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EQUITY IMPLICATIONS OF FOOD POLICIES FOR THE RURAL POPULATION IN EGYPT

Joachim von Braun¹

Government interventions in food markets have numerous objectives, one of which is to supply sufficient food for the population. Egypt's food policy seems to be doing an exceptional job—no country with a comparable per capita income level has such a high food supply. When calorie consumption per capita of 73 developing countries was regressed on variables such as per capita income, past growth, and share of agricultural population, Egypt had the highest underestimated calorie supply in such a model (Braun). The current favourable supply situation is due to the attention which Egypt has historically devoted to basic food provision (Goueli). The high consumption level is achieved through an extended system of subsidies on food, which required about 12 percent of total public expenditures in 1981.

The impact of food subsidies on the economy is at the heart of an ongoing controversy in Egypt. Assessments of their effects on growth, public investment, and inflation differ widely² as do judgments on the distributional implications of the system. A central issue in this respect is the urban bias which is frequently seen as a characteristic of food subsidy schemes in developing countries and which a number of studies mention as dominating the Egyptian system.³

This paper particularly addresses the urban bias hypothesis, and focuses on the equity implications of the food policy system for the rural population. A rigorous theoretical framework for an evaluation of the urban bias in a country's food policy would estimate the deviation of rural and urban incomes and possibly food consumption compared to an alternative system (e.g., free market). Such disparities would arise as a result of producer-consumer transfers and the distribution of government subsidies. A policy would be urban biased if it relatively increases urban real incomes in comparison to rural ones. The theory would also have to deal with the problem of valuing changes in income distribution patterns. A complete evaluation of the urban bias question in the rigorous theoretical sense mentioned is not intended here. The analysis in this paper focuses on equity implications of the current system only, determined by the distribution pattern of food subsidies and food distribution.

Design of the Food Subsidy and Distribution System

The subsidized food distribution system in Egypt has three major components. First, bread and wheat flour are available to everybody at licensed outlets at a highly subsidized price in unlimited quantities. Second, practically every household owns a ration book. Basic rationed quantities of rice, cooking oil, sugar, and tea are guaranteed. Additional quantities are sold at higher prices but are not always available. Pulses are also partly rationed but supply is not assured. Third, frozen, imported meat and chicken are sold in portions if available. Queueing is the common means of rationing for these goods. Domestically produced meat is regulated by fixed prices. Meat sales are restricted to certain days to reduce meat consumption.

Food distribution is administered by the Ministry of Supply. Distribution Committees at the regional and local levels define needs in an annual plan and have some flexibility in deciding on distribution, especially in situations of scarcity.

Given this general policy, rural households may be affected by the actual administration of the system for their locality. The rural system may differ from the urban one both within the same region and also from that in other rural areas. There are fewer bakeries and flour outlets in rural areas, a situation

which increases costs of acquisition for the consumers. Ration regulations and availability of additional quantities of rationed goods also differ. Outlets for subsidized meat are almost nonexistent in villages (Alderman, Braun, and Sakr).

Determinants of Government Cereal Distribution

A major determinant of regional food availability in Egypt is the government's decision to allocate a certain quantity of food to a region, and to produce a certain quantity of food from a region. Interregional private trade in basic food is controlled. Policy orientation may be seen in the actual government distribution pattern for wheat, wheat flour, and rice, the most important basic food commodities in the distribution system. Wheat and flour are mainly imported; only a small amount is procured domestically. Rice is procured entirely from domestic production.

The procedure for distributing procured and imported cereals in Egypt's 20 major governorates was evaluated using a cross sectional regression analysis model. The policy variable--government distributed cereals per capita in a governorate (CERD)--is assumed to depend on per capita cereal production less procurement (CERP) and on the degree of urbanization in governorates (UPOP). Moreover, the model tests whether more cereal is available in richer than in poorer regions in terms of wage levels (WAGE), and whether government employees receive special benefits (GOVE, share of government employees).

$$(1) \quad \text{CERD} = f(\text{CERP}, \text{UPOP}, \text{WAGE}, \text{GOVE}).$$

Regression results are given in equations (2)-(4). They include separate estimates for wheat, rice, and total cereals. Much of the variance remains unexplained; it could be due to stock changes and special distribution flows to particular governorates due to political priorities or power of a regional political leader. Still, some conclusions can be drawn, despite a rather high correlation between the production and urbanization variables in the first two equations.

$$(2) \quad \text{TOTD} = -0.5557 \cdot \text{TOTP} + 0.3695 \text{ UPOP} - 0.0727 \text{ WAGE} + 1.776 \cdot \text{GOVE}$$

$$\quad \quad \quad (-1.70) \quad \quad (0.43) \quad \quad (-0.24) \quad \quad (1.35)$$

$$R^2 = 0.570 \quad \text{F-value} = 5.1$$

$$(3) \quad \text{WHED} = 0.6084 \cdot \text{WRMS} + 0.1715 \text{ UPOP} - 0.0036 \text{ WAGE} + 1.615 \text{ GOVE}$$

$$\quad \quad \quad (-1.80) \quad \quad (0.21) \quad \quad (0.12) \quad \quad (1.20)$$

$$R^2 = 0.520 \quad \text{F-value} = 4.2$$

$$(4) \quad \text{RICD} = -0.0394 \cdot \text{RWMS} + 0.2216 \cdot \text{UPOP} - 0.0652 \cdot \text{WAGE}$$

$$\quad \quad \quad (-2.98) \quad \quad (6.41) \quad \quad (-3.85)$$

$$+ 0.2889 \cdot \text{GOVE}$$

$$\quad \quad \quad (3.92)$$

$$R^2 = 0.854 \quad \text{F-value} = 22.0$$

where TOTD = total cereals distributed to governorates per capita per year (1980) in kilograms (wheat equivalent)

WHED = wheat and flour distributed to governorates per capita per year (1980) in kilograms (wheat equivalent)

- RICD = rice distributed to governorates per capita per year (1980) in kilograms
- TOTP = total cereal production available for human consumption per capita in kilograms (1980), equals production of wheat, rice, maize, and sorghum, less rice procurement and less animal feed use from maize and sorghum
- WRMS = production of wheat, rice, maize, and sorghum available for human consumption (calculated as TOTP) plus rice distribution in kilograms per capita per year (1980)
- RWMS = production of wheat, rice, maize, and sorghum available for human consumption (calculated as TOTP) plus wheat distribution in kilograms per capita per year (1980)
- UPOP = urban population as percent of total in the governorates (1976)
- WAGE = average wage per worker in the governorates (1976)
- GOVE = employees in government enterprise in percent of total in governorate (1976)
- *,**,*** = rejection of null hypothesis at 10-, 5-, and 1-percent level according to the t-distribution (in parentheses). Number of observations = 20.

The major determinant of regional distribution is the availability of cereals from local production. But per capita production differences seem not to be levelled out completely. According to the estimated parameters, an additional kilogram of cereal production per capita may decrease the quantity distributed per capita by 0.56 kilograms. Special direction of cereal distribution toward urban areas exists for the less important rice distribution, but not for wheat and aggregate cereals. As expected, the variable UPOP is always positive. A 10-percent increase in the urban population would mean 3.2 kilograms more rice per capita, which is about 10 percent of the country's average rice consumption. Income differences seem to be taken care of in a socially equitable way; that is, the lower the regional wage level, the higher the quantity of cereals distributed to the region, particularly for rice. The parameter estimates of the variable GOVE indicate that the government seems to support its employees via the cereal distribution system, but it should be mentioned that a high share of government employees falls in the lowest income groups. Comparison of actual and estimated aggregate cereal distributions shows that the model overestimates distribution to some regions in Lower Egypt, and underestimates distribution to generally poorer Upper Egypt, whereas the main urban areas of Cairo and Giza are fairly well covered.

In general, we may conclude from this regression exercise that there is some regional targeting in the food distribution system. But a disproportional allocation of food to urban biased food policy does not play an exceedingly important role for the pattern of distribution. Lack of data precludes a similar analysis for other points in time. Thus we cannot examine government food distribution behaviour when supplies were scarce, for example, during the period 1968-1973 when per capita cereal supply declined markedly. At that time, the cereal price index increased much more in rural areas than in urban ones. When supplies were short, the system was certainly less equity oriented than in the current favourable supply situation.

Impacts on Equity of Food Subsidies for the Rural Population

In considering the income distribution implications for household groups, the analysis is extended to other basic subsidized food items such as pulses, oil, and sugar. The central questions addressed are how much rural households, stratified by income groups, participate in the current subsidy system, and how much would eliminating the system affect food consumption.

The quantities of the various subsidized food items consumed are therefore estimated by income groups as well as price and income elasticities; in other words, adjustments in demand due to changes of the system are analyzed. A complete demand system, estimated as a linear expenditure system on the basis of a time series of cross sections, is applied for the purpose. The model distinguishes 14 commodities and 6 expenditure groups—three rural and three urban groups of similar household expenditure levels.⁴ It fits the changes in consumption patterns to price and income changes during the time period 1958/1959 to 1974/1975. Because the last actual observation of consumption patterns is for 1974/1975 only (CAPMAS), the current pattern for the expenditure groups is estimated using an ex-post projection. Consumption shares of basic subsidized food items are calculated for the six household expenditure groups under the assumptions listed in table 1. The current subsidy budget is then broken down into groups according to the shares of commodities in subsidized food consumption.

According to these estimates, rural consumers who represent 57 percent of all consumers receive about 40 percent of the total subsidy on basic food items. The consumption pattern of the rural low income group implies that it should receive 15.9 percent of the subsidies, but 21.6 percent of the population falls into that group, which means that it receives only 73.6 percent of its equity share (see table 1). The criterion for the definition of equity share in this context is a perfectly equal distribution of subsidy per capita, not weighted by income. The urban groups received higher shares. Differences within the rural and urban groups are not very high. This is mainly due to the low income elasticities of basic food items.

If income share rather than population share is taken as the criterion determining equity share, the distribution of basic subsidized food no longer appears to be urban biased, since average rural-urban differences are nearly the same as differences in rural-urban subsidy receipts.⁵ Taking population share as the criterion, an effective targeting of food subsidies toward the poor is achieved. Cost effectiveness of the system in terms of providing additional food for the poor appears to be rather low. But political feasibility of theoretical alternatives incorporating a higher degree of targeting is a big constraint, and in comparison to subsidy systems in other developing countries (e.g., see Ahmed) the rural poor are reached to a considerable degree in Egypt.

Completely phasing out food subsidies and adjusting consumer prices to corresponding world market prices would have far-reaching repercussions on food consumption patterns and on nonfood expenditures. At least in the short run, nutritional problems might arise in the low income groups. According to an estimate based on the demand system, such a hypothetical change in 1979-1980 would have shrunk effective food demand below the FAO calorie requirements for 26 percent of the population, 14 percent of which belong to the rural poor. In general, the urban population would be affected more seriously due to its high dependence on the system. If the subsidies were to be phased out by 1990, the nutritional risk could be avoided if per capita incomes in the low income brackets could be boosted by 2 percent per year throughout the period.⁶

Producer-Consumer Transfers Due to Distorted Prices

Where rural households are also farm households, they are also directly affected by the government's food policy from the supply side. Rice and pulses are procured at prices far below world prices via compulsory deliveries in a system of fixed quantities on the basis of an area allotment plan. Wheat and sugarcane are both also effectively taxed. A disproportionately high share of these procured commodities is channelled into the urban distribution system, which implies an income transfer from the farm sector to urban consumers. This increases the inequality of the system against the rural sector. These hidden transfers from the farm sector are not included in the calculation of the distribution of subsidies in table 1.

A second force acts in the opposite direction. Imported, frozen meat is distributed at a subsidized price, mostly to urban consumers, but the much more important domestic meat production is effectively protected. So fodder crops, especially Egyptian clover (berseem) which covers about 40 percent of the

**Table 1. Consumption of Major Subsidized and Rationed Food Items
by Rural and Urban Expenditure Groups in 1979/1980 and
Distribution of Subsidies: Estimation Results**

Item	Rural Expenditure			Urban Expenditure		
	Groups			Groups		
	Low	Middle	High	Low	Middle	High
-----Percent-----						
Share in consumption						
Wheat (total) ¹	14.0	16.9	2.9	13.0	40.5	12.6
Bread	9.0	6.5	1.9	16.5	49.2	16.9
Flour ²	21.8	33.0	4.5	7.5	17.1	6.0
Rice ³	6.2	12.2	2.9	10.6	47.7	20.3
Pulses ⁴	12.2	21.4	4.6	15.3	31.8	14.6
Fats, oils ⁵	21.5	32.5	6.6	8.2	21.4	9.9
Sugar ⁵	19.1	29.5	7.3	7.0	25.5	11.7
Share of population	21.6	29.8	5.2	8.2	26.4	8.8
Share of subsidies on the above items ⁶	15.9	21.1	4.1	11.4	35.3	12.1
Subsidies' share in per- cent of population share	73.6	70.8	78.8	139.0	133.7	137.5

¹Bread and flour in wheat equivalents.

²Total flour less nonwheat flour, less wheat flour from domestic wheat.

³Rural subsidized rice quantity estimated, assuming all urban rice being subsidized; consumption of government distributed rice in rural expenditure groups estimated according to shares in total rice consumption of the groups.

⁴Estimated by similar procedure as for rice.

⁵Total consumption; nonrationed purchases assumed as negligible.

⁶1980/1981 subsidy budget.

acreage in the winter season, are providing farmers with returns much higher than they would be at corresponding world prices. As high income groups consume the bulk of meat and milk products, this pricing implies an income transfer from the high income (urban) consumers to farm households. The implicit taxation of major food and nonfood crops (cotton) increases the advantage of growing fodder crops, but the impact on allocative efficiency is obviously negative (Cuddihy). The income transfer to livestock producers exceeds the net transfer established by the procurement of the food crops mentioned above, even under a wider range of assumptions.⁷ Thus, the effects of the food policy on the rural population are somewhat more favourable than they appear in the distribution pattern of fiscal food subsidies.

There is not enough information available to analyze in detail the effects of the food subsidy and agricultural pricing system for farm size classes and their households. A case study for Nile Delta region indicates that availability of subsidized bread in villages increases bread consumption from this source more on larger farms than on small (Alderman, Braun, and Sakr). On the other hand, small farms demand relatively more of the subsidized flour and continue to bake their own bread, which is probably cheaper, taking opportunity costs into account. This difference in demand behaviour results in changes of production and marketing patterns by farm size, not only for cereals; it also has an impact on the distribution of food subsidies among farm households.

Conclusions

Egypt's food subsidy system reaches most of the rural population. This contrasts with comparable systems in other developing countries. Nevertheless, the system does not support the rural and urban population equally in terms of absolute per capita subsidy receipts, but rural people get an equal share of subsidies relative to per capita incomes. Two additional factors should also be taken into account. Pricing of food on the producer side modifies the result indicated by the pure subsidy receipts, but does not alter our main conclusion. The regional pattern of basic food (cereal) distribution by the government does not strongly support a hypothesis of urban bias. A sharp distinction between rural and urban consumers does not fit the differences in the regional and commodity specific features of the system, nor the differences in household types, especially in the rural group.

Notes

¹International Food Policy Research Institute, Washington, D.C.

²See, for example, the arguments in Bruton.

³See, for example, USAID; and Korayem. Taylor assumes in some of his studies equal percentages of subsidized food for individuals in rural and urban areas.

⁴The demand system is described in Braun.

⁵Average urban-rural per capita income consumption ratios are estimated to have been 1.93 and 1.73 in the mid-1970s.

⁶There are indications that the survey underestimates the shares of the lowest and highest income recipients (El-Issawy). Cautious interpretation of the results is thus required.

⁷Transfers from the sector due to procurement below world prices of the commodities included in the analysis (table 1) account for roughly 20 percent of the subsidy budget for those commodities. If Cuddihy's framework is used to calculate transfer to meat producers in 1979/1980, higher figures are obtained.

References

- Ahmed, R.**, *Foodgrain Supply, Distribution, and Consumption Policies Within a Dual Pricing Mechanism: A Case Study of Bangladesh*, Research Report No. 8, International Food Policy Research Institute, Washington, D.C., 1979.
- Alderman, H., Braun, J. von, and Sakr, S. A.**, *Egypt's Food Subsidy and Rationing System: A Description*, International Food Policy Research Institute, Washington, D.C., 1982.
- Braun, J. von**, "Ernährungssicherungspolitik in Entwicklungsländern: Analyse und Strategien am Beispiel Ägyptens," mimeograph, Göttingen, 1982.
- Bruton, H.**, *Four Issues on Economic Policy in Egypt*, Economic Studies Unit, Foreign Trade and Economic Cooperation, Ministry of Economy, Cairo, 1980.
- CAPMAS (Central Agency for Public Mobilisation and Statistics)**, *Family Budget Surveys for 1958/1959 and 1974/1975*, Cairo, 1961, 1978.
- Cuddihy, W.**, "Agricultural Price Management in Egypt," Working Paper No. 388, World Bank, Washington, D.C., 1980.
- El-Issawy, I.**, "Interconnections Between Income Distribution and Economic Growth in the Context of Egypt's Economic Development," mimeograph, Princeton-Egypt Income Distribution Project, Cairo, 1979.
- Goueli, A.**, "Food Security Program in Egypt," in Valdes, A. (Ed.), *Food Security for Developing Countries*, Westview Press, Boulder, 1981.
- Korayem, K.**, "The Impact of the Elimination of Food Subsidies on the Cost of Living in the Urban Population in Egypt," mimeograph, International Labour Organization, Geneva, 1980.
- Taylor, L.**, "Food Subsidies in Egypt," mimeograph, Massachusetts Institute of Technology, Cambridge, 1979.
- USAID**, "Egypt's Food and Energy Subsidies," mimeograph, Cairo, 1981.

OPENER'S REMARKS—Jerry B. Eckert

Under the broad topic of "Equity in Agricultural Development," we have three papers dealing with the attempts by government in different settings to influence the allocation process. They are dissimilar papers, presenting (1) a conceptual view leading to pessimism, (2) an empirical study from which a reasonable success emerges, and (3) a very tentative suggestion of an alternative to an entrenched modus operandi of land allocation for strictly political reasons. One unifying perspective, that of the extent of government intervention in the allocation process, provides a point of departure for this discussion. A second area of common ground lies in the fact that each paper contains significant gaps in treatment, thus raising as many questions as are answered.

Adams and Meyer's paper provides a lucid exposition of possible effects of national credit schemes on income distribution in the absence of careful controls. The picture, according to the authors, is not terribly bright. Relationships reviewed suggest that not only certain popular credit policies (e.g., subsidized or controlled interest rates) but also several inherent characteristics of the credit markets in developing countries serve to worsen income distribution.

While the authors' exposition is fairly persuasive on the surface, it is difficult to accept the finality of their summary statement, "Even under the best of circumstances, it is unlikely that financial markets can significantly improve rural income distribution." The authors are apparently convinced that the development environment is sufficiently exploitative so that credit programmes, once made available, will be used to exacerbate existing differentials. Development planners must, indeed, be disillusioned.

I believe the authors have seriously underestimated governments' capacity for imaginative interventions aimed at targeting credit to selected target recipient groups, regions, or uses. The economic processes analyzed in the paper are basically those of unrestrained supply of and demand for capital, subject only to macro interventions at the level of quantity and price of capital. Yet the developing and developed countries are replete with examples where governments have used considerably greater control in the implementation process, and, I suspect, achieved more favourable results. In fact, it is questionable whether the laissez faire environment dealt with by the authors exists in any significant measure in developing countries. To read the obverse side of the coin of their own data, if Brazil accounts for half to three quarters of the problem world wide (as suggested in the data on transfers due to negative interest rates), then the rest of the world combined must be doing quite well indeed in controlling these distortions.

Planners and administrators have grappled for three decades with ways of directing credit programmes toward desired development goals. While we can in general accept the proposition that complete success is improbable, the paper provides no insights into implementation methods that might largely succeed. In this context, one wonders how different the analysis would have been if any of the following issues had been addressed. First, what differences occur when the borrower is a social group (village, panchayat, commune, or producers' association) which has well articulated internal goals with respect to distribution? Second, the paper is confined, as is most work on rural credit, to the formal credit institutions. Given the equity ethic inherent in many traditional societies, it seems pertinent to examine the comparative performance of traditional credit sources with that of institutional programmes with respect to equity objectives. Third, if we can accept that governments have the capacity to control, at least partially, the recipient mix of credit services, then are there not differential multipliers (e.g., between the expenditure patterns of large and small farmers) that yield differing overall developmental results from a given

quantity of credit? Fourth, it seems to me that there is a direct and inescapable relationship between credit programmes and investment oriented development strategies. For those who teach or do research in the area of distribution, poverty, and growth, consider the following devil's advocate proposition--that it is precisely the poverty of our past investment oriented growth theories that has led to the distributional crisis facing the developing world today. If strategies were to abruptly shift to focus on consumption as the engine of growth, what departures would be required in the design, implementation, or analysis of credit programmes? Finally, the paper makes no mention of resource complementarities. In a situation where the affluent are generally better off with respect to quantity or quality of all productive resources, they can apply borrowed funds to much higher production functions than their less advantaged neighbours. Viewed from this perspective, the return to positive real rates of interest could easily result in effective price barriers to the use of credit by small, resource poor production units.

Behrmann writes from the other end of the spectrum of government intervention. In a country where a segregationist set of policies has long been the principal determinant of resource allocation, he suggests a return to the market mechanism. Unfortunately, the suggestion appears more explicitly in the title than in the text. One must, therefore, guess at the precise recommendations in the absence of definitive text to that end.

If it is Behrmann's intention to recommend land transfer through the market from white farming areas to African farmers, then his own figures guarantee the infeasibility of this suggestion. With gross value of output at R42/ha for white owned land and R14/ha for African farms, it is more probable that a land market would shift use rights, if not ownership, to the higher value uses, from Africans to Europeans. Furthermore, this idea is politically unthinkable at present and for the future.

Behrmann points to significant amounts of white owned farmland lying idle, implying that some of these lands might be transferred to farmers that would put them back into production. While this is possible, one must recognize that this is not generally a period of agricultural prosperity worldwide, and the lands in question have probably been lain idle for sound economic reasons. South Africa has recently entered a 9-10 year period during which rainfall is expected to be below normal if historical patterns continue. One of the worst maize crop failures in history occurred in 1981/1982. Furthermore, terms of trade have turned against mechanized agriculture as a result of soaring equipment and energy costs plus strong political pressure to keep grain prices moderate. Taking marginal lands out of production constitutes one of several rational farm management responses. And one would not expect a land market to change this. If land is uneconomic to till under the best farm management, it is less so under unskilled management.

If it is Behrmann's intention to recommend marketable titles to land or its uses within African held areas as a means of generating viable farm size, then he must deal with the issue of landlessness as well as the roles played by traditional (nonmarket) tribal tenurial systems. On the first point, he presents data showing that if land were concentrated into 36 hectare units (which would yield an income equal to off-farm work), some 80 percent of the African population would be landless. The second point is not touched. It must, however, be recognized that a highly developed tribal ethic of equity lies behind traditional tenure and land allocation systems. That use rights cannot be sold is one of the important operational maxims drawn from the concern for equity. One should not blindly interject market systems without much more thorough analysis of the social and economic consequences.

The Braun paper makes its points clearly and will not create much confusion. One would have expected the analysis to have compared the distribution of food subsidies to the total expenditures on food rather than to total or per capita

expenditures. Furthermore, an examination of Egypt's food distribution programmes from a caloric consumption standpoint could be instructive.

I see the three papers at three points on a spectrum. Adams and Meyer stand at the end where government intervenes very little, and they show the consequences to be worsening distribution. Behrmann stands at the end of complete government control with its attendant inequities and pleads for the market mechanism as a counterbalance. Braun examines a system in which significant government interventions are interwoven with market forces, a blend reminiscent of Yugoslavian market socialism in its balance, and finds that the system works fairly well in achieving equity of food distribution and reaching the poor.

OPENER'S REMARKS—John M. Slater

I would like to congratulate Adams and Meyer on providing such an interesting insight into the problems of cheap credit policies in low income countries. I found their paper particularly informative because I am not familiar with the operation of the policies in developing countries. Subsidized credit schemes are an important ingredient of the agricultural policies in most countries, and clearly this is an important subject for discussion.

Their paper describes very clearly four ways that subsidized credit can affect financial markets, and the adverse implications for income distribution. I doubt whether any of us would seriously disagree with the logic of the arguments, although I did find the presentation somewhat unbalanced in places. For instance, it is stated that, "It is just as likely that some of the excluded individuals--small potential borrowers, those without loan experience, and those with less collateral--may have higher marginal returns." No one can argue with that statement. However, the relevant argument concerns the number and importance of the individuals who might be excluded. Others more familiar with the schemes will no doubt comment on the balance of the evidence presented.

I would, however, raise one further quibble over the use of the term leverage. Economic jargon develops because of the need for words or phrases which sum up lengthily economic arguments. However, unless the term unambiguously conveys the argument to other readers (i.e., economists, politicians, and decisionmakers), it can be counterproductive. I wonder if leverage is the best term to describe the basic economic process whereby a producer who gains a positive return from the use of an input can accumulate capital and grow faster (sometimes the growth is exponential) than a producer with limited access to the input. Perhaps a new word is not needed, and this process can be described as the effect of low interest rates on capital accumulation and growth.

Reverting to the theme of the paper, it does provide considerable evidence of the harmful effects that subsidized credit programmes can have on income distribution in developing countries. However, the implicit conclusions that cheap credit programmes invariably lead to the transfer of resources to the wrong people, and are particularly prone to fraud, are open to debate. If only the defects of policy measures were set out, I suspect that most policy measures would be rejected. Experience in government suggests that most policy measures have some positive and some negative effects; an optimum policy is usually a question of getting the mix of measures right and of ensuring that their administration is adequate.

The length of Conference papers limits what can be included, but I would have welcomed some reference to the objectives of subsidized credit schemes. The preamble to legislation setting up credit programmes does, I am sure, list the objective of helping poor farmers, but I would be surprised if it does not list many other objectives. One of the objectives I would expect to find in the preamble is that of stimulating investment and growth, and I would be interested

to know whether there is evidence that the side effects set out in the paper have prevented the achievement of this objective.

Subsidized credit or capital grant schemes are important policy instruments in many developed countries. Would the authors dismiss this with similar arguments to those in the paper or would they include them among the measures offering decent savings alternatives? Deposits by lenders are often all unaffected under these schemes, and lenders receive the going commercial rate. The schemes I am familiar with are those in the European Community where producers are provided with subsidized credit or capital grants as means of stimulating and directing investment. Evidence would suggest that they have by and large been successful in achieving these objectives without most of the disconcerting side effects mentioned in the paper. By restricting aid to particular types of farmers and particular types of investment, capital can be directed where it is most needed. Limits can be and are placed on the total an individual farmer can receive. I should add that the schemes are often designed to exclude small, nonviable producers, but I do not think this invalidates their potential usefulness in developing countries. The schemes require adequate administration and a reasonable extension service would seem to be essential. I would be interested in the views of the authors and other discussants as to whether such schemes are a practical proposition in developing countries. I would like to conclude by thanking the authors for providing such an interesting paper. I trust, however, that they will go on to develop their work on the alternative policy measures.

OPENER'S REMARKS—C. Mackel

I found Braun's paper very interesting, since it picks up an issue which I have often discussed with my own postgraduate students, particularly those from African countries. The equity problems posed by food policies with a definite urban bias were clearly present in their countries. It was equally clear that they were unsure how to solve them. Braun's paper is therefore important in that it attempts to measure the degree of urban bias in a developing country. It is essential that this type of evaluation is carried out so that an appropriate policy programme can be developed to reduce any deficiencies.

As Braun points out, Egypt's involvement in food policy has long historical roots. To my memory, the first recorded account is of Pharaoh paying attention to the patriarch Joseph and setting up a food reserve programme over 3,000 years ago. However, that was at a time when Egypt had an exportable surplus of cereals and was the bread basket of the ancient world.

When reviewing Egypt's present food policy, it is significant to note that this cereal surplus has gone, and that the bulk of the wheat has to be imported. Egypt has an admirable record on food supply, and Braun's analysis shows a reasonable degree of equity between rural and urban populations. However, this is at a considerable cost, and 12 percent of total government expenditure is absorbed in the food programme. It must therefore be a source of concern as to whether this programme can be sustained in the long term, particularly if there were an upturn in world cereal prices.

I would like to have seen the author make the basis for his model more explicit, and to have discussed more fully the aspects of taxation of producers' returns via the rigid procurement programme. Whilst the author discusses the consumer aspects of Egypt's food policy at some length, this neglect of the producers' equity position is a serious weakness. I believe that a food policy can only be described as truly equitable if both producers' and consumers' interests are kept reasonably in balance.

To sum up, the author has presented an interesting analysis of the effects of Egypt's food policy, an evaluation out of which Egypt comes fairly well. However, I believe that the analysis needs to be carried beyond this important

last step. There is a need to evaluate the effects of the present rigid pricing and marketing systems for certain staple crops. This step must be taken before a policy capable of stimulating domestic production can be developed. Without such a policy, I believe that Egypt's present equity between rural and urban consumers will break down under the strain of the increasing exchequer cost of food imports.

RAPPORTEUR'S REPORT—R. F. Bates

The views of the Ohio State school on real credit are well known and have become widely accepted by aid agencies. A number of discussants were not, however, convinced that their views could be classified as definitive. For example, India is an example of where subsidized credit schemes are important, and have proved successful. Sixty percent of medium term institutional credit in India goes to small farms, and a high proportion of such lending is directed to poor people, especially with the acquisition of productive assets such as bullocks, dairy animals, sheep, and goats. The repayment rates in at least six states in India are close to 100 percent, which is contrary to the observations of the authors that the default rate is high in several agricultural credit programmes. Where defaults have occurred, they have often been as a result of adverse climatic conditions such as drought and floods. Marketing aspects were also cited as affecting the rate of default. Groundwater development in India would not have reached the levels it has had it not been for the subsidized credit programmes. Low interest rate policies for small farmers have not affected the mobilization of savings as banks viewed the financial market as a whole and not as segregated operations.

The recent investigation undertaken in Australia into the financial system, "The Campbell Report," was brought to the attention of the author. That report supports the return to a free market mechanism for a determination of interest rates. The policy of low interest rates is famous. It was reported to have had an adverse effect on the ability of certain groups of small farmers to obtain their credit requirements.

The main reason small farms experienced difficulty in obtaining credit was not a result of the subsidized interest rate policies but of the high transaction costs involved in obtaining loans. A reduction in transaction costs by way of subsidizing the establishment of financial institutions at the village level may have some merit. Further, the promotion of innovative methods of lending specifically to reduce the transaction costs, such as group lending schemes, should be pursued.

In reply, Meyer agreed that a number of sweeping statements had been made in the paper. The authors' approach was, however, based on social interactions and was not merely a theory or conjection as suggested by some discussants. Evidence indicates that many credit systems have not expanded outside the original project areas because of financial problems arising from the subsidized nature of the agencies. Normal banks have to generate a surplus to function and this is not possible if basic economic principles are not adhered to.

The financial needs of the agricultural sector are extremely heterogeneous and it should be noted that farm households are frequently involved in a multiplicity of enterprises, and at different stages some households may have surplus funds while others may be in deficit. Their differences indicate that there is a need to mobilize savings to meet the investment needs of surplus households and the credit needs of deficit households.

The informal credit market indicates by way of the high interest rates which prevail that there is a good return to be had from borrowing.

Financial systems should be self-sustaining, and what is done for a certain group of farmers should not frustrate the total financial system.

As Behrmann was unable to present his paper, there was no discussion other than two statements from the floor. The statements raised the problems of equitable land allocation in South Africa with respect to the policies being followed by the government. Concern was expressed that the political nature of the land policies was not taken into account, and that an objective analysis was difficult if not impossible under the circumstances.

Several questions were addressed to Braun regarding the target groups of the policy, the disincentive nature of the policy, and the variable he had used in his explanatory function.

In reply, Braun stated that the target groups were those in need of food. The 1979 riots had indicated that it is important to make food available to everybody. The author felt that the variables he had used in his explanatory function were adequate as they relate to the calorie distribution.

The long term viability of the Egyptian food policy is questionable. It may experience constraints in the near future relating to increasing prices, increasing demand, and an increasing population. The taxation issue was not dealt with in the paper but it was necessary to point out that this operates at a cost to the economy. It was pointed out that he did not propose that the Egyptian system be applied to other countries.

Participants in the discussion included F. Baffoe, G. E. Dalton, G. D. Gwyer, J. B. Hardaker, R. F. Lord (Session Chairman), G. T. Magagula, K. S. Parikh, C. Ramalingam, G. J. Ryland, and P. M. Villegas.