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Overview

This package provides underlying data and codes to produce the empirical results presented in Policy Research Working Paper "Transport Accessibility and Food Price Differentials: A New Era of Mining Development in Guinea" prepared by Atsushi Iimi.

Data Availability

The main original food price data, is provided by World Food Programme Price Database, publicly available at UNOCHA The Humanitarian Data Exchange: <https://data.humdata.org/dataset?groups=gin> , accessed on June 12, 2025.

Consumer Price Index data: [https://data.imf.org/en/Data-Explorer?datasetUrn=IMF.STA:CPI\(5.0.0\)](https://data.imf.org/en/Data-Explorer?datasetUrn=IMF.STA:CPI(5.0.0)), accessed on March, 2025

Road spatial data are compiled and constructed by the World Bank, in collaboration with the Ministry of Infrastructure and Public Works, Guinea, provided in "data" folder, named GIN_Main_Route5_Open.shp

Other spatial data are not directly used for the regression analysis, in "map_layer" folder:

- population
 - GIN_ppp_2020_1km_Aggregated_UNadj.tiff
 - Source: WorldPop
- agriculture production value
 - GIN_SPAM_value_all.shp
 - Source: Spatial Production Allocation Model (SPAM)<https://www.mapspam.info/>
- cities
 - GIN_major_cities_w_pop.shp
 - Source: World Cities Database by MIT(<https://simplemaps.com/data/gn-cities>)
- Simandou rail alignment
 - GIN_Simandou_Rail.shp
 - Developed by Bank staff

Municipal-level tax data from the National Treasury is also available at <https://spatialtaxdata.org.za/>

- [x] All data are publicly available.
- [] Some data cannot be made publicly available.
- [] No data can be made publicly available.

Data Sources

- [x] I certify that the author(s) of the manuscript have legitimate access to and permission to use the data used in this manuscript.
- [] I certify that the author(s) of the manuscript have documented permission to redistribute/publish the data contained within this replication package. Appropriate permission are documented in the LICENSE.txt file.

Instructions for Replicators

- Run the main file, GIN_AG_price_open_data_2026feb23.do
- Before running, change the STATA directory to your folder where all data are stored. For instance:
cd "C:\data"

Spatial data processing:

1. Food market locations are included in the original WFP data
wfp_food_prices_gin.csv
 2. Based on these geo-references, each market is mapped in
WFP_food_price_survey_locations_w_climate_data.shp
 3. Travel time between each pair of these markets is calculated using Origin-Destination (OD) Cost Matrix tool in ArcGIS Pro.
 - Origin is defined by market in
WFP_food_price_survey_locations_w_climate_data.shp
 - Destination is also the same.
 - Optimal routes are computed by minimizing impedance, which is defined by transport costs, TC.
 - This is run for each year, 2018 and 2024.
 4. The resultant route tables are exported to txt files, which are provided as:
 - OD_WFP_to_WFP_by_TC_2018.txt
 - OD_WFP_to_WFP_by_TC_2024.txt
- These output tables will be used, when the main file is run.
 - Geospatial processing log is also provided in python code,
GIN_AG_OD_analysis_log.py

List of Exhibits

The provided code reproduces:

- [] All numbers provided in text in the paper
- [] All tables and figures in the paper
- [x] Selected tables and figures in the paper, as explained and justified below

All regression results will be reproduced, including:

- Table 1: List of markets and commodities
- Table 2: Summary statistics
- Table 3: OLS results
- Table 4: Tobit results
- Table 5: OLS and Tobit by commodity

All figures related to descriptive statistics and regression will also be reproduced.

Figure 1: Local rice prices

Figure 2: Change in food price differentials

Figure 6: Share of national roads by condition

Figure 7: Distribution of dependent variable

Figure 10: Food price differentials

Other figures and maps are not coded but manually generated using spatial software, like ArcGIS Pro.

Figure 3: Population distribution (using WorldPop; Simandou rail; cities shp)

Figure 4: Agricultural production (using SPAM data; road shp; Simandou rail; cities shp)

Figure 5: Changes in road conditions (using WorldPop; road shp; Simandou rail)

Figure 8: Location of WFP (using WFP shp; Simandou rail; cities shp)

Figure 9: Price elasticity by commodity (Visualized in Excel, based on the results from Table 5)

Software Requirements

- **Stata version 19.5**

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