Can Food-Security Policies in Tunisia be Better Targeted?

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Can food-security policies in Tunisia be better targeted?

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Introduction

- Food security is a major policy concern in developing nations where poverty reduction and hunger elimination are primary development goals.
- Tunisia is a representative case of a developing North-African country with increasing grain trade deficits (“import-dependent”).
- Grains are vital for Tunisia's economy and food security.
- The government of Tunisia (GoT) has been using a series of policies subsidizing food consumption to mitigate the price volatility.

Introduction

- These policies are not well targeted, and most consumers benefit from these subsidies.
- Recent international events:
  - The COVID-19 pandemic.
    - ✓ Closures led to reduced economic activity (decreased income)
    - ✓ Loss of tourism revenues.
  - Ukrainian-Russian conflict:
    - ✓ Exacerbated rising food prices.
    - ✓ Highest ever in nominal terms (2022).

Objective and contribution

=> Better understand food security in Tunisia:

- Analyze the current subsides and their impact on food security for lower-decile income groups.

=> Measure the impact of international shocks.

=> Suggest better targeted policy that presumably will lower the subsidy cost and market distortions while maintaining food security constant for vulnerable deciles.

Methodology

- Calibrated International Food Security Assessment (IFSA) model used by USDA's Economic Research Service ERS.
- The PIGLOG demand system of Muellbauer (1975).

  → Exact aggregation of decile demands into an average representative consumer with a correction term reflecting the income distribution inequality as measured by Theil's entropy measure.
- Prices are linked to international prices via price transmission equations incorporating the current subsidies imposed in these markets.
- Available data on expenditure share at the decile level from Tunisia.

Data for calibration and sources

Data	Source	Year
Income	FAOSTAT database	2020
Quantity consumed	Balance sheet of FAOSTAT	2020
Food expenditure share	Based on own calculation using a Tunisian National Institute of statistics (INS) survey and FAOSTAT database	2021
Elasticities	Literature based, the AgLink-COSIMO model for some food categories, and IFSA model	2005
Theil Index	World bank income distribution PIP data	2015
Subsidies	Tunisian Ministry of Commerce	2020
Domestic and world prices	Own calculation using FAOSTAT database and Tunisia's Institut National de Statistiques (INS) survey	2020-21

Data

- **Seven food categories:**

1. Main grain: Wheat and wheat-based products,
2. Other Grain: 70 % Barley, 16% Rice, 4% Millet, and 3% Sorghum,
3. Root & Tuber: Potato,
4. Vegetable Oil: other oil than olive oil,
5. Sweetener: Sugar,
6. Dairy,
7. All Other food aggregate.

Scenarios

- Policy evaluation criteria:
  - ✓ Food security: relative to the caloric threshold:1800 Kcal (close to MDER), 2000 Kcal and 2100 Kcal (old FAO for “healthy life”).
  - ✓ Allocative efficiency: against unfettered markets.

    Captures changes in consumer surplus, taxpayers outlays, DW Losses, and social cost of public funds (20%).
  - ✓ Program cost: Calculated as the sum of income transfers or the cost of providing food items if food stamps are incorporated.

Scenarios

- Step 1: Existing policy evaluation.
- Step 2: Wheat-related scenarios.
  - ✓ Scenario 1: World price increase (30% rise).
  - ✓ Scenario 2: Elimination of subsidies.
  - ✓ Scenarios 3 to 4: Means-tested food policies (income transfers, food stamps).

Scenarios

- Scenario 3:

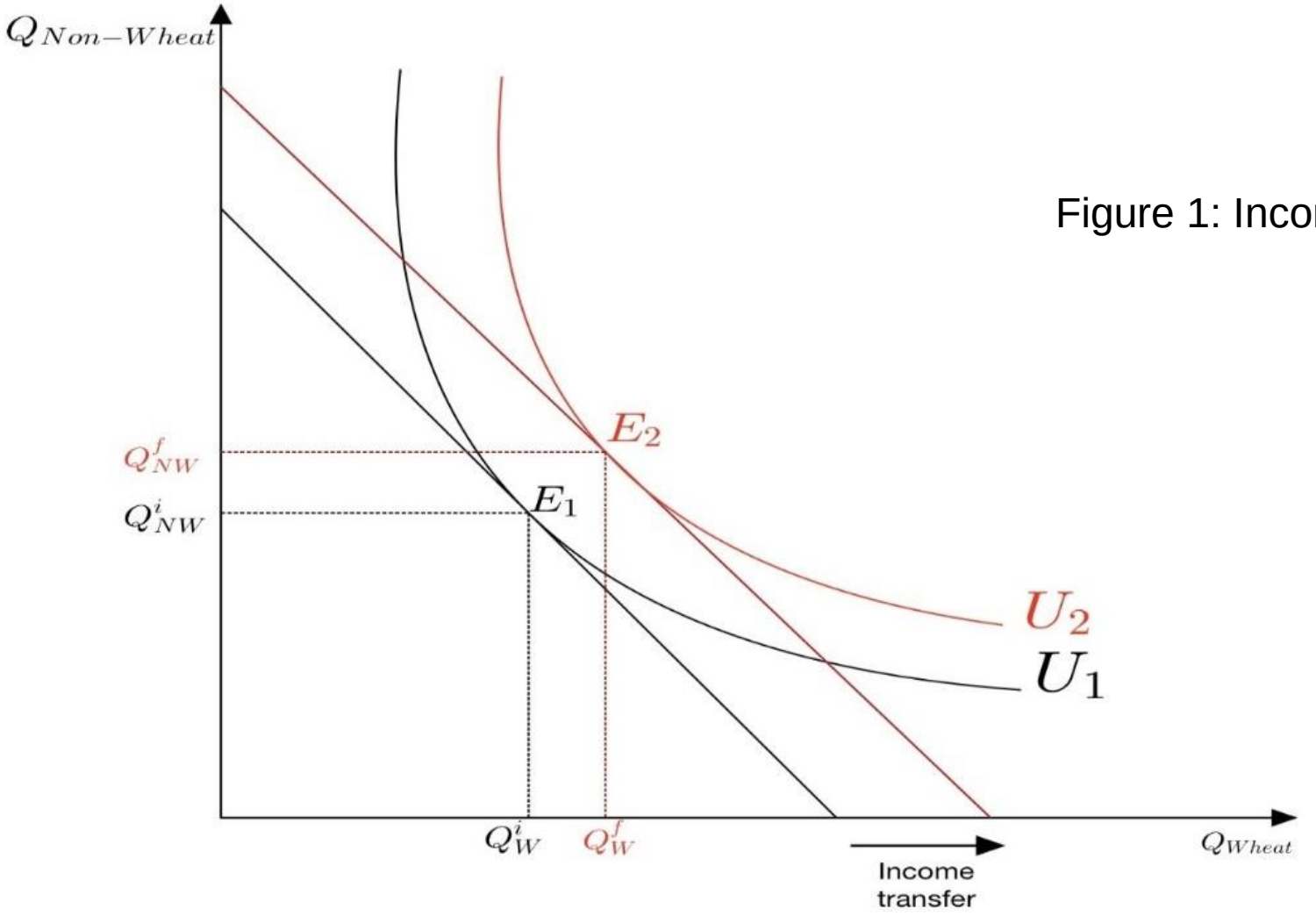

Figure 1: Income/Cash Transfer.

Scenarios

- Scenario 4:

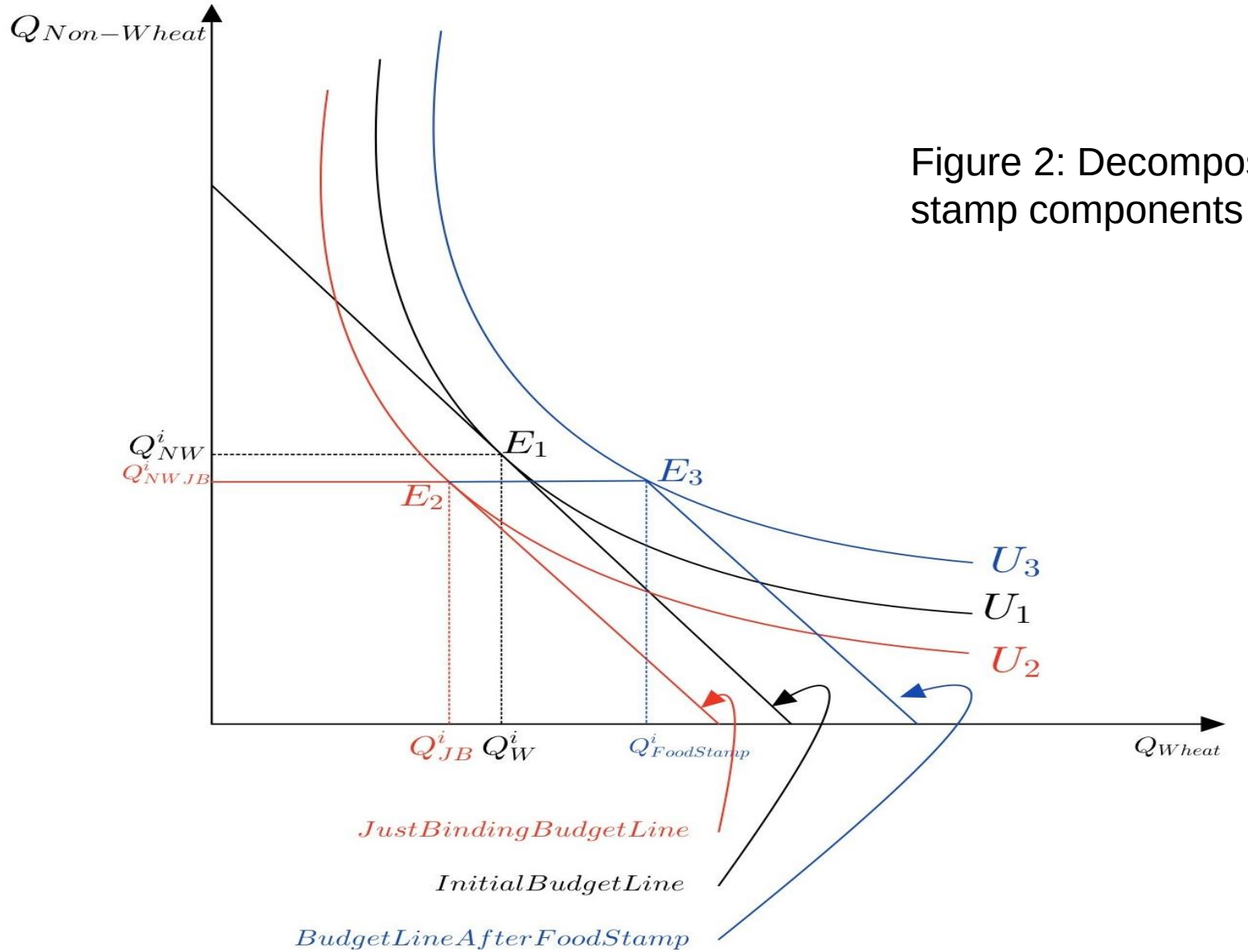

Figure 2: Decomposing the food stamp components

Table 2: Results of current situation and scenarios 3 and 4.

Decile caloric intake	under current policies (2020)	Scenario 1: 30% increase in world price	Scenario 2: unfettered markets	Scenario 3: income transfer to lower decile to reach 2100 calories	Scenario 4: food stamp to reach 2100 calories
1	1,821	1,821	1,571	2,100	2,100
2	2,315	2,315	2,016	2,100	2,100
3	2,532	2,532	2,277	2,277	2,277
4	2,806	2,806	2,556	2,556	2,556
5	3,048	3,048	2,810	2,810	2,810
6	3,361	3,361	3,125	3,125	3,125
7	3,595	3,595	3,381	3,381	3,381
8	3,983	3,983	3,801	3,801	3,801
9	4,517	4,517	4,414	4,414	4,414
10	7,564	7,564	7,269	7,269	7,269
Average per capita intake	3,554	3,554	3,322	3,383	3,383
ΔConsumer Surplus (dinar)	1,790,724,729	2,132,479,620	-	2,534,216,337	404,150,610
Fiscal saving (-) or deficit (+)	0%	20%	-100%	32%	-76%
DWL reduction (-) or increase (+)	0%	23%	-100%	-2%	-72%

Concluding remarks

- Current subsidy system inefficiency:
  - ✓ High cost to taxpayers and deadweight losses.
  - ✓ Disproportionate benefits to higher-income consumers.
- Vulnerability to international price fluctuations:
  - ✓ Constant consumer prices exacerbate fiscal outlays and deadweight losses.
- Efficiency of food stamp scenarios:
  - ✓ Food stamps for wheat products prove effective in achieving calorie targets with some distortions but less DWL and taxpayer outlays than income transfers.

Concluding remarks

- Challenges in implementing reforms:
  - ✓ Political instability since 2011 and historical resistance 'Bread riot' to subsidy reforms.
  - ✓ How to target the food insecure deciles.
  - ✓ Potential resale of food stamp-based quantities.

Thank you!