Discussion

The Food Balance and Economic Growth: An Appraisal of FitzGerald's Reformulation of Kalecki

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In his article on 'Kalecki on Planned Growth in the Mixed Economy' which appeared in *Development and Change* 19(1), FitzGerald provides an interpretation in the form of an analytical model of Kalecki's analysis of the problem of financing economic development. This exercise, he argued, should be seen as part of a larger process of constructing a 'macroeconomics of development' on sound theoretical foundations, taking Kalecki's work as a point of departure. Such an effort is especially welcome at a time when matters of economic growth and distribution are often relegated to a secondary position. Indeed, a characteristic feature of Kalecki's work on development is that he consistently analysed issues of short-run adjustments within a perspective of long-run objectives concerning growth and equity.

In this discussion my aim is to make a critical assessment of FitzGerald's analysis of the aggregate food balance in the context of economic growth. FitzGerald remarks on Kalecki's vagueness concerning the main determinants of the growth in the demand for food and the consequent lack of clarity in specifying the distributional effects of a process of economic growth which involves grossly violating the food balance. A major objective of FitzGerald's reformulation of Kalecki's analysis is to correct for this apparent vagueness.

First, I argue that the specific strength of FitzGerald's reformulation lies in his insistence that in formulating the aggregate food balance, the structure of food entitlements of various classes should

be explicitly incorporated. However, FitzGerald's model suffers from a similar type of vagueness. Although he criticizes Kalecki for not clearly defining who consumes food (and from what income) and what is meant by price stability, his own basic model is equally vague with respect to the determination of real wages and to what is meant by price stability. A slight modification of FitzGerald's equations, however, brings the basic issue much more to the fore and leads to an interesting conclusion. Indeed, it will be shown that even if the distribution of *money* incomes in industry remains stable with respect to the relative shares of wages and profits, the distribution of *real* incomes between wage earners and entrepreneurs may be subject to adverse shifts resulting from the inflation of food prices.

Second, I argue that FitzGerald's attempt to model a food supply reponse to changes in the internal terms of trade constitutes the weak link in his reformulation of Kalecki's model. His concern with incorporating the growth in the supply of food as an *endogenous* component in the model determined by the *logic* of the model itself deflects attention away from the fundamental issue of understanding the institutional context of specific historical processes of agrarian change. The search for *completeness* of the model leads him towards adopting mechanical and artificial general assumptions concerning peasants' behaviour with respect to savings, investments and migration. It would have been preferable to see modelling as a useful analytical device to investigate interactions within a given structural context and to draw attention to the *complementary* need for analysing long-term processes of structural change which determine the configuration of social relations as well as their dynamic features. In this respect Sen's concrete applications of his entitlement approach to the analysis of famines provide illuminating examples in modelling short-run shifts in entitlements within a context which clearly needs to be understood in terms of the long-run historical process of commoditization and proletarianization within rural development. FitzGerald in contrast tends to fall back on a nondescript dual economy approach with a traditional sector of peasant producers who react in similar fashion to price incentives with respect to their production responsiveness and migration decisions.

ECONOMIC GROWTH AND THE AGGREGATE
FOOD BALANCE

A central preoccupation of Kalecki's analysis of financing economic development concerns the conditions under which economic growth does not take place at the expense of income distribution. It is consequently rather surprising that Kalecki chose to present the argument in such aggregate terms that the consequences for income distribution resulting from a high rate of accumulation are revealed only in a very indirect manner. This indeed accounts for the vagueness in Kalecki's analysis which FitzGerald sets out to correct.

To see this point it may be useful to explicate the aggregate demand function for necessities which underscores Kalecki's basic equation,

$$\frac{C_n}{P} = A \left\{ \frac{Y}{P} \right\}^e \tag{1}$$

where, C_n = aggregate consumer demand for necessities, Y = aggregate income, and P = population.

The coefficient e requires careful interpretation. It is customary to state that e is the income elasticity of the demand for necessities which is assumed to be less than unity in accordance with Engel's law (FitzGerald, 1988: 34). However, two questions need to be answered to warrant such interpretation. First, what is meant by necessities, and second, how should one interpret an income elasticity applicable to a relation between per capita variables?

Necessities constitute a basket of basic commodities which account for the major part of the consumption of the broad masses of the population (Kalecki, 1976: 98). Clearly, the concept of necessities will widen as the standard of living increases in the longer run. However, for the operationality of equation (1) it is imperative that 'necessities' refers to a fixed set of basic commodities, a set which remains unchanged over the envisaged plan period. Indeed, if the definition of necessities is specified too broadly to include occasional consumption items of workers and peasants, or if more items are included with rising standards of living, the growth in per capita consumption of necessities would roughly be equal to the growth in per capita income if the distribution of income remains stable throughout the period. In fact, in his discussion of necessities Kalecki often considers only an important subset consisting of staple foods.

Secondly, the coefficient *e* reflects a weighted mean of class-specific elasticities and, hence, the value of *e* is defined in equation (1) assuming a *stable* distribution of income. If the growth in average income takes place in the context of a changing distribution of income, *e* will adjust as a consequence. It is precisely in the downwards adjustment of *e* as a result of a growth process which involves adverse changes in the distribution of income that the distributional implications of such growth are revealed in Kalecki's analysis.

Taking logarithms of both sides of equation (1) and differentiating yields:

$$\frac{\dot{C_n}}{C_n} - \frac{\dot{P}}{P} = e\left(\frac{\dot{Y}}{Y} - \frac{\dot{P}}{P}\right)$$

Using Kalecki's own notation, this equation can be rewritten as follows,

$$c_n = q + e(r - q) \tag{2}$$

where c_n = the growth rate of the demand for necessities, r = the growth rate of national income, and q = the rate of growth of the population.

Now, Kalecki's central preoccupation concerned the question of the dynamic balance in the demand for and the supply of necessities and, more specifically, the question of securing the food balance in the process of economic growth. Stated differently, a basic assumption concerning the problem of financing economic development was that 'there must be no inflationary price increases of necessities, in particular, of staple food' (Kalecki, 1976: 98). Indeed, if the supply of necessities (food) lags behind the expansion of demand and prices rise as a consequence, the poorer classes of society will be particularly hard hit as their consumption of necessities (food) consitutes a high proportion of their incomes. The strong negative real income effect of such price inflation will bring about a downwards adjustment in the value of average (weighted) income elasticity (*e*) in the process of bringing demand back in line with supply.

FitzGerald rightly points out that the aggregate nature of this argument is at once very illuminating, but it also leaves the concrete adjustment processes rather unspecified:

> The limitation on the industrial growth rate that is imposed by food supply is
> simple to grasp in principle but tricky to define precisely because of Kalecki's

uncharacteristic vagueness as to just who is consuming necessities (and from what income) and what is to be understood by price stability (FitzGerald 1988: 37).

Rather than relying on such broad indicators as income per capita and population in order to determine the food balance, FitzGerald sets out to reformulate the food balance in terms of the changing structure of entitlements of various classes in the process of economic growth.

PRICE STABILITY AND THE FOOD BALANCE

FitzGerald's approach constitutes an attempt to disentangle the various effects the growth in industrial output and in its labour productivity may have in terms of employment growth and of the evolution of real wages which together constitute the main determinants of the growth in the demand for necessities and, in particular, for marketed surplus of food. I would argue that the specific strength of FitzGerald's approach lies in his insistence that it is necessary to integrate these factors which determine *access* to food in an analysis of the aggregate food balance.

However, FitzGerald's own analysis is not without problems. Although he criticizes Kalecki for not clearly defining who consumes necessities (and from what income) and what is meant by price stability, his own basic model suffers from a similar type of vagueness with respect to the determination of real wages and to what is meant by price stability. To see this, it is necessary to outline briefly the main features of his basic model as set out in section 2 of his article. I do not need to reproduce all the equations of FitzGerald's model to clarify the basic point about his vagueness in analysing the distributional consequences of rising food prices.

FitzGerald's model is comprised of two major sectors (industry and agriculture) each of which is characterized by particular production relations. In industry, capitalist relations of production prevail and income is distributed between capitalists and wage earners. The former save part of their income and these savings fuel industrial growth in a Harrod–Domar type fashion. Industry produces investment goods (sector 3) and industrial consumer goods (sector 2) which are referred to as non-necessaries although workers and peasants spend part of their income on their consumption.

The distribution of money income between profits and wages in the industrial sectors is given by the price formation equation:

$$p_j = (1 + g) \frac{w}{r_j} \; ; \; j = 2, 3 \tag{3}$$

which states that industrial prices (p_2, p_3) depend on unit labour costs and a fixed mark-up derived from the degree of monopoly. FitzGerald assumes a single mark-up (g) and a single money rate (w) for all industries although labour productivities (r_2, r_3) can be different. Since he furthermore assumes that labour productivity grows at the same rate β in both industrial sectors and, similarly, that output in both sectors grows at an equal rate (α'), there is no need to complicate matters here with specifying the output balance between sectors since it remains constant by assumption.

Equation (3) is deceptively simple but its interpretation is not as straightfoward as it may appear. It is a behavioural equation which *describes* price formation in industry, but certainly does not *explain* it. It can best be looked upon as an equation which describes the evolution of the price indexes in industry assuming productivity growth and a *stable* distribution of money income.

In agriculture, production relations are rather vaguely defined. Production is carried out by peasant producers and — in the first instance — the growth in the supply of marketed surplus of food to industry is taken to be *exogenously* determined by institutional constraints within agriculture. In fact, FitzGerald does not explicitly distinguish between the supply of marketed surplus of food and total food production, a point to which I shall return below. The fact that the supply of food from agriculture to industry is seen to be subject to exogenously determined institutional constraints is in line with Kalecki's own concern about the constraints imposed by exploitative relations imposed on the peasantry on the growth rate of food production. I return to this point in a subsequent section.

Unlike the case for industry, in agriculture the food price is supposed to adjust such that the market is cleared. As the supply of food to the towns grows at a *given* exogenously determined rate (α_1), the price movements in the food market will be determined by the growth in the demand for food relatively to this fixed growth rate of supply. In FitzGerald's model the demand for food wholly originates from wage earners. *Implicit* in his analysis is the specification of the following demand function for food:[1]

$$\frac{F}{L_i} = A\ \overline{w}^e \tag{4}$$

where, F = demand for food, L_i = industrial employment, $\overline{w}$ = real wage rate and e is the income elasticity of the demand for food for wage earners. The growth in the demand for food will therefore be equal to:

$$\frac{\dot{F}}{F} = \frac{\dot{L_i}}{L_i} + e\ \frac{\dot{\overline{w}}}{\overline{w}}$$

$$= (\alpha' - \beta) + e\ \frac{\dot{\overline{w}}}{\overline{w}} \tag{5}$$

It is at this point that FitzGerald's analysis begins to become vague. He assumes that real wage growth equals labour productivity growth (β) because the growth in labour productivity leads to an improvement in the ratio of wages to industrial prices as can be seen from equation (3) (FitzGerald, 1988: 38). This is incorrect as it stands because real wage growth depends principally on the price of food (assuming that wage earners spend a high proportion of their income on food). It is therefore the ratio of money wages to the price of food which matters most, not its ratio to industrial prices.

To see this, define the real wage as specified by FitzGerald in a subsequent section (1988: 40):

$$\overline{w} = \frac{w}{p} \tag{6}$$

where p is a weighted geometric mean of consumer prices which confront wage-earners:

$$p = p_1^a p_2^{1-a};\ 0 < a < 1 \tag{7}$$

where a equals the relative weight of food in the average worker's budget at the beginning of the plan period.

As a first approximation, changes in the real wage can be specified as follows:

$$\frac{\dot{\overline{w}}}{\overline{w}} = \frac{\dot{w}}{w} - a\ \frac{\dot{p_1}}{p_1} - (1-a)\ \frac{\dot{p_2}}{p_2} \tag{8}$$

Note that this concerns only a first approximation since rising real wages will bring about a change in the relative weights of food and of non-necessaries in the worker's budget. However, as we are considering medium-term planning and presumably moderate changes in real incomes, using the weights of the base year at the start of the plan period will not involve substantial errors.

Returning now to the main argument, it can be seen from equation (8) that the effect of productivity growth in industry will not be *symmetrical* when a situation in which money wages remain constant is compared with one in which money wages are allowed to rise in line with productivity growth. FitzGerald seems to assume the former but derives the solution for the latter, presumably unaware that they involve different cases.[2]

Indeed, in the case where money wages remain constant the rise in productivity will lead to a fall in industrial prices and the *immediate* impact on the growth of real wages will be given by:

$$\left.\frac{\dot{w}}{w}\right| = (1 - a)\,\beta \qquad\qquad (9)$$

$$\Big|\;\; \text{case 1}$$

assuming stable food price.[3]

In the case where money wages are allowed to rise proportionally with productivity growth the *immediate* impact on the growth of real wages will be different. Industrial prices will remain constant in money terms, and,

$$\left.\frac{\dot{w}}{w}\right| = \beta \qquad\qquad (10)$$

$$\Big|\;\; \text{case 2}$$

assuming a stable food price. This is what FitzGerald effectively assumes, but the reason why the real wage rose at a rate equal to productivity growth has to do with the rise of money wages relative to the food price.

Now, for food prices to remain stable the growth in the demand for food should equal the growth in its supply. For case 1 this yields:

$$\alpha_1 = \frac{\dot{F}}{F}$$

$$= (\alpha' - \beta) + e(1 - a)\beta \qquad (11)$$

for constant money wages. In contrast, case 2 yields:

$$\alpha_1 = \frac{\dot{F}}{F}$$

$$= (\alpha' - \beta) + e\beta \qquad (12)$$

which is the result derived by FitzGerald (1988: 38), and applies only when money wages rise with productivity growth. In this case the growth in the demand for food is more pronounced than in case 1.[4]

This way of setting up the argument also highlights a specific feature of Kalecki's analysis which FitzGerald aimed to pinpoint but does not fully do so. Equation (3) implies constant *shares* of profits and wages in industrial money incomes. However, the fact that the distribution of income between profits and wages is stable in this sense does not mean that the distribution of *real* incomes between profits and wages remains stable as well.

Indeed, given FitzGerald's specific assumptions, the real wage depends primarily on the ratio of money wages to the price of food, while the appropriate deflator of incomes of profit earners is the industrial price index (p_2). Hence, if industrial growth implies that the food balance cannot be maintained as a result of rapidly rising demand relative to supply expansion, real wages will be cut (or grow at a lesser rate) as a result of the inflation in the price of food. Profit earners will not experience a similar type of negative real income effect.

Obviously, FitzGerald's simplifying assumption that capitalists do not consume necessities can be criticized for lack of realism. However, the argument is only slightly modified if it is assumed that capitalists also consume necessities but have a much lower income elasticity of demand for food and hence spend a much lower fraction of their income on such necessities. The equations would be a bit more complex but the basic argument would be preserved. Industrial growth which violates the food balance will bring about a redistribution of real income as between profits and wages in favour of the former even if the share of wages in industrial money incomes remains constant.

Restated in this way, FitzGerald's reformulation of Kalecki pro-
vides interesting insights in the mechanisms which bring about
adjustment when the food balance is violated. It furthermore draws
attention to the importance of employment growth. Indeed, it is
perfectly possible for economic growth to proceed with rising real
wages and without violation of the food balance while at the same
time poverty may worsen as a result of growing urban unemploy-
ment. Hence, the evolution of the food balance needs to be analysed
in conjunction with the employment balance to be able to assess the
overall impact of economic growth on distribution and on poverty
(Saith, 1985: 9–16). I return to the crucial role of the employment
balance along with the food balance in a subsequent section.

MODELLING AGRICULTURAL SUPPLY RESPONSIVENESS

In my opinion, FitzGerald's treatment of the agricultural supply
response constitutes the weak link in his reformulation of Kalecki's
model. The problem concerns his dissatisfaction with what he refers
to as the 'somewhat artificial feudal food constraint' which consti-
tutes a central premise in Kalecki's analysis (FitzGerald, 1988: 50).
Kalecki was indeed clearly concerned with the prevalence in the
Third World of agrarian systems with little inherent capacity for
productivity growth due to the parasitic nature of the existing rela-
tions of production within which the peasantry is incorporated.
Hence, institutional factors such as feudal landownership and the
domination of peasants by merchants and moneylenders inhibit the
growth of the food supply (Kalecki, 1976: 152). Mundle (1985: 62)
refers to this type of agrarian system as 'where production is orga-
nised by the surplus producers but where the gains in productivity
would be appropriated by the surplus appropriator'. As such, he
argues, 'the organisers of production have no incentives to experi-
ment with new ideas or to introduce innovations to raise produc-
tivity' and neither 'do they have the means to undertake innovations
which entail a large initial outlay since the previously produced
surplus has been alienated from them'. As a result, he argues that
'such agrarian systems are likely to be stagnant with labour produc-
tivity stable or even declining' (Mundle, 1985: 62). This is clearly
what Kalecki (1976: 152) also had in mind when referring to the rate
of growth of food as the major constraint on economic growth.
    FitzGerald takes the point and immediately qualifies it. He argues

that 'in order to maintain this position, Kalecki sometimes assumes that *all* price increases are absorbed by merchants and money-lenders, thus swelling profits and leaving food supply unaltered; but this is hardly realistic' (FitzGerald, 1988: 38). Hence, 'an improvement in the internal terms of trade will increase real peasant incomes, even if they do not receive all this increment' (p. 39). This appears at first sight a minor point, but it is critical for understanding how FitzGerald sets out to replace the 'artificial feudal food constraint' with an agrarian constraint on feasible growth defined 'from within the logic of the model itself' (p. 50).

Indeed, by making this point FitzGerald opens up a new avenue which allows him to construct a more self-contained model, but in my opinion this is achieved at the expense of a better understanding of the agrarian barrier to industrial growth.

FitzGerald's immediate reason for introducing this point is straightforward. It allows him to build into the model a food supply response to changes in the internal terms of trade. If peasant producers are not automatically forced down to subsistence levels as a result of their subordination to landlords, merchants or money-lenders, improvements in the relative price of food will have some trickle-down effect on peasant incomes and therefore may enlist a supply response. Such supply responses may result from a variety of mechanisms and it is of interest to note which particular mechanism FitzGerald singles out for modelling.

First, there is the possible short-run supply response resulting from an increase in marketed surplus relative to total food production. Peasants may be willing to offer more food for sale out of their current production or stocks. FitzGerald (1988: 38) makes the point but — as shown below — does not incorporate it into his model. Its net effect would amount to a *temporary* increase in the rate of growth of the food supply.

Second, the peasantry may be willing to lengthen their working day by attempting to produce more with existing assets. FitzGerald does not consider this possibility, which clearly can account only for a *temporary* increase in the rate of growth of the food supply.

Finally, the improved terms of trade may bring about an increase in food production inasmuch as the increased income may enlarge the peasant households' room for manoeuvre through greater savings which can be ploughed back into production through investment. As I show below, this is the road which FitzGerald follows in modelling the supply response. Clearly, his interest lies in

adjustment mechanisms which can account for longer-term *sustained* growth. But this type of modelling implies much more far-reaching assumptions about peasants' savings and investment behaviour, as I argue below.

However, before turning to the analysis of the model it is important to point out another reason FitzGerald introduces this supply response to the internal terms of trade. His objective is less obvious, but clearly implicit in the analysis. It can be deduced from a comment he makes when he criticizes Kalecki for assuming that only land reform will raise output growth while not considering how prices (i.e. the internal terms of trade) might affect the food supply *both before and after* the land reform (FitzGerald, 1988: 38). In contrast, FitzGerald suggests that it is possible to model the price responsiveness of the food supply somewhat independently of the institutional context. The model would therefore be valid with respect to its structural set-up both before and after an agrarian reform although the *parameters* of the model may take on different values in both cases. Hence, if an agrarian reform implies that the peasantry benefits more from an increase in the terms of trade the value of the supply *elasticity* will consequently be higher, but the basic model remains unchanged. This I find to be a very problematic premise. It sweeps aside any concern with understanding *processes* of agrarian change which result from major policy interventions such as agrarian reforms (but also green revolutions, etc.) and which may drastically alter the structure of entitlements which underscore rural livelihoods. As a result, consumption and savings behaviour as well as the determinants of rural investments cannot be assumed to be invariant. Yet this is precisely the assumption FitzGerald appears to be making.

With respect to the analytics of the model, FitzGerald derives a somewhat peculiar version of a Harrod–Domar growth model for agricultural production. First, supply (Q_1) depends on the capital stock (K_1) in agriculture:

$$Q_1 = \frac{1}{k_1} K_1 \tag{13}$$

This is confusing since one would expect the total output to depend on the capital stock with k_1 = capital–output ratio (which FitzGerald in his own notation defines as its inverse). FitzGerald seems to assume that either the marketed surplus equals the total output (and

hence all production is for sale) or the marketed surplus is a *constant fraction* of output and k_1 should be interpreted accordingly.

FitzGerald makes a further assumption clearly rooted in dual economy-type reasoning: he assumes that the capital stock in agriculture and therefore also agricultural investment originate wholly from *within* the rural sector and involve no *exchange* with industry. We are therefore presented with a picture of a peasantry who produce their own means of production along with food and who depend on the market only to the extent that they are in need of industrial consumer goods. This is a rather limited view of the development of productive forces in agriculture which is clearly conditioned by the increasing importance of the deliveries of means of production from industry to agriculture (Mundle, 1985: 57–60).

The savings function is subsequently specified by assuming that savings are a function of the real value of peasants' incomes from the sale of food:

$$S_1 = \frac{s_1 p_1 Q_1}{p_2}$$

$$= s_1 Q_1 T \tag{14}$$

where $T = p_1/p_2$: the internal terms of trade. At first sight one may wonder why peasants would bother to generate monetary savings when investments within agriculture appear to be homemade. FitzGerald would probably argue the existence of an investment sector within agriculture (artisans, etc.) which requires cash payments to finance the purchases of consumer items consumed by these artisans.

There is, however, a further problem with this savings function. Indeed, it appears that the producer price paid to the peasantry equals the market price of food confronted by industry. FitzGerald therefore implicitly assumes that there is no surplus appropriation through land rent, merchant profit or usurer's interest of any kind. The peasantry receives the total increment resulting from improvement in the terms of trade. The model therefore cannot distinguish between 'before' and 'after' since basically it assumes the existence of a community of independent commodity producers whose behavioural patterns are akin to those of capitalist producers.

Not surprisingly, the outcome of the model obtained by equating

savings with investment yields a typical Harrod–Domar-type growth equation:

$$\alpha_1 = \frac{s_1}{k_1} \, T \tag{15}$$

The terms of trade figure in this equation because it determines real incomes on which savings depend.[5] By equating savings with investment however FitzGerald overlooks the fact that it is not a *closed* economy situation (although dual economy thinking tends to gravitate towards such position). First, it is not uncommon for savings of the better-off peasantry to find their outlet in various commercial and small-scale industrial undertakings precisely because of the limited scope for agricultural investment. Secondly, historical experience has shown that the process of industrialization often involves considerable net-resource flows between agriculture and industry in favour of the latter (Mundle, 1985: 50–58).

In summary, it seems that FitzGerald's attempt to bring the supply response of food production within the logic of the model independently of the institutional context is not very fruitful. Invariably, assumptions have to be made with respect to the savings and investment behaviour of various actors in the economy. Since these behavioural relations are themselves determined by the existing configuration of production relations, they cannot be abstracted from their context.

Kalecki's own approach to the problem appears to be more satisfactory. He starts from the premise that in many Third World countries the agrarian systems are often stagnant in terms of productivity growth and consequently the growth in the supply of food is sluggish. This conviction did *not* spring from a Malthusian view that there is a *natural* tendency for population growth to outstrip the growth in the production of food. On the contrary, in Kalecki's view the growth in the food supply was conditioned by the domination of the peasantry by landlords, merchants and moneylenders who syphoned off the surplus produced by the peasantry and appropriated any increment in production resulting from productivity growth. Hence, the reason for agrarian stagnation is eminently *social* in Kalecki's view. He subsequently takes this as an *exogenously* defined institutional context and sets out to analyse the consequences of any attempt to propel rapid industrial growth under such conditions. If economic growth is not to proceed on the

basis of declining real wages and adverse income distributional effects the key problem remains the agrarian barrier to sustained growth, hence the importance of understanding the institutional context of agrarian change as a key factor in the process of industrialization. FitzGerald's concern to provide a *general* model of the price responsiveness of the supply of food (or more generally, of agricultural production) tends to direct attention away from this fundamental issue. Kalecki employed his model to highlight the consequences of a failure to transform agriculture in the process of industrialization and puts his finger squarely on the configuration of social relations of production within agriculture as the key issue. FitzGerald — in contrast — sets out to model output responsiveness to price in agriculture and ends up sweeping the social context of production under the carpet.

AGRARIAN CHANGE AND LONG-TERM SHIFTS IN ENTITLEMENT

The previous section pointed out that FitzGerald's insistence on modelling the structure of food entitlements in the analysis of aggregate balances of food availability constitutes an important aspect of his approach. He tries to do so for industry by looking at employment growth and the movement of real wages. However, he does not carry this principle forward in the analysis of agriculture, which is seen to consist of a rather amorphous set of producers responding to price incentives.

In this respect, Sen's (1981, 1984) analyses of food entitlements and famines provide very illuminating insights. Interestingly, when defining the entitlement approach Sen proceeds in a typically neoclassical manner by specifying the entitlement set E_i for each individual: 'E_i can be characterised as depending on two parameters: the endowment vector x and an exchange entitlement mapping $E_i(.)$, which specifies the set of commodity bundles any one of which person *i* can choose to have through "exchange" (trade and production)' (Sen, 1984: 454). He then proceeds by defining the 'starvation set' S_i as containing all endowment vectors which will not allow a person to meet his/her food requirements either directly or through exchange (that is, by trading or in the exchange with nature — i.e. production) (p. 455). He remarks quite correctly that 'in standard models of general equilibrium for capitalist economies, it is assumed

in effect that everyone's endowment vector lies outside the starvation set, and in this way the problem of survival is eliminated' (p. 455).

In applying this framework to the analysis of famines Sen adopts a very *short-run* perspective. He investigates the sudden *collapses* in exchange entitlements which occur in situations of acute famine provoked by drought, war, floods, etc. People enter into such situations endowed with given resources and locked into particular market situations and production conditions. It is interesting, however, that in the analysis of such concrete situations Sen no longer employs the concept of the individual within the economy, but rather *models* the entitlement structure of various *groups* within society characterized by their common position vis-a-vis access to resources and market dependence.[6] Hence, in analysing rural famines Sen (1984: 460–80) refers to the different *vulnerabilities* of agricultural labourers, smallholder peasants, sharecroppers, pastoralists, etc.

There are considerable similarities between Sen's concrete approach and FitzGerald's concerns in reformulating Kalecki. Both approaches adopt essentially a *short-run* perspective starting from a *given* institutional context characterized by a given entitlements structure. Both are interested in the distributional consequences of short-run changes, although the focus is different: situations of famine versus the impact of industrial growth on standards of living. FitzGerald, however, manifests a pronounced blind spot in so far as his analysis of agriculture is concerned, which he continues to view as some ill-defined 'traditional' sector.

In both cases understanding the initial context as well as the *direction* of change within the short-run requires a complementary analysis of the broader historical processes of socio-economic change which shaped the class context in which development takes place. In a discussion of Sen's analysis Tilly (1983: 143) makes this point eloquently: 'the development of capitalism is linked to long-term entitlement shifts in three ways: the expansion of market systems, the increasing division of labour, and proletarianisation'. She argues that Sen provides several examples of such long-term entitlement shifts. For example, the pastoral peoples of Ethiopia who suffered severely from the famine of 1972 to 1974 were compromised by the growth of commercial agriculture which progressively displaced them from their low-lying dry weather pastures. Similarly, in the Sahel the commercialization of agriculture made agriculturalists

vulnerable both to output fluctuations and to shifts in marketability of commodities and in exchange rates (Tilly, 1983: 143).

In the case of FitzGerald's analysis it seems preferable not to attempt any general modelling of an agricultural supply response to price in the context of an ill-defined agrarian structure. Rather, it seems more appropriate to draw attention to the need to understand historically specific processes of agrarian change and their class implications in terms of the vulnerability of certain groups within the rural economy. Such analysis may underscore concrete short-term modelling of such specific contexts in an attempt to get an insight into distributional implications of economic growth.

Understanding historically specific processes of agrarian change is central to the analysis of the long-term development of the employment balance. In this respect, FitzGerald's analysis of rural-to-urban migration is disappointing, yet not surprising. It essentially boils down to stating that people will migrate if average incomes in the urban 'informal' sector exceed average peasant incomes. Stating this in a mathematical equation does not alter the fact that it is merely scratching the surface of much more complex social processes which propel the commoditization and proletarianization of rural production. It remains a watered-down version of Todaro-type migration models which contribute little towards understanding real dynamics within the economy and society. Once more, the desire to arrive at a general formulation which can be inserted into a formal model is given preference over drawing the attention to the need to understand specific processes of agrarian change and deducing the dynamics of employment from such analysis. In such an approach the migration from rural to urban communities is not only seen to be the consequence of differential earnings, but also a result of shifts in entitlements within agriculture springing from processes of commoditization and proletarianization. It is indeed not uncommon for increasing average incomes in agriculture to go together with an expulsion of labour from that sector. Similarly, it is often noted that rural-to-urban migration does not necessarily originate from the more backward rural areas, but rather from the more advanced ones in which labour markets are more developed and access to land and other resources more differentiated.

CONCLUSION

FitzGerald's attempt to reformulate Kalecki's well-known model of the role of the food balance as a constraint on economic growth provides an interesting approach based on his premise that the structure of food entitlements should be explicitly integrated in the analytical formulation of aggregate food balances. It is necessary to identify the sources of the demand for food along with the conditions of its supply so as to integrate Sen's entitlement approach within overall food availability balances. This is an important addition to Sen's short-run focus in his otherwise illuminating analysis of famines inasmuch as it tends to play down the fact that the growth in food availability remains an important condition for economic growth. This, I believe, is the strong point in FitzGerald's analysis.

In fact, the consequences of a slow-growing food supply for rapid industrial growth can be nicely demonstrated within the context of a relatively simple analytical model. Reformulating FitzGerald's model somewhat I have tried to show that it is possible for industrial growth to proceed with a stable distribution of money income between wages and profits in industry while in real terms income distribution evolves at the expense of wage earners. The key factor is indeed the movement in the price of food, which cuts more heavily into the real income of workers. This is what Kalecki hinted at, and FitzGerald's model shows the distributional mechanisms more clearly.

It is unfortunate that FitzGerald does not carry his basic principle over to his analysis of the agricultural sector. Here he tends to fall back on the notion of a nondescript 'traditional' economy of uniform but amorphous peasant producers who are supposed to react in a similar way to price incentives. No account is taken of different agrarian systems with distinct dynamic features with respect to processes of commoditization and proletarianization that determine the structure of rural livelihoods. As a result, the general model with its in-built supply response of agricultural output and its rather mechanical migration pattern tends to divert attention away from the real determinants of the interdependence and tensions between food availability and the structure of food entitlements.

NOTES

1. FitzGerald is rather untidy in setting his equations. For example, in the derivations on p. 38 it is clear that he defines the demand for food per worker as a constant elasticity function of the real wage. However, he immediately equates the growth in real wages with the growth in labour productivity in industry because 'labour productivity growth . . . leads to an improvement in the ratio of wages to industrial prices'. Here, he overlooks the fact that real wages also depend on the price of food. This point crops up in p. 40 through equation (20) and the one immediately following, which — at last — defines the real wage, but isn't even numbered as a key equation. However, on p. 39 we are presented with a market-clearing process for necessities where the demand side now features the money wage instead.

2. In fact, FitzGerald constantly refers to relative price movements without stating whether prices actually fall in money terms or not. See, for example, such expressions as 'an improvement in the ratio of wages to industrial prices' (p. 38); 'this lowers industrial prices (in relative terms at least)' (p. 44); 'raising wages through decreased (relative) prices' (p. 47). However, when real wages depend both on industrial prices and food prices and when price determination differs between industry and agriculture, whether or not industrial prices actually fall in absolute terms does make a significant difference.

3. Hence, in this case the increase in the real wage is (much) less than productivity growth in industry precisely because workers consume only part of their income on industrial goods and consequently the income effect of falling industrial prices is not as substantial as the growth in labour productivity.

4. Note that it is only in the case where money wages grow in line with productivity that a stable distribution of money income between wages and profits also implies the stability of the *real* distribution of income provided food prices remain constant. In the case where money wages remain constant, productivity growth in industry will improve the real incomes of profit earners more than those of wage-earners, assuming constant food prices.

5. In fact, this equation implies that the *growth rate* of the food supply is proportional to the *level* of the terms of trade. In this respect, FitzGerald's graph on p. 39 wrongly depicts this growth equation as a linear and proportional function of the food supply on the terms of trade. The latter equation is exponential.

Hence, in the case where money wages move in line with productivity growth in industry the equilibrium level of the terms of trade can be obtained by equating the right-hand sides of equations (12) and (15), i.e.

$$T \frac{k_1}{s_1} [(\alpha' - \beta) + e\beta] \tag{16}$$

which is what FitzGerald seeks to establish in a rather cumbersome fashion in section 3.

6. Hence, Sen distinguishes different occupational groups by focusing on the main ingredients of their entitlement structure (which determines their real income). He does not model demand equations for food, since his main concern is to analyse famines: 'considering occupational group j, characterised as having commodity j to sell or directly consume. Let q_j be the amount of commodity j each member of group j can sell or consume, and let the price of commodity j be p_j. The price of food per unit is p_f. Let $F_j = q_j p_j / p_f = q_j e_j$, where e_j is the occupation j's food exchange rate (p_j/p_f)'

(Sen, 1984: 458). If group j is threatened by famine the potential demand for food will be determined by the maximal food entitlement F_j and this will effectively become the demand for food. In the case of wage earners who depend on the sale of their labour, $F_j = w/p_f$.

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