

The ASIA University
Management of College
The Department of Finance

**THE IMPACT OF FOOD INFLATION ON HOUSEHOLD BUDGET SPENDING
DURING THE PANDEMIC**

A Thesis in Graduation Project

by

Khishigbayar Batsaikhan /110035113/

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The thesis of Khishigbayar Batsaikhan was reviewed and approved* by the following:

Professor Chang, Jun-Pin
Doctor
Thesis Advisor

Professor Tzang, Shyh-Weir
Doctor

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ABSTRACT

The COVID-19 pandemic has been impacting the entire world since the end of 2019. This virus caused an emergency that turned into a \$90 trillion global public health and economic crisis. In Mongolia's scenario, the economy was growing at 7.5 percent and showed signs of continuing to do so in the future, but due to pandemic lockdowns in 2020, the growth fell to a negative 4.6 percent. In addition to the economic recession related to the epidemic, the MNT exchange rate continues to fall due to the implementation of erroneous micro and macroeconomic policies, which has had a significant impact on the increase in inflation in Mongolia. Along with this, the price of goods and food products increased in Mongolia in the period 2019-2021.

Despite the rise in food prices, I will be examining how Mongolians manage their income and expenses during the lockdown in my paper. I will also be looking into whether their grocery budgets have changed. I eventually conducted a survey of Mongolian citizens using the sampling technique.

Keywords: Food price, food inflation, Covid-19, Mongolia, monthly income, monthly expenses,

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ABBREVIATIONS

ADB- Asian development bank

CPI- Consumer price index

GDP- Gross domestic product

UN- United nations

Chapter 1

Introduction

1.1 Research purpose

As everyone knows, since the end of 2019, the coronavirus epidemic has broken out all over the world. Because of this, Mongolia closed its borders and imposed a lockdown on several occasions, and a lockdown was imposed for a total of more than 11 months. Due to this, many enterprises faced difficulties in conducting their businesses, and people began to face financial problems. Also, because Mongolia closed its borders, there was a shortage of some food products, which was a major cause of food price inflation.

This study aims to investigate how people's income and expenditure have been affected by periods of high inflation and rising food prices. on the other hand, it is aimed at obtaining real answers by taking sample questionnaire surveys from citizens

1.2 Research background

Mongolia is a landlocked country in East Asia, bordered by Russia to the north and China to the south. It covers an area of 1'564'116 square kilometres, with a population of just 3.4 million, making it the world's most sparsely populated sovereign nation. Mongolia is a member of the United Nations, Asia Cooperation Dialogue, G77, Asian Infrastructure Investment Bank, Non-Aligned Movement and NATO global partner. Mongolia joined the World Trade Organization in 1997 and seeks to expand its participation in regional economic and trade groups.

The GDP figure in 2022 was \$15'720 billion. The GDP per capita of Mongolia in 2022 was \$4'542. Mongolia's GDP expected to grow by 5.4% in 2023, and 6.1% in 2024. (Asian Development Bank, 2023)

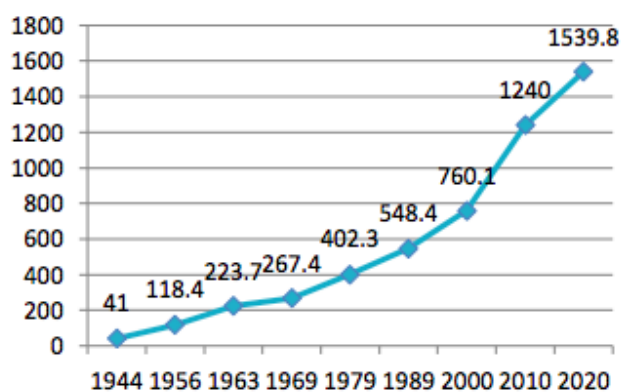


Figure 1 Population of Ulaanbaatar /Thousand/

According to Worldometer's elaboration of the most recent United Nations data as of Saturday, May 13, 2023, the population of Mongolia is currently 3,429,003. According to UN statistics, the population of Mongolia is expected to be 3,278,290 at the midpoint of

the year. In 2023, Ulaanbaatar's metro region will have 1,673,000 residents, a 1.7% rise over 2022. In 2022, Ulaanbaatar's metro area had a population of 1,645,000, a rise of 1.86% from 2021. In 2021, Ulaanbaatar's metro region had 1,615,000 residents, a 1.96% rise from the previous year.

Chapter 2

Literature review

In this chapter, the domestic and foreign studies of the topic are reviewed.

2.1 Internal and external research

Table 1 Internal and external research

№	Researcher, research work	Content of research work
1	(Jean Pascal Nganou, Undral Batmunkh, Ganbaatar Jambal, Mark Charles Dorfman, Ibrahim Saeed Chowdhury, 2022) <i>“Mongolia economic update”</i>	In Mongolia, the rate of inflation rises and falls with abrupt peaks and valleys. For the purpose of developing and evaluating monetary policy, understanding why is essential. Given Mongolia's geography, it is not surprising that food prices are a major source of inflation. These prices are highly seasonal, prone to substantial yet transient shocks, and primarily influenced by local supply conditions. However, it has been discovered that demand factors are also important in explaining price changes. According to empirical data, for instance, a 10% rise in government wages would result in a 1% increase in underlying inflation. As a result, although agricultural shocks will cause inflation to remain erratic, there is room for macroeconomic stabilization policy to help lower inflation volatility.
2	(Charlotte Hebebrand, David Laborde, 2022) <i>“High fertilizer prices contribute to rising global food security concerns ”</i>	They discuss the underlying causes of the current high prices, clarify why the global fertilizer market is particularly vulnerable to shocks, and investigate which countries are most susceptible to fertilizer market disruptions in our study, which uses data from the new IFPRI fertilizer dashboard, IFASTAT,

		compiled by the International Fertilizer Association (IFA), and FAOSTAT. The topic of immediate and long-term remedies to the major concerns about availability and affordability will be covered in a forthcoming piece.
3	(Asian Development Bank, 2023) <i>“Mongolia: Strengthening Food Security Post COVID-19 and Global Food and Fertilizer Price Crises”</i>	The information and assistance provided by technical assistance (TA) will help Mongolia recover from the COVID-19 food security and fertilizer pricing crises. It will boost Mongolia's institutional ability to respond to the risks of food insecurity and develop an investment plan to improve logistics along the food supply chain.
4	(Subir Bairagi, Ashok K. Mishra, Khondoker A. Mottaleb, 2022) <i>“Impacts of the COVID-19 pandemic on food prices: Evidence from storable and perishable commodities in India”</i>	Global food prices have changed as a result of the COVID-19 outbreak's impact on the supply chain. There hasn't been much of an effect of COVID-19 on the cost of necessities and perishable foods in developing and emerging nations. This study investigates the effect of the COVID-19 pandemic on the cost of the three key food products in India using a recent phone poll by the World Bank. The findings show that the cost of staple foods like rice and wheat flour dramatically increased during the pandemic compared to the pre-pandemic period. Onions, meanwhile, had a substantial decrease in price over the same time period. The results could point to food hoarding, panic buying, and food storage. The findings also show that monetary transfers from the government and remittance revenue had a negative impact on commodity prices. Thus, the results of this

		study imply that during the pandemic, families may have changed their demand for basic meals.
5	(Rob Vos, Joseph Glauber, Manuel Hernández, David Laborde, 2022) <i>“COVID-19 and rising global food prices: What’s really happening?”</i>	Food prices are skyrocketing around the world, raising concerns over the potential for another global food crisis. Instead of major food supply interruptions or ongoing trade restrictions, the 2021 spike in food prices is mostly attributed to the recovery in food demand from the worldwide COVID-19 recession and brief logistics hiccups. The increase in fertilizer costs, the decline in the value of the US dollar, and the rising cost of international shipping were further variables that contributed to the upward trend in food prices. Although the demand for staple crops is declining and the production outlook is positive, many poor people may not find comfort in these developments. To safeguard the purchasing power of low-income families, governments in low-income nations require substantial financial support.
6	(Dave Mead, Karen Ransom, Stephen B. Reed, Scott Sager, 2020) <i>“The impact of the COVID-19 pandemic on food price indexes and data collection”</i>	The COVID-19 pandemic's effects on price changes for food categories within the import/export price indexes, producer price indexes, and consumer price indexes of the U.S. Bureau of Labor Statistics are discussed in this article. The essay also evaluates how the pandemic has affected efforts to obtain price data. For some price indices more than others, the pandemic's safety procedures made it difficult to collect data.
7	(Valentina Stoevska, 2020)	Along with significantly increasing unemployment and causing significant income losses for many people, the COVID-19 pandemic and the associated

<p><i>“Global and regional estimates of consumer price inflation”</i></p>	<p>lockdowns, mobility restrictions, and physical distancing rules have also changed consumer spending habits and the rate of price inflation they are subject to. The lockdown measures, in particular, have had an impact on the supply and demand for specific products, as well as their costs.</p>
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2.2 Market research

Real household incomes have been reduced by 4% in 2021, primarily as a result of a 6.6% reduction in household consumption, as a result of a combination of COVID-19 limits, a bleak economic outlook, and inflation. The rise in commodity prices around the world should have benefited Mongolia, but China's ongoing border controls have decreased exports, negating any advantage Mongolia may have had from higher prices. In 2021, there were 60000 fewer jobs overall, a 5% decline.

In 2022, Mongolia was dealing with price inflation and currency devaluation. The manager of Uran Uurgach LLC, Galsanbat Narantogtokh, said: "Our country imports the majority of its commodities. Foreign currencies are used to pay for all imports. Consequently, everything is getting more expensive. It's becoming harder to live on the same salary."

The consumer price index (CPI) of Mongolia, which is used to calculate inflation, contains around 50% imported items. By March 2022, headline inflation, which is measured by a basket of commodities that Mongolians use on a daily basis, had reached 14.4%.

In comparison to the same month the year before, the price of food in Mongolia rose by 17% in April 2023.



Figure 2 Food inflation rate in Mongolia /National statistical office of Mongolia/

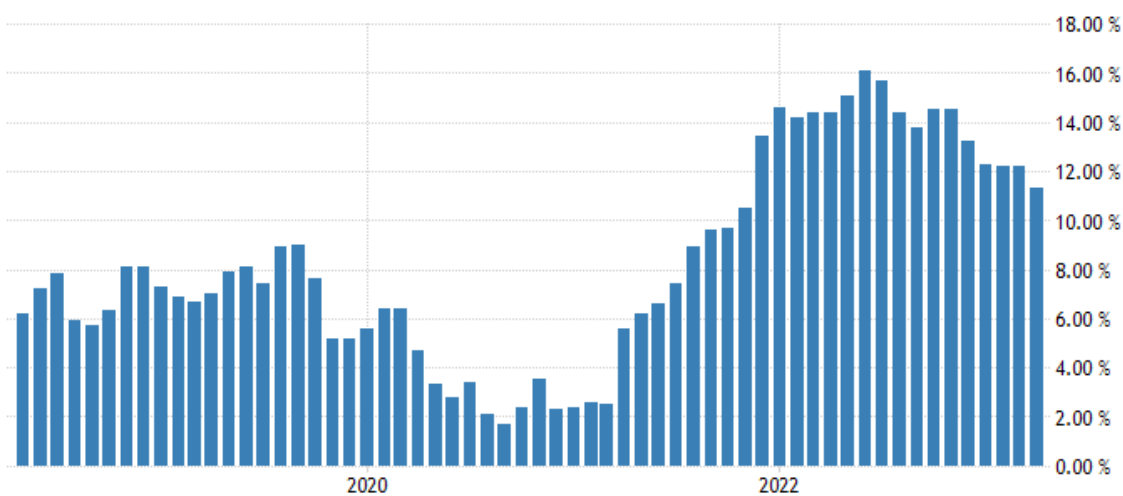


Figure 3 Inflation rate /Mongol bank/

The Mongolian Consumer Price Index (CPI) rose from 133.60 points in March to 135.30 points in April of 2023.

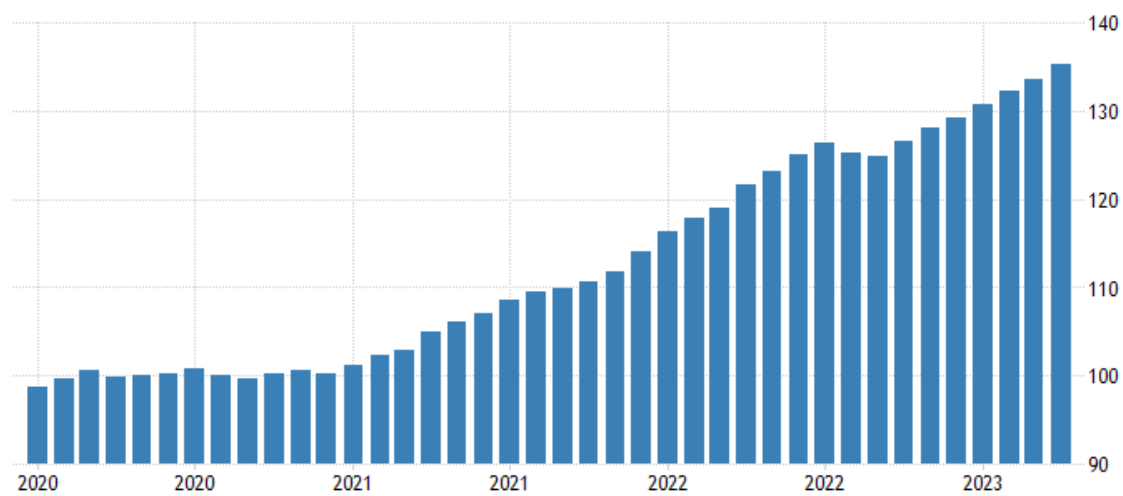


Figure 4 Consumer price Index /Bank of Mongolia/

Chapter 3

Data and methodology

3.1 Research method

Consumer research will be the main method used to this study.

- Theoretical research- The use and study of theoretical information
- Environmental analysis- Collect, use, and summarize secondary data
- Customer research- Collect primary data from young adults by questionnaire and analyze it using SPSS 20.0 software.

In this study, Mongolian citizens between the ages of 20 and 60 mainly participated, and there were no restrictions on the age, gender, or salary of the participants. By asking respondents how much they spend collecting food before and after Covid-19, we can learn how their household budgets are spent and how they cut their expenses.

3.2 Research sampling

According to the 2023 survey, 2,267,792 people over the age of 18 were selected from the total population of Mongolia of 3,448,568. Currently, there are 897,427 registered households in Mongolia, so there is a probability that there will be households that collect food when selecting people by sampling method. $897,427/2,267,792$ or 0.3957. Substituting this into the formula yields an optimal sample size of 187.4712.

$$n = \frac{N}{1 + Ne^2}$$

n = number of samples

N = population size

e = margin of error

Table 2 Research sampling

Data	Value	Explanation
t	1.96	95 percent confidence level
w	0.5	Constant value
N	2,267,792	Original set
Δ	0.05	Margin of error
n	187	Optimal sample size

3.3 Research hypothesis

Hypothesis 1:

H1: The reliability and safety of food products will positively affect consumer attitudes.

Hypothesis 2:

H2: Products with manufacturing defects will negatively affect consumer attitudes.

Hypothesis 3:

H3: Easy-to-use products will have a positive effect on consumer attitudes.

Hypothesis 4:

H4: An increase in the price of a products will have a negative effect on consumers' consumption habits.

Hypothesis 5:

H5: Product availability will positively affect consumers' attitudes toward use.

Chapter 4

Result and Discussion

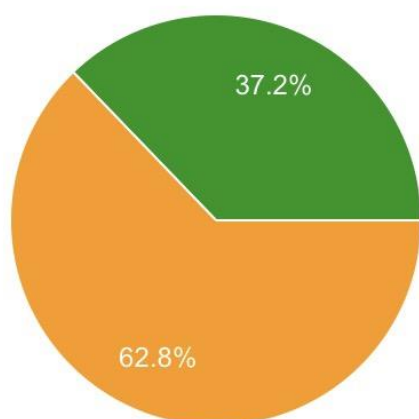
4.1 Personal information of the survey participants

Table 3 Personal information of the survey participants

Gender		Frequency	Percentage
	Male	59	37.2
	Female	100	62.8
	Total	159	100
Age		Frequency	Percentage
	Below 20	31	19.4
	21-30	26	16.1
	31-40	35	22.6
	41-50	31	19.4
	51-60	31	19.4
	Above 60	5	3.1
	Total	159	100
Education		Frequency	Percentage
	High school	82	51.6
	Bachelor	61	38.7
	Master or higher	16	9.7
	Total	159	100
Job		Frequency	Percentage
	Student	26	16.1
	Civil servant	46	29
	Employee of a business organization	41	25.8
	Sole proprietor	20	12.9
	Unemployed	26	16.1
	Total	159	100

Family members		Frequency	Percentage
	1	21	13.2
	2	20	12.6
	3	31	19.4
	4	36	22.6
	5	31	19.4
	6 and above	20	12.9
	Total	159	100
Monthly income		Frequency	Percentage
	Below 1,000,000	67	41.9
	1,000,000-1,500,000	36	22.6
	1,500,000-2,000,000	26	16.1
	2,000,000-2,500,000	20	12.9
	Above 2,500,000	10	6.5
	Total	159	100

To present the personal data of the total survey participants:



100 or 62.8% of the 159 people participated in the survey were women, and the remaining 59 or 37.2% were men.

Figure 5 Gender information of the survey participants

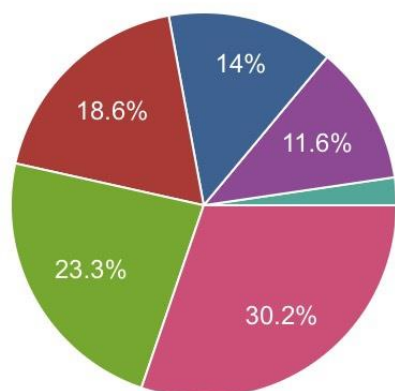


Figure 6 Age information of the survey participants

In terms of age, 22.6% of all participants or 35 people are in their 30s, while 58.2% of the remaining people are in their below 20s, 40s and 50s. The smallest number, 3.1%, is made up of people in their 60s.

The educational level of the respondents was divided into 3 groups, and half of them, or 51.6%, were people with high school education. 40% of this research is made up of students and young people under 20 and 20 years old, so it is concluded that such a response has occurred. The majority of the remaining half, or 38.7%, have bachelor's degrees, while the remaining 9.7% have master's degrees or higher.

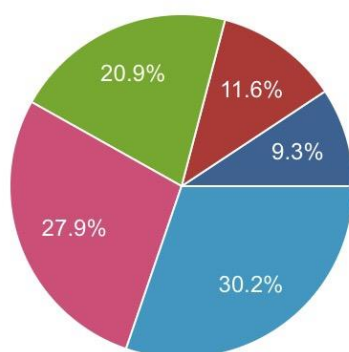
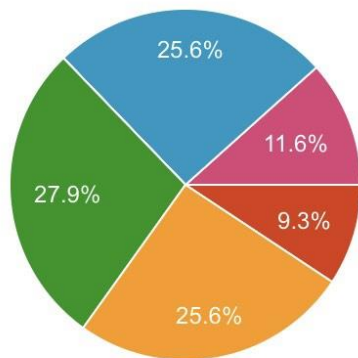


Figure 7 Employment level of the survey participants

The employment level of the participants was divided into 5 groups, 29% were civil servants, almost 25.8% were employees of business organizations, and 12.9% were sole proprietor. The rest are students, unemployed and retired people.

As for family members, 22.6% of the respondents or 36 people live as a group of 4 people. Also, 19.4% or 31 people live in a group of 5 people, and 12.9% or 20 people live in a group of 6 or more people. It can be seen that the population growth is increasing.



In terms of monthly income, 67 people, which is almost half, or 41.9%, live on a salary of about \$300. Only 10 people or 6.5% of this study have a salary of more than \$700.

Figure 8 Monthly income of the survey participants

Chapter 5

Conclusion

Mongolia is economically dependent on its two neighboring countries, Russia and China. In 2020, a shortage of imported and exported food products due to a long-term curfew and border closure became one of the main reasons for the increase in food inflation in Mongolia. The central bank of Mongolia adopted an expansionary monetary policy during this time, printing cash, lowering interest rates, and adding liquidity. As a result, the tugrik's value decreased, and by the end of 2021, the national debt had increased to 81%.

In this study, we investigated whether there was a change in people's wages during this period, how they managed their food, and how they managed their finances due to the inflation of food products.

Out of 159 people who participated in the survey, 51.2% or 81 people answered that there was no change in their salary. While the remaining 48.2% or 78 people answered that it has decreased. The remaining 23.3% filled out the survey saying that their salary increased, and when explaining the reason for the increase in salary, they gave the reason that they changed jobs and got a new job.

It was investigated whether households cut food due to the increase in the price of food products and inflation, and 107 of the total 159 participants, 67.4%, answered that they did. Also, when people were asked about the price of food products, there were no cheap products for people. However, delicate vegetables, meat, and baked goods dominated among the most expensive products.

Thankfully, in 2022, Mongolia's economy began to recover. Also, in its survey dated May 22, 2023, the metropolitan statistics department reported that the prices of 28 types of food products are stable.

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National statistical office of Mongolia

<https://www.1212.mn/mn>

Bank of Mongolia

<https://www.mongolbank.mn/>

Appendix

Appendix A. Research survey (Translated into English)

1. Your gender.
 - a. Male
 - b. Female
2. Your age.
 - a. Below 20
 - b. 21-30
 - c. 31-40
 - d. 41-50
 - e. 51-60
 - f. above 61
3. Your education level.
 - a. High school
 - b. Bachelor's degree
 - c. Master's degree or higher
4. Your occupation.
 - a. Student
 - b. Civil servant
 - c. Employee of a business organization
 - d. Sole proprietor
 - e. Unemployed
5. How many people, including yourself, live in your household?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5

- f. 6 and above
6. Your monthly income.
 - a. Below 1'000'000 tugrik (approximately \$287.92)
 - b. 1'000'000-1'500'000 tugrik (approximately \$287.92-\$431.88)
 - c. 1'500'000-2'000'000 tugrik (approximately \$431.88-\$575.84)
 - d. 2'000'000-2'500'000 tugrik (approximately \$575.84-\$719.81)
 - e. Above 2'500'000 tugrik (approximately \$719.81)
 7. Comparing to during the pandemic, is there any change in your monthly income?
 - a. Yes
 - b. No
 8. If yes, how did it change?
 - a. Decrease
 - b. Increase
 9. Write your reason to change in your income.
 10. How many times do you do grocery shopping in 1 week?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. above 5
 11. Before the pandemic, how much did you spend on grocery shopping weekly?
 - a. Below 20'000 tugrik (approximately \$5.76)
 - b. 20'000-40'000 tugrik (approximately \$5.76-\$11.51)
 - c. 40'000-60'000 tugrik (approximately \$11.51-\$17.27)
 - d. 60'000-80'000 tugrik (approximately \$17.27-\$23.03)
 - e. Above 80'000 tugrik (approximately \$23.03)
 12. After the pandemic, how much do you spend on grocery shopping weekly?
 - a. Below 20'000 tugrik (approximately \$5.76)
 - b. 20'000-40'000 tugrik (approximately \$5.76-\$11.51)
 - c. 40'000-60'000 tugrik (approximately \$11.51-\$17.27)

- d. 60'000-80'000 tugrik (approximately \$17.27-\$23.03)
- e. Above 80'000 tugrik (approximately \$23.03)

13. Your monthly income is enough for you to do grocery shopping.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

14. During the pandemic, food price increases affect your household budget.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

15. Have you cut back on food because of the increase in food prices?

- a. Yes
- b. No

16. When you do grocery shopping, how many times do you buy this items? /weekly/

	1	2	3	4	5
Milk, milk products					
Bread, bakery					
Vegetables					
Fruits					
Meat, meat products					
Flour					
Rice					

17. What do you think about this items' price?

	Very cheap	Cheap	Neutral	Expensive	Very expensive
Milk, milk products					
Bread, bakery					
Vegetables					
Fruits					
Meat, meat products					
Flour					
Rice					