

Estimation of private stocks

Exercise outline

February 6, 2020

Miller stocks estimation

Overview of the survey:

1. We collected information from 798 rice millers. The survey covers 32 districts and all types of rice mills.
2. *Brief overview of the Miller questionnaire.* In this part, you will understand how we asked the questions to the rice millers. We collected their monthly paddy procurement, paddy processing and rice sales information. We collected their opening stocks at beginning of November 2016.
3. In the following exercises we will use a subset of the dataset. The dataset *Miller stocks.xlsx* shows subset only for *Mymensingh* district.

Exercise 1: The Data sheet in the *Miller stocks.xlsx* file shows several columns of different variables. The name of columns are self-explanatory. Our task is to calculate the following variables:

- **Monthend paddy stock:** The formula is:

Monthend paddy stock = Opening paddy stock + Paddy procurement - Paddy processed

In excel we have to write: = F2 + G2 - H2 in cell I2 (don't forget to start with =). This will calculate **Monthend paddy stock** for first observation. Now, **copy** the formula from cell I2 and **paste** in all the cell of the same column (before paste selecting all the cells where you want to paste is the fastest way).

- **Monthend paddy stock (rice equivalent):** The formula is:

Monthend paddy stock (rice equivalent) = Monthend paddy stock * Conversion ratio

In excel we have to write = I2 * J2 in cell K2 (don't forget to start with =).

- **Monthend rice stock.** The formula is:

Monthend rice stock = Opening rice stock + Processed rice - Rice sale.

Try it yourself

- **Total rice stock.** The formula is:

Total rice stocks = Monthend paddy stock (rice equivalent) + Monthend rice stock

- **Weighted total rice stock.** Sampling weight tells how many millers of this type/ these characteristics exists in the district. Thus to get Weighted total rice stock of the district we need to multiply total rice stock with sampling weight. This the formula looks like:

Weighted total rice stock = Total rice stock * Sampling weight

Exercise 2. In the **Summary and graphs** sheet, we have to calculate summary statistics of four tables.

In *Table 1* we have to calculate average, standard deviation, minimum and maximum values of Paddy procurement, Paddy processed, Conversion ratio, Monthend paddy stock, Monthend rice stock and Total rice stock.

- Formula of **Average** calculation in excel is : = AVERAGE(range). For example to calculate *average paddy procurement* we have to write = AVERAGE(G2:G529) in cell B3. Here, G2:G529 is the range for which we will calculate average.
- **Standard deviation.** Standard deviation shows the average distance of each value from the average. The formula is: =STDEV.S(range).
- **Minimum.** The formula is: = MIN(range).
- **Maximum.** The formula is: = MAX(range).

Exercise 3: In *Table 2*, we have to calculate Average paddy and rice stocks for different types of mill.

- To calculate Average paddy stock for *Automatic mill*, we need to type:

= AVERAGEIF(Data!D1:D529, "Automatic mill", Data!I1:I529).

Here, D1:D529 is the range where the condition will match in Data sheet and Automatic mill is the criteria. Rather than writing Automatic mill we could write A12. Finally, I1:I529 is the range for which we will calculate mean based on the condition.

Exercise 4: In *Table 3*, we have to calculate Average paddy and rice stocks for different months.

- To calculate we will use same formula used in **Exercise 2**.

Exercise 5: In *Table 4*, we will calculate weighted total paddy and rice stocks. To calculate this table, at first we need to generate three variables names Weighted total paddy stock, Weighted total paddy stock (rice eqv), Weighted total stock in column S,

T, U respectively. We have already generated **Weighted total rice stock** in **Exercise 1**. Use the same formula from **Exercise 1**.

- To calculate **Total paddy stock** in *Table 4*, we need to write the following in excel:

= AVERAGEIF(Data!E1:E529, A38, Data!S1:S529)

Here, Data!S1:S529 is the range where we have calculates **Weighted total paddy stock** in Data sheet.

Exercise 6: In this exercise, we will generate a line graph where **x-axis** shows **Months** and **y-axis** shows **Total stocks in million tonnes**. Put different color for paddy, rice and total stocks. The title of the graph should be **Millers' Total Private Paddy and Rice Stocks, 2016-17 for Mymensingh**