STABILIZING THE MARKET FOR FOOD GRAINS: SOME HISTORICAL EXPERIENCE

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ABSTRACT

Developing countries where the food grain harvest varies sharply with rainfall have been advised to set up parastatal enterprises to stabilize their domestic markets by buying into and selling out of buffer stocks. A counter view is that continuing such operations is too costly. When charged back to farmers they become a deterrent to production. This paper looks at historical precedents for state management of food grain supplies and prices. The experience of past societies subject to substantial constraints on transport, communications, and the mobilization of finance can provide useful insights.

INTRODUCTION

In most countries and at most periods of history consumers without access to land have obtained their basic food grains through commercial market channels. These have been made up of wholesalers who mobilized finance to buy from producers, undertook transport and storage, and together with retailers, assumed the risk of re-sale at a remunerative price. Where consumers wanted to buy their food grain as bread, channels were extended to include millers and bakers.

The prevailing role of government has been to ensure stable conditions for market operations, and establish standard weights and measures as a protection against fraud. Under pressure from consumers, many governments have also responded to a concept of 'just prices' intervening to punish wholesalers and retailers who were considered to be overcharging in a time of scarcity.

Where the staple food grain is harvested during a limited season (or seasons) and yields tend to vary substantially between one season and another, it is accepted wisdom to hold over some reserves from the good seasons. This is done by farmers and their families, by traders who have access to storage and by public authority that is responsive to popular needs. This may range from a tribal chief in Africa, to the oligarchic heads of city states and authoritarian monarchs.

The first account of such action on a large scale appears in the Bible in Genesis 4. The Pharaoh or King of Egypt had dreamed that a series of good years for grain production and cattle raising would be followed by seven bad years. He was advised to look seek a man discreet and wise, and set him over the land of Egypt.

> Let Pharaoh do this, and let him appoint officers over the land, and take up the fifth part of the land of Egypt in the seven plenteous years. And let them gather all the food of those good years that come, and lay up corn under the hand of Pharaoh, and let them keep food in the cities. And that food shall be for store against the seven years of famine, which shall be in the land of Egypt; that the land perish not through the famine.

This action was taken; in due course came the bad years. In response to popular appeals for assistance the grain stores were opened and supplies made available. Thus Egypt was very well placed compared with nearby countries which were also affected by drought. Emissaries came to Egypt from those countries to buy supplies to stave off famine.

Fact or legend, the action taken by the Pharaoh of Egypt presaged broadly the recommendation of the Food and Agriculture Organization of the United Nations (FAO) in the 1960s and 1970s to countries of Africa, Asia and Latin America. Most governments of developed countries carry over stocks of grain against a short harvest or the interruption of normal supplies. The advice and assistance it gave in establishing and operating food grain supply and price stabilization systems in developing countries is recognized as the most significant contribution of the FAO's Marketing Service (Lele, 1989).

'Managing the market with 10 percent of the crop' was the FAO marketing dictum. In developing countries, half the crop was commonly eaten in the villages where it was grown. The other half reached consumers through market channels. A shift of 5 to 10 percent in yield at harvest could easily occur under rain-fed conditions. It would result in a much more than proportionate shift in prices. If the government could buy on average some 20 percent of the quantity marketed it could keep prices within certain limits by holding and releasing stocks. Buying at a pre-announced price just after harvest would be an incentive for production, especially for the poorer growers under pressure to sell at that time when prices were lowest.

Already in the 1950s FAO had advisers in Colombia, Guatemala, Honduras, Jordan, Iraq, and Malaysia. Later it helped many of the African countries. For the Asian region it promoted an Association of Food Marketing Institutions to exchange experience and training.

Stabilization Mechanisms

Typically, a parastatal body was established to implement the program. It was then assigned capital to acquire storage and empowered to obtain bank finance under government guarantee to buy and hold stocks. The most economical approach was to use existing grain wholesalers as agents. This avoided the overhead cost of maintaining staff and facilities to undertake purchases which were seasonally concentrated and could vary greatly according to the harvest. This would not ensure, however, that the smaller farmers received a guaranteed minimum price. So the stabilizing agency often came under pressure from farmers to set up its own buying stations in the rural areas.

To help meet the cost of these operations, FAO proposed that the initial stabilization stock be supplied from external sources by the World Food Programme or bilateral aid. It could be replenished by food aid when drawn on to relieve famine. The stabilizing agency could also be assigned a monopoly of grain imports for higher income consumers, such as wheat or rice. Profits from these sales could be set against the cost of stabilizing the market for domestic food grains.

This constitutes an overall frame for protecting both producers and consumers against the negative aspects of a free market where output can vary sharply from season to season. It raises, however, many issues in operation:

> How big a reserve stock is needed under a particular set of production and consumption conditions?
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> How should such a stock be acquired?
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> At what prices should supplies be bought from farmers and released to consumers taking into account the need to allow a margin sufficient for commercial movement and storage?
>
> What proportion of a country's financial and administrative resources can be committed to such a program in the face of competing claims?

How can the body administering such a program be kept efficient given the scope for waste and the temptations for corruption?

These issues continue to bedevil governments and their advisors. The pressures and counter pressures are notably acute where governments are fragile, where their financial resources are severely constricted. There is a wealth of literature from FAO, the International Food Policy Research Institute, the World Bank and independent research drawing on economic concepts and contemporary endeavour, Pharaoh's action provides basic guidance. How far did subsequent governments pursue and develop it in parallel circumstances? The balance of this paper will review some historical experience.

Mainly this is taken from Athens and Rome during the classical period. Both cities had relatively large populations dependent on food supplied through marketing channels that could be interrupted. Government attained there a degree of sophistication not seen again for many centuries. There is also a comparative wealth of information.

Various medieval monarchs and city authorities took summary action to control supplies and price of food grains under pressure of famine, epidemic disease and war. The two further cases taken up here - Florence in the sixteenth century and Saugor, India in the nineteenth may seem disparate. Each demonstrates, however, the consistent application of a well thought out policy. We are fortunate in having detailed accounts.

ATHENS

The population of Athens and the area around known as Attica was only 220,000 to 250,000 in the classical period. But this was far more than could be supported from local food production. One of the motives for sending out colonists to accessible Mediterranean coasts was to reduce the population dependent on imported supplies. This dependence increased as Athenians developed a taste for bread made from soft wheat, as opposed to their traditional porridge of home grown barley. This wheat was available from Thrace and the northern shores of the Black Sea.

A mark of a statesman, according to Socrates, was to know how much wheat was needed to feed Athens. There is a rich literature on the measures taken to ensure supplies adequate to meet the consumers' needs at acceptable prices. Lysias' famous speech 'Against the grain dealers' in 386 B.C. presages two subsequent millennia of popular feelings about the trader and his propensity to manipulate market supplies to profit advantage. (Austin and Vidal-Naquet, 1977)

Retail markets were already organized and supervised at this period. The city authority drew revenue from leasing shops and sites for stalls around a paved colonnaded square. 'Agoranomi' or market supervisors rang a bell to open the market, and verified the weights and measures used and quality specifications. They also supervised currency exchange, which could be complicated since various Greek cities had their own coinage. They were also supposed to see that an adequate supply of provisions were put on the market at a 'fair price'. Inscriptions have been found praising 'agoranomi' under whom 'there was plenty and fair dealing' and appending the prices prevailing in their year of office.

The problems of price management became acute when poor harvests and interruption of shipments from overseas cut the supply of food grain. In the fourth century B.C. there were laws that for merchants setting out from Athens half the return cargo must be grain, and that grain must not be transported elsewhere. The penalty for non-observance was death.

Following Lysias' attack retailers were permitted to buy only 50 baskets of grain a day - a measure intended to curb 'speculative hoarding'. Mark-ups were restricted. The number of wardens appointed to supervise grain market operations was increased in 320 B.C. from five in Athens and five at the port to 20 and 15, respectively.

The grain merchants of ancient Greece were family operations using their own capital. Often the city authorities assembled capital for them to use in purchasing grain from distant sources. Privileges and honours were bestowed on merchants and land owners who sold grain at prices below levels inflated by shortage. While public spirited officials and other personalities often took pride in selling grain at a loss in a time of scarcity, and this was inscribed on stone for posterity to note, there was no regular hand out of the kind that became institutionalized in Rome. Nor is there evidence of a consistent policy of maintaining stocks in public hands against an eventual shortage.

ROME

Rome, of course, was a much bigger city than Athens. Its food market requirements were unique for many centuries. It had a population of from 600,000 to over a million, according to various estimates. Meat, dairy products and fresh vegetables were eaten only by the well off. These and some food grain came into Rome from farms within reach on foot or by horse and wagon. The bulk of the basic food - grain and pulses - to feed a great concentration of people was brought from far afield, notably from Egypt and what is now Tunisia. There was a dependence on extended marketing channels, and on the transport, storage, financing, organizational and risk bearing initiatives they involved, unknown to the world hitherto.

Much attention has been given to the populist elements in Roman life - provision of 'bread and circuses' by politicians and emperors wanting to be liked. The trend in recent writings, notably by the 'restrictionist' school, has been to set this into balance. A large part of Rome's food supply arrived through free market channels made up of 'negotiatore' (brokers) and 'mercatores frumentiari' (grain wholesalers) subject to government intervention only in emergency.

Facilitatory Action

Aside from the quantities it supplied to people directly, the general stance of the government was to assist private traders. Impressed by the losses and delays incurred in discharging grain for Rome at Ostia in all but the most favourable weather conditions, the Emperor Claudius undertook the construction of a new protected port. A major advantage was that ships could then unload the year round so easing the bunching of arrivals during a limited season. With the public treasury depleted he obtained a loan of 'one million gold pieces' from the six largest grain wholesalers to begin the work. They were promised repayment as resources became available. This is a clear indication of the strength of the private grain trading sector.

The grandiose Trajan markets still preserved in the centre of Rome were built by that Emperor to mark an era of power, prosperity and stability. They were intended for use by private shop keepers - like the shopping malls of today.

There were large public warehouses for grain and other produce at Rome alongside the river, at Ostia its main port, also at Pozzuoli near Naples where grain was often offloaded for shipment onto Rome in smaller boats. The 'Grandi Horrea' at Ostia built in the first century A.D. had 7,200 square metres of floor space; even so it was dwarfed by the Galbana store in the Testaccio area of Rome.

This storage was essentially horizontal, with a ground floor and one suspended above it. Each was divided into a number of chambers with access from a courtyard or by passages. Grain was moved in an out in sacks and baskets.

The big stores at Rome for general commercial use were built by rich merchant families, often when one of their members attained high public office. The Horrea Lolliani, built by a member of the Lollia family who was consul, seems to have gone into imperial ownership when Claudius confiscated the property of one Lollia Paulina, a very rich woman. The Horrea Galba were built by the Sulpicius trading family. They became state property when Sulpicius Galba of the family, the richest private citizen of the time, was elected emperor. The big stores at Ostia were built by the emperors Claudius and Trajan as integral parts of their new port construction projects.

Stores for public use were lent to contractors who then subletted space. There is a record of the Horrea Seiana being lent to such a contractor for a five year period. Storage laws were developed setting out the responsibilities and the rights of such contractors.

The stores of the emperor were run directly by imperial slaves or freedmen. Later they came under a 'Procurator annonae' or supplies supervisor. This post was concerned with the prevention of fraud and the proper use of weights and measures. Contracts with shippers formed a large part of its business. The incumbent heard and adjudicated on civil complaints related to the food market. He was also supposed to coordinate supplies on a predominantly free market so as to maintain steady fairly low prices, for grain in particular. It is not clear how this was done other than by passing on information, the use of persuasion and the occasional fixing of prices. That the grain merchants of Ostia set up a statue to honour one 'Procurator Annonae' suggests that his interventions did not bear too heavily on their operations.

A grain merchants' guild developed under the later empire. There was also a guild of grain measurers institutionalized into 'acceptores, adiutores and nauticarii'.

Samples of grain in sealed earthenware pots or leather wallets were the basis of transactions over distance. On the side of the container were inscribed details of the sample, also of the boat on which it was cargo. They could travel on the boat along with the shipment, or be sent separately in advance. That they could be effective in revealing fraud is illustrated by a papyrus of A.D. 188 constituting a letter to the place where a cargo of wheat had been loaded complaining that it had been adulterated with earth and barley.

Tablets discovered in 1959 during the construction of a new highway provide conclusive evidence that the grain warehouses were used by private traders and that traders could obtain credit on produce left in store, at a reasonable rate of interest. Loans are recorded to C. Novius Eunus, a large scale dealer in foodstuffs, amounting to 10,000 sesterces payable on demand, by T. Julius Evenus. As collateral Novius pledged 7,000 modii of Alexandrian wheat and 4,000 modii of chickpeas and lentils in sacks 'all of which I have in deposit in my name in the public warehouse, the Horrea Bassiana at Puteoli'. 7,000 modii would be about 45 tons. The deposit of these stocks coincided with the main season of arrival of ships from Egypt suggesting that they had been taken into storage from a ship pending resale.

On a further tablet Novius records an additional loan against the same collateral implying that its market value provided ample coverage. Other tablets record the renewal of the loan in part at an interest rate of one percent per month for 13 months, with a penalty of 20 sesterces per day if repayment was delayed beyond 31 October.

The initial loan was made four days before the collateral went into store suggesting that the lender accommodated a cash purchase from a ship cargo of produce which then went into store. At this point the grain was formally made over to the creditors. Another tablet records a loan to a different person against the security of 13,000 modii of Alexandrian grain, double the quantity pledged by Novius.

Deducible also from these tablets and other evidence is a high upward mobility in Roman commercial circles at this time. The first loan to Novius by Evenus was handled by his agent, a slave named Hesychus. The second loan was made by Hesychus on his own account. Evidently he saw a foolproof opportunity to use to advantage some of his own funds.

Striking indeed is the progress of a slave sent to Tunisia to buy wheat for his master in Rome. He became known and respected at the grain market centre of El Djem where warehouses from the Roman period still exist. He first moved to buying and shipping on his own account. Then he acquired the use of land and became a resident producer wholesaler. The apotheosis of his career was for him to be sent back to Rome as senator.

Claudius referred to the 'grain merchants' ring' when he was looking for funds to build his port. Later they had a guild at Ostia. We have no reason, however, to suppose that within such loose professional groupings they did not compete in obtaining supplies and in organizing shipping and sales to the best advantage.

State Distribution of Grain

Subsidized and free distribution of grain began in Rome with attempts by individuals to ingratiate themselves with the public during times of scarcity. One such individual was Spurius Melius who bought up grain in B.C. 440 and distributed it free. He was put to death by the patricians who resented his efforts to achieve popularity. His house was razed to the ground and the site kept vacant (Hare 1876).

Introduction of a continuing distribution to specified sets of citizens is attributed to the tribune Gaius Gracchus in 123 B.C. The amount was 5 modii per month - about 75 pounds, according to a speech delivered by a tribune in 73 B.C. Some 200,000 families were eligible. However, the quantity allocated, while exceeding that needed for one man, was insufficient for a family. For the balance they would have to go to the free market.

Though attacked by conservatives such as Cicero as likely to promote indolence and as ruinous for the treasury, this program continued for several centuries. The beneficiaries were not necessarily the poor. The free grain went to 'citizens'. Immigrants, servants and slaves were not eligible; they were left to the care of the people for whom they worked.

This state allocation was not free initially, but by the time of the emperor Claudius the beneficiaries had come to regard free distribution as their right. At some periods it took the form of bread handed out by bakers from stalls sited on the various flights of stairs around the city. Establishments combining several stone mills operated by slave or donkey power and a baker's oven can be seen at Ostia and other excavated sites.

The burden on the state treasury of financing this distribution is obvious, but while they tried in various ways to contain this obligation none of the emperors dared set it aside. In A.D. 6, Augustus doubled 'the grain dole' because a serious shortage in free market supplies had forced up their price. At one point under Claudius stocks in hand fell so low that he became alarmed and 'cut down the free ration of grain to a very small daily measure'. Frequent disorders were reported from the poorest quarters of the city and much 'loose revolutionary talk'. Claudius bought up and commandeered grain from every possible source.

In addition to this traditional obligation the government also bought grain for the imperial bureaucracy and for army units located in or near Rome. Total annual consumption of grain in Rome during the first two centuries A.D. is estimated at around 400,000 tons. Of this the state procured 80,000 tons for free distribution and a further 7,000 to 10,000 tons for government and military personnel. This leaves say 310,000 tons, three quarters of the total supply, to come in through free market channels.

Emergency Measures

The year A.D. 5 saw a very bad harvest in Italy due to drought followed by torrential rains that beat down the crops before harvest. The public granaries had already been depleted because of a poor harvest the preceding year. The Emperor Augustus sent commissioners to Egypt and other places to obtain supplies. These were distributed to the needy at his expense. He also took drastic measures to limit the needy. He banished temporarily all but householders and their families to country districts 100 miles or more from the city. Those expelled included the professional sword fighters who could be dangerous if there were disturbances. Thinning the population of Rome was also a recourse in a similar emergency 300 years later. By then, as Casson (1980) remarks drily, attitudes had changed. Scholars were expelled; 3,000 'chorus girls' were allowed to stay.

There are various references to the emperors' holding stocks. In A.D. 62, some state grain had been around so long that it went bad. These stocks are thought, however, to be surplus to requirements for official distribution left over from good years when tribute and the output of imperial holdings provided more than was needed. Casson also marshals against the argument that the emperor held stabilization stocks, the frequent concern about delays in the arrival of the supply ships from Egypt due to weather conditions and other interruptions. Such concern would be normal for a city so dependent on imported supplies and unprotected by an ample carryover.

When Claudius was afraid to go out into the city because people pelted him with bread crusts to show their dissatisfaction with current high prices, he was inspired to seek a long-range solution. This was to extend the season of arrivals by ship from Egypt by compensating merchants for storm losses.

There is no evidence of a program whereby the state operated a buffer stock system to manage the overall market. Its preoccupation was with its more immediate commitments - the 'grain dole' and feeding the army.

Measures to manage the overall supply adduced by some scholars include:
a) controlling exports of grain from Egypt, the main source of supply;
b) fixing the price for retail sales in Rome.

There does not seem to have been tight regulations of shipments. Exports from Egypt were subject to informal allocation. On an inscription found at Ephesus an emperor of the second century tells his merchants that the first claim on Egypt's supplies is that of Rome. If the harvest is abundant then they, the first of traders from other cities, may satisfy their needs. Only during a year when supplies were short were limits applied, as when Hadrian permitted '60,000 modii to go to the people of Tralles', a town in Lydia, Anatolia.

Price fixing occurs in the literature in response to shortages causing hardship. In A.D. 19, Tiberius set a maximum sales price. He paid a subsidy of 2 sesterces per modii to traders to enable them to meet his price. This is the only instance in the literature of a subsidy policy. On many other occasions of high free market prices the government announced a retail maximum, in the expectation that it would be observed for a time and would help consumers in bargaining.

The next grain marketing experience examined is that of Florence in the sixteenth century. Here, a paternalistic government tried in general to balance the interests of producers and consumers.

FLORENCE

Though down from its peak in the sixteenth century, Florence had been one of the largest cities in Europe, smaller only than Paris and London. The bulk of its food needs were met from domestic agriculture. When the harvest was poor, supplies had to be brought in through the port of Livorno.

Quaglia (1980) has brought together information on the responsibilities assumed by its authorities over food supplies and sales at that time.

There were two magistracies controlling the market in agricultural products. The first, the Abbondanza, was specifically responsible for the production and supply of cereals. The second, the Grascia, controlled the production and exchange of all other foodstuffs. It was obligatory to report the quantities of products harvested - wheat, secondary cereals, and olive oil - as well as population statistics, so that a clear picture of availability could be reached. In this way the Grand Duke was kept informed of the supply situation and it was he, in the last instance, who intervened and took decisions.

Supplies moved to consumers through free market channels, but there was regulation in detail. Within an area of some 20 miles around the city, grain could only be transported in the direction of the city. During the first hours of the market sales were in small quantities of grain only to individuals for their own consumption. It was even laid down that village supplies should be gradually put on the market every year towards the end of the agricultural year. This was a time when it was most difficult to make ends meet, and when the small rural merchants risked finding themselves without supplies.

While the price of grain was free, the magistrates set the weight of bread loaves, which differed from place to place. The bakers were obliged always to bake the same quantity of bread, which was always sold at the same price, but the weight of the loaves varied according to the orders of the magistrates. These weights were calculated against the market price of grain, the bakers' costs and the 'reasonable profit' which they were allowed to make. The variations in weight were not automatic, but depended on the general situation in the country.

Normally the bakers could obtain supplies freely, and were limited only by the quantities on the market. There were, however, cases when the Abbondanza intervened to provide supplies freely or by force. This happened when prices rose and the Abbondanza took a decision to sell its own grain at prices below those of the market, or when the Abbondanza, due either to poor estimation or incautious buying, found itself with excessive supplies, or supplies that were likely to deteriorate in storage. The Abbondanza could also force the bakers to buy from it directly when it needed to replace quickly capital which had been laid out on purchases.

On occasion there were extreme interventions. After the poor harvest of 1591, bread was sold to the poor at a subsidized price from shops run directly by the Abbondanza; the cost was disastrous. From time to time the proportion of wheat in bread was limited, sometimes to half, with the balance made up of coarse grains and pulses.

The decade from 1620 saw a sharp drop in population due to an epidemic of plague. Grain prices fell sharply. The Abbondanza was ordered to buy to ease the difficulties of producers. Wholesale buying was freed throughout the state, except for the twenty-mile zone round Florence itself.

Thus the government intervened to level off price movements up or down, following the notion of a 'fair price'. Controls were designed not only to protect the urban consumer, and so keep wages down, but also took account of the needs of the producers. If prior attention went to the city, this was because the population there could more easily riot. The need to avoid popular protest and disturbances was a common theme in the correspondence between the Grand Duke and his officials.

While there were extraordinary interventions the measures taken were generally supportive of existing marketing channels. Although the controls over bread making were always there, in normal times the bakers were allowed to find their supplies freely as long as they adhered to the stipulated weights. The Grand Duke took measures to buy grain abroad during shortages. The Florentine and Livorno merchants did also; on occasion supplies were acquired from them directly.

In 1592, to bring down the prevailing very high prices, there was a suggestion in the Grascia that merchants' licenses should be withdrawn and their activities stopped. The Pratica Segreta, one of the most important organs of the Medicean government, and the one closest to the Grand Duke, imposed its own views which were quite the opposite of such a proposal. It argued, that were such intermediaries to be eliminated, there would be no grain left on the market, and were the Abbondanza to have to intervene directly in the market this would result in a heavy increase in costs.

The stricter controls were applied in response to short-term crises. Over longer periods intervention was more mediated and tolerant, seeking to balance and harmonise the interests involved.

The generation of a food riot and break-in to a bakery in Milan, a neighbouring city, at about the same period is a feature of the Italian classic (Manzoni, 1952). The process of de-regulation of bread and grain marketing there was outlined by Grab (1985). It was slowed down by fear of the price crises and difficulty in reconciling the interests of agricultural landowners who wanted a vigorous export trade and of the urban poor who wanted cheap and abundant bread.

The next situation studied - in Northern India - focuses on the problem of bringing privately held stocks onto the market without employing measures that would deter private investment in storage in the future.

SAUGOR

In this part of India seasonal shortages of grain were a regular occurrence. The trade was in private hands; wholesalers held stocks for an expected rise in price. The issue for those who had to buy on the market was when would the wholesalers release their stocks? In this area longer term storage of grain was in brick lined pits. Sealed hermetically, they were secure against insect damage. Situated behind a merchant's house they were not easily identified.

Tucker's account (1937) of the handling of such a situation by British administrator, W.J. Sleeman, brings out the need for a very cool head. In 1830, there was famine in Saugor. European and local communities raised funds to help the needy, but Sleeman, a man with some economic training, knew that such help could bring no cure. He also knew something which no one else seemed to realize: that although the wholesalers still had considerable secret stores of grain, they would never open these if they thought that the authorities would requisition the contents. By threats he might have some of them opened, but the others would remain concealed and never be found.

He was now put to the severest test of his life. Everyone demanded that he should break open the traders' stores by force. The colonel in charge of the troops swore that they would mutiny within a week as food was giving out. Sleeman's wife was in tears; almost on her knees she brought starving swollen-bellied children to him to demand that he do something. Famine-stricken people thronged about his house. The police inspector declared that the lives of his police would be no longer safe unless the grain pits were searched for and opened forcibly. Sleeman was regarded by all and sundry as a pig-headed, callous fool. He was shunned wherever he went, a grim strained figure. Nevertheless, he declared firmly that he would never permit any man's granary to be opened by force.

He issued a proclamation that anyone could keep his grain and sell it wherever and whenever he pleased and at whatever price he could get. Within a few days the traders came to him to ask him to protect their stores. His reply was that he would do so with his police, provided that all, even the most secret stores, were disclosed to him. Within a few hours there was a constable on every grain-pit in the area, the doors were flung open and the grain flowed out on to the markets, attracted by the high price, whereupon the traders forthwith sent messengers to Malwa, a distant centre that was better supplied, for convoys of grain to be brought into Saugor to catch the good market. The flood of wheat brought the price down at once and the famine was over.

When Sleeman was at the worst extremity he had a note from a fellow administrator describing terrible conditions in Elichpore, where the breaking in of the grain stores had only brought a temporary relief. Sleeman advised him to issue the same proclamation as he had issued: that would cure the troubles. And cure them it did.

CONCLUSIONS

This paper has brought together experience in the management of grain markets in ancient Greece and Rome and, for contrast, that of Florence in the sixteenth century and Saugor, India in the early nineteenth century. Its conceptual frame has been to examine the circumstances where it would be advantageous for central authority to stabilize food grain prices by buying into and selling out of a buffer stock. This also involves consideration of the conditions where this is practicable and where other measures might achieve an adequate stability at less cost and disturbance of normal marketing channels.

Factors bearing on this issue include the frequency with which shortages occur and their severity, the administration and financial resources available, and the interests of the social groups paramount in the making of action decisions.

The governments of Greece and Rome both came under periodic pressure to deal with shortages of food grains. They did not, however, establish continuing mechanisms for containing them. There were no state grain fleets to bring in supplies from production areas more consistent in output, nor state stabilization agencies in continuing operation. Local aristocracy maintained a continuing resistance to their establishment. It had social, economic and political power. In Athens, ambitious families bought grain and sold it at low prices during times of shortage. This was one way in which they competed for public office, prestige and honor.

In Rome, attempts by individuals to gain popularity in this way were heavily frowned upon. By conquest, however, it obtained access to substantial grain production resources. The system of grain distribution to citizens introduced by the Tribune Gaius Gracchus was unique in its time. Once established, though attacked heavily for its political implications and cost, it could never be abolished. While it did not cover all their needs it was of continuing benefit to a favoured group of citizens, and indirectly to others to the extent that it reduced demand on the free market.

The main contribution of Claudius and subsequent emperors was to strengthen commercial supply channels. They improved port handling, provided storage for hire, set up facilitatory services through the office of prefect of grain supply and generally encouraged merchants to extend their supply channels. They did not, however, attempt a continuing management of the market as a whole through buffer stock operations and tight controls.

The paternalistic government of Florence in the early sixteenth century went a considerable way in this. It maintained a continuing organization, the Abbondanza which bought, held stocks and sold alongside private marketing channels. When judged necessary it made massive purchases abroad, applied rigorous controls designed to promote direct transfers from producers to consumer; it made free distributions to the poor. This could be done because Florence was rich from artisanal manufacture and commerce. Its government had substantial resources to draw upon from outside agriculture.

Sleeman's course under the stress of famine demonstrates skilled management of independent marketing enterprise by authority with no resources to hold stocks of its own. Instead of punitive measures against what might be termed hoarders, he gave protection in return for information. When the merchants became aware of the stocks held by their fellows they hastened to sell.

Consistent maintenance of stabilization stocks in India began with the establishment of its Food Corporation in the 1960s. Since then famine has been rare. The annual government subsidy required averaged about one dollar per person at that time.

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