioning of the PDS as an agricultural subsidy scheme, through their availability determining the planting areas available for production, which affect their domestic supply, and subsequently the need for imports, and ultimately the sensitivity to global prices.

**TABLE 10<sup>27</sup>** Public Distribution System

Selected Social Welfare (IQD bn)	2020	2021	2022	2023
Public Distribution System (PDS)	795	1,433	6,993	4,662
Wheat & Rice Imports	258	2,552	3,600	2,500
Farmers Support	245	275	963	768
Oil Revenues	55,955	96,622	154,039	102,967
PDS Distributions	2020	2021	2022	N/A
Wheat Flour				
Frequency	8	13	7	
Amount ('000 tons)	2,864	4,314	2,372	
Rice				
Frequency	3	6	11	
Amount ('000 tons)	361	669	1,367	
Sugar				
Frequency	3	7	11	
Amount ('000 tons)	236	436	451	
Vegetable Oil				
Frequency	2	8	11	
Amount ('000 tons)	72	229	411	

**Note:** There is a time lag between the enactment and timing of distribution of a particular distribution (which varies significantly), and the data seems to suggest that a given month might have more than one allocation of a ration. 2023 Figures are projections provided by the Ministry of Finance.

25. Important to note: Most of the families that receive brown wheat flour portions, at subsidised prices, either sell it to end up either as animal or fish feed due to its low quality or sell it to bakeries for those who can't bake it at home. Most urban families, end up buying their daily bread needs from private bakeries, who use imported wheat flour mostly from Turkey, and to a lesser extend from Iran. As such, the wheat flour distributed under the PDS, still ends up subsidising family purchases of bread.

Interesting to note that, although, the PDS procures wheat from domestic sources, and imports wheat from the United States, Canada, and Australia, yet most of the wheat flour in the marketplace is imported from Turkey which is the largest regional producer of wheat, which given the weakness of its currency has likely helped with moderating wheat flour price increases.

26. The importance of consistent, complete and frequent distribution of the items in the PDS food basket in ensuring domestic food price stability, and in holding back price increases is often made by the Ministry of Trade such as in the statement by the ministry's media office on January 11, 2023 "The Ministry of Commerce, through its duties in securing the items of the food basket (PDS) for citizens, has effects 11 full basket distributions in the prior year, contributed to creating a balance in the local market and controlling prices." Source: "A new statement from Ministry of Trade regarding the food basket: increasing the items for two tranches", NasNews, January 14, 2023: <https://www.nasnews.com/view.php?cat=100324>

27. The Ministry of Trade has provided data on the PDS rations for the years 2020-2022, which has greatly contributed to the effectiveness of this review, and is greatly appreciated.

## HIGH DOMESTIC CONTENT VS HIGH IMPORT CONTENT

The price data, and the PDS distribution data for 2020-2022 show two different price actions within the four staples in the impact that the PDS has on their price changes.

Wheat flour and rice prices acted in similar ways, but different extents, given the extent of local production of each versus imports, as well as the

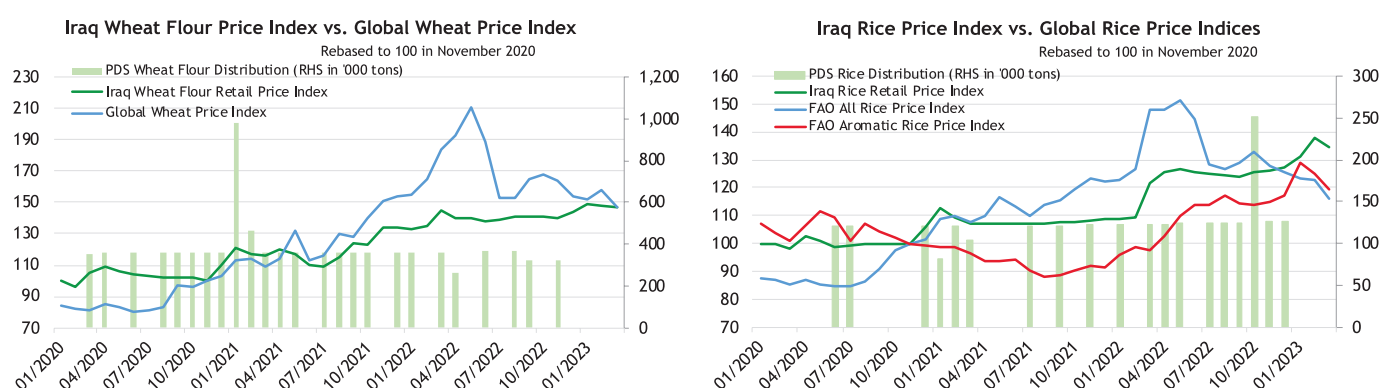
frequency and consistency of their distributions within the PDS. While sugar and vegetable oil acted in similar ways, but different extents, given the very high dependency on imports for these two items, and the frequency and consistency of their distributions within the PDS.

### High Domestic Content

(1) for domestic wheat flour prices, the comparisons are made with the global price of wheat<sup>28</sup>, which while not a direct comparison, yet wheat flour price changes should reflect those of the price of wheat, with a lag<sup>29</sup>;

(2) domestic rice prices, the comparisons are made to the FAO All Rice Price Index and to its Aromatic sub-index which follows the movement of prices of Basmati and fragrant rice varieties. The Aromatic sub-index was chosen to reflect the high concentration of Iraqi imports of rice from India.

**FIGURES 8 AND 9: Comparison of Iraq and Global Rice and Wheat Price Indices**



**Note:** Food price data is for January 2020-March 2023, while PDS distribution data is for January 2020-December 2022.

**TABLE 11 Comparison of Iraq Global Wheat and Rice Price Indices**

	Period	Iraq Wheat Flour Retail Price Index	Global: FAO Wheat Price Index	Iraq Rice Retail Price Index	Global: FAO Aromatic Rice Price Index	Global: FAO All Rice Price Index
		% change in index		% change in index		
Wave I	Jan 2020 – May 2020	5.6%	-1.8%	1.1%	4.3%	12.0%
Wave II	May 2020 – Jul 2021	3.5%	39.3%	5.8%	-19.2%	-12.6%
Wave III	Jul 2021 – Jan 2022	21.6%	33.8%	1.5%	6.4%	0.2%
Wave IV	Jan 2022 – Mar 2022	9.1%	18.9%	12.0%	1.6%	1.6%
Wave V	Mar 2022 – Mar 2023	1.5%	-20.2%	10.7%	22.5%	17.7%
<b>IQD Devaluation in December 2020</b>						
Pre-Devaluation	May 2020 – Nov 2020	-5.4%	20.5%	-1.0%	-10.4%	-6.2%
Post-Devaluation	Nov 2020 – Apr 2021	20.3%	13.8%	7.3%	-6.3%	1.7%

28. <https://fred.stlouisfed.org/series/PWHEAMTUSD>

29. The lag between increases in price of wheat and increases in price of wheat flour is a consequence of transmission along the value chain reflecting the costs involved in the converting wheat to wheat flour such the electricity used in wheat mills, as well as costs of packaging and transporting the flour.

Important to note: Most of the families that receive wheat flour portions, at subsidised prices, either sell it to end up either as animal or fish feed due to its low quality or sell it to bakeries for those who can't bake it at home. Most urban families, end up buying their daily bread needs from private bakeries, who use imported wheat flour mostly from Turkey, and to a lesser extend from Iran<sup>1</sup>. As such, the wheat flour distributed under the PDS, ends up subsidising family purchases of bread.

So, although, the PDS procures wheat from domestic sources, and imports wheat from the United States, Canada, and Australia, yet the most of the wheat flour in the market place is imported from Turkey which is the largest regional producer of wheat.

While it is impossible for the PDS to fully negate the pass-through of higher global food prices to domestic food prices given the mechanism of its indirect effects on food prices through the supply-demand balance.

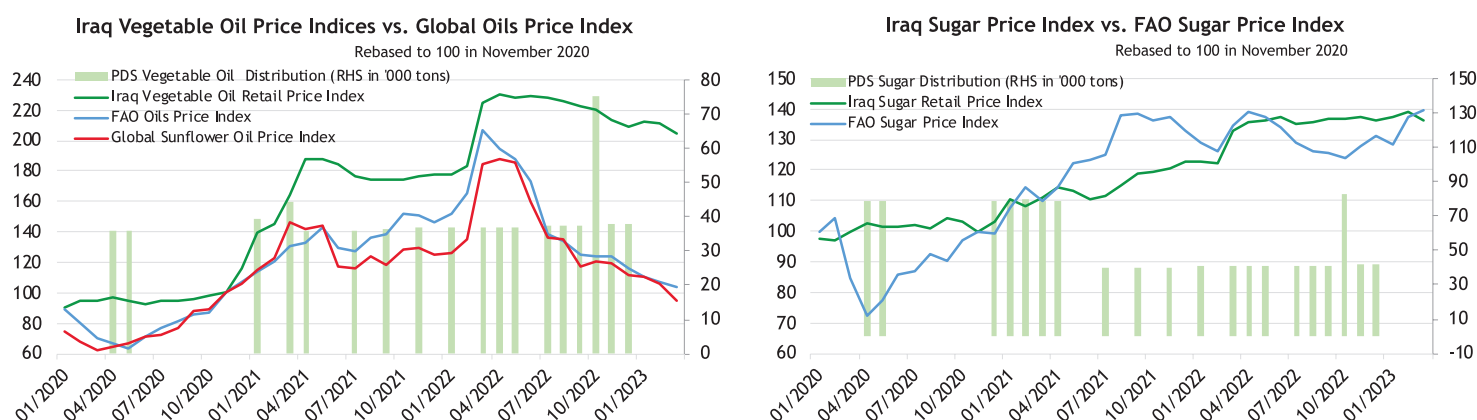
Nevertheless, the PDS in the case of high domestic content has clearly contributed

meaningfully to moderating domestic price increases as well price stability for wheat flour given the frequent and consistent distributions (figure 8, table 11), and for rice (figure 9, table 11) – with rice less so given the lower frequency of distribution and the higher dependence on imports.

## HIGH IMPORT CONTENT

(1) for domestic edible oil prices, the comparisons are made to the FAO Oils Price Index, and to the global sunflower oil price index given the domestic preference for sunflower oil over other vegetable oils. (2) For domestic sugar prices, the comparisons are made to the FAO Sugar Price Index.<sup>30</sup>

**FIGURES 10 AND 11: Comparison of Iraq and Global Edible Oil and Sugar Price Indices**



**Note:** Food price data is for January 2020-March 2023, while PDS distribution data is for January 2020-December 2022

**TABLE 12 Comparison of Iraq Global Edible Oil and Sugar Price Indices**

	Period	Iraq Vegetable Oil Retail Price Index	Global: FAO Sunflower Oil Price Index	Global: FAO Oils Price Index	Iraq Sugar Retail Price Index	Global: FAO Sugar Price Index
		% change in index			% change in index	
Wave I	Jan 2020 - May 2020	4.2%	-10.0%	-28.5%	4.3%	-22.5%
Wave II	May 2020 - Jul 2021	87.3%	73.4%	99.9%	9.9%	61.5%
Wave III	Jul 2021 - Jan 2022	0.5%	9.2%	19.6%	9.8%	2.8%
Wave IV	Jan 2022 - Mar 2022	26.2%	46.0%	35.4%	8.3%	4.7%
Wave V	Mar 2022 - Mar 2023	-8.9%	-48.4%	-49.7%	2.4%	3.6%
<b>IQD Devaluation in December 2020</b>						
Pre-Devaluation	May 2020 - Nov 2020	5.7%	49.8%	56.8%	-1.6%	29.0%
Post-Devaluation	Nov 2020 - Apr 2021	87.4%	42.4%	33.0%	14.4%	14.2%

The high import dependency, especially for vegetable oil, has resulted in quick and high domestic price increases during periods of sharp international price increases- less so for sugar given the different nature of its usage to vegetable oil and its somewhat lower import dependency. Nevertheless, the frequency and consistency of their distribution within the PDS has led to a period of price stability as can be seen in figures 10 and 11.

30. <https://fred.stlouisfed.org/series/PSUNOUSDM>

## CONCLUSIONS & RECOMMENDATIONS

By reviewing price changes of Iraqi foods, and food groups, within the context of changes in global food prices over 2020-2022 and the PDS distribution through the same period, this paper showed that the consistent and frequent distribution of the items in the PDS food basket has played a key role in holding back domestic prices increases and leading to price stability even in an environment of rising global food prices, as well high entrenched retail costs (figures 8-11). This relates to the budget allocations to PDS, as well as the quantity of commodities injected in the market by the PDS (table 10).

Yet, it was impossible for the PDS to fully negate the pass-through of higher global food prices to domestic food prices given the mechanism of its indirect effects on food prices through the supply-demand balance. As such, Iraqi food prices have increased in synch with global food prices increases during the same periods, but the pass-through has been muted by the PDS.

While the positive role of PDS in mitigating food inflation in the country is recognised, reforms in the PDS are needed to improve its effectiveness and efficiency in addressing food insecurity and nutrition in the country. Supported by the UN community, the Government has recognized the need to reform the PDS, including through the introduction of digital solutions and revamping targeting to be need-based and shock-responsive.

Introduction of a need-based shock-responsive targeting approach. The current PDS eligibility criterion based on income (IQD 2 million) is difficult to implement because of lack of digitalisation of several government ministries and interoperability of various government systems. Furthermore, the current monetary eligibility criterion does not encapsulate the level of vulnerability or food insecurity of a household, as there are several multi-dimensional indicators analysing a household's adaptive capacity, coping mechanisms, and resilience. In addition, universally provided benefits are cost inefficient for governmental budget resources. During the COVID-19 pandemic, as the price of oil dropped, the Government saw its fiscal space shrinking and PDS distribution halted for citizens - for the most vulnerable and food insecure poor and wealthy equally. This was also due to the fact that neither targeting nor prioritisation were possible with the limited PDS data fields (name, gender, date of birth). The Iraqi Ministry of Trade (MOT) runs the PDS through the MoT Law No. (37) of 2011. In addition to the law, the MoT has issued many instructions and regulations for PDS, including roles and responsibilities, regulations for food items and flour agents, and guidelines for distributing ration cards. However, a legal framework for electronic PDS is not yet developed by the Iraqi Parliament, despite its announcement in 2018.



## THE FOLLOWING ARE SUGGESTED RECOMMENDATIONS TO IMPROVE THE EFFECTIVENESS AND EFFICIENCY OF THE PDS:

### RECOMMENDATION 1:

Continue the efforts to implement end-to-end digitalisation of PDS, including a reform in the supply chain component. The MoT with the support of international partners is reforming the PDS to transition from a paper-based system to an end-to-end digitalized system. This includes digitalisation of registration, redemption, and change requests processes.

End-to-end digitalisation should continue to be promoted to foster cost-saving and reduce inefficiencies in the system. Further gains in efficiency and effectiveness can be accrued to the digitalisation of the supply chain component of PDS.

### RECOMMENDATION 2:

The introduction of a shock-responsive and food-sensitive targeting approach for PDS will improve its effectiveness and cost-efficiency, helping addressing inequalities, building resilience and social cohesion. By excluding the wealthier tier of the population, who does not consume the food basket, the Government will be able to save up resources that can be re-invested in the PDS to ensure that those who are most vulnerable receives a better food basket in terms of quality and quantity contributing to their food and nutrition security.

### RECOMMENDATION 3:

Social Behavior Change Communications. Campaign to accompany the PDS Reform. A comprehensive SBCC Campaign should complement the reform efforts in terms of digitalisation and targeting. The outreach campaign is needed to change the perception around digitalisation of the process and the mindset of the population who is currently looking at PDS as an entitlement rather than a social assistance directed at those at risk of food insecurity. It is vital for the reform process to be accompanied by the SBCC campaign to ensure that the implementation of targeting will be widely accepted by the population, avoiding social discontent.

### RECOMMENDATION 4:

Improvements in the quality and quantities of the PDS food basket. Through costs savings derived from improved efficiency, the Government could look at improving the quality and nutritional content of the food basket to ensure that it not only meets their caloric but also nutritional needs in order to improve its effectiveness in addressing food insecurity and malnutrition. These improvements need to be based on a further study on the nutritional content of the PDS food basket and recommendations on how its nutritional value could be improved at similar costs bearing in mind supply-side difficulties of delivering high-nutritional value commodities like fruits and vegetables. Moreover, to fill the current data gap in terms micronutrients deficiencies and needs of the population, a micronutrients analysis should be conducted as fortification of key commodities (e.g., wheat flour) could be considered.

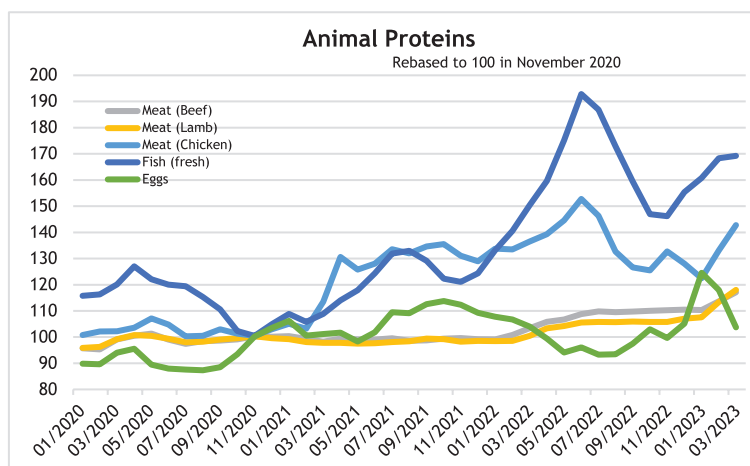
### RECOMMENDATION 5:

Support the Iraqi government's issuance of a law specific to PDS. Given the importance of the public distribution program in Iraq's food security, we recommend the Iraqi government, and all stakeholders take a step forward to the issuance of an independent law specific to PDS.

## APPENDIX: PRICE INDICES OF INDIVIDUAL FOOD ITEMS

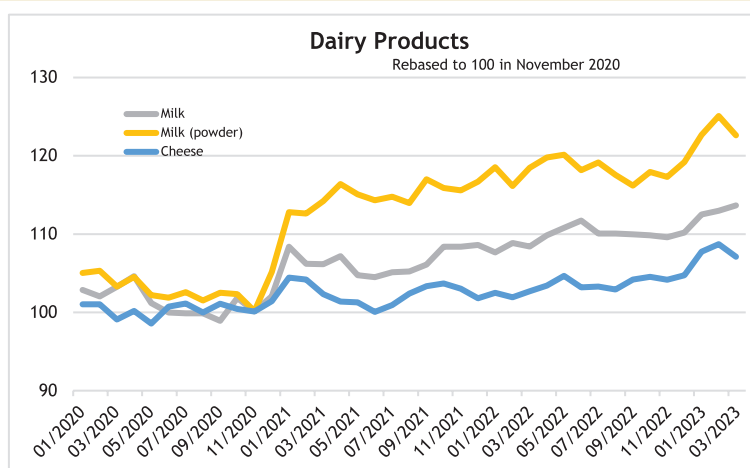
This appendix reviews the prices of 23 essential food items in Iraq, as compiled by WFP, over the past three years, using the same methodologies and subject to the same constraints in applying comparisons, i.e., Iraq food prices are retail prices with a number of embedded costs.

### IRAQI FOOD PRICE INDICES (2020 TO 2023): MEATS, FISH AND EGGS



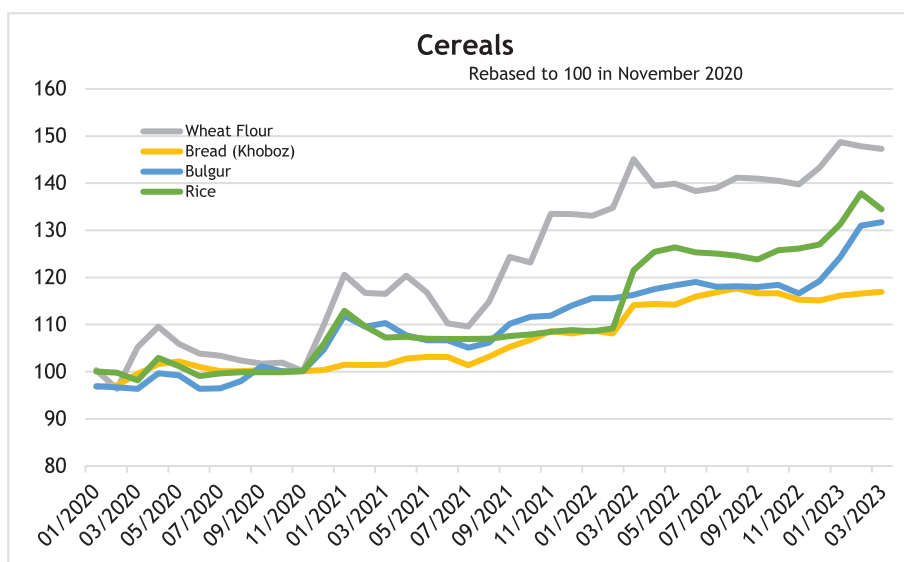
	Period	Meat (Beef)	Meat (Lamb)	Meat (Chicken)	Fish (fresh)	Eggs
Wave I	Jan 2020 – May 2020	6.1%	5.0%	6.4%	5.5%	-0.4%
Wave II	May 2020 - Jul 2021	-1.9%	-2.5%	25.1%	8.1%	23.0%
Wave III	Jul 2021 - Jan 2022	-0.5%	0.4%	0.2%	1.0%	-1.6%
Wave IV	Jan 2022 - Mar 2022	4.5%	2.2%	2.1%	13.1%	-3.6%
Wave V	Mar 2022 – Mar 2023	13.8%	18.1%	4.7%	12.7%	-0.3%
<b>IQD Devaluation in December 2020</b>						
Pre-Devaluation	May 2020 - Nov 2020	-1.1%	-0.2%	-6.3%	-17.9%	12.3%
Post-Devaluation	Nov 2020 - Apr 2021	-0.9%	-2.6%	30.6%	13.6%	1.6%

### IRAQI FOOD PRICE INDICES (2020 TO 2023): DAIRY PRODUCTS



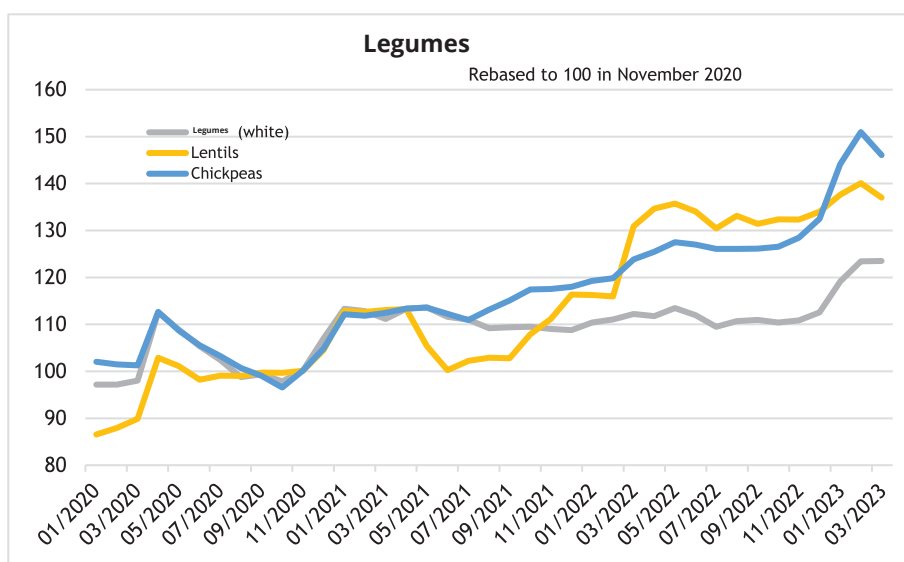
	Period	Milk	Milk (powder)	Cheese
Wave I	Jan 2020 – May 2020	-1.7%	-2.7%	-2.5%
Wave II	May 2020 - Jul 2021	4.0%	12.4%	2.5%
Wave III	Jul 2021 - Jan 2022	2.4%	3.3%	1.6%
Wave IV	Jan 2022 - Mar 2022	0.7%	-0.1%	0.2%
Wave V	Mar 2022 – Mar 2023	4.9%	3.5%	4.4%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 - Nov 2020	-1.1%	-2.0%	1.6%
Post-Devaluation	Nov 2020 - Apr 2021	7.2%	16.4%	1.3%

## IRAQI FOOD PRICE INDICES (2020 TO 2023): CEREALS



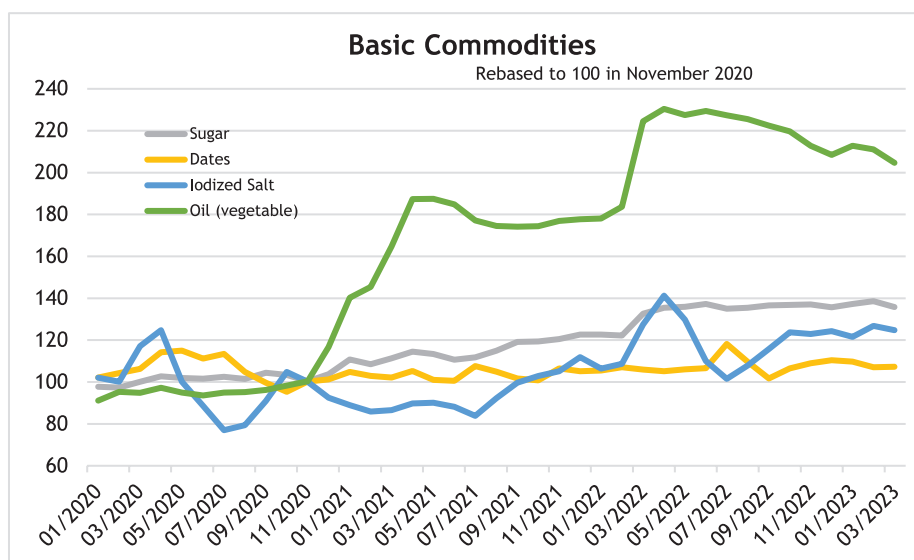
	Period	Wheat Flour	Bulgur	Rice	Bread (Khoboz)
Wave I	Jan 2020 – May 2020	5.6%	2.4%	1.1%	5.7%
Wave II	May 2020 - Jul 2021	3.5%	6.0%	5.8%	-0.8%
Wave III	Jul 2021 - Jan 2022	21.6%	10.1%	1.5%	7.4%
Wave IV	Jan 2022 - Mar 2022	9.1%	0.6%	12.0%	5.0%
Wave V	Mar 2022 – Mar 2023	1.5%	13.4%	10.7%	2.5%
<b>IQD Devaluation in December 2020</b>					
Pre-Devaluation	May 2020 - Nov 2020	-5.4%	0.9%	-1.0%	-2.0%
Post-Devaluation	Nov 2020 - Apr 2021	20.3%	7.7%	7.3%	2.7%

## IRAQI FOOD PRICE INDICES (2020 TO 2023): LEGUMES



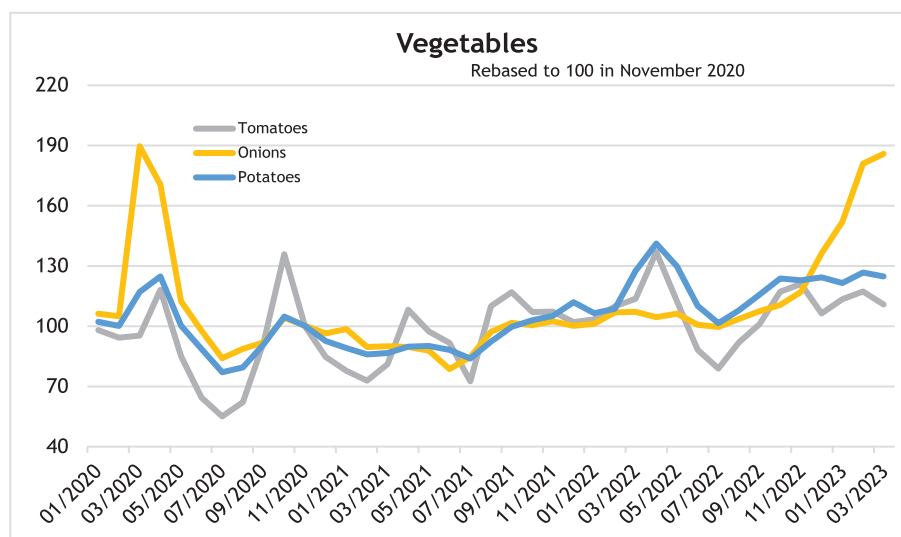
	Period	Beans (white)	Lentils	Chickpeas
Wave I	Jan 2020 – May 2020	12.2%	17.0%	6.6%
Wave II	May 2020 - Jul 2021	2.0%	1.1%	2.1%
Wave III	Jul 2021 - Jan 2022	-0.6%	13.8%	7.6%
Wave IV	Jan 2022 - Mar 2022	1.7%	12.7%	3.8%
Wave V	Mar 2022 – Mar 2023	10.2%	4.7%	18.1%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 - Nov 2020	-8.1%	-1.0%	-7.9%
Post-Devaluation	Nov 2020 - Apr 2021	13.3%	13.2%	13.3%

## IRAQI FOOD PRICE INDICES (2020 TO 2023): BASIC COMMODITIES



	Period	Sugar	Oil (vegetable)	Iodized Salt	Tea	Dates
Wave I	Jan 2020 – May 2020	4.3%	4.2%	-1.6%	2.8%	13.0%
Wave II	May 2020 – Jul 2021	9.9%	87.3%	5.7%	6.0%	-6.6%
Wave III	Jul 2021 – Jan 2022	9.8%	0.5%	0.7%	3.0%	-2.0%
Wave IV	Jan 2022 – Mar 2022	8.3%	26.2%	6.4%	0.2%	0.4%
Wave V	Mar 2022 – Mar 2023	2.4%	-8.9%	-1.9%	4.2%	1.3%
<b>IQD Devaluation in December 2020</b>						
Pre-Devaluation	05/2020 – 11/2020	-1.6%	5.7%	5.4%	1.3%	-13.2%
Post-Devaluation	11/2020 – 04/2021	14.4%	87.4%	-0.3%	5.5%	5.2%

## IRAQI FOOD PRICE INDICES (2020 TO 2023): VEGETABLES



	Period	Tomatoes	Potatoes	Onions
Wave I	Jan 2020 – May 2020	-13.4%	-1.9%	5.8%
Wave II	May 2020 – Jul 2021	-14.8%	-16.5%	-24.9%
Wave III	Jul 2021 – Jan 2022	43.0%	27.3%	19.8%
Wave IV	Jan 2022 – Mar 2022	10.0%	20.0%	6.0%
Wave V	Mar 2022 – Mar 2023	-2.6%	-2.1%	74.1%
<b>IQD Devaluation in December 2020</b>				
Pre-Devaluation	May 2020 – Nov 2020	17.8%	0.0%	-10.8%
Post-Devaluation	Nov 2020 – Apr 2021	8.3%	-10.5%	-10.7%







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