

Research Article

Research on Impacts Given by Grain Price Fluctuation on Customers in Inflation Period

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Abstract: In this study, we have a research on impacts given by grain price fluctuation on customers in inflation period. In the context of inflation, grain price fluctuation gives immediate impact on consumption level and consumption behaviors as well as welfares of customers whose. However, the degree of impacts on customer whose incomes varies is different. The impacts given by the rise of grain price on consumption structure and welfare level of the lower income group are the most great. Because of the convergence of the food price and grain price, the rise of the grain price results in rise of the food price, further increasing the living cost of the lower income group. Under circumstance of steady income, purchase power of the lower income group gets weak and they go into the abject poverty. Simultaneously, 25% rise of the grain price will lead to nearly 2.8% rural population goes back to the poverty state. The rise of the grain price will also results in price rise of the products of animal husbandry as well as articles for daily use, for such products take grain as production materials or raw materials. As a result, price of other products goes up and the living cost undoubtedly gets higher, increasing salaries of workers, which in return makes the labor cost gets higher and further increases the grain price. Similarly, the labor cost increase makes the production cost of animal husbandry as well as articles for daily use get higher, finally making the end prices of such products increase. The inflation therefore gets worse and the consumption level and welfare get lower.

Keywords: Fluctuation, grain price, inflation, lower income group

INTRODUCTION

Grain consumption includes grain ration, seed grain, feed grain and industry grain. In the context of inflation, rise of commodities price is widespread and the grain price inflation to a great extent is price rise. The impacts given by grain price rise differ among peoples who use grain differently and it is the same to peoples whose income differs. The increase of proportion of grain ration in consumption makes the Engel coefficient increase and the living gets hard for lower income families. For grain feeding animals, the rise of grain price makes feeding cost get higher and as a result, the meat products gets more expensive. During inflation period, grain price rise gets the prices of grain foods and living materials as well as production materials higher, leaving a severer inflation. Consequently, the living cost gets higher and customers with various Engel coefficients would face different situations. This article mainly gives an analysis of impacts given by grain price rise on different customers in inflation period. Rural Area Development Research Center of Chinese Academy of Social Science (2000) shows the rural area development research center of Chinese academy of social science Report of China's rural area development research. Beijing. Lin (1995) studies the discussion on agricultural policies and grain development. Zhou *et al.* (2007) analyze the deeply thought of price fluctuation of agricultural products in

China. Lu and Peng (2002) have a research of the relation between grain price and inflation (1987-1999). Xu (2008) study the features and impacts of the new round of price fluctuation agricultural products. Zhao (2007) study the inflation anticipation and grain price trends. Dai *et al.* (2008) have a study the grain price analysis from period of china reform and opening-up. Tang (1998) analyzes the poverty line research of china urban residents.

In this study, we have a research on impacts given by grain price fluctuation on customers in inflation period: In the context of inflation, grain price fluctuation gives immediate impact on consumption level and consumption behaviors as well as welfares of customers whose. The rise of the grain price will also results in price rise of the products of animal husbandry as well as articles for daily use, for such products take grain as production materials or raw materials. As a result, price of other products goes up and the living cost undoubtedly gets higher, increasing salaries of workers, which in return makes the labor cost gets higher and further increases the grain price. Similarly, the labor cost increase makes the production cost of animal husbandry as well as articles for daily use get higher, finally making the end prices of such products increase. The inflation therefore gets worse and the consumption level and welfare get lower.

Table 1: Engle coefficient and consumption level of different income groups (2010)

		Low-income group	Low-middle income group	Middle income group	Middle-high income group	High income group	Poor population
Rural family	Engle coefficient	48.78	45.49	43.34	40.74	34.53	65
	Food expense(Yuan)	1236.73	1464.57	1718.02	2047.57	2828.41	850 ¹
Urban family	Engle coefficient	44.11	40.89	37.86	35.38	32.17	65 or more than 65 ²
	Food expense(Yuan)	3246.69	3946.00	4773.83	5710.14	6756.00	2231.48

Data sources: Calculation and collection based on China statistical yearbook (2011).

POPULATION CONSUMPTION STRUCTURE, GRAIN CONSUMPTION

The impacts given by grain price fluctuation on grain ration customers in inflation period are classified into 2 aspects: variations of consumption structure and customer income. From the angle of consumption, the main variable mainly refers to consumption structure composition and consumption fluctuation situation. Along with grain issues, it refers to grain proportion to total consumption as well as impacts given by grain price fluctuation on different consumption population and so on.

From the angle of consumption structure, for low income group, the grain cost might take up half percent or even more of the total expense. Therefore, grain price rise gives more impacts on lower income group and their livings and nutrition might get remarkably worse. As what the FAO (2008) research shows, no matter they are urban or rural, the poorest 1/5 families are affected the most. Their welfares either get decreased or the gain is the least. Even in the countries with positive averaged welfare growth in rural areas, the poorest 1/5 families have to face the negative welfare growth for the price rise of the staple food. Undoubtedly, provided that all urban families in all countries have to face loss in different degrees, however, the poorest families still the 1 who suffers the most. For the most poor class and families, because that proportion of grain to their total expense is much more, the extent their real income and disposable income are affected are more remarkable. Their living is influenced the most. This opinion is applicable to Chinese customers. Base on the above analysis, it is concluded that: The more the proportion of food or grain consumption takes up to total expense, the greater the impacts given by price fluctuation. To make it short, the impacts given by price fluctuation on customers whose incomes are various might be different. In inflation period, the grain price rise makes the life for poor families hard and the degree of impacts lies on the extent of price increase; it is the same to the families with modest-income; and the families with high income is affected little by the grain price rise.

THE ANALYSIS ON IMPACTS GIVEN BY GRAIN PRICE FLUCTUATION ON LOWER INCOME CUSTOMERS

Customer income level grouping and analysis on Engle coefficient:

According to grouping principles of China Statistical Yearbook (2010), the income level can be divided into 5 groups: low income, low-middle income, middle income, middle-high income and high income. The Engle coefficients are respectively as the list shows. The proportion the food consumption takes up to total expense is also grouped based on income levels, from the low coefficient to the high one. In general, the proportion the food cost takes up is getting lower from the year 1992 to 2010. The living standard is improving year to year. As the Table 1 shows, the Engle coefficient of rural families is higher than that of the urban families and the coefficient is getting lower.

It is recognized internationally that Engle coefficient more than 60% is taken as the poor standard, but it might be different in some countries for they have different national conditions. Compared with developed countries, China has a long way to go. Recently, in China, house rent takes up a small proportion to total income for most normal families, no more than 10% of salaries. Food expense, however, is much more, 50% or so. The standard is defined to be lower, for China is still a developing country and the specific situation of consumption is low: The Engle coefficient more than 65% is the poor standard (Fig. 1).

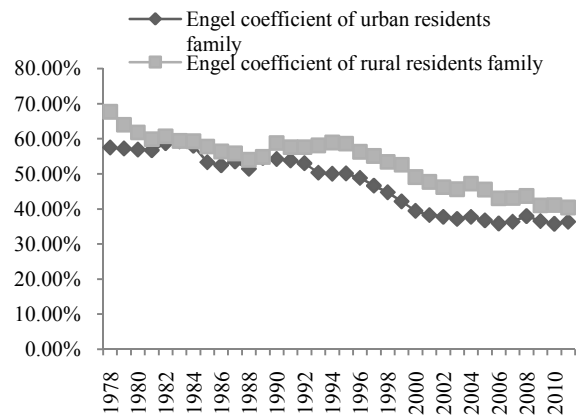


Fig. 1: Engle coefficient fluctuation along with time among urban and rural residents

Table 2: The poverty line changes along with food price fluctuation

Food price increase (%)	Food expense	Poverty families food expense	Engle coefficient (%)
	850	1307	65
5	892	1373	65
10	935	1438	65
15	977	1503	65
20	1020	1569	65
25	1062	1634	65

Data sources: data collection based on the China Statistics Yearbook (2011).

Impacts given by grain price fluctuation on low income customers: For urban residents, the grain proportion to the total expense is about 20% lower than that of the food cost and the grain proportion is steadier. Consequently, low income residents have to face more income shrinking under circumstance of grain price rise and low consumption elasticity of grain. The higher the income of urban residents, the lower the proportion of food expense to total expense and vice versa. It is thus clear that as main customers of grain and food, urban residents who are poorer have weaker resistance of price rise and their life might be harder. In addition, averaged Engle coefficient of rural families is higher than that of urban families. Only in 1989 the discrepancy is only 7% points (the rural Engle coefficient is 54.8 while the urban is 54.5). The above facts prove that rural residents may put more expense on life consumption for lower income than urban residents. The price rise of such products leads to more loss of grain and food products customers in rural areas.

Because of inflation and food price rise, the lower income groups are affected a lot and to make it worse, new impoverished population might appear. As what Table 2 shows, according to the poor standard that Engle coefficient more than 65%, as the food price increases, the impoverished population increases. The poverty line has to be raised as the food price increases. When the food price goes up 15%, the total expense of the impoverished people has to be raised from 1307 Yuan to 1503 Yuan; and when the food price goes up 25%, people has to get 1643 Yuan to keep the living as the 1307 Yuan can support before. That is to say, the purchase power of 1643 Yuan is actually the same with the 1307 Yuan before. For this reason, the impoverished people have to face the drop of consumption power, consumption level and welfare, since the income shrinking resulting from irreplaceable rigid consumption of grain. Simultaneously, because the poverty line goes up, nearly 2.8% of rural population goes back to poverty group. For people who successfully get the needed income for food, their consumption power and living quality also drop, since indispensable food expense squeezes other consumptions like articles for daily use. As a result, the consumption structure changes. Meanwhile, because of inflation, prices of articles for daily use also go up, the

absolute value of consumption for such products declines and the impoverished people sink into abject poverty state for the drop of consumption power and consumption level.

IMPACTS ANALYSIS GIVEN BY GRAIN PRICE FLUCTUATION ON FEED GRAIN AND INDUSTRY GRAIN

Grain price rise leads to increase of the products prices of animal husbandry tanking feed as raw materials, driving up prices of end products. Although the money people spend on grain decreases for the growth of living standards, money people spend on meat and egg gets more and feed need is relatively increasing. In addition, wages of workers of fish breeding and poultry rising is increasing for the growth of urban resident income. The initiative of people to work in fish breeding and poultry rising is harmed, since the costs of transportation and feed are up and wages people get from such industries is less than that of working in cities. As a result, the products price of animal husbandry is driven up for factors like supply decrease, demand increase as well as increase of cultivation costs, which in return drives up grain price. According to results of surveys, from February of 2011 to April of 2012, along with grain price rise, prices of meat and egg are also up, with prices of pork, beef and mutton increasing by 30% while that of the egg is 20%. Meanwhile, grain prices are increasing steadily from last year by removing influences of accidents and artificial factors, 20% higher than the same period of last year. Similarly as to customers of industry grain taking grain as production materials (It refers to industries taking grain as raw materials like wine-making industry, vinegar-making industry), the increase of prices of raw materials and worker wage makes the end products prices go up and finally drives up the living cost. Consequently, the living cost increases for the rise of grain consumption expense and for the rise of prices of animal husbandry products and other products of daily use except for food (like sugar, vinegar and wine), the living cost is further increased. The prices of animal husbandry products and other products of daily use are further increased for the wage rise of the workers. Meanwhile, the grain price rise drives up price of seed grain, making the grain production cost go up.

Grain price rise drives up seed grain price; grain price rise drives up grain ration price; grain price rise drives up means of production of raw materials of grain as well as other products of daily use taking grain as production materials; the prices rise of animal husbandry products and other products of daily use drive up living cost; living cost rise derives up wages and labor cost of the industry.

Under the background of inflation and price growth, grain price rise will affect the prices of grain,

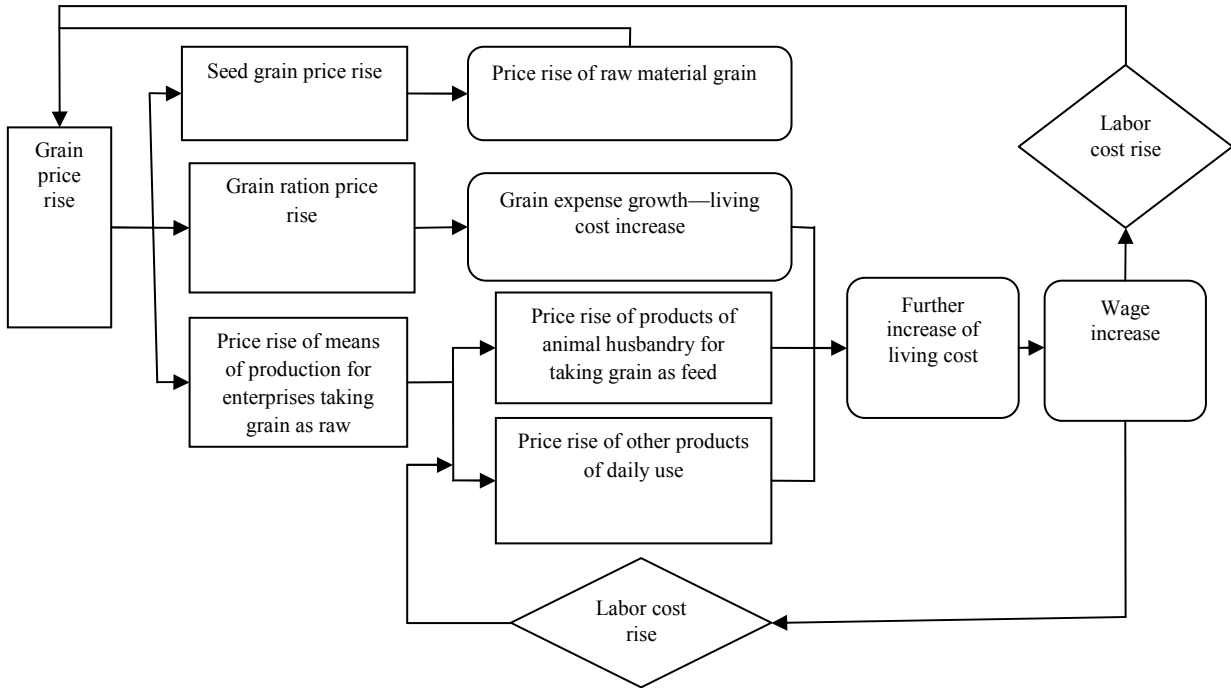


Fig. 2: Customer Impacts Given by Grain Price Fluctuation

animal husbandry products as well as other products of daily use as what the following two loops. As what the Fig. 2 shows:

Loop 1: On one side, the grain price rise drive up prices of seed grain, products of animal husbandry as well as other products of daily use; one the other side, prices of such products drive up living cost, worker wage and labor cost. The seed grain price and labor cost of grain production are consequently increased. In addition, in inflation period, the price of agricultural means of production is also up, further driving up prices of grain and grain products.

Loop 2: On one side, grain price rise the prices of the products of animal husbandry and other products of daily use, since such products take grain as raw materials or means of production; on the other side, prices of such products drive up living cost which drives up worker wages, making labor cost increased. The price of products of animal husbandry is driven up consequently by the price growth of raw materials and labor.

IMPACTS ON CUSTOMER WELFARE GIVEN BY GRAIN PRICE FLUCTUATION

This part shows impacts on customer welfare through cost of living indexes of urban residents in price fluctuation periods. Impacts on customer welfare

might be different to people with different incomes. Grain price fluctuation affects lower income groups much more no matter in rural or urban areas. As pure grain producers, farmers might be the biggest winner. Grain price gives crucial impacts on food prices and the volatility of grain fluctuation is obviously higher than that of food. The low income groups, especially those living in rural areas, have to face the severest influences given by grain price fluctuation. In addition, grain price fluctuation gives low income population direct and complex impacts. According to comparison of consumer prices of rural and urban areas, when the price indexes go up, the consumer prices indexes of rural areas are increasing fast; on the contrary, the consumer prices indexes of urban areas are decreased fast. Consequently, as net consumers, rural residents have to face more welfare loss compared with residents of rural areas during periods of price fluctuation while as net sellers, residents of rural areas get more net welfare. Because that most low income groups are also net consumers, it is clear that the impoverished groups have to face more negative influences during price fluctuation periods. The price fluctuation gives more impacts on rural areas than urban areas and the low income groups or impoverished groups in rural areas have to face deeper impacts than those in urban areas. According to the above analysis, it can generally be concluded that it is the low income groups or impoverished groups who suffer the negative effects during the price fluctuation periods.

CONCLUSION

Grain price fluctuation affects the consumption level, consumption structure and welfare directly. According to the above analysis, we can draw the following conclusions:

- The impacts given by price fluctuation might be different on people with different income or status (differences between rural and urban areas). For people who lead an impoverished life, such impacts will be severer and more complex
- Grain price growth drives up prices of products of animal husbandry and products of daily use which take grain as raw materials. The production cost rise results in the price growth of such products
- The prices rise of products of animal husbandry and products of daily use increase living cost, resulting in increase of worker wages and labor cost, which together drives up further increase of such products. The inflation is getting more serious and drives up the grain price
- As net consumers, rural residents have to face more welfare loss compared with residents of rural areas during periods of price fluctuation while as net sellers; residents of rural areas get more net welfare. Because that most low income groups are also net consumers, it is clear that the impoverished groups have to face more negative influences and welfare loss during price fluctuation periods. Further more, for convergence of prices between grain and food, the grain price rise drives up food price, which decreases purchase power of low income group further. The situation for low income groups gets worse since the grain and food expense squeezes consumption of other products of daily use because of rigid consumption of grain and food
- From the angle of consumer price index, the information obstacles exist in rural and urban consumption market. The rural consumer price index, however, fluctuates heavier than that of the urban areas and national averaged level. Price fluctuation gives more impacts on rural areas and people in rural areas have to suffer more than those who living in urban areas

- According to the reaction chain that “grain price fluctuation-income variation and real purchase power changes-welfare changes (poverty state changes)”, when the food price is 25% higher, there might be 2.8% of all rural population go back to impoverished state

REFERENCES

- Dai, C., X. He and C. Leng 2008. Grain price analysis from period of China reform and opening-up. *Price Monthly*, 6: 5-12.
- FAO, 2008. *The State of Food Insecurity in the World 2008*. FAO, Rome.
- Lin, G., 1995. *Discussion on Agricultural Policies and Grain Development*. Fujian Agricultural Science Press, China, 1: 27-31.
- Lu, F. and K. Peng, 2002. The Relation between Grain Price and Inflation (1987-1999) *Economics Quarterly Publication*, 4: 821-835.
- Rural Area Development Research Center of Chinese Academy of Social Science, 2000. *Report of China Rural Area Development Research*. Social Science Literature Press, Beijing, pp: 229-240.
- Tang, J., 1998. *Poverty Line Research of China Urban Residents*. Academy of Social Science Press, Shanghai, 1: 121-240.
- Xu, X., 2008. Features and impacts of the new round of price fluctuation agricultural products. *Financ. Econ. Res.*, 8: 110-119.
- Zhao, L., 2007. Inflation anticipation and grain price trends. *Economics*, 6: 30-42.
- Zhou, H., Y. Tang and F. Xia, 2007. Deeply thought of price fluctuation of agricultural products in China. *Price Theory Pract.*, 1: 57-60.

End note:

- 1: Rural impoverished population refers to people with yearly averaged consumption expense less than 1307 Yuan. This population takes up 3.86% or so of the rural population.
- 2: Urban impoverished population refers to people with yearly averaged consumption expense less than 3433 Yuan. This population takes up 3.86% or so of the rural population.