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AN ESSAY ON THE FORMATION AND DYNAMICS OF THE ARKETED SURPLUS AND PRICE OF FOODGRAINS

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AN ESSAY ON THE FORMATION AND DYNAMICS OF THE MARKETED SURPLUS AND PRICE OF FOODGRAINS

INTRODUCTION AND PLAN OF THE WORK

Scope and objectives of the thesis

The thesis is basically a methodological exploration of the field we have called the marketed surplus and price of foodgrains.[1/] The object is basically to develop a framework of thought, developing alongside the tools, concepts and methods necessary for the purpose. In doing this we keep entirely to the basic structure of the field as we see it, which is defined in reference to a few bare elementary facts pertaining to our general context of reference -- the rest is simply abstracted from. Our whole

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1/ One point of substance concerning the field is to be mentioned right here. The very concept of marketed surplus is meaningfully defined only in the context of the agriculture of an underdeveloped country (like ours, say), applying specifically to its subsistence crop, which is what we mean by the term "foodgrains" all through. So the subject is understood only in this background. In the thesis we will sometimes call attention to this by the phrase "our general context of reference" or some such expression. Whether the reference in a particular context is to the country as a whole or its agriculture or that part of the agriculture which is devoted to raising the subsistence crop is to be read from the context itself.

approach is thus strictly analytical from the beginning. The methodology is explored within boundaries that we ourselves set for the purpose, not across all boundaries.

Next we have to state that our methodological exploration is in some sense an exploration of the classical methodology -- we view our subject from an essentially classical standpoint all through. Having said this, we must point out that our field never came within the substantive domain of concern of the classical economists. Our exploration of the classical methodology is therefore across their own field and there has to be a great deal of adaptation about this. How this comes about has to be left to the thesis itself.

Let us now give a broad outline of how we proceed. Our starting point in the thesis is a completely fresh view of the formation of marketed surplus in the literature that we come across in an unpublished Ph.D. thesis recently submitted in our Institute on the structure and inter-relations of the land, labour, credit and product markets of South Kanara.[2/] We simply take this over and develop it into a general framework for the subject within which our whole analytical programme on the formation of marketed surplus gets defined. The matter is introduced in the section below, and then

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2/ K. Nagaraj, Structure and Inter-Relations of the Land, Labour, Credit and Product Markets of South Kanara, thesis submitted to the Indian Statistical Institute, 1981.

worked out in details in Chapters 1 - 3 defining Part I of the thesis, on marketed surplus.[3/] This is done entirely on our own without further reference to the thesis mentioned. This is because we felt it necessary as part of the thesis to give a more or less comprehensive review of ideas on the formation of marketed surplus in the literature, and the relevant parts of the thesis then automatically come as the end point of this review (Appendix 2). So, our whole 'taking' from it is also clearly set out there, making earlier references unnecessary.

Our work in Part II, on price, rests on a different footing. One starting point for it is simply the implications of the mode of formation of marketed surplus started out with for that of the price of foodgrains. This comes in as a completely fresh point in the literature and serves to set apart our approach to the problem from all the rest. There are, however, also other starting points for the subject (price-formation) where we are closer to the literature. However, the difference in approach remains, and the points, or ideas, are in the end only similar, and not the same.

3/ However, there is also an appendix at the end of the thesis where we take up certain matters relating to marketed surplus left out of Part I. This will be clarified through the section below.

As specific sources or location of these ideas we will cite the relevant writings of Kalecki, Robinson and Eatwell, and Hicks.[4] This defines our specific background in the literature (in the sense just clarified) so far as Part II of the thesis is concerned. Again, we give a review of this at the end (Appendix 3) where the whole 'taking' is clarified. Here we just put the matter in a perspective.

The writings just referred to cover between themselves the basic content of what we may call modern price theory. The main focus of this is on industrial pricing. It is therefore only the periphery of concern of modern price theory that we start from. A certain delinking from the main methodological concerns of this theory is thus automatically suggested, leaving us to pursue our goals on our own.

Let us end the introduction by acknowledging a debt to a Ph.D. thesis under preparation in our Institute for th "tools, concepts and methods" that come into this pursuit.[5] As stated in

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[4] M. Kalecki, "Costs and Prices", Chapter 4 in Selected Essays on the Dynamics of the Capitalist Economy 1933-1970; Joan Robinson and John Eatwell, An Introduction to Modern Economics (Chapter 5, Book 2); J.R. Hicks, Capital and Growth (Chapter 5); The Crisis in Keynesian Economics (Chapter 1); Economic Perspectives (Preface (and Survey)).

[5] P. Gajapathi, Wage, Capital, Value and Rate of Profit: Reconstruction of the Classical Framework (unpublished manuscript, Indian Statistical Institute).

its title, the thesis is a reconstruction of the classical framework of thought. In the course of this the author has put forward a precise analytical formulation of the buying and selling of traders, or the "process of trade" as he calls it, as a specific reconstruction of the notion of circulating capital in Adam Smith, the very defining example of which was the trader's or merchant's capital. This is in fact the first analytical formulation of th "process" that we meet in the whole literature. The relevance of this for our purpose is obvious. One has simply talked far too long of the 'key role' of traders in foodgrains pricing without making any attempt to see what this means in terms of the process of trade. The whole of this therefore simply remains in the air. Some attempts at grounding this have been made here. It is only to be mentioned that we have a long way to go in this from the work of our colleague, as his terms of reference included neither price formation nor foodgrains trade in particular.

The subject matter - marketed surplus

The very idea of formation of marketed surplus is a system-idea, in the sense that one can meaningfully discuss it only in the background of an agrarian system as a whole, however broadly defined. On this we must go by received ideas. There is no one

system to represent in any meaningful sense so broad and complex a reality as the "agriculture of an underdeveloped country like ours, say'. At this point we just agree that the reality may be broadly covered by three distinct 'systems'. We have in mind the system of peasant proprietorship, the landlord-tenant system of agriculture, and capitalist farming. Let us get off the ground by considering the formation of marketed surplus in these three systems.

The 'peasant' in the system of peasant proprietorship, at least in its pure form, is a small peasant, whose family labour suffices to cultivate his own plot of land. Paraphrasing Adam Smith, we can say that in this system the whole produce from this plot belongs to him; he has neither landlord nor master to share with him. If he then has something of the produce to sell, he qualifies as a 'producer' of foodgrains in the economy, and the amount sold represents his marketed surplus. The marketed surplus is formed in this case, we can say, directly out of production, being simply the production minus the own product consumption of the 'producer'. Implicitly or explicitly, this is the concept one meets in the literature under the term "marketed surplus".[6/]

6/ One unfortunate implication of this has been that as an analytical discipline the subject of marketed surplus has become part of consumer behaviour theory. See the next footnote in this connection. Also, Appendix 1, pp. 325-326.

Let us now turn to the landlord-tenant system. Here again, in its pure form, the tenant is a small cultivator cultivating his plot with his own family labour. The produce here is shared between landlord and tenant. Let us be clear that this is in fact the case in our general context of reference -- the rent is obtained by the landlord by and large directly in the product, and not in money. It is clear that an overwhelming part of this 'rent-in-produce' as we may call it is sold or marketed by the landlord. Turning to the other side, we will simply say that the same forces that call this system into existence also generally see to it that rent is set at a level that leaves the tenants with hardly any 'surplus' to sell. The marketed surplus out of the whole produce in this case is, therefore, for all practical purposes the landlord's marketed surplus, or marketed surplus out of rent.

This obviously is a very distinct mode of formation of the marketed surplus which we may successively formulate as follows. The first formulation is that the produce is in this case first distributed between the parties concerned (landlord and tenant), and then a marketed surplus is formed out of the 'distribution of produce'. Nothing is stated in this about who sells what, or in other words, the specific source of marketed surplus is left in the open. This is closed in the second formulation. This takes off by seeing the rent as the 'surplus' extracted out of agriculture by

the landlord, so that the rent-in-produce becomes a surplus-in-produce. The marketed surplus is then obtained simply as the marketed part of the 'surplus' -- a 'marketed' surplus in this sense. This is a different concept altogether from what one meets in the conventional view.

Let us now pass on to capitalist farming. We may cut the story short here and just assert the validity of both the formulations just given for this case too. This rests on the fact that the 'wage' in our general context of reference is again a wage paid directly in the product, or wage-in-produce as we may call it in parallel to the rent-form. Hence, even though the capitalist farmer by definition 'produces for the market', a seeming denial of the very notion of marketed surplus -- the 'production' is still subject to the prior structure of wage payment in the product, and this reinstates the notion in just the form asserted.

We are now ready to draw a line for the purpose of our thesis. We begin by simply collapsing all the systems together, considering variations and all. Within this, we first distinguish the surplus class -- landlords and capitalist farmers in some variant or other. Their marketed surplus is one category,

indeed one concept altogether, as already clarified.[7/] They are also a priori the major source of marketed surplus in the total. On the other side we have the marketed surplus from outside the surplus class. We call this demarcation the big producer - small producer demarcation. The term producer here means simply a seller of the product, or more precisely, a first seller, since the trader is also a seller, and we do make a distinction between the trader and the producer.

The line we draw in the thesis is that in Part I we simply abstract from the category of small producers. They are brought back in Part II, when we go over to study the formation of price, but the formation of a marketed surplus with them is discussed by us only at the end in an appendix already referred to. The justification is as follows.

7/ One aspect or implication of this is to be clearly pointed out here. Technically, it remains necessary to take account of the landlord's or capitalist farmer's own consumption of foodgrains to arrive at his 'marketed surplus'. That is also the end of it. It does not simply come into any meaningful discussion of the marketed surplus, and the subject is thus taken out of the folds of consumer behaviour theory even as an analytical discipline. While it is not necessary to elaborate upon this any further, for future reference we mention that we simply treat the landlord's or capitalist farmer's own consumption of foodgrains as a pure a priori datum all through. It remains at a level of satiation through all relevant variations and that again is the end of the matter.

As already stated, the marketed surplus of the surplus class a priori accounts for the major part of the total marketed surplus. This already justifies an initial abstraction from the remainder or residual as a first approximation. Let us however be more purposive. Above, we have already taken, we believe, a fresh view of this area[8/] and started our "methodological explorations" on it. It is only in order that we follow this through to whatever goals we can set in the thesis, free from the unnecessary obligation of having to pay heed to this 'other' marketed surplus all through. This explains the a priori scope set for Part I of the thesis. As regards the 'other' marketed surplus, the main thing to be stated is that we have little to add on our own to what one already has on its formation in the literature.[9/] We merely attempt some systematisation of this in a priori terms. This is a different order of problem compared to the rest of the thesis, and is best separated out to an appendix.

8/ Following, to repeat, the Ph.D. thesis of K. Nagaraj.

9/ This does not mean that this 'other' marketed surplus fits in with what one may a priori identify as the domain of the 'system of peasant proprietorship', considered in its due variations in the actuality. However, we need not pursue these points here. Let us just mention that the 'other' marketed surplus also includes the marketed surplus from the other side of the two other systems.

Let us now proceed to give an outline of our work in Part I. We have to begin with a disclaimer, taking a little time to make it. We have called our subject the formation and dynamics of marketed surplus. The formation is already broadly covered, and consists in essence of the formation of a product-surplus within agriculture, part of which is then converted into money by the marketed surplus. This rests on the wage and rent being in the produce and not in money, in the sense of their dominant forms. As this very expression suggests, there is nothing invariant about these forms — they get transformed with the transformation of the system as a whole. Stated slightly differently, these are transitional elements and so, we have to add, is the very notion of 'marketed surplus' : there is no room for it under the rules of full-fledged commodity production. The whole mode of formation of marketed surplus must by definition undergo fundamental qualitative changes through this transition. This is the fundamental problem in the dynamics of marketed surplus that one is logically led to starting from the view of its 'formation' taken in this thesis. We however make no attempts at analysing this problem. This is the disclaimer.

The reason for this is that we see no way of analysing the problem except on a historical plane, and this lies beyond the scope of our thesis. Methodologically, the 'history' simply gets frozen in the dominant forms of wage and rent we start with. These are treated as invariant coordinates of the system enabling us to pose problems of

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dynamics in a purely analytical sense, within the given structure. Even here, we do not carry out any systematic exploration of the field but simply take up a few problems more or less at random, meant basically to bring out the analytical significance of the mode of formation of marketed surplus in reference to certain 'changes' and illustrate the methodology called forth. At this point we will only say that the changes come under two very different notions — the 'good' and 'bad' years of agriculture (Chapter 2) and the capitalist development of agriculture (Chapter 3). Stated differently, these are the only two sources of the 'dynamics of marketed surplus' that we discuss in the thesis. The precise contents are spelt out through the two chapters.

Before beginning on these problems we spend a good deal of time in setting up the proper accounting framework for our agrarian system (Chapter 1). This is the basic tool of analysis for our purpose, and it is around this that the whole methodology takes its shape. We have therefore taken a good deal of time on conceptual clarifications in this chapter, the significance of some of which are realised only much later in the thesis.

Before ending this introduction, let us return once again to the 'agrarian system' we presume at the bottom of our work and spell out a little more of its a priori scope or coverage. At the beginning we conceived this system as a mixture of three distinct systems. Of these, the first (the system of peasant proprietorship) goes out of our reference in Part I as there is no room for a 'surplus' in the proper

sense in this system. As regards the other two, we have already talked of their defining relations viz., the landlord-tenant relation, and the capitalist farmer-worker relation respectively. These apart, we consider one more relation in the text, viz., the borrower-lender relation as per the system of consumption loans. This is considered part of the landlord-tenant system, nothing outside it. We also allow some 'direct farming' by the landlord, thereby doing away with any strict separation between the two systems.[10/]

The subject matter continued -- price-formation

The subject of marketed surplus kept us confined so far to agriculture; that of the price of foodgrains brings us out into the economy at large. This offers us a vantage point to view our subject as a whole. Let us begin with this.

Let us begin from the consumption of foodgrains in our economy, and divide it between consumption within agriculture and consumption outside agriculture. The concept of marketed surplus is often

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10/ However, the line between 'landlord' and 'capitalist farmer' remains basically intact through this. The explanation is best set out in terms of the relationship of the ownership and the operational holding of the two. For the landlord, the former is always larger than the latter, but for the capitalist farmer, the operational holding can only be larger and not smaller than the ownership holding by the very motive of 'accumulation' (expansion beyond the limits set by the ownership holding, by leasing in of land).

implicitly equated to the latter, but the equation itself is never explained. Obviously, defining the marketed surplus to be the marketed surplus out of agriculture simply turns the equation into a tautology, and explains nothing. Where the "market" in the marketed surplus comes in is left entirely in the open. If we now begin from the mode of formation of marketed surplus as just described, then we do come back to the equation in a broad sense, with this gap filled in, i.e., in a rigorous conceptual manner. This is the fundamental integration between the two parts of our subject, formation of marketed surplus and formation of price. Let us go over the argument.

We have seen the marketed surplus to be formed fundamentally out of the distribution of produce (foodgrains) within agriculture as defined by its relations of production or the agrarian relations. A moment's reflection shows that the same distribution also distributes the product for its consumption among all those coming under these relations. Notionally, we can equate this population with the entire agricultural population. The market does not simply come into this. It comes in only to distribute the product for its consumption outside agriculture — it comes in basically between agriculture and non-agriculture, and not within agriculture. This is our rigorous justification of the "equation" started with. Having done this, let us state clearly that it is not the equation as such but the argument leading up to it that is of real consequence for our purpose. Let us now follow through this

consequence. Let us talk of the distribution within agriculture explicitly in terms of wage, rent and profit.[11] Our fundamental point is that the forces associated with these variables have all worked themselves out simply in the quantum of marketed surplus or supply, they do not reappear as components of a supply price, which is simply to say that the supply price itself remains undefined in our context.[12] Stated slightly differently, we do not have any cost of production to be "covered" by the price. This must mean a radical departure in the mode of price-formation of foodgrains from that of all 'products' as thought of in economic theory. To repeat, though the factors behind the formation started with remain the same (wage, rent, profit, or the distributive variables), they operate very differently in the two cases, requiring one to think afresh over the whole mode of our price formation.

This is the integration between the two parts of our subject. Let us now proceed to take a positive view of the formation of our price. Two factors come in at once, shaping the whole 'view', i.e., the framework for this purpose. The first is simply that the market in our case means substantially the traders -- it is they who distribute

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[11] "Profit" is here understood simply as the product surplus of the capitalist farmer.

[12] In theory, it is possible to re-invent the notion of a supply price arguing from the end of 'consumption' instead of 'production', which is precisely the text-book approach to the analysis of marketed surplus. We have already distanced ourselves from this approach. So, we do not consider this line of reasoning. In other words, we simply keep to the point just made in the text.

the product to 'consumers'.[13] Consumers by definition are at the pure receiving end of this process, buying the product at a price that is given to them, while 'producers', though not so passive, remain essentially in the background. The whole management of demand, which in some sense is the essence of the whole process of pricing in our case (see the next point), is done by traders. This explains their "key role" in the formation of price mentioned at the very outset of the thesis.

Our second point is simply that the output in our case is obtained only in successive harvests coming out of an annual cycle of production,[14] dependent critically upon the course of weather, and therefore subject to rather wide fluctuation through the years.

13/ "Consumers", to be in the clear, are the final buyers of foodgrains, just as its "producers" are the first sellers. The agricultural population does not come into the first set.

14/ This does not mean that there is just one harvest in a year. 'Multiple cropping' too comes out of an annual cycle of production. This clarified, we shall nevertheless assume throughout that there is only one harvest of foodgrains in our agriculture in a year, in the background of our analysis. This is just a convenient simplification which puts things in a proper focus without taking away anything essential of the reality of agricultural production as it actually is in our general context of reference. Having made this assumption, we can now set up our a priori calendar or time frame of reference in a rigorous fashion by simply locating the harvest at the 'beginning' of each successive year. I.e., the year is understood to be the harvest-to-harvest year, including the former and excluding the latter.

Demand, on the other hand, is not only continuous, and continuously satisfied in time, but is also liable to rise or change quite significantly through a year. Hence the significance of demand management in the pricing of our product.

Let us now take some steps towards building up a framework of analysis on the basis of these two points. The first step from either point is purely formal. The very presence of traders requires us to distinguish between c eve r rs t ce. We may call these simply the wholesale (or primary) and retail (or secondary). Similarly, the very fact of an annual harvest of foodgrains requires us to see the formation of our price in respect of a year as a whole, which is to say that it is the formation of the entire course or timepath of our price through a year that we have to adopt as the basic unit of our study. This in fact is the fundamental methodological proposition that we have for the whole subject.

Let us now proceed on. Let us begin with the point that the [illegible] price of foodgrains is the price as a whole; what the wholesale price does is simply to divide it between one part going to producers that is the wholesale price itself, and one part going to traders, which is the so-called trading margin. We are thus led back to the forces of distribution within the pricing itself, though over a quite different population (traders and producers).

So far as the "whole" price is concerned, we have nothing to add here to what is already stated above — consumers are purely passive elements in the process, producers remain in the background, and the central role is therefore played by traders. Let us now come to the formation of the wholesale price. Granting fully the element of competition on both sides of the market, we simply see no alternative to viewing the formation of this price in an essentially bargaining framework. This is because, in the absence of any prior base in the cost of production, the wholesale price must be formed relative to the retail price, which automatically sets a 'total' to be divided between the two. The actual level of the wholesale price relative to the retail must then by definition depend upon the relative bargaining strengths in the broad, general sense of the term. 'Competition' is already accommodated in this framework through the relation that the higher the degree of compe tion on either side, the weaker is its bargaining strength.

So much is of a purely definitional status. Let us now come to see the actual forces of bargaining at work as they may be. This brings us to the structure of the market in the sense of its 'parties'. On the producer side, we already have the 'structure' defined by the class of big producers and the class of small producers whom we now see as playing very different roles in the market. We shall simply replicate this step on the trader side, distinguishing

sharply between the roles of big traders and small traders. There is nothing to defend about this. We simply recognise a fact, albeit in a highly schematic form.

We can say right away that the forces of bargaining in the proper sense are defined only through big traders and big producers. Small traders and small producers do not have any bargaining strength as such and remain as purely passive elements in the market exactly like consumers in the retail market. However, their presence does make a fundamental qualitative difference in the market, not only by the element of 'competition' it introduces, restraining the bargaining strengths of the respective 'bigs', but also as a buffer between them. A direct confrontation between big traders and big producers is therefore avoided to a certain extent, which is completely in line with their own interest. It is also to be remembered in this context that big producers and big traders act individually, not as a group.

For all these reasons, it is in order that we think of their 'role' in the market in somewhat broader terms than bargaining as such. We shall simply suppose that a big trader/producer has a general objective of control over the market as a whole to which he belongs,[15/] respecting a similar objective for others. We will not go right now into the means for attaining this objective.

15/ The "market as a whole" means here the market at both levels, retail and wholesale, for the trader, and only the wholesale market for the producer.

This is the strict individualistic view cutting across the market. When we put these together, we see the same forces as those of bargaining operating on the two sides of the market. In particular, it is granted all through that big traders and big producers are aware of the true nature of the wholesale price as a bargaining variable, which is what makes their objective of market control a meaningful one. Thus, "market control" and "bargaining" remain basically as conceptual transforms of one another enabling us to go from the level of the market as a whole to that of its big parties, and vice versa, in a way that we feel is free of any question-begging. When we talk of the market as a whole, we talk of the forces of bargaining in it; when we talk of a big trader or producer individually, we talk of his object of market control.

Let us now return to our basic "unit" of study, the timepath of price over a year. In the background, we have the possibility of a significant rise in demand through a year. It is clear that this very unit provides a rigorous framing to the question of the effect of this change upon the price. Let us now turn our attention to another factor in the background mentioned earlier, viz., the fluctuation of harvest through the years, and see this as source of change in price.

On the face of it, it may appear that the change necessarily takes us outside our "unit". This however is not so. A year, as we reckon it, not only begins in a harvest, it also ends in the next

harvest. Though the latter does not fall within the year, expectations are already formed about it through the year, which in turn enters as one of the factors shaping the timepath of price over relevant parts in the year. We see this most clearly in the speculative movement (rise) in price preceding a poor harvest, which must a priori be counted as a component of this timepath. Our "unit" thus makes room for the change in price associated with the fluctuation of harvest. Though this is not the complete 'change', it is the one which, from an analytical viewpoint, is the really interesting 'change' in the subject.

We have now underscored the methodological significance of our analytical framework (i.e., simply of the "unit" proposed) in reference to changes in the conditions of both demand and supply. On the face of it, it may appear that if we abstract from both of these changes, and therefore from both the price movements in a year pointed out above, then we are left with a constant price through the year. This, however, is not the case. The price of foodgrains in our general context of reference is typically subject to an upward movement through a whole year, repeating itself through the years. This is the so-called seasonal movement in the price. Pending clarification of this term, we point out that, by its very regularity (self-repetition), the seasonal movement must have its cause in the purely structural factors in the formation of our price. Change in demand through a

year and the prospect of a poor harvest at the end of it are, on the other hand, purely conjunctural factors in this formation, dependent upon particular events. Obviously we must begin our study with the structural factors, and then come to the conjunctural factors which by definition must play on a ground already shaped by the structural factors. This sets out our basic methodology for the study, which is simply a follow-up of the methodological significance innate to the "unit" proposed.

Let us now turn to clarification of the term "seasonal movement in the price of foodgrains." This movement as such is already broadly outlined. The clarification therefore pertains simply to the term "season" that appears in it. Two prior clarifications are necessary before we begin on this. First, though the term under reference is very commonly used, its precise meaning is nowhere clearly set out. This we have to do on our own, with the objective simply of clarifying the 'structure' within which our price gets formed. This necessarily implies a great deal of simplification, or stylisation, of the relatively complex empirical domain we enter with the term. The second prior clarification is this. Let us begin with the two terms, foodgrains market and foodgrains price. We have a pairwise association of our two terms, "season" and "seasonal movement" with this pair. Let us now remember that we also have a two-level break-up of the first pair into the wholesale (or primary)

and retail (or secondary). We now point out that the seasonal movement in price as we have already described it is defined for the price at both levels. But the seasons of the foodgrains market are really those of its primary or wholesale level. The concept remains undefined if one looks at only the retail market. We are thus already aware of the limits of pure terminological association.

Let us now begin. Stated simply, we have two distinct seasons of this market, first, a short, post-harvest 'busy' season of the market and then a long 'slack' or 'lean' season covering the rest of the year. The movement in price apart, there appear two fundamental characteristics of these two seasons. One, small producers by and large sell their whole marketed surplus within the busy season, so that the market is left only to big producers over its whole slack season. Two, there is a significant concentration of the total annual turnover of the market within its busy season or, in other words, there is a significant drop in the rate of turnover as we pass from the busy season of the market to its slack season.

6/ Just to fix a notional order of magnitude, we may take the 'busy season' to last for 6-8 weeks, and account for 40%-60% of the total annual turnover of the wholesale market. (See, e.g., D.S. Tyagi, Farmers' Response to Agricultural Prices in India, pp. 44-45; Uma Lele, Foodgrain Marketing in India, pp. 121-128; K. Subbarao, Rice Marketing System and Compulsory Levies in Andhra Pradesh, p. 35). We note in the passing in this context that because we assume big producers to be the major source of marketed surplus, the two characteristics of the busy season together imply that they too must sell a sizeable fraction of their marketed surplus in it. Thus if we take big producers to account for 80% of the total marketed surplus, then the proportion of their busy season sale to annual sale, i.e., marketed surplus, works out to the range 25%-50% for the figures cited.

We may call these respectively the fundamental qualitative and quantitative aspects (or characteristics) of the notion of "seasons" in our context. This completes our statement of this notion.

We have now reached the final stage of our introduction. At the very beginning we stressed the necessity of seeing the formation of our price through the process of trade. In the thesis, we shall put in a good deal of effort into this, which lies at the very centre of our whole treatment of the subject of our price formation. At this point, we just collect together some points from the discussion above to set out the salient features of the process of trade -- or its basic "structure" -- in our case, which we must later tie up with whatever properties of the process we may derive from a priori principles, i.e., its "analytical formulation" as stated at the outset.

Let us start from an a priori time-view of "demand" and "supply" in our case. Let us in fact start from the more basic level of the production and consumption of foodgrains. Production is defined by the annual harvest; while consumption is simply continuous in time. More precisely, we can say that the consumption of foodgrains is intrinsically uniform through the year; there is no "seasonality" to it. Let us now pass on to supply and demand.

Viewed in time, we have the supply coming out of the harvest at the beginning of a year, and then getting distributed over the year. The broad time-pattern of this distribution is already stated under what

we just called the quantitative aspect of the notion of "seasons" of our market. Indeed, we can say in an a priori sense that this aspect describes in the first place the time-distribution of marketed surplus, or the time-pattern of supply, to which traders merely adjust their time-pattern of purchase, defining in the end an observed characteristic of the turnover between them. This already gives us the salient feature of the process of trade on its buying side in our case.

Let us now turn to the selling side of the process. The first point to be stated is simply that we do not have any data on this side parallel to the buying side. So we can only make surmises. This is a matter that engages us at quite some length in the body of the thesis. At this point we merely specify what appears to be the only a priori benchmark for the question of the selling pattern of traders through a year. For this we simply go back to the uniformity of consumption and extend it successively to the "demand" by consumers and the "sale" by traders. The benchmark, or norm, then is simply that traders sell uniformly through the year. As just stated, the actual selling pattern of traders is left in the open. It is however clear that there cannot really be arbitrary deviations of the actual pattern from the benchmark just defined, for traders after all can sell only according to demand.

This brings us to the final point about the structure of the process of trade in our case, which is simply a summing up of the patterns

discussed above. This is given by the traders' timepath of stock-holding through a year, what we may also call the timepath of the trading stock. It is clear that there is first a steep ascent in this path to a peak located roughly at the end of the busy season and then a gradual descent over the rest of the year to a closing stock at the end of the year, which, under stationary conditions, is of the same magnitude as the opening stock begun with. Further, the ratio of the peak stock to the closing or opening stock is of a relatively high order.[17/] Let us reiterate that we do not have any data on this. The whole pattern described is a logical surmise on our part. However, we treat it simply as "fact" all through. The logical basis of this is already stated.

We have now set out completely the basic "structure" within which our price is formed. It may be worthwhile to briefly recall the salient features of this structure or what we may also call the basic structural characteristics of our price formation, and see them in a perspective. Before doing this, let us also recall that we said at the beginning that "we keep entirely to the basic structure of the field as we see it, which is defined in reference to a few bare elementary facts pertaining to our general context of reference". This was for the

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17/ The ratio lies in the range 2.5 - 5 under the assumption of uniform sale, according to figures cited in footnote 16.

thesis as a whole, but obviously the "structure" for our purpose here (price formation) is defined in reference to the same "elementary facts" mentioned in this statement. These are what reappear as structural characteristics of our price formation.

What are these facts or the structural characteristics? At the very beginning, we must mention the mode of formation of marketed surplus which is simply the basic mechanism of "supply" in our case. This is what we referred to above as the basic "integration" of the two parts of our subject. Let us also note here a negative fact, as to say, for the formation of price that this gives rise to, viz., the absence of any cost-base to our price. Technically, this allows us to study the formation of our price in a completely "closed" manner within the market and therefore by reference to demand and supply in the purely physical sense.

The second elementary fact underlying the formation of our price formation is simply the annual cycle of production at the back of our whole "supply". This gives us the basic unit of our study, viz., the entire course or timepath of our price through a 'year' going from one harvest to the next. This is the same as saying that we must study the formation of our price in a clear annual frame of reference all through. This sets the context for another elementary fact underlying the formation of our price, which is simply the break up of a year into distinct "seasons" in our market.

However, this is to proceed too fast. Before coming to the "seasons", we must recollect a third independent fact underlying the formation of our price, which is simply the presence of an independent class of traders who actually distribute the product to "consumers". This gives us the two levels of our market (and price), the wholesale and retail. As already noted, the seasons are properly defined at the wholesale level of our market (and then obviously have implications at the retail level, to be studied through the thesis). With this, a price structure (retail/wholesale) gets embedded into the unit of our study, and the subject itself takes the form of formation of the timepath of price at both levels through a year. It includes the whole interaction between the price at its two levels.

The fourth elementary fact for our purpose is then the whole set of characteristics associated with the notion of "seasons" of our market. This opens out logically into the a priori characteristics of the timepath of "demand" and "supply" through a year in our case, which in turn gives us the salient features of the process of trade which we have just gone over. Let us just mention that though these are all part of the "structure" embedding the formation of our price, this does not mean that we can simply take them as exogenously given for our purpose. In a way our whole purpose is simply the explanation of certain elementary "facts" regarding our price, which we have already stated in the form of a general classification of the change or movement

in price through a year. What part of the timepaths of demand and supply in our case[18] can be taken as 'given' and what is to be properly 'explained' for this purpose is simply to be left in the open. The ultimate boundary is drawn not in terms of "facts" as such but the conceptual framework.

The final set of facts underlying the formation of our price consists simply of changes in the conditions of demand and supply that may a priori take place through a year. These come from outside and have roots in the broader frame of reference for our purpose, ultimately the very nature of the "economy" we are concerned with. The nature of these change is already pointed out.

We are now to end this long introduction. We have called our subject the "formation and dynamics" of foodgrains price (in our general context of reference). We will say that by proposing the entire timepath of price through a year as the basic "unit" for the price-formation we at once provide an integrated frame for the subject as a whole. The unit by definition includes all changes or movements in the price taken place through a year and the whole "dynamics" of these movements therefore automatically come within the framework. The fundamental methodological step towards this is also already taken by

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18/ Lest there be any confusion, let us state that the terms "demand" and "supply" are used here in their original sense of consumers' demand and producers' supply.

drawing a clear line between the movements determined respectively by the "structural" factors and the "conjunctural" factors in our price-formation. It is however to be clearly stated that all these movements together constitute what may be called the short-run movement in our price. Correspondingly, it is only the "short-run dynamics" of the price that falls within the scope of our study. The so-called long-run factors are simply taken as given. This is precisely what we have just summarised under the notion of the "structure" underlying the formation of our price.

One final point. Ours is ultimately a purely analytical construction of the formation and dynamics of our price (a "model" if you like). It is based on a few simple facts (just gone over). As stated at the beginning, the "rest is simply abstracted from". We lay out (rather carefully, we hope) a "starting point" for our subject and no more. Hopefully, steps may be taken from the starting point to bring in more and more facts into the framework. Let us just mention two important facts which are absent in our framework and which, we feel, are necessary to come to some grips with before one has a proper groundwork for going into the empirical domain. One is simply the spatial aspect of the whole production and consumption of foodgrains (and therefore of "foodgrains trade" as well). The other is the role of the state in the whole formation of marketed surplus and price of foodgrains going from direct procurement and distribution (or state trading) to various more conventional means.

Chapter 1

THE ACCOUNTING FRAMEWORK

Section 1 : The Basic Concepts

Any accounting scheme has to take a clear view of things in time. The starting point of this in our case has to be to see how precisely in time a surplus in produce or product surplus comes to be formed within our agriculture. This is what concerns us in this section; the scheme itself will be set up in the next.

Let us begin by taking both our parties, 'landlords' and 'capitalist farmers', in their pure forms. By this we mean simply that the 'surplus' in the hands of the former consists entirely of the rent of his land, and for the latter, of what is left of the output or produce of his 'farm' after the payment of wage.[1/] Let us begin with the latter.

The output or produce of the farm under reference we readily identify with its harvest, which is already clearly located in time. As regards the payment of wage, it is best to start with a view of the work in time, for which the payment of wage . Agricultural work or field cultivation is by definition a series of operations through a year, the

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1/ Needless to say, wage and rent are both in the product.

fruit of which is realised only at the end of the sequence as a whole, in the harvest. The institutional arrangements for the hiring in of labour for the sequence covers a wide spectrum. It is however unnecessary for us to cover this. Through the whole spectrum we have the common element that the farmer has to pay out the wage as a sequence in time, in advance of his realisation of the fruit or end result of the work, i.e., the harvest.[2] It follows that the wage for a harvest is paid not out of the harvest itself but out of the previous harvest. The harvest literally is therefore the farmer's, as a whole — only, he has to pay the wage for the work for the next harvest out of it. This is how the 'surplus' gets formed in time with him. We note as a corollary that the "produce after the payment of wage" therefore means two quite different things depending upon whether it is the payment 'for' the harvest or 'out' of it that one has in mind.

Nothing of the sort is generally met with in the case of the rent of land. We may use the words of Sraffa (slightly out of context, but this will be straightened out shortly). and say that the rent is obtained "post-factum" as a "share of the annual product"[3] (i.e., harvest). 'Time' does not come into this — it is the harvest directly that is divided between the two parties. If we have to talk

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2/ There is an exception to this which we come to later on.

3/ P. Sraffa, Production of Commodities by Means of Commodities, p. 10.

of 'time', we have to say simply that the divisioning of harvest is contemporaneous with the harvest itself. We note that this gives us a general concept in the field of distribution of produce in agriculture, which we may call simply division of harvest. As already clarified, this means a division of harvest, then and there, between contending parties as defined by the system to which they belong. This (the "parties") includes 'landlord and tenant' but is not confined to that. Further instances will be met as we go on. As far as the landlord-tenant division is concerned, we simply point out the generality -- it covers the division under both the so called share-cropping system and the fixed-rent system of tenancy. Thus the point made here again cuts across institutional arrangements in the finer sense.

Let us now return to Sraffa. The context of his words quoted was the treatment of wage, not rent. He was drawing the distinction between his way of treating wage which was "paid post-factum as a share of the annual product" and "the classical economists' idea of a wage 'advanced' from capital". Let us straighten this out. First we point out that the classical economists' idea regarding rent was indeed that it was paid "post-factum" as a share of the harvest fixed in the absolute (i.e., as per the fixed-rent system). This is self-evident from the accounting of rent met throughout classical writings. Thus our own treatment of rent is 'classical'. So is the treatment of wage (and that is the second point of straightening out). The specific classical word in this context was the wage fund -- "funds", in the

words of Adam Smith, "destined for the payment of wage".[4] The idea is already implicit in our discussion above. We will now make this explicit and rigorous. This will also serve as our point of exit from the accounting of the 'surplus' to that of 'marketed surplus'.

Let us go back to the capitalist farmer. We have just seen that the whole harvest of his farm as it comes out of the ground is his own. We can say in a purely a priori sense that the harvest creates a fund of the product with him for use through the whole open future, from which he then draws out the product through time for actual use. We call this his product fund, or more precisely, product-fund at the beginning (harvest-time). The payment of wage, in the first instance, can be seen simply as one such drawing out. No notion of wage fund is defined thereby. For this, we have to see the farmer as separating out a part of his product fund and keeping it reserved for payment of wage This defines the wage fund. The wage is then actually paid from it, and the notion of product fund recedes to the background.

As just stated, this notion serves as our point of exit to the accounting of marketed surplus. Before this, let us take up the "exception" to the general rule stated above, that the payment of wage in o u r c a s e i s in advance of the realisation of the end-result of the work concerned. The exception is that the labour engaged in the harvesting itself is paid by and large out of the harvest harvested.

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[4] Adam Smith, The Wealth of Nations, p. 69.

Thus, in the widely prevalent daily labour system, the harvesting worker is generally paid a part of the day's harvest at the end of each day. This is thus a case of "division of harvest" as we define this term. Assuming this to be the case, the term "wage fund" has to be conceived as covering the wages of all labour other than the harvesting labour. This is taken as understood all through.

Let us now turn to the accounting of rketed surplus. This rests on a straight generalisation of the scheme underlying the notion of wage fund. The generalisation is that we now see the farmer as separating out not only a wage fund but a fund for each alternative use of the product at the very beginning, i.e., at the time of the harvest or the beginning of a year as we reckon it. So we have a general division of his product fund at this point into a number of specific funds, one for each use, from which the product is drawn out through time for the actual use. Sale is one such use, defining the sales fund of the farmer. This is how the marketed surplus gets accounted for in the scheme, on par with all other uses of the product.[5/]

Let us now say a few words about the general methodological significance of the scheme. The scheme is meant to facilitate a view of things in time. This means many things. The focus here is on the

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5/ The general scheme set out above obviously applies to the landlord as well. The only difference is that his product fund is defined not directly by the harvest, but by the contemporaneous "division of harvest" defining his rent. This does not matter for the scheme under reference.

future as seen at the beginning of each year: division of the product fund is nothing but a decision on alternative future uses of the product taken at this point as constrained by the fund itself. The question arises as to how much of the 'future' (i.e., how far) comes into this, which is the same as the question of the life span of the specific funds into which the product fund gets divided. It is important to recognise that what is referred to here is the life span ex ante as projected at the time of its very creation. The decision behind it may be subsequently altered or revised in view of circumstances, the revision itself being defined within the given structure of the moment, and with this the life span ex post may become shorter or longer. The methodology is to leave the whole of this in the open. There is a comprehensive recognition of the passage of time in this.

This is the pure conceptual frame. Nothing is stated in this about the actual length of time covered by the life spans, ex ante or ex post. These depend upon substantive factors where obviously the life span ex ante is prior -- the ex post, as just mentioned, is a revision of this in view of circumstances unfolded. It is best not to hold up our development of the accounting scheme at this point with these issues which we want to discuss at some length. The discussion is therefore postponed to the end (Section 3). Till then we proceed by simply taking for granted a basic proposition established there. Stated informally, the proposition is that ex ante each year is left to take care of itself in the sense of meeting its requirements of the product

out of its own harvest. Nothing therefore is planned to be carried over as 'stock' from one year to another. However, there may still be an actual carry-over of such stock on account of a revision of the original decision or plan at a later date in the year. Stated in the language just established, the proposition is that each specific fund has an ex ante life span of a year or less. The life span ex post is left in the open.

We have now reached the point of a complete statement of our accounting scheme on the basis of this assumption. It is best to start a fresh section for this.

Section 2 : The Accounts

The only sources of marketed surplus in our system are the landlord and the capitalist farmer. Hence the accounting framework for our purpose boils down to setting up the product account (as we may call it) of each, by which we mean simply a statement of his sources and disposition of the product, which in turn is the same as the formation of a product fund and its divisioning into the specific funds concerned. All the concepts in this are already spelt out. However, one point may be gone over again before we begin.

Our accounts refer to a given year. We have just left open the possibility of an actual carry-over of a stock of the product from one year to the next. Hence we have two distinct sources for the

formation of a product fund: one is this stock carried over from the previous year, i.e., the opening stock of the product; the other is the harvest. However, at the other end, we simply have a division of the product fund into so many specific funds: there is no room for a closing stock in this simply because it does not exist in the decision regarding product-use taken at the beginning of a year.

Let us now begin on the task. We proceed in the manner of successive generalisation starting from the "pure forms" of the landlord and capitalist farmer. The product accounts for them need only be written down -- they are perfectly self-evident and do not require any spelling out.

Landlord's account I

Rent of the land + Opening stock

= Product fund of the year

= Consumption fund + Sales fund

Capitalist farmer's account I

Harvest of the farm - Wages of the harvesting labour

+ Opening stock

= Product fund of the year

= Seed fund + Wage fund + Consumption fund + Sales fund

Two generalisations immediately follow as 'mixture' of these two accounts, viz., (1) the undertaking of some 'direct farming' by the landlord, and (2) the leasing in of some land by the capitalist farmer. The generalised accounts are as follows.

Landlord's account II

Rent of the land under tenancy + (Harvest of the land under direct farming - Wages of the harvesting labour) + Opening stock

= Product fund of the year

= Consumption fund + Sales fund + (Seed fund + Wage fund for the direct farming)

Capitalist farmer's account II

Harvest of the farm - Wages of the harvesting labour - Rent paid for the land leased in + Opening stock

= Product fund of the year

= Seed fund + Wage fund + Consumption fund + Sales fund

We have only one more 'generalisation' in our scheme -- the granting of consumption loans by the landlord. Let us first outline the loan system. It consists of purely short-term loans in the product taken in the closing 'lean' months of a year, and repaid in full with the interest immediately after the harvest. (Thus the repayment of the loan constitutes a "division of harvest"). Clearly, the loan defines an alternative use of the product for the landlord, and the repayment of the loan another source of the product fund. The statement of the product account follows from these considerations. For simplicity, we abstract from direct farming by the landlord in the statement of these accounts.

Landlord's account III

Rent of the land + Repayment received on account of the loan granted in the previous year + Opening stock

= Product fund of the year

= Consumption fund + Loan fund + Sales fund

Let us just take note of the stationary case in this context, which we may define by :

Loan granted in a year

= Loan originally planned for the year, i.e., the loan fund

= Loan granted in the previous year

This leads to the following obvious simplification of the account :

Landlord's account III (case of stationary loan)

Rent of the land + Interest on consumption loan[6/] + Opening stock

= Product fund of the year

= Consumption fund + Sales fund

This brings our statement of the product account of our parties, the landlord and capitalist farmer, to a conclusion. It is possible to set up the account for the 'system' as a whole, as relevant for the

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6/ Let us call attention to the fact that the interest on consumption loans defines a specific form of the 'surplus' in the system.

accounting of its marketed surplus, by straightforward aggregation and consolidation of these individual accounts. This is a purely formal step having no substantive significance for our purpose and so we simply omit it.

Section 3 : The Stock at the End of a Year

Let us begin by establishing a clear benchmark of reference for our purpose. Suppose our agriculture were in a stationary state in the strict sense, that is, the harvest as well as all the requirements of the product within agriculture simply repeat themselves over at exactly the same level year after year. Let us also suppose that the 'demand' coming from outside is stationary in this sense. In such a state, the actual use of the product every year is exactly in balance with the harvest and hence can be met entirely out of it. We can go one step further and take it for granted that this in fact is so, i.e., the use is met out of the harvest every year in the state described. In such a state then the stock under reference -- the stock carried over from one year to the next -- is by definition absent.

Let us now step out of this benchmark by supposing that the harvest does not exactly repeat itself over time but is subject to a random fluctuation around a 'normal' level due to the exogenous factor of weather. The requirements of the product however continue to be the same year after year. It is clear that these requirements can be satisfied every year only if the excess of the harvest over the

requirements of a 'good year' is carried over as stock for being actually used in a 'bad year'. The general logic or rationale of the carry-over of a stock then becomes to provide for the requirements in case of a poor harvest.

Let us now look into this as process. The process has to begin with a decision to set aside part of the harvest of a year for use next year. By definition the decision is in anticipation of a poor harvest. So the whole process begins only as and when a poor harvest comes to be expected in the first place. This expectation in turn can get formed only on the basis of some initial weather conditions which themselves get defined only through the year under reference, not at its very beginning. Let us put this as a logical axiom that, at the time of each harvest, the expectation held of the next harvest is that of a normal harvest. It follows at once from this that a closing stock of the product is simply not envisaged at this point. The whole idea begins to take form along with the expectation of a poor harvest beginning sometime in the middle of a year. We note in the passing that the harvest expectation becomes more and more definite as the year comes to a close, i.e., as the next harvest is approached in time, and would in general prove to be quite correct in the end. So, there would in general be an opening stock of the product in a bad year, and only in a bad year. A good or normal year is left to take care of itself. This is an important asymmetry.

Let us now retrace a few steps and note that to say that the closing stock of a year is not envisaged at the beginning is to say the same as that the product fund as a whole has a life span, ex ante, of a year. This establishes the proposition taken for granted in the previous section, viz., that each specific fund has a life span (ex ante) of a year or less. As a corollary, the fact of a closing stock is accounted for by a revision of the original decision incorporated in the division of the product fund. The conditions of this revision are now also established under our general terms of reference (fluctuations in the harvest on account of weather).

However, our whole argument here has been in purely a priori terms without making any reference to the 'system'. It is necessary to recast the argument in terms of the 'system' with particular reference to its landlords and capitalist farmers before we can properly join up with the mainline of our analysis. Let us be careful about this.

In the a priori sense, the requirement (or need) of our product is simply the consumption requirement and the seed requirement (for the next cycle). This is what the term implicitly stood for in the discussion so far. Within this, we can take it for granted that the seed requirement in a year is always met from its harvest; so it does not get into our problem here and we can simply abstract from it for the rest. The stock carried over from one year to the next is then identified broadly as consumption stock.

This is the social view. Let us now look at the matter in terms of the individual owner of the product. His own consumption of the product then appears as a self-defined use of the product by him, among other uses, all of which are ultimately for the consumption of others through the appropriate institutional channels (wage-payment, sale, ...). Now, for the vast majority of these individuals -- the agricultural masses -- "providing for the requirements in the case of a poor harvest" means providing for their own consumption. But our own reference all through is not to the masses but to the landlords and capitalist farmers. Their own consumption of the product in a year accounts for but a small fraction of their product fund of the year and can therefore be taken to come entirely from the harvest concerned, good or bad. Providing for their own consumption of the product in case of a poor harvest thus ceases to have any relevance in the present context. It is in their other uses of the product that we must find the rationale of a closing stock, and this automatically dictates an approach to the problem other than just "providing for a bad year". The uppermost factor becomes the gain to be made out of carrying over a stock to the 'bad' year.

This gain in the case of the 'use' being sale is simply axiomatic. A poor harvest means a high price thereafter; this is certainly foreseen, and the "process" we talked of at the beginning becomes simply the process of a speculative withdrawal of stocks from sale, i.e., current sale. Stated differently, the life span of the

sales fund, which was initially put as one year, comes to be prolonged beyond this under the expectation of a poor harvest in the coming. This explains the mechanism of divergence of the ex post life span of the fund from the ex ante.

It remains to consider the two remaining uses of the product, viz., payment of wage and granting consumption loans. It is hard to see what gains may be associated with the carrying over of a stock of the product for payment of wage in the next year. So, we may simply leave this out as well, which is simply to assert that the payment of wage in a year comes out of its own harvest, whatever it be, rather like the seed.7/

Let us now turn to the granting of consumption loans. It is true that a bad year is a year of high demand for consumption loans, but this does not mean that the interest charged is also high. The rate of interest is in fact a long term parameter of the system which by definition remains invariant under good or bad harvests.8/ So we cannot associate any gain with the carry-over of a stock for granting consumption loans in the next year as well. We are left with the sales fund as the unique location of the closing stock of the product in a year with our parties. It is also by definition a speculative stock

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7/ Indeed the very fact that the harvesting labour is paid out of the harvest itself, even a poor harvest, is 'proof' of this proposition which we may restate in the language established earlier by saying that the wage fund has a life span less than a year, ex ante as well as ex post.

8/ The same is true of parameters of the rent system.

held in expectation of the rise in price following the failure of the harvest expected. This triggers off one more question.

The price next year may be higher[9/] not only because the harvest is poor, but also because demand has risen. The question is whether this also induces a speculative stock at the end of the year under reference. Stated slightly differently, the question is whether the closing stock in a year is a speculative stock in the general sense of the term, or is it specifically a speculative stock defined through the fluctuation of harvest. This is a question that assumes a good deal of significance in the problem of our price formation. We simply take this opportunity of an early discussion, the point being already raised.

Let us begin with a clear asymmetry between the two cases. Anticipation of a poor harvest, and of the rise in price following it is something well defined in itself. But there can be no expectation of a rise in demand next year just on its own — it can only be a projection into the next year of some rise in demand already taken place and underway. So, the price rise is also underway and projected forward, through the harvest coming in between. The whole uncertainty of the harvest comes into this, compounding the original uncertainty about the rise in demand, more precisely the continuation of the rise in demand from this year to the next. Let us now translate this into uncertainty regarding price which is the relevant factor for speculation.

9/ Stated mathematically, 'higher' in the sense of point domination.

When one says that a good or bad harvest is known to lower or raise the price, one refers only to the qualitative direction of the movement in price. The magnitude of the rise or fall remains in the open under a wide range of expectations. This, we would say, is the single biggest uncertainty about the level of our price in a year as viewed from time points in the preceding year, as are relevant for the process of speculation. At the back of this, we have the point that the single most important factor affecting the level of price in a year is simply the harvest itself. Taken together, the two points imply that in any year the estimation of the level of price next year is dominated by one single factor towering above all others, which is simply the estimate of the harvest coming in between. This being so, one is left with no basis in the fundamental qualitative sense for projecting the price movement arising out of rise in demand through a harvest, from one year to the next. Stated slightly differently, whatever 'movement' may have been projected on this basis gets completely swamped by the other factor, and loses its identity.

The net upshot for our purpose then is that the speculation brought about by the expectations of rise in demand does not extend beyond a year — the speculative stock gets built up and then liquidated within the same year and thus finds no room in the closing stock of the year. So, we see the whole logic or rationale of the carry-over of a stock of the product from one year to the next by the big producers as built around their expectations regarding the price next year through the

harvest expectation. This stock by definition then comes into being only under the expectation of a poor harvest. It is a speculative stock in this specific sense and not the general sense of the term.

Let us now put things in a perspective. Above, we have made an attempt at a logical understanding of the entity of an opening/closing stock of the product in a year in our context and shown it to have a very specific character. This is in marked contrast to 'accounting schemes' as generally met with, where the entity is left as something purely self-defined, without requiring any logical support. We do not however see how the scheme can become a tool of analysis on this basis -- hence the whole effort. We also point out that our analysis of the entity here fully justifies our treatment of it in the accounts set up in the previous section. So, these accounts are simply retained intact.

Let us end by taking a brief forward view of the thesis in respect of the entity under reference. We have already stated that it becomes significant in the study of price formation. This is to be seen.[10/] As regards our problems in the "dynamics" of marketed surplus, nothing essential seems to be added by the entity. Hence we simply abstract from it in this context. The entity is therefore going to be met with only in Part II of the thesis, not in the remainder of Part I. This is simply to enable us to focus properly on our problems without unnecessary cluttering up.

10/ Specifically in Chapter 7, Section 1, and Chapter 9.

Chapter 2

DYNAMICS OF MARKETED SURPLUS I : THE GOOD AND BAD YEARS

Section 1 Different Systems of Cultivation

'Good' and 'bad' years of agriculture are synonymous with ...ch and poor harvests, which in turn are defined through the year-to-year fluctuation in harvest arising out of the vagaries of weather.[1] Our problem in this and the next section is simply to trace the consequences of this fluctuation for the course of marketed surplus through the years. The last section will give a somewhat different turn to the whole problem area, which we need not anticipate at this point.

It is convenient to begin by setting out the conventional analysis of our problem as a theoretical benchmark of reference from which to 'distance' ourselves. In the conventional analysis, marketed surplus is seen to be formed straight out of production or output or harvest through the 'consumer behaviour' of the producer. The fluctuation in harvest is therefore taken to be transmitted to marketed surplus entirely through the so called "income effect" of consumer

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[1] Throughout this chapter, the term "harvest fluctuation" is understood in the above sense, i.e., as fluctuation of harvest arising out of the purely exogenous factor of weather conditions.

behaviour theory, which in the present context can also be called the "output effect". This is a straight year-by-year transmission according to the formula:

$$(1) \qquad \Delta Q_t = (1 - c)\Delta H_t$$

where ΔQ_t and ΔH_t are respectively the change in marketed surplus and change in output (harvest) between years (t) and (t+1) and "c" is the producer's marginal propensity to consume foodgrains (written mpc for short below).

Since we see the formation of marketed surplus in very different terms, the whole analysis of the problem follows a different course. Consumer behaviour theory does not play any role in this as we have our "producers" (the landlords and capitalist farmers) as already satiated in their consumption of foodgrains. Stated in the conventional language, their mpc is set at zero. Going by (1), we would be led to predict $\Delta Q_t = \Delta H_t$. However, as will be seen below, the result may be just the opposite, $\Delta Q_t = 0$, as if the mpc were unity. This depends upon how precisely a 'surplus' is formed in agriculture, out of which the marketed surplus is formed. We will also see that the fluctuation in harvest is not necessarily transmitted to marketed surplus on a year-by-year basis --ΔH_t may have repercussions on Q_t beyond the year (t+1), requiring one to distinguish clearly between the 'initial effect' and the 'total effect' (in time) of the change in harvest.

Let us now outline the programme of work. We have to point out that the "repercussion beyond a year" just talked of comes with the institution of consumption loans, which on its own will be seen to define a complete mechanism for transmitting the effect of harvest fluctuations on marketed surplus. We shall take this up in Section 2. below. In this section we focus attention upon the structural features of different systems of cultivation per se and see what significance they have for our problem. Let us clarify that the term "system of cultivation" is just a renaming of "agrarian systems" found convenient in this context.

Let us now set down to work. We begin with the landlord-tenant system of cultivation considered in its 'pure' form (no 'direct farming' by the landlord and no consumption loans as just pointed out). The marketed surplus in this case is simply the rent minus the landlord's own consumption of foodgrains, a 'constant'. So, the effect of harvest fluctuation upon marketed surplus depends entirely upon its effect upon rent, which in turn depends entirely upon the mode of fixation of rent, (or the system of tenancy in this sense). In case of a fixed-rent system of tenancy, the 'effect' is simply zero, i.e., there is no effect, while in the case of a share-cropping system of tenancy, the 'effect' is given by the percentage share of rent in output. Stated in the symbols already introduced, we have

$$(2) \qquad \Delta q_t = \begin{cases} 0 & \text{under the fixed-rent system} \\ \alpha \Delta H_t & \text{under the share-cropping system} \end{cases}$$

where α is the percentage share of rent in output.[2/] We thus justify the claim made earlier that even though we have the producers' mpc as zero, the fluctuation in harvest may not simply have any effect on marketed surplus. Though the result is straightforward within its assumptions, it is certainly a counter-intuitive one, even without any reference to mpc. This prompts us to look a little carefully into the real situation underlying the formal analysis above.

The real situation is simply that it is the tenants or cultivators who have to bear the whole brunt of harvest fluctuation in the case under reference (fixed rent system of tenancy). But there must certainly be limits to the extent to which they can cut down on their subsistence in the case of a poor harvest. If the rate of rent is actually not lowered, because it is a long-term parameter, then the only course open is default on the payment of rent, and this does belong to the real situation. Thus the rent actually received by the landlords in a bad year will typically fall short of the rent due, and through this, the volume of marketed surplus does get reduced by the amount of default. The other side of this is simply that the landlords insist upon, and do generally realise, part of the accumulated default in a good year, and so the rent actually received rises above the rent due for the year. We thus have a supplementary channel for the transmission of harvest

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2/ It is assumed that the parameters of the rent system remain invariant to harvest fluctuation. This has already been justified (see footnote 8, Chapter 1).

fluctuation to marketed surplus defined through the 'mechanism of default' as we may call it. Formally, this is the only channel for this transmission in the case of the fixed-rent system, while under the share-cropping system — where the 'default' is still there, though possibly in a weaker form — it gets superimposed upon the primary channel defined by the mechanism of share-cropping itself.

Let us now turn to the system of cultivation remaining, namely, capitalist farming. The marketed surplus here is given by the harvest minus the wage paid out of the harvest minus the farmer's own consumption of the product (once again, a 'constant').[3/] Let us begin with a point of some subtlety. The wage paid out of the harvest includes the wage paid for the harvesting itself, the rest being the wage paid over the year beginning with the harvest. We may take the latter to be independent of the actual harvest obtained on the following grounds. First, the wage rate itself is again a long-run parameter of the agrarian system which does not fluctuate with the harvest. Secondly, the production plan of the farmer is again based on long-run considerations unlikely to be influenced by the actual harvest. Employment over the year depends upon this plan and is thus also a 'constant' for our purpose. Hence, so is the whole wage paid over the year ensuing from the harvest.

3/ We abstract here from the seed, because it is of no consequence for our problem.

Let us now turn to the wage paid for the harvesting itself. Here we have an almost tautological relation, viz., whatever be the 'plan' before, the actual intensity of the harvesting operation depends entirely upon the harvest itself: a bumper harvest will require a lot of labour to cut it down, and a poor harvest only a meagre amount of labour. So the labour employed for the harvesting, and hence the wage paid to it, depends upon the actual harvest. As a result, even though the production plan and wage rate remain unchanged through the harvest fluctuation, the actual wage paid out of a harvest becomes positively correlated with the harvest itself. Without this factor we would have the marketed surplus varying in the full amount with the harvest; i e., $\Delta Q_t = -\Delta H_t$. Because of this factor we have the following adjustment of the equation

$$(3) \qquad \Delta Q_t = \Delta H_t - \Delta w_t^h$$

where Δw_t^h denotes the change in the wage paid to the harvesting labour between years (t) and (t+1). Note that Δw_t^h will typically be a very small fraction of ΔH_t . So we may rewrite (3) as :

$$(3') \qquad \Delta Q_t = (1 - \varepsilon)\,\Delta H_t$$

where ε is a small fraction.

We have now gone over the year-to-year change in marketed surplus arising out of harvest fluctuations through the three different systems of cultivation. Obviously the three systems define an 'ordering' in this respect, in the sense that the numerical value of $\Delta Q_t / \Delta H_t$

successively increases from 0 (but for the default mechanism), to α (the rent-share), to near unity $(1 - \varepsilon)$, as one goes from the fixed-rent system of tenancy to share-cropping to capitalist farming. In the actuality, all the three systems may coexist side by side in some combination. The value of $\Delta Q_t / \Delta H_t$ for the actual system will then be a weighted average of its values just not 1. The precise numerical value of $\Delta Q_t / \Delta H_t$ is thus left wide in the open. We will only say that it has not been our intention to fix this value in any a priori sense. The fundamental point is that the value itself comes directly out of the structure of land-relations -- nothing else enters the relation.

Section 2 : The Mechanism of Consumption Loans

The analysis of this section falls in two parts. In the first we discuss the role of consumption loans as transmitter of harvest fluctuations to marketed surplus, noting its salient features. This itself divides up again into two parts, where, in the first, we study the pure interaction between consumption loans and marketed surplus as per the very definition of the loan system, and in the second we relate this interaction to the phenomenon of harvest fluctuations. With this, we have consumption loans as defining a complete mechanism for transmitting the effect of harvest fluctuations to marketed surplus as claimed at the beginning. The second part of our analysis then consists

of tracing the actual course of marketed surplus through the years in the background of harvest fluctuations.

The interaction between consumption loans and marketed surplus comes out as follows. Let us remember first that the whole system of consumption loans is an appendage to the landlord-tenant system of agriculture. Hence the source of the loan is the landlord, and the loan itself, i.e., the loan granted, is one of the alternative dispositions of the product by him, the other dispositions or uses being sale, and his own consumption of the product.[4] In the language of the previous chapter, his product fund in any year is divided between a consumption fund, a sales fund, and a loan fund. Of these, the first is simply a constant independent of all variations in the system. This is the beginning of the interaction between consumption loans and marketed surplus, which at this point takes the simple form that as of a given product fund of the landlord, variations in his loan-fund and sales fund simply cancel one another — a larger loan extended means simply a smaller sale and vice versa. However, this is only the beginning, not the end of the matter, because any larger loan extended one year means by definition a larger product fund for the landlord the next year. So, both his loan fund and sales fund can be larger the next year. In particular, the increase in the size of the product fund

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[4] We abstract here from any direct farming by the landlord.

here is given by the original increase in loan plus the interest on this increase. So, the potential increase in marketed surplus in the year following the increase in loan is larger than its fall in the previous year. Taking this to be the actual increase this year, there is a net increase in the total quantum of marketed surplus over the two years together, compounded out of an initial fall and a subsequent rise. Though the element of harvest fluctuation is not yet brought into the analysis, one can see in this the whole logic of the distinction between the "initial" and the "total effect" of harvest fluctuation on marketed surplus as transmitted by the mechanism of consumption loans that we had mentioned at the outset of this chapter.

Let us set out the interaction between marketed surplus and consumption loans, described above, in algebraic terms. At the back, we assume a purely transient rise in the loan granted in a certain year. Let X denote the amount of rise, and t_o the year of rise. This means in particular that the loan granted in year $(t_o + 1)$ is the same as that in year $(t_o - 1)$. We also assume that the rise in the loan granted in year t_o is the only source of the change in the landlord's product fund between years (t_o) and $(t_o + 1)$. We have then established the proposition that the landlord's marketed surplus falls by the amount X in the year (t_o), and rises by the amount $(1 + r)X$ in the year $(t_o + 1)$, where "r" is the rate of interest charged on consumption loans.

Stated as an equation we have :

$$(4) \qquad \Delta Q_t = \begin{cases} -X, & t = t_o - 1 \\ (1 + r)X, & t = t_o \end{cases}$$

where ΔQ_t denotes, as before, the change in marketed surplus between years (t) and (t + 1). This completes the statement of the pure interaction between consumption loans and marketed surplus.

Let us take off a minute here to look a little closely in time into the meaning of the rise in consumption loans talked of. As already stated, this is considered a purely transient change in the loan granted, taking place in a certain year, (t_o). This is the broad time-view of the matter. The 'close' (or narrow) view is simply that the loan itself (and hence its rise) gets defined only in the closing 'lean' months of the year. Let us now suppose that this is a rise not originally envisaged at the beginning of the year, when, by definition, the whole division of the product fund took place. The actual rise in the loan granted then comes as a revision of the original decision, a revision which by definition takes the form of a diversion of some funds from the sales fund to the loan fund as these were originally set up. This is an important proposition having both a methodological and a substantive aspect to it. Let us point these out.

The methodological aspect was in fact pointed out in the previous chapter when we distinguished between the ex ante and ex post life span of the funds into which the product fund of a producer was divided. As stated there, the distinction was based on a tacit

revisability of the original decision regarding these funds. This was already in the 'methodology' which then by definition took a "comprehensive view of things in time".5/ The same point is now expressed through a revision of the original allocation defining the diversion of funds just talked of.

Let us now come to the substantive aspect of this diversion. Let us again remember that the whole loan is granted only towards the end of a year. So, for part of the loan granted to come from the sale fund as originally planned, the fund itself must have had a life span extending upto a year. In other words, the sales of the landlord are distributed through a year. Again, the postulate is already justified in terms of the speculative process discussed in the previous section. What we do here is merely tie up things together.

Let us now tie up the interaction between consumption loans and marketed surplus discussed above with the phenomenon of harvest fluctuation. The basic connection is this. A consumption loan is taken only as a last resort by the borrower, to make up a shortfall in his annual consumption budget, which, (i.e., the shortfall), in turn obviously depends upon the harvest began with: the demand for consumption loans is higher in a bad year, lower in a good year.

Let us look a little further into this. The borrower of consumption loans in our case is the tenant of the landlord-tenant system, the a priori food budget for whom is set simply by the harvest

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5/ See Chapter 1, pp. 35-36.

on his plot minus the rent paid. Obviously, it is this budget that bears the entire brunt of harvest fluctuation in case this is a fixed-rent system of tenancy (a point already made earlier), and we therefore see the correlation between the loan demand and harvest all the more clearly in this case. We shall therefore now assume a fixed-rent system of tenancy in the background. We shall also abstract from the element of default of rent payment in the system. This clears the ground for our purpose in the sense that we are then left with no mechanism for connecting the variation in harvest to marketed surplus without the element of consumption loan; or in other words, this becomes the only such mechanism and the whole analysis therefore gets automatically focussed upon it.

Returning to the mainline of our analysis, it remains to pass from the 'loan demand' (which is what we related to the harvest above) to the loan actually granted. No assumption regarding the relation between the absolute magnitudes of the two comes into our analysis. All that we need presume is that the landlord responds positively to an increase in the loan demand; i.e., the loan actually granted is higher or lower as the loan demanded is higher or lower. It is therefore on the high side in a 'bad' year, and on the low side in a 'good' year.

We are now in a position to begin the second part of our analysis, to trace the actual course of marketed surplus through the year in the background of harvest fluctuations. Let us get started by defining a clear benchmark of reference. For this, we simply focus

upon the normal harvest, abstracting from the fluctuations around it. I.e., we suppose, as an abstraction, the normal harvest repeating itself over year after year, which we may call the 'regime of normal harvest'. Let us denote the normal harvest by H^*, and the loan corresponding to it, i.e., the part of the loan demanded in a normal year that is actually granted, by L^*. Let us denote the landlord's product fund and marketed surplus under the regime of normal harvest by P^* and Q^* respectively. To complete the statement of his account, we have to bring in the rent received and the landlord's own consumption of foodgrains. These have the same values within and without the regime of normal harvest and so we denote them simply as R and C respectively (i.e., without the *-mark of the normal harvest). The complete account of the landlord under this regime is thus defined by the following equation[6/]

$$(5) \qquad R + (1 + r)L^* = P^* = C + Q^* + L^* .$$

From this we have his marketed surplus in the regime under reference as

$$(6) \qquad Q^* = R + rL^* - C .$$

This completes the statement of the benchmark of reference.

Actually, not the whole of this benchmark comes into our analysis. What we have to get started from is simply two consecutive years of normal harvest. This is enough to set the loan actually granted

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6/ We just note that this is the same as the case of stationary loan discussed in the previous chapter (see page 40).

as well as the product fund of the landlord in the second of these two years as equal to their respective values under the regime of normal harvest, i.e., L^* and P^*. It follows that the marketed surplus this year is also Q^*. Let us now denote this year as $(t_o - 1)$, and come to year (t_o). Let us suppose that this is a 'bad' year, i.e., $H_{t_o} < H^*$. The loan actually granted in year (t_o), i.e., L_{t_o}, is then larger than L^* $(= L_{t_o-1})$ by a certain amount, say X. So the marketed surplus this year, Q_{t_o}, is smaller than Q^* $(= Q_{t_o-1})$ by this same amount. Let us now get on to year $(t_o + 1)$ and suppose that this again is a normal year, and so the loan granted reverts back to its original value, L^*. We are then back to the case of pure interaction between consumption loans and marketed surplus described at the outset. The notation has also been chosen to fit in exactly, and so we may just reproduce equation (4) as the equation describing the actual change in marketed surplus over the years concerned:

$$\Delta Q_t = \begin{cases} -X & , \quad t = t_o - 1 \\ (1 + r)X & , \quad t = t_o \end{cases}$$

The only point added is the substantive interpretation of X as the increase in the loan actually granted in the 'bad' year, (t_o), over that in the normal year, $(t_o - 1)$, on account of the rise in loan demand.

Let us immediately follow through this substantive interpretation to the interpretation of the result that over the two

years, (t_o) and $(t_o + 1)$, taken together, there has been a rise in marketed surplus. The point here is simply that the whole 'cause' of this rise is the poor harvest of year t_o; this is the only change, in terms of the notional regime of normal harvest, that brought the whole sequence under reference into being. Let us just repeat what has been established: the initial effect of a poor harvest, in the year of its occurrence, is a fall in marketed surplus, but its total effect, spread over this and the following year, is a rise in the marketed surplus. Between the two we also have the passage from the 'intuitively obvious' to the 'counter-intuitive'.

This completes our basic analysis of the dynamics of marketed surplus originating in the fluctuation of harvest, transmitted through the system of consumption loans. It is true that the whole analysis has been conducted in terms of a single poor harvest coming within a string of normal harvests. However, the whole analytical content of the dynamics is already contained in this, and so we do not carry out any explicit analysis of other cases. As for the 'general' result, we simply state that whatever the precise sequence of harvests, the change in marketed surplus through the years is obtained by inter-locking the successive 'two-year cycles' implicit in the analysis above, where the change in marketed surplus between any two years is obtained by compounding the change arising out of the change in the loan granted between the two years on account of the change in harvest and the change arising out of the change in the product fund between these two years on

account of the change in the loan granted between the previous year and the year before. The fluctuation of harvest is thus transmitted to marketed surplus on a 'year-to-two year' basis, so to say, not 'year-to-year'.

Section 3 : The Course of Weather per se

As stated at the beginning, this section gives a fresh turn to our general problem of the chapter, which is simply the dynamics of marketed surplus arising out of, ultimately, the vagaries of weather. So long, the "vagaries of weather" itself remained in the background, and we concerned ourselves with the impact of "fluctuation of harvest", arising out of it, on the course of marketed surplus. Our problem in this section is to explore what impact the "vagaries of weather" itself, directly may have upon the course of marketed surplus as distinct from its impact through the harvest. This is the fresh turn. It is hardly necessary to point out that this is a totally different order of problem as compared with our problems in the previous sections. The primary thing now is simply to argue that there is a relation between the weather per se, in a given year, and the total sale of the year, prior to its realisation in the harvest at the end of the year. This is all that we concern ourselves with. The discussion is therefore purely exploratory in nature, as already mentioned.

Let us get down to work. Our point of reference here is the actual course of weather over a year as it affects agriculture, i.e., field cultivation. A priori, the course of weather, is subject to wide variations. Within this, there must be a broadly identified range which is generally expected, and on the basis of which, therefore, the 'cultivation' is planned or designed. We may call this range the normal weather conditions. Our basic proposition then is that when, at the beginning of a year, a 'farmer' plans out his cultivation for the year, he bases it upon normal weather conditions being realised through the year. This is the a priori expectation regarding the course of the weather at the beginning of every year.[7/] This defines the basic benchmark of reference for our purpose in this chapter. "Vagaries of weather" is now thought of simply as non-realisation of the normal weather conditions, i.e., the actual course of weather in a year being outside the range generally expected. This upsets the 'plan' of cultivation and so the actual course of operations over the year generally departs from the course originally planned. This defines our precise point of entry into the subject.

Let us consider the 'bad' year — too much rainfall or too little of it, at the wrong times, and so on. Given some severity of this (which is really axiomatic), one very general effect would be

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7/ It will be recognised that this is nothing but a spelling out of the "logical axiom" of the previous chapter, that "at the time of each harvest, the expectation held of the next harvest is that of a normal harvest" (see page 42).

simply the abandonment of cultivation on particular plots — the high or low plots, as the case may be, depending upon whether it is floods or drought that one has in mind as 'bad year'.[8/] The work or labour that was meant to go into this cultivation therefore does not simply take place. In short, we have 'unemployment' forced upon the agriculture.

The word unemployment has just been used in an a priori or pre-institutional sense, covering both 'family labour' and 'hired labour'. Let us now follow these two different channels on their own, bringing in the specific point of our concern, viz., what happens to the marketed surplus. So, we grant a priori a 'marketed surplus' in either case. We point out that the first case — the case by definition of a small farmer or peasant — takes us outside our terms of reference in this part of the thesis. We bring this in here for purely clarificatory purposes. Let us begin with this case.

The sale or marketed surplus of a small cultivator is simply the harvest minus his own consumption of the product. The harvest for our year of reference has already taken place at the beginning, and the above division made in reference to it. The important thing to note is that his consumption through the year is already provided for, quite independently of his 'work' through the year. It is his consumption

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8/ The "abandonment" or "giving up" may even begin before actual cultivation has started: the reference all through is to the cultivation 'planned'.

next year that poses the problem, and he may try to provide for it in advance by curtailing either his consumption or the sale this year. Going by the latter alternative, marketed surplus this year is then reduced. We note this effect, but we note also that the whole effect under reference, whether on consumption or on marketed surplus, is defined through the farmer's expectation regarding the coming harvest. This is a general possibility already discussed[2/] and does not fall in line with our specific concern here.

Let us now turn to the other case. The granting of a marketed surplus here means granting it for the farmer concerned and that is purely axiomatic for the farmer here is a capitalist farmer. (We abstract from any sale by the worker himself.) The effect of unemployment -- the unemployment thrust by the bad year under reference -- takes a totally different turn in this context. The agricultural worker loses his job, his wage, and his consumption. There is nothing to redress this. In no sense is he provided for by the harvest already taken place, as the small peasant is. The wage lost by the agricultural worker is, however, a product saved by the farmer. This is by definition a part of his wage fund laid aside at the beginning of a year, a part that now becomes redundant. So, we again have a diversion of funds through the year, revising the original decision. A moment's reflection (or glance back at the capitalist

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2/ See Section 3, Chapter 1, pp. 41-46.

farmer's product account I, of the previous chapter) convinces one that this is in fact a diversion of funds from the wage fund to the sales fund of the producer. So, the whole phenomenon shows up in the end as an increase in marketed surplus through the year. This explains what was to be explained, that there is a relation between the weather per se in a year and the marketed surplus.

Let us point out that nothing of the coming harvest, i.e., the expectation of it, comes into the argument. The effect is of the course of weather per se, which is our specific concern here. This also sets apart the mechanism connecting the weather conditions to marketed surplus of this case (capitalist farmer) from that of the previous (small cultivator). Stated differently, the whole effect just pointed out is defined exclusively through the working of a specific system of cultivation (capitalist farming) and remains undefined outside (system of small peasants).

Let us now proceed on. The " aguries of weather" may be many, and so can be the responses of a farmer to it. Above we considered what may be called the 'passive' response of the farmer to the weather turning bad. The same event may also be met by an 'active' response -- more intensive drainage or irrigation, as the case may be (floods or drought). The effect on employment and wage is then simply reversed. In general, both responses exist side by side so that the net effect upon marketed surplus becomes indeterminate. Let us just

point out that the analysis here is meant to be exploratory, not predictive.

Let us now turn to the other side of normal weather conditions, the 'good' year. Insofar as one thinks of this just symmetrically with the 'bad' year — some plot of land which would otherwise have been left fallow actually taken up for cultivat' n, for instance — one would naturally also just symmetrically reverse the 'effects' discussed. It is however not quite clear that this symmetry does in fact hold. Stated very generally, a farmer may respond variously to a bad year but a good year may simply mean the bounty of nature realised in the end in a good harvest, on the basis of the same operations as originally planned in terms of the normal weather conditions. The relation between weather per se and marketed surplus may then be a rather one-sided relation in the sense of being defined only on the 'poor' side of the normal weather conditions. This is to be taken in the spirit of pure exploration.

Chapter 3

DYNAMICS OF MARKETED SURPLUS II : CAPITALIST DEVELOPMENT

Section 1 : The 'Capitalist Transition'

It is obvious that we can no more than scratch the surface of a big subject here. We limit ourselves to simply tracing the implications of the process of capitalist development of agriculture in certain elementary forms for the course of marketed surplus. The process considered in this section is called the capitalist transition. Within our framework, this can be understood as the transition from the landlord-tenant system of cultivation to capitalist farming. However, we can simplify this further by tracking down the origin of capitalist farming to the so-called 'direct farming' of the landlord. We then remain entirely within the landlord-tenant system and conceive the transition as consisting simply of the first taking to some direct farming by the landlord — why or from where the very idea of this new mode of cultivation comes, we do not enquire. It comes with all its 'rules' already there. We will also suppose this whole transition to be over in a certain year, t, say, so that we have one state of agriculture before it and another after it, which are nothing but the landlord-tenant system in its 'pure' and 'mixed' forms respectively.[1/]

1/ We abstract from consumption loans through this discussion.

Let us now settle down to the work. To take to some 'direct farming', the landlord has to first terminate the tenancy on some land which he then converts into a 'farm' of his own. To avoid any question-begging, we may suppose that the very same tenants who are 'evicted' in the first step are 'hired in' or 'employed' in the second for the actual cultivation on this farm. On the face of it, this may look like just ensuring the survival or continued existence of these persons. However, there is something more to it, for the very mode of subsistence under the two forms, tenant or tenant-cultivator and farm-labour or agricultural worker, are very different from one another. The tenant's subsistence comes out of the division of harvest between him and the landlord taking place at the beginning of a year and this by definition provides for his whole subsistence for the year. The agricultural worker, on the other hand, is paid through the year in advance of the harvest resulting from the work. So, in the year of transition that we consider, the tenants turned agricultural workers are doubly provided for. Though their tenancy is terminated this year, they already have their subsistence for the year provided by the division of harvest at the beginning. Then again they are hired in for working on the same land, now the landlord's 'farm', through the year, receiving wages pari passu. This whole wage therefore comes in as an additional source of consumption this year, and we assume that it is in fact consumed directly in the 'product' as paid. There is therefore a rise in their consumption this year precisely by the amount of wage received,

for their share of the harvest this year is the same as in the previous year or the initial state.

This is a net rise in the consumption of foodgrains within agriculture, for there has been no other change, and so it must mean a fall in marketed surplus in the year concerned. The mechanism is straightforward. Our landlord begins this year, t, with the same product fund, say P_o, as in the previous year. But whereas previously this fund was divided between just a consumption fund and a sales fund, now a whole new separate 'division' comes in, viz., the wage fund to pay for the wages of agricultural workers through the year. Since the consumption fund by definition continues unchanged through the years, this wage fund can be created only by reducing the sales fund by the same amount. This is the mechanism.

Let us put this in symbols. Let us denote the marketed surplus in the year t by Q_t, and the wage fund under reference by W_{NH} [2/]. We have just obtained the result

$$(1) \qquad \Delta Q_{t-1} = Q_t - Q_{t-1} = - W_{NH} < 0 \ .$$

Let us now pass on to year (t+1). The bounty in the tenants' consumption last year was a purely transient one; this year

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2/ The subscript NH stands for the fact that the wage paid through the year covers the agricultural work upto but not including the harvesting labour which is paid directly out of the harvest itself. W_{NH} is in short the wage paid to non-harvesting labour.

the whole harvest of the land which they previously cultivated as tenants has gone to the landlord as 'output' of his 'farm', and they are paid simply a wage for their work through the year, which is to see them through their consumption. This wage may not in fact come up to their consumption in the 'old' or 'initial' state, but we will come to this a little later.

Let u turn to the landlord. As compared to the last year, he has now foregone the rent of the land taken up for direct farming, and obtained instead the whole harvest on it which may in fact be larger than the harvest raised by the tenants. Again, we will come to this a little later. For the time we just note that the rent foregone is smaller (much smaller) than the harvest actually obtained by him. It is also smaller (much smaller, again) than the harvest minus the wages for the harvesting labour itself, for this can in turn be but a small fraction of the whole annual consumption of tenants as per the 'old' state, which is what their harvest minus the rent provided for.

Let us again put this in symbols. Let H_L, W_H, and R_F denote respectively the harvest obtained by the landlord by his direct farming, the wage paid by him to the harvesting labour, and the rent foregone by him, i.e., the rent on the same land that he had obtained under the 'old' state. We then have the condition

(2) $$H_L - W_H > R_F .$$

Let us now come to the marketed surplus in year (t+1). We have to begin with the landlord's product fund this year, which we denote by P_N. This is now made up of two parts, one the rent from his land still under tenancy, and the other the harvest of his 'farm' net of the wage paid to the harvesting labour, i.e., $(H_L - W_H)$ above. Let us compare this with the formation of P_O. the first element is common to both; the second is new to P_N and there is a third element which belonged to P_O but is now no longer there, viz., the rent foregone on the land taken up for direct farming, i.e., R_F above. So, we can write

$$(3) \qquad P_N = P_O - R_F + H_L - W_H .$$

This product fund is now divided between a wage fund, a consumption fund and a sales fund. Since we assume that there is no further change in the system, the wage fund this year is the same as in the previous year, i.e., W_{NH}. There is no change in the consumption fund either. So the <u>whole change in the product fund between the two years is passed on simply to the sales fund</u>.

This gives us the result

$$(4) \qquad \Delta Q_t = P_N - P_O = H_L - W_H - R_F > 0 .$$

Since there is no further change in the system, Q_{t+1} also denotes the marketed surplus year after year, after (t+1), i.e., in the 'new' state. So, the whole <u>course</u> of marketed surplus through the 'capitalist transition' as we have defined it is given by (a) an initial

fall, in the year of transition, as given by equation (1); and (b) a subsequent rise, in the year after, as given by equation (4). The mechanism behind the two changes has also been fully set out above.

Let us now focus attention upon the change in marketed surplus through the transition as a <u>whole</u>, i.e., the change as revealed by comparing the two states, 'old' and 'new'. Let us denote this change by ΔQ. The marketed surplus under the two states is given here by Q_{t-1} and Q_{t+1} respectively, and so we have

$$(5) \qquad \Delta Q = \Delta Q_{t-1} + \Delta Q_t = H_L - W_H - R_F - W_{NH} = (H_L - W) - R_F$$

where

$$W = W_H + W_{NH} .$$

Now, $(H_L - W)$ and R_F represent simply the <u>two alternative forms of the 'surplus' in agriculture</u> defined in respect of the <u>same land</u>. In one, the surplus appears as <u>harvest minus wage</u>, which is the form in which the surplus is obtained by the landlord through his "direct farming"; and in the other, the surplus appears as <u>rent of land</u>, which is the form in which the surplus is obtained through "tenancy". Our whole "transition" is simply a passage from this latter to the former form of surplus defined in respect of the land which is actually taken up for direct farming by the landlord. The question whether the marketed surplus <u>increases or decreases</u> through the transition as a whole is a question directly of the comparison of these two forms of the surplus.

It may be argued that the landlord would have no motive for taking to direct farming unless this provided him with a greater surplus. The substantive basis of this proposition is not very clear as it already ascribes a full capitalist rationality to the landlord, which may simply not be there. Since, however, we ourselves have been looking upon the transition from the 'old' to the 'new' state as 'capitalist transition', we have to accept this as part of the interpretation. The important thing is to look underneath the condition and see how it comes about. Points for this have already been mooted through the previous discussion and it basically remains to tie them up together. However, before turning to this, we just state the condition in formal terms :

$$(6) \qquad H_L - W > R_F \ .$$

Obviously this implies

$$(7) \qquad \Delta Q > 0$$

or, in other words, the marketed surplus increases through the transition as a whole.

Let us now look into the substance behind this condition. We begin with R_F, the rent foregone by the landlord upon his taking up of some direct farming. If we go back for a moment to the 'old' state left behind, then we see this rent as coming out of the division of the harvest raised by the tenant on the same land between one part going to the landlord, i.e., the rent itself, and the other providing the

subsistence or consumption of the tenant. So, denoting this harvest by H_T, and the tenant's own consumption by C_T, we can express R_F as :

(8) $$R_F = H_T - C_T .$$

Note that C_T represents the tenant's consumption as per the 'old' state, where they were tenants. Their consumption now in the 'new' state, where they are no longer tenants but agricultural workers, is given by the total wage bill, W. Let us put this too in symbols by writing C_W for their consumption as workers, so that we have by definition

(9) $$C_W = W .$$

Let us now substitute for R_F and W in (5) by the expressions just obtained. This gives us the result :

(10) $$\Delta Q = (H_L - C_W) - (H_T - C_T) = (H_L - H_T) - (C_W - C_T) .$$

These two terms, we may say, define respectively the output effect and the consumption effect of the whole transition under reference. Both of these had already been touched upon earlier. The output effect comes about from the fact that the harvest raised on the same land by the landlord and the tenant may not be the same. The harvest raised by the landlord would typically be larger, which by itself would go towards increasing the volume of marketed surplus. The consumption effect similarly comes about from the fact that the consumption enjoyed by the same person as tenant and as agricultural worker may not be the same.

The consumption enjoyed by the tenant is typically larger, and this again would go by itself towards increasing the volume of marketed surplus. Thus the marketed surplus would typically increase on both counts. Stated in complete terms, what we have just shown is that the capitalist transition may have a positive output effect as well as a negative consumption effect within agriculture, and the effect of either on marketed surplus is in the positive direction, increasing it. This is how the whole 'change' comes about.

Section 2 : Capitalist Expansion

The capitalist development of agriculture is thought of here in its most transparent form of expansion of the area under capitalist farming. We have been introduced to this already in the previous section by thinking of the 'direct farming' of the landlord as equivalent to capitalist farming. Let us now suppose that the expansion occurs by the expansion of the farm size of some existing capitalist farms, secured through a fresh leasing in of land from the landlords by the farmers concerned, displacing his earlier tenant-cultivators.

This is exactly parallel to the 'change' described in the previous section, the only difference being that we talk now of the change in the marketed surplus of the capitalist farmer, not of the landlord. The mechanics of the change or the underlying process remains the same, enabling us to reproduce the results by merely adapting the

terms and notations to the present case. Thus, let us think of the year of transition, t, as a year in which our capitalist farmers lease in some land for expanding their farms. Following the previous section, we then have W_{NH} (which had earlier been the wage fund created for the first time by landlords in this year) as an <u>increase</u> in the wage fund of capitalist farmers this year over that in the previous year. This now appears as a <u>fall</u> in the marketed surplus of capitalist farmers instead of the landlords, giving us the same equation :

$$(11) \qquad \Delta Q_{t-1} = - W_{NH} .$$

The change in the product fund, and hence marketed surplus of the landlord from this to the next year was given earlier by the harvest he obtained on his 'farm' (H_L) net of the wages of the harvesting labour paid out of it (W_H), minus the rent foregone by him on the land concerned (R_F) . Instead of the 'rent foregone' we now have to consider the rent actually paid by the capitalist farmer on the land he has leased in, in order to trace the change. Let us denote this by R_P . Let us also denote the harvest by H_{CF}, as it now represents the harvest raised by the capitalist farmer. Thus the change in the marketed surplus from year (t) to (t+1) is given, exactly parallel to equation (4) of the previous section, by the equation :

$$(12) \qquad \Delta Q_t = H_{CF} - W_H - R_P .$$

Note that ΔQ_t here refers directly to the change in the marketed surplus of the capitalist farmer. We however have this to be the same as the

change in marketed surplus of the system as a whole on the assumption that the rent paid by the capitalist farmer is the same as that paid by the evicted tenants so that there is no change in the rent obtained by the landlord, and hence in his marketed surplus.

Combining the above two results, we have, as before, the change in marketed surplus between the two 'states' before and after expansion :

$$(13) \qquad \Delta Q = \Delta Q_t + \Delta Q_{t-1} = H_{CF} - W - R \ .$$

The right hand side of (13) is nothing but the 'surplus' obtained by the capitalist farmer on the land leased in, which is necessarily positive. As before, we have a decomposition of ΔQ between an 'output effect' and a 'consumption effect' which is a straight adaptation of equation (10) of the previous section, the only difference being that we replace the variable H_L in it, which stood for the harvest obtained by the landlord on his farm, by the variable H_{CF}, which is the harvest obtained by the capitalist farmer on the land leased in. So we have :

$$(14) \qquad \Delta Q = (H_{CF} - H_T) - (C_W - C_T) \ .$$

We have now gone over the case of "capitalist expansion" running exactly parallel to that of "capitalist transition" considered in the previous section. If nothing else, this underscores the significance of the starting point we had chosen for the whole exercise. The case considered may be thought of, in some sense, as the 'classic'

case as it sets capitalist expansion in the background of the landlord-tenant system of agriculture. Let us now go on to consider a different case or variant, setting it in the background of certain conditions thought to be typical of the agriculture of many underdeveloped countries. As before, we start off with a fresh leasing in of land by the capatalist farmers. The land, however, is leased in, not from a landlord, but from small owner-cultivators or poor peasants who, in the first place, lease out their land because they no longer find it viable to cultivate the land on their own.

What difference does this make to the formation and dynamics of marketed surplus as compared to the previous case? So long as the peasants themselves cultivated the land, there was no marketed surplus from it. Once it comes under capitalist farming, there is a marketed surplus, and we thus see the first emergence of marketed surplus from this land through the "capitalist expansion". This is a qualitatively new element in the discussion so far. However, viewed in terms of the change in marketed surplus through the years concerned, we are back to the same sequence as described earlier. In the first year in which the peasants give up their 'own cultivation', they already have the harvest, and the wage paid by the capitalist farmer is a net addition to the consumption of foodgrains within agriculture, accounting for an equal fall in his marketed surplus. The increase in marketed surplus comes next year, both over the marketed surplus of the previous year as well as over that of the year before, i.e., over the marketed surplus of the

initial state. Let us focus upon the increase in this latter sense, i.e., the change in marketed surplus between the initial and the new state.

As before, this decomposes into an output effect and a consumption effect. The first is given by the difference between the harvest raised respectively by the capitalist farmer and the poor peasant on the same land. The second is given by the difference in the latter's consumption between the two states. We now note that at bottom it is only the prospect of a positive difference that can lead a peasant to give up, on his own, his 'own cultivation'. So if we grant that this prospect is realised, we have a positive consumption effect through the whole change -- which of course is to say that the effect of this change upon marketed surplus through the consumption effect is in the negative. This is a different direction of effect as compared to the previous case. The difference arises simply from the fact that in the previous case we started from the landlord's decision to terminate some tenancy -- the tenant's consumption did not simply figure in it. To return to our case here, we note that the consumption of our peasant after giving up his 'own cultivation' is made up of the wage earned for whatever work he gets plus the rent obtained from his land. It is this sum that is larger than his consumption out of his 'own harvest' earlier. The root cause of this is simply the low level of his 'own harvest' because of resource constraints. Once the land gets absorbed under capitalist farming, the whole situation is changed, leading to a much larger harvest than before.

This of course is the output effect of the whole change. The argument then is that it is because the output effect is large that we have a rise in marketed surplus through the whole change. It swamps the consumption effect which works in the opposite direction. In the cases considered previously, on the other hand, the two effects worked in the same direction and got added so far as the change in marketed surplus is concerned.

We have now covered the major part of the chapter. We have called this the dynamics of marketed surplus under the process of "capitalist development" of agriculture. We have covered this area in a rather piece-meal fashion, going briskly from one case to another and settling down straight to the heart of the problem as we saw it. However, there has been a clear line of analysis running all through. Let us now take a little time in spelling this out, simultaneously clarifying the general problem area we have had in mind, and the main points we have tried to make in respect of it. This will also enable us to open out in a systematic way into the problem of the next section.

Let us begin by clarifying the notion of capitalist development of agriculture underlying the whole discussion. Stated at its most general, we have seen the phenomenon at bottom as the substitution of one mode of cultivation by another in our agriculture implicitly identifying them respectively as "pre-capitalist" and "capitalist" in some sense. "Capitalist" meant simply capitalist

farming, but the term could be stretched for our purpose to include the so-called direct farming of the landlord. "Pre-capitalist" in turn has been identified all through with the small cultivator, covering both the cases of tenant-cultivator and owner-cultivator (or peasant). So, one dimension of the substitution was simply the replacement of the "small" by the "big" in the sense of the land under cultivation in small units passing under a large unit, whether under the control of the landlord or the capitalist farmer. However, the focus of our attention has been, not on the farm-size per se, but on the output and more particularly the distribution of produce from the same land before and after the substitution of its mode of cultivation. This is what held the key to the dynamics of marketed surplus studied. Before going on to this, let us just give a statement of the different cases of substitution considered. Altogether, we have considered three distinct cases. The first two have been defined by the eviction of small tenants by a landlord, firstly for his own direct farming, and secondly for switching the tenancy or land lease to a capitalist farmer. The third was defined by the winding up of his own cultivation by a small peasant by leasing out the land to a capitalist farmer, and himself taking up wage-employment. The first case was called the "capitalist transition" and the latter two were grouped together under the heading of "capitalist expansion". The term "capitalist expansion" was here defined in reference to the so

capitalist farmer. In a wider sense, the term includes all the three cases.

Let us now turn to the dynamics of marketed surplus. First, a word on the scope of our analysis. All that we have really analysed is the effect upon marketed surplus of a once and for all substitution in the modes of cultivation in respect of some given land in our agriculture. One may very well consider this as falling short of the scope or boundary of "dynamics". Implicitly, the boundary is then taken to be crossed only with the consideration of successive rounds of substitution engulfing more and more land. We will return to this point later. Let us for the time concentrate on just what we did.

First of all, we saw the substitution under reference as "underlying change" in our agriculture, and gave it a clear time-location in a certain year of reference, t_o. By definition then t_o marked the transition from an initial or old state of our agriculture holding before t_o to a new state in the b e i n g, not yet located in time. It was seen that the new state in fact came into being in the very next year, $t_o + 1$, and as between the two states there was typically a rise in the marketed surplus. Taking this as the reference point we can say that our analysis established two main points, one each in respect of the comparison of the two states, and the transition from the old to the new state. The first consisted of breaking up the change in marketed surplus between the two states into an output effect and a

consumption effect of the underlying change. This gave a clear expression to the mechanism by which the change in marketed surplus is brought about. The other point, regarding the transition, consisted of bringing out an invariable reversal in the direction of change in marketed surplus through the years concerned -- it first fell in the year of transition itself, i.e., between $(t_o - 1)$ and t_o, and then rose between t_o and $(t_o + 1)$. It is the sum total of these two successive changes that defined the change between states just talked of, which we may also call the long-run change. The "long-run" is here automatically understood in reference to a state of agriculture and therefore as something open-ended in time. But the underlying change which separates the two states takes place at a definite point in time and has a definite impact upon the "given situation" of the time. This impact, we can say, gives us the short-run change in marketed surplus (as well as other variables of the system). It is to be identified with the initial fall in marketed surplus just referred to. We thus have a clear opposition between the short and the long-run change in marketed surplus in our case. However, more significant than this result as such is the very method by which we see the short-run as ultimately the 'becoming' of a long-run.

We can now return to the notion of "dynamics". It is clear that merely by going from the once and for all change in the modes of cultivation in our agriculture to a succession of such changes adds

nothing of significance to the analysis given.[3/] One simply makes repeated application of the method we describe and that is all. The essential dynamics of the change in marketed surplus is given in either case by the way the change comes about in time. This is precisely what our analysis of the "transition" brings about.

Section 3: Investment

Let us recall the output effect met in our discussion so far. It represented the change (rise) in output from some given land as it passed from cultivation by small cultivators to capitalist farming. It represented, in other words, an improvement in the production of this land. This must have required some investment in the physical or technological sense by the capitalist farmer, not just the deployment of a larger wage fund that we had talked of. We had simply taken this investment for granted at the back of our analysis without explicitly bringing it in into the set of inter-relationships through which we traced the dynamics of marketed surplus. Our object now is precisely to bring the investment itself into this set of inter-relationships.

3/ This is taking the whole "succession" as given a priori. Once it is seen as the outcome of an underlying process, we automatically pass into the area of long-run dynamics. This is truly something we stop short of.

This sets out broadly how we open out from the foregoing discussion to the problem of this section. Let us now follow this to certain logical conclusions and set out more clearly the problem we pose before ourselves. In the foregoing discussion, our starting point was an expansion in the size of some pre-existing capitalist farm. The investment we just talked of came in as a logical corollary to this expansion. Now, we want to focus directly on the investment itself. There is no necessary connection between this and expansion of the farm size — the investment may have been directed entirely inside the pre-existing farm, changing its technology or the physical state of cultivation in some way, a way profitable from the standpoint of the capitalist farmer. It may have also, of course, gone towards an expansion of the farm size, being again found profitable. We thus have two alternative directions of the investment in a broad sense. We will now follow the first direction, i.e., take the farm size as given through the investment. This is simply to keep away the complications for our present problem that arise from the expansion of the farm size per se, the 'dynamics' of which we have already discussed in detail. This already leaves behind the scenario or set up of our discussion so far. Let us now briefly chalk out a further step in this direction.

Let us go back for a minute to the notion of investment implicit in the "output effect" of the discussion in the previous section. As already pointed out, the broad direction of this investment was simply

an improvement in the productivity of land as compared to its original productivity under the small cultivator. Clearly, we can replicate this step in the present set-up by simply taking the original productivity to be given by the pre-existing productivity of the land in our given capitalist farm. It is understood that this is a very broad step (or category) as it really includes all cases of increasing output, for the farm size is taken as given. But there still remains a whole category or direction of investment outside this, viz., the investment which is directed basically towards reducing the 'cost' of cultivation as seen by the capitalist farmer, i.e., the employment and wage. Any change in output in this case is a secondary matter, and can simply be abstracted from for clear separation of issues. We are thus left with no output effect at all, thereby delinking the notion of investment completely from what we had begun with.

We have now set out a broad class of alternative lines or directions of investment in the broad context of agriculture. This remains essentially as conceptual backdrop for our purpose here. The substantive analysis of this section is devoted in the main to a detailed consideration of the effects upon marketed surplus of one broad type of investment within the first direction just set out. The type is defined by simply interpreting the expression "investment for the improvement of productivity of land" in a concrete or literal sense. The case considered is almost tailor-made for our method of analysis of the

dynamics of marketed surplus which we had just gone over at the end of the last section. This is why we take it up for detailed discussion. We may remember in this context the scope we had originally set out for our whole discussion of the "dynamics of marketed surplus". To quote, "we do not carry out any systematic exploration of the field but simply take up a few problems more or less at random, meant basically to bring out the analytical significance of the mode of formation of marketed surplus in reference to certain 'changes' and illustrate the methodology called forth".[1] We have now discussed in details a series of such problems over the previous chapter and this. The problem discussed below is considered simply a fitting endpoint of this whole series.

Let us now settle down to the analysis. Our concrete interpretation of the term "investment for the improvement of productivity of land" boils down simply to land-improvement in the physical sense -- basically, irrigation and drainage work. The fundamental point about this investment is simply that it is a physical activity within agriculture, akin to the agricultural activity itself. The labour necessary for the activity is drawn from the same pool or agricultural population, and shares the common feature of being paid directly in the product. We then have a clear "product-term" in the very concept of "investment", i.e., the investment made by our capitalist

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[1] Introductory Chapter, p. 12.

farmer. No doubt there will typically be also a "money-term" in the investment for the purchase of various "inputs" that go into the irrigation work etc. We will however focus only on the product term, for this is what links up directly with the formation of marketed surplus and so brings the case within the folds of our method of analysis of the dynamics of marketed surplus.

Let us now see our capitalist farmer engaged in an act of investment of the above sort in a certain year, t . He begins the year with the same product fund and harvest as the previous year, say H_o ,[5/] but has now to set aside or create a specific wage fund absent earlier, viz., the fund for the payment of wage to the labour engaged for the improvement of land as sketched above. Let us denote this wage fund by W_I where the subscript I stands for 'investment' as distinct from 'production' or 'cultivation'. Though it is not very realistic, we may suppose for our purpose that the actual cultivation in the farm under reference can be carried out as before while the land-improvement is going on, i.e., there is no interaction between the two activities. So, the next year also, t+1 , the farmer begins with the same product fund and harvest, H_o . The effect of the land improvement on output shows up only in the following year, i.e., t+2 . This will typically imply

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5/ For simplicity, we consider here the product fund and the harvest to be equivalent notions for the capitalist farmer.

also a change in the labour needed for cultivation, but we can come to this in the course of the statement of the effect of this whole sequence upon the volume of marketed surplus through the years concerned. We can now begin directly on this.

It is clear that we again have a pure short-run effect through which we pass on to the long-run effect of the investment upon marketed surplus. As before, the former is given by the fact that there is a rise in the wage fund -- the total wage fund now, comprehending the wages of the labour for both the improvement of land and cultivation -- created in the year t as compared to the previous year, while the product fund remains the same. Since the capitalist farmer's own consumption of foodgrains is unaffected by this, there must be a fall in marketed surplus between these two years, precisely by the amount of wage paid to the former, i.e., W_I , for the employment and hence wage of cultivating labour is the same in both the years. This is the short-run effect of the investment upon marketed surplus.

Let us take a little time off at this point to set out formally the profitability criterion that must have been satisfied by the investment. For this, we simply compare the complete state of cultivation before and after the land improvement. Before the improvement, we have a certain harvest, already denoted H_o , and a certain wage fund supporting this harvest, say W_o . After the improvement, we will have a new level of the harvest, say H_n , which by

definition is larger than H_o . This is the positive output effect of the whole investment. We will also have a new level of employment associated with this harvest and hence a new level of the wage fund, say W_n . We can call this the employment effect of the investment. We note that as a general proposition the employment effect could be positive or negative. It could be positive because more labour may be necessary to raise the larger crop, H_n , that can now be raised on the improved land, and it could be negative because the very improvement of land may reduce the labour necessary for drainage, irrigation, etc. in the cultivation of land. Whichever way the effect goes, the profitability criterion remains the same, viz., there must be a larger surplus to the capitalist farmer after the investment. We can state this formally as

$$(15) \qquad (H_n - H_o) - (W_n - W_o) > 0 \quad .$$ 6/

The two terms on the left hand of this represent respectively the output effect and the employment effect of the investment. As just noted, the first is necessarily positive, but the second may be either positive or negative.

We can now return to the course of marketed surplus through the years we are concerned with. Let us denote the sales fund of the

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6/ This is properly only a necessary condition, for we are looking only at the product surplus.

capitalist farmer, i.e., his marketed surplus, in the initial state (before land improvement) by Q_o . It is given by :

$$(16) \qquad Q_o = H_o - C_o - W_o$$

where C_o represents the consumption fund of the farmer, assumed constant through the years. This represents the level of marketed surplus before year t . In the year t the marketed surplus, Q_t , is given by :

$$(17) \qquad Q_t = H_o - C_o - W_o - W_I$$

and so,

$$(18) \qquad \Delta Q_{t-1} = - W_I \ .$$

This is the short-run effect of our investment upon marketed surplus which we had just found out.

Let us now move on to year t+1 . We still have the same product fund and consumption fund of the farmer. But firstly, the investment being now over, W_I drops out of the scene, and so, on this count, the marketed surplus should be back to its original value, Q_o . But the employment effect of the investment already comes into being this year, calling forth a new wage fund for the actual cultivation which we had just denoted W_n . The change in the volume of marketed surplus between years t and t+1 is now compounded out of these two changes in

the wage fund, the dropping out of W_I and the difference between W_n and W_o. Formally :

$$(19) \qquad \Delta Q_t = W_I - (W_n - W_o) \ .$$

Finally, it is in the year t+2 that we reach the "long-run" consequent upon the improvement in the productivity of land, incorporating the output effect of the investment. Since the employment effect of the investment is already reflected in the marketed surplus of year t+1 , the change in the volume of marketed surplus between years t+1 and t+2 will be given simply by the output effect. In other words :

$$(20) \qquad \Delta Q_{t+1} = H_n - H_o \ .$$

This completes the statement of the course of marketed surplus through the years relevant for our purpose. Let us end by just noting the long-run effect of the investment upon marketed surplus. This is the same as the effect of the investment upon the surplus obtained by the capitalist farm, i.e., the left hand side of the profitability criterion as given by equation (15). Viewed in time, the effect is obtained by comparing the sales fund before t (initial state) and after t (new state), which in turn is the same as the sum of the successive changes in the volume of marketed surplus between years t-1

and t+2 . So, denoting the long-run change in marketed surplus by ΔQ , we have the following equivalent expression of it :

$$(21) \qquad \Delta Q = (H_n - H_o) - (W_n - W_o)$$

$$= Q_{t+2} - Q_{t-1}$$

$$= \Delta Q_{t-1} + \Delta Q_t + \Delta Q_{t+1} \ .$$

We have now completed the main task we had set before ourselves. Let us now come out of it with just the observation that the whole key to the "short-run" that we meet here — the direct effect of the investment activity upon marketed surplus within the time over which it is carried out, prior to any of its technological effects — is simply the product term in the investment. Once one leaves this out, one has only the long-run or technological effect of investment. One more equation can be added to this. The product t m in the investment necessarily turns our attention inside agriculture. Beginning with this, we then remain entirely within agriculture for the whole effect of investment. If on the other hand, the investment was conceived purely in money, then we are necessarily taken outside agriculture for the whole beginning of the story in a physical sense. The short-run effect of the investment then also takes place outside agriculture, having no bearing inside. This is why we are then left only with the long-run or technological effect.

However, even within this, there is a pertinent observation to be made. We refer back to the second direction of investment inside a given capitalist farm distinguished at the outset, i.e., the investment directed purely towards reducing the cost of cultivation or the wage. We can broadly identify this with mechanisation. (Note that the investment here is purely a money investment by the capitalist farmer, and the story in a physical sense begins outside agriculture with the construction of the farm machinery. However, this is simply an aside.) The point we wish to make is simply that we will have in this case only an employment effect of investment, no output effect. The marketed surplus will still increase, simply because there is now a fall in the wage fund and hence a smaller part of the output is consumed within agriculture.

We end by pointing out that the conventional analysis of the effect of investment upon the marketed surplus considers only the output (or production) effect of investment which in turn is conceived purely as a money expenditure by the farmer concerned and hence as no "activity" in the proper sense within agriculture. As a result, it leaves out both the short-run effect of investment upon marketed surplus as well as the long-run effect defined through the possible reduction of wage, employment and consumption within agriculture as distinct from increase in output. We rest content here merely with pointing out these gaps

or lacunae in the conventional treatment of the subject which we have already filled out in the analysis given, though no more than in the sense of a first, preliminary step. But things can at least be seen in a more comprehensive manner than hitherto.

Chapter 4

SEASONAL MOVEMENT I: THE WHOLESALE PRICE

This chapter, we have to say, is an enquiry simply into the "nature and causes" of what is stated above, the seasonal movement in the wholesale price of foodgrains. The broad "nature" of the movement has already been set out (p. 21 , Introductory Chapter). Let us begin with a clarification of this.

Let us begin at the beginning of a year with the harvest just come in. A large part of the marketed surplus out of this harvest -- including the whole of the marketed surplus of small producers -- is in fact marketed within a few weeks from the harvest defining the so-called busy season of the market. We can say that in this season there is every day a big fresh arrival of the product in the market, bringing fresh faces as well, some to stay on, some to disappear the next day. By nature, the price in this season is therefore subject to almost daily fluctuations of a purely random nature. This is its dominant characteristic now. No meaningful notion of rise in price through time is defined over this time. This comes after the busy season is over, and that is the beginning of the upward movement in the price through a year defining its "seasonal movement" as conceived at the beginning. This is the clarification.

In line with this, we simply ignore the fluctuation in our price over this period, and thus take it to be a 'constant' over the busy season, rising thereafter, through the remainder of the year. This defines the general nature of the timepath of price that we have under reference now. The "causes" to be discussed are those of (a) the initial upturn coming after the busy season, and (b) the continuation of the rise thereafter.

The basic cause, as we see it, falls at once out of the general bargaining framework proposed at the outset for the formation of the wholesale price, (p. 18, Introductory Chapter). The end of the busy season means the disappearance of the whole host of small producers from the market. This means simultaneously a significant improvement in the bargaining strength of the producer-side (and there is no parallel change on the other side). This, in a word, is the root cause of (a). Let us now pass inside the slack season. Our basic point here is simply that there are big producers and big producers, a whole hierarchy of them, and ours is a long season. Not all of those producers can hold on till the end -- the smaller ones simply drop out on the way. So we have a process of successive drop-out of one class of big producers after another along the hierarchy, starting from the bottom and proceeding upwards. This simply continues the improvement in the bargaining strength of the producer side into the slack season, or in other words, there is a continuous

improvement of their bargaining strength through the whole season. This is the root cause of (b).

This is the bare skeletal statement of the "cause". Before we put some flesh and blood into the statement, one adjustment is necessary. At the very beginning, we took the stand that the wholesale price is formed relative to the retail price (p. 18 , Introductory Chapter). This was the beginning of the whole "bargaining framework" for the formation of the price used above. It however follows at once from the "beginning" itself that, quite apart from any change in the bargaining situation, the wholesale price will change systematically with the retail price. We are also aware that the retail price itself is subject to a general upward movement through the year, which is its seasonal movement and which is simply left out above. So, viewed in the total, we have both an external and an internal cause of our phenomenon, the former consisting of the seasonal movement in the retail price and the latter of the systematic improvement in the relative bargaining strength of producers through a year, which is what we just spoke of as the "cause". Taken together, the two causes give us the result that our price rises both absolutely and relatively to the retail price through a year, one by the external as well as the internal cause of the movement and the other by the internal cause alone. This is the "adjustment" referred above.

Let us now get back to the internal cause and proceed on with it. So far we have merely seen the movement in our price as a reflection of the underlying movement in the bargaining situation in the market through a year without explaining how precisely this reflection occurs, i.e., the mechanism through which the movement in price is actually brought about. This is what is to add flesh and blood to the bare skeletal statement of the cause of the movement given above. Let us now go into this.

The first point to be stated is that the end of the busy season must mean by definition a fundamental qualitative change in the whole structure of our market and therefore in the "rules of the game" in it. Whatever bargaining power over the price (or equivalently, "control over the market") our big producers may a priori possess must simply lie dormant in the busy season just by the presence of the whole host of small producers. They too must act as price takers in this season, exactly like the small producers. It is only when this season is over that their bargaining power -- control mechanism comes of its own, freed from external constraints. The essence of this is simply their ability to hold back stocks, i.e., refusing to sell except at a suitable price, a price which by itself now comes to be judged by the rise secured over the initial busy season price. We will turn this later into a full-fledged statement of bargaining strategy or strategy of market-control employed by the big

producers.[1] For the time we simply note that by this very lever (stock-withholding), our big producers are in some measure turned into price makers in the slack season — each dictates a price on his own holding back his stock as necessary, knowing full well that others are also playing the same game. Though they do not act in concert, and there is at any moment only a single price ruling, the "process of competition" among big producers must end in this price being in fact higher than the earlier price by the argument already given, viz., no one accepts the latter as a suitable price. This is the change in the rules of the game referred above. Once this is established, no further change in the rules becomes necessary to explain the mechanism for the continuation of price rise through the slack season. At each stage in this process, we have a class of producers dropping out of the scene, having sold off their whole stock, i.e., the marketed surplus they had for the whole year. The remaining producers now simply take the price ruling at this point as a fresh benchmark for dictating a still higher price, which they succeed in getting by the same mechanism. It is only to be stated that this whole game is played by each within the basic terminal condition that at the end of the year they have sold out the whole stock they had — nothing is carried over to the next year.[2]

1/ In Section 2, Chapter 7. See especially pp. 263-264.

2/ Except in the case of a poor harvest through the process of speculation sketched earlier (pp.44-45), which does not come into our argument now.

We are now at the last leg of our analysis. By the very nature of its objective, our analysis has so far remained at a basically qualitative level. But underlying this there also runs an argument in purely quantitative terms. Let us now bring this out clearly, marking clearly the transition from the qualitative to the quantitative level of analysis.

The qualitative argument can be summed up as follows. Over the year, there is in our market a continuous process of improvement of the bargaining position of sellers (producers) who stay on, who are also a priori the bigger and bigger (or stronger and stronger) producers and who are thereby enabled to successively demand, and secure, further and further rises in the price from its pre-existing benchmarks, this whole process getting started only when the "big producers" in the a priori sense of the term are in control of the market, i.e., after its "busy season" is over. This is called the qualitative argument as its direct reference is simply to the number and quality of sellers in the market at successive points through the year, which we can also call the "state of competition". But underlying this is the purely quantitative element of the stock with the sellers at these points, which is already seen to define the whole basis of their successive "bargaining". It follows from this that the larger this stock, the greater must be the extent of price rise secured. This is the quantitative argument. Though stated very simply, the argument covers a wide ground, the full

significance of which will be clear only at a later point in the thesis. At this point we simply take the steps of a proper initiation of this quantitative line of argument.

It is clear that the "stock" under reference in fact refers to the entire timepath of producers' stock from the beginning to the end of a year. The "beginning" stock here is simply the whole marketed surplus out of the harvest taken place at the beginning of the year, and the "ending" stock is simply zero, and the stock monotonically declines over the whole length, the decline over any stretch being simply the quantity sold over it. We already know that there is a steep decline at the outset (busy season) and then a general flattening out.[3/] The broad shape or pattern of the timepath is simply taken as given. Within this, the argument made just now is simply that as between two alternative timepaths, one dominating the other pointwise over the whole domain, the magnitude of each successive price rise associated with the "dominating" or "higher" path is also higher. Stated more roughly, the higher the path, the greater the rate of increase of price through its "seasonal movement". Mathematically, this is a relation between the shapes or forms of two functions of time over a given domain (a year). Because of its complexity, we do not put this in algebraic symbols.

3/ This is nothing but a restatement of the so-called quantitative aspect of the two "seasons" of our market stated at the outset. See pp.23-24, section on price in the Introductory Chapter.

Let us however reiterate two simple points which may otherwise be lost under this formalism.

First, what we are relating here to the timepath of stock is not the timepath of price but only the movement in this timepath, i.e., the successive rises that take place along it. Nothing is stated in this chapter about the level of our price at any point. Secondly, a critical turning point in the timepath of stock is already marked between its initial "steep decline" and subsequent "flattening out". The stock at this point of transition is also a priori the critical magnitude, for this is nothing but the total stock on the basis of which big producers come "of their own". It defines the a priori basis of their whole "bargaining" for the rest of the year (slack season). To this is matched the turning point in the timepath of price mentioned at the very beginning.

So much is a purely formal clarification of our quantitative argument. Let us look at it now in substantive terms. Let us first spell out the argument which has been made very cryptically above. The point however is a very simple one. The basic bargaining lever of big producers when they are in "control" of the market was seen earlier to consist simply of their threat to remove the supply, i.e., withdraw stocks. Obviously, the actual strength of this lever depends entirely upon how much stock they possess at this time, which they can withdraw. This has been the argument so far. Let us now just go over to the

other side of this stock, which is simply the stock that has already passed into the hands of traders. The completion this gives to the argument is obvious. Suppose the stock in the hands of our producers is "small" at some point, and so they can remove but a small supply from the market from this point. We have argued that they can then extract but a small rise in price through this threat. Let us now point out that to say that our producers have a small stock at some point is to say the same as that a large part of the original supply or marketed surplus has already passed into the hands of traders. To that extent, they have become independent of producers for their own sales through the year, and cannot simply be pressurised into offering a much higher price for the remaining supply. This is the completion.

Let us make this more rigorous. The precise measure of dependence of traders upon producers at any given point through the year depends upon the stock they hold at this point, which in turn depends not only upon how much they have already bought from the producers (i.e., the producers' stock which has already passed into their hands, as stated above), but also how much they have sold to consumers over this time. We are however entitled to take their whole sale through the year, in the complete "timepath" sense, as given by other considerations. This simply means that given the harvest and the marketed surplus out of it, we have a given timepath of the total stock of traders and producers together through the year. So within this, the larger the producers'

at any point, the smaller is the traders' stock at that point, and the greater therefore is the dependence of traders upon the continued supplies from producers for their own sales through the rest of the year. This "dependence" is simply the outside basis for the sole bargaining of our producers. By retaining larger stocks, the producers increase the traders' continued dependence upon them through the year, which allows them to extract a larger increment in price by the threat of withholding. This is the more rigorous statement of the substance of our quantitative argument.

There is a further completion to this argument which rests on a proposition concerning the trader-side which we will be able to establish only later in the thesis. At this point we simply take this proposition for granted, and point out its significance for our purpose here. Let us first motivate the direction of enquiry by going back to the fundamental quantitative aspect of the very notion of "seasons" of the wholesale market which we just restated above as an initial steep decline in the timepath of producers' stock through a year followed by a general flattening out. It may appear from this that the traders in general have already become to a very large measure independent of producers at the turning point of the stock-path just described (which is the endpoint of the busy season of the market), so that little room is left for the success of any bargaining device that big producers may later deploy in the year. The whole seasonal movement in the price derived on this basis vanishes.

This however is not so. Our proposition concerning traders established later is simply that their "independence" just talked of applies only to big traders -- it is they who buy off the "extra supply" of the busy season;[4] small traders perforce remain continually dependent upon fresh supplies in the market for their sales through the year. The "dependence" of traders on the basis of which producers ultimately derive their bargaining power is not only retained but in some sense enhanced by the qualitative change in the character of traders coming in at the point concerned. This in turn adds a further dimension to the qualitative change in the whole structure of the market with the end of its "busy season" already talked of earlier. The whole of this enters as qualitative basis of the quantitative relation set out above.

Before ending this section, we wish to call attention to the essential contrast between the whole line of argument here and that of "demand and supply" in the conventional sense of the term. As a first step, let us simplify down the statement of seasonal movement in our price to a form most convenient from the standpoint of "demand and supply", which is simply that the level of the price in the slack season is higher than that in the busy season. Let us denote these

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[4] See the discussion in Section 5, Chapter 5, below.

two levels by q_b and q_s respectively.[5/] We also tacitly assume that the retail price remains constant through the year, so that the change in our price becomes purely selfcontained, within the wholesale market.

Let us now consider the price ratio, q_s / q_b, which we can obviously take as a measure of change in the price between the seasons. According to our line of argument, the larger the stock out of a given harvest that the producers (big producers) retain through the busy season, the greater is the extent by which they are able to raise the price in the slack season over its level in the busy season. Formally, this translates into the proposition that the ratio q_s / q_b is an increasing function of the producers' stock at the end of the busy season, as of a given harvest in the background. Let us denote the magnitude of this stock, and the harvest respectively by S_p^* and H. Then we can write

$$q_s / q_b = f(S_p^*, H), \quad f' > 0$$

(Implicitly, also :

$$f > 1 \quad \text{for } S_p^* > 0 \text{) .}$$

5/ Formally, it is possible to regard q_b and q_s as the average levels of the price within the two seasons. It is however to be remembered that the structures of the two averages are quite distinct -- q_b is an average over fluctuations (in this sense an average proper) but q_s is an average over a trend. Because the trend is internal to the question under reference, it is best to disregard the whole movement, i.e., assume the price to remain constant within each season.

Let us now turn to "demand and supply". We assume that once the harvest is given, so is the total marketed surplus out of the harvest, which is the same as the supply for the year as a whole. Let us denote this supply by Q. Now S_p^* is simply the part of Q that is not 'supplied' in the busy season. So, a larger value of it means simply a transference of some supply from the "busy" to the "slack season", i.e., a reduction in the "supply" of the first and an increase in the "supply" of the second. According to "demand and supply" this must increase the value of q_b and reduce the value of q_s. The ratio q_s / q_b then becomes a decreasing and not an increasing function of S_p^*. This is the diametric opposite of our result.

Let us confine ourselves here purely to the difference in methodology underlying the opposition. Our whole argument has focused directly upon the change in price between the seasons; nothing is said about the level of price as such. The apparatus of "demand and supply", on the other hand, requires one to focus directly upon the level, deriving the change in price as a corollary to changes governing the level as seen through the apparatus, i.e., changes in demand relative to supply (or vice versa).

Starting from this, let us make just one methodological critique of this whole approach in the present context: Q is the supply for the whole year. One can balance only the demand for the whole year with it. What precisely the separate balancing of demand and supply

within each of the busy and slack seasons (on which the whole analysis rests) means, is simply not understood. Let us be clear that nothing is stated in this about what exactly the balancing of demand and supply for the year as a whole may also mean or imply. We also point out that any such balancing has to be conceived in respect of our market as a whole, not separately for its "retail" and "wholesale" levels. The rest we simply leave open to the rest of the thesis.

Let us however take this opportunity to dispel a possible misgiving about our line of argument. We do not deny that if one were to think of the whole timepath of producers' stock through a year — $S_p(t)$, $0<t<T$, say, where 0 and T denote the beginning and endpoints of the year — as something purely arbitrary, then a larger value of $S_p(t)$ at some given t would reduce the 'level' of price (in some sense of the term) for larger values of t . However, $S_p(t)$ is not thought of as an arbitrary timepath in the first place; it is decided upon at the very beginning ($t = 0$), by the producers concerned (big producers), which already includes the basic terminal condition, $S_p(T) = 0$. What the hypothetical variation in this path means at bottom is a change in the underlying structure of producers themselves — a change in the direction of strengthening the position of big producers vis-a-vis small producers, and of the bigger among them vis-a-vis the others, which necessarily shows up in a pointwise dominance of the new stock path over the old one, and through that

of a higher rate of price rise all through by the mechanism already described. This is the clarification. There is no room in this for an arbitrary increase in supply in one 'season' and decrease in another, as presumed in the demand-supply approach.

Chapter 5

A DIGRESSION INTO THE PROCESS OF TRADE

ction 1 : Basic Concepts and Framework

This chapter comes in as a long technical digression from our mainline of concern, which we tie up with only at the end of the chapter. The whole purpose, as explained at the beginning, is to develop certain indispensable tools for further developments of the subject. It is with this end that we discuss the process of trade and its various forms, such as the 'big' and the 'small' trader process (Sections 2, 3 below), the process of trader-speculation (Section 4), and finally the process of trade in foodgrains within an overall structure as already laid down in the Introduction, which is where we tie up with the mainline of our concern in the thesis (Section 5).

The task of this section is to set out a broad conceptual framework for this whole effort, including a general conception of the "process" from which we fan out in the directions just mentioned.

Let us begin by setting out clearly the methodology we follow. The "process of trade" is nothing but the buying and selling, or more precisely, the reselling of a trader, viewed as a connected entity in time. It is necessary to enter this circle at some point, and we make the entry at the point of "selling". The first step is then to see the

selling itself in time. We will suppose that the selling is going on at a certain rate in time, repeating itself over and over again, and look into the conditions necessary for this. The conditions divide into two sets, one falling outside the process-boundary, and the other falling inside. The process itself is in the end defined by these inside conditions, under the appropriate outside conditions — it is thus a process w i t h i n a definite environment and not in isolation from it. It is also a process of self-repetition, defining the indispensable prior tool for any analysis of change.

Let us now begin with the elementary point that a trader is able to make a sale only as and when some customer arrives and places a 'demand' before him to satisfy. From this we see that the basic outside condition for the self-repetition of sale by the trader has to be the self-repetition of the demand faced by him. This condition itself is to be understood in terms of the whole open-ended environment of the process. However, for our purpose, we can draw a boundary around the market concerned and stay within that. The important point to note is that the notion of demand is a priori defined only for the market as a whole, and not for an individual trader within it -- the demand (customers) comes to him only via the competition of other traders. This whole competition necessarily enters the framework of a process of trade.

Let us now turn to the inside condition of self-repetition of the trader's sale. Again we start from the entirely elementary point that a trader at any point of time is selling from a stock of goods held

precisely for this purpose. The condition for the self-repetition of sale is therefore simply that the stock sold be replaced in the due course, or in other words, the stock be maintained through the sales. It is around this point that we organise our whole conception of the process. Let us chalk out the directions.

First, there arises the purely quantitative question, at what level is the stock maintained for a given rate of sale. This is a question which we will be able to go into only in the next section. At this point we just mention that the whole complex question of the precise motives of stock-holding necessarily comes into the question, and this in turn necessarily takes one to the relation of the trader concerned to the 'outside' or 'environment', i.e., the market. So it is only to be expected that the answer to the question is different for big and small traders.

Next, we have to point out that, viewed in time, maintenance of stock is a very broad notion comprehending many different ways or patterns. The full relevance of this point for our purpose will become clear as we go on, but the first point is to be made right here.

Let us go back for a minute to the conception of a trader as a buyer on the one hand and seller on the other (of the same good). We have just noted that the sales depend upon the outside factor of demand in a precise time-sense, viz., when precisely the trader is able to make a sale depends entirely upon when a demand is placed before him to satisfy. In the matter of purchase, however, it is for the trader

himself to decide when to buy, and in what amount. This is precisely what defines the "way" or "pattern" of stock maintenance we just talked of. In this background, the whole buying or purchase is already seen within a framework of stock maintenance, which is quite distinct from seeing it as something analytically primitive.

Let us take a little time off here to point out one important limitation of our framework. When we say that it is for the trader himself to decide when to buy and in what amount, we tacitly assume the availability of the product in the market. So, we do not have any explicit "supply condition" in our framework parallel to the "demand condition". Our treatment of the supply side lies entirely within the conventional notion of "competition" — the trader at any given time faces a certain price at which he can buy any amount he chooses.

Note that we all along have "time" in the picture. The statement that we do not have any explicit "supply condition" in our framework therefore boils down simply to disregarding the timepath of supply in it. This is a very delimiting assumption for our overall purpose in the thesis, and we will have to increasingly get rid of it through the later chapters. We simply do not see any alternative however to t assumption for the purpose of our initial build-up of the process of trade. Actually, we have to go one step further for this purpose and assume that our traders buy at a constant price through time. However, we will follow this up by later going into the trader's response to change in

price in both ex post and ex ante terms.[1] The point is that when we go into this problem we are already equipped with a rigorous notion of trade process conceived in abstraction from price changes to start from.

Let us now come to the direction we want to follow for the present, starting from the central point of maintenance of stock. Broadly, this is the direction into the financial side or aspect of the process. Again, we start from an entirely elementary point that a trader finances his successive purchases in time largely out of sale-proceeds already realised. We turn this into a complete method of financing the purchases, and develop some important concepts out of it.[2]

Viewed ex ante, it is clear that the trader must first decide to hold back part of the sale-proceeds, as they come, to finance his future purchase, instead of taking it out as profit, and then meet the actual cost or expense of the successive purchases out of the stock of money so accumulated inside the process. We will call the part of sale-proceeds held back the ploughback from sale-proceeds (or just the 'ploughback' for short), and the stock of money inside the process the purchase fund of the trader. The financial process within the process of trade then boils down to the creation and utilisation of the purchase-fund.

The financial process just defined ends in the successive purchases of the trader. But the purchases themselves are already

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1/ The "ex ante" here is nothing but the prospective change in price that takes one to the whole process of speculation that a trader may engage in, which we have already said we take up in Section 4 below.

2/ We will come to loan-finance at the end of this section.

conceived within a framework of maintenance of stock, and hence, so is the whole financial process. This has a straight implication. Since the whole purpose of ploughback is ultimately to enable the trader to replace the stock sold from within his means, its magnitude must equal the cost of this replacement. We can state this more simply by starting out from the trader's sales in time, and saying that it is his cost of purchase of the amount sold that he ploughs back from the sale-proceeds. We will call this the ploughback rule or equation of the process.

It is to be pointed out that how precisely this equation works out in time is left in the open. There are again different ways or patterns to this, which broadly complement the different ways or patterns of the maintenance of stock. We can also state this as different modes of creation and utilisation of the purchase fund within a frame set by the maintenance of stock.

Another point that comes in here is that we already make use of our assumption of constant price in the statement of the ploughback equation. This is because, unless the price is constant, no clear meaning can be given to the notion of the "cost of purchase of the amount sold" in the sense of the cost actually incurred by the trader. To spell out, the sale in the first place is from a stock, purchases made at different dates are already mixed up in this stock, and hence an unambiguous meaning of "cost of purchase of some amount sold" is defined only in case the purchases are all made at the same price,

which is to say that there is no change in the price through time. As this makes clear, the assumption is to be treated as a technical condition necessary for the well-definability of our concepts.

We have now reached the point of rounding off our conceptions. At the very beginning we mentioned that our whole work on the process of trade takes off from a "reconstruction" of the notion of circulating capital in Adam Smith set out by one of our colleagues in the Institute.[3] Let us just quote the relevant passage in Smith:[4]

> " The goods of the merchant yield him no revenue or profit till he sells them for money, and the money yields him as little till it is again exchanged for goods. His capital is continually going from him in one shape, and returning to him in another, and it is only by means of such circulation, or successive exchanges, that it can yield him any profit. Such capitals, therefore, may very properly be called circulating capitals. "

It is clear that the stock of goods and the purchase fund of the trader we have been talking of are nothing but the trader's capital in its "two shapes" — one in goods and one in money — in this passage. It is also to be stated that the whole conception of the process set out so far is essentially the same as that found in our colleague's "reconstruction"

3/ P. Gajapathi, op. cit. (see pp. 4-5 of the Introductory Chapter).

4/ The Wealth of Nations, Book 2, Chapter 1.

of this passage as a whole — the steps we ourselves take come basically in the following sections of this chapter. Let us now take one more step with our colleague from the background already covered.

The step consists essentially of defining the trader's capital in the sense of a 'magnitude' as the sum of the money in his purchase fund, and the goods, valued at 'cost', in his sales-stock at any point of time. This is the momentary view of capital. It is only by setting it in motion that we see the "goings" and "returnings" that Smith talks of, which we can also put as a continual transformation of the two "forms" of capital going on inside the process. The next point is simply that capital itself as defined above is maintained intact through these transformations. This is purely definitional so far as its transformation from the "money" to the "goods" form is concerned, for this transformation is effected by the purchase, and a purchase by definition takes away the same amount of money from the purchase fund as the value at cost of the goods it puts into the stock. As for the other transformation, which is effected by the sales, the maintenance of capital is ensured by our ploughback equation. Thus, from an operative standpoint, the condition of maintenance of capital boils down simply to this equation. It is also a comprehensive condition including within itself the condition of maintenance of stock. This is why the whole notion now

brought up (capital) serves the purpose of rounding off the conceptions advanced earlier.

Let us now come to the last point left for this section, viz., a consideration of loan-financing of purchase by the trader instead of self-financing. Let us look at this from a conceptual angle. Viewed within the framework of "self-repetition", a loan taken by the trader must be seen as repaid in the due course. But this repayment can come only out of sale-proceeds realised in the meanwhile. This has to be provided for in advance, and we are thus back to the same principles expressed through our terms "purchase fund" and "ploughback" for conceiving the process. In fact, the terms can be extended in a straightforward way to handle the case, but the more proper method is to start from a division of the capital engaged in the process and come to the distinction between methods of finance as something already contained in this. The division is between the capital "owned" by the trader, and the capital "owed" by him, or his own capital and debt capital. This does not come into the development of the framework in terms of the notion of capital engaged in the process, its

'forms' of being, their mutual transformation, and so on.

The above suggests a very simple methodological principle for organising our thought on the trade process, which we follow throughout. The principle is simply that we purposely bring loans and debt capital int the picture only when it throws some light on a problem we are concerned with, not obtainable on the basis of pure self-financing. Till such points come, we proceed precisely on this basis. This has nothing to do with the empirical significance of trading loans, which is simply granted as a very general proposition. However, the more relevant point from which to look at the assumption (pure self-financing) for our purpose is simply this, that a trader generally takes a loan only after he has in some sense reached the limits of his self-finance. Conceptually, we can treat this simply as a logical axiom. This gives us an independent justification of proceeding as we do, which is only complemented by the fact that, loans or no loans, the essential principles around which we develop our framework of the trade process remain the same.

Section 2 : Big and Small Traders I : Motives of Stock-Holding and the Stock-Flow Relation

In our Introductory Chapter, we conceived big traders only as of an objective of market control over the market to which they belong. This is something completely undefined for a small trader. So an analytical line is already drawn between the two categories. Our objective here is simply to follow this through a general discussion of the so-called stock-flow relation of the process, i.e., the relation between the 'stock' and the rate of sale.

The starting point is simply this, that, at bottom, it is only by controlling - or cornering - a sizeable part of the total stock in a market that a trader comes to achieve his control over the market. The basic means for his whole object of "market control" is therefore simply the physical stock at his command. We now point out that this defines a specific objective, or motive, for stock-holding which comes over and above the 'general motives', so to say; i.e., those that are defined for a trader as such, big or small. What these other motives are, and how to 'frame' all of these together, is the general problem we face in this section.

Obviously this is a conceptual problem which is really prior to the framework of process of trade developed in the previous section. We therefore keep the framework temporarily in abeyance, to be picked up or rather aligned with, later as we go on. Two points come in at once the moment we look into the question of motive of stock-holding in an a priori sense. Let us go over these one by one.

The first point is simply whether to try to comprehend all the motives under the general motive of profit or not. It is understood that by sufficiently stretching the term, one can always do this. Let us however avoid this. The term "profit" in "profit motive" is then understood as a sum of money calculated by specific rules. Once this is accepted, it is seen that the objective of market-control has an irreducible dimension of power attached to it, which cannot be brought under the notion of profit. So we cannot subsume this objective wholly under the profit objective, which obviously is to leave the precise relation between the two broadly in the open. At this point we will only say that it is only through a general two-way relationship between the two objectives of profit (or money) and market control (or power) that it appears possible to arrive at a meaningful comprehension of the 'objective' of a big trader. We will return to this point at the end of the section.

Our second point is this. Any stock-holding is, by definition, for the future. The question that arises is how precisely the 'future' distinguishes itself in this context, if it does at all. Obviously the distinction has to be from the 'present' and it therefore becomes a question of the significance of some future change, which in some sense is already foreseen (or expected), for the current holding of stock. Let us not attempt a general discussion of the question but come straight to a particular case in point. What we have in mind is the holding of a stock in expectation of a rise in price in the future,

selling it (or from it) thereafter to realise the speculative gains. This brings us to the speculative process of the trader, which, as already said, we discuss on its own in the fourth section. At this point we simply record the speculative stock as a component of the general stock-holding of a trader, defined completely within the profit motive. However, we naturally can also talk of a speculative motive of the trader as a self-defined entity within it, defined precisely by the nature of the "future change" that enters it.

Let us take a fresh look at the stock for market control (denoted S_{mc}) in this context. It is clear that it must be based on a comprehensive view of "future changes". It still remains the fact that even if no such changes were there (i.e., no change is expected from the given situation of the present), the stock would still be there as it belongs to the very 'structure' of a big trader. This at once sets S_{mc} apart from the speculative stock.

Let us now proceed on. We do not in any way deny that there may be other sorts of "future change" — other than a rise in price in the future — that may motivate a trader to hold stock currently. However, we do not see this beyond particularities, i.e., as a general force of stock-holding. We therefore do not go into this any further. This brings us to a common core in the stock-holding of a trader, which we get to simply by abstracting from the stock for market control on the one hand, and the speculative stock on the other. We will call this simply the ordinary stock of the trader. Let us set this conception out straight.

Let us start from the profit motive of the trader, and argue straight in a line: profit is made upon sale, sale is made upon demand, and the demand comes in the end only from the market as a whole, via the competition of other traders. To make this profit, the trader must necessarily hold a stock ready for sale, satisfying the demand as it comes, and himself surviving through this; for the whole continuity of demand coming to him — i.e., his not losing it to others — depends upon it. It is this stock — the stock held ready for sale in this sense — that defines the ordinary stock of the trader. It is in a sense the polar opposite of speculative stock, for the speculative stock is, by definition, not for current sale.

The conception of ordinary stock just set out is already an analytical conception, for it is conceived only in relation to the demand coming to, or faced by a trader. Let us now attempt a formalisation of this relation. This brings us back to the folds of the process of trade as set out in the previous section. Let us be clear that as we see it, the very possibility of any formalisation of the relation hinges upon the acceptance of the basic premise of "self-repetition" (or stationarity) upon which we rested our whole conception of the process in the previous section. Having returned to this framework, we now think of the 'demand' and 'sale' as the rate of demand and rate of sale, and of the stock (ordinary stock) as a stock maintained. This is simply presumed in the discussion below.

Given this framework, our formal definition of the ordinary stock of a trader is simply that it is the minimum stock that a trader needs to hold through time -- i.e., the minimum value of the 'stock maintained' -- for actually meeting the demand at the rate that is faced by him. Since the demand here is assumed 'met', it is the same as sale, and so we have the ordinary stock defined in terms of the actual rate of sale of the trader. Let us set this down in symbols:

$$(1) \qquad S_{ordy} = \theta x$$

where S_{ordy} is the ordinary stock, more precisely, the 'level' at which the ordinary stock is maintained through time, and x is the rate of sale; θ is a parameter representing the minimum relation between the stock-holding and sale of a trader.

By the very dimensions of S_{ordy} and x, it is clear that θ has a dimension of 'time', i.e., it represents a pure length of time. This is sometimes called the turnover period of stock. The idea is that the stock is completely 'turned over', or sold, over a period of this length. We note in the passing that, because the actual stock is never really fully sold off, no precise operational significance is to be attached to the notion just described. In particular, θ is not to be equated to the interval between the successive purchases of a trader, which lies necessarily below the numerical value of θ. However, turning this around, we can say that the purchase interval is one important element in the determination of the numerical value of θ. We do not however follow

this line of thought any further. Let us turn to more conceptual matters. First we point out that θ is essentially in the nature of a competitive norm. This follows from the very conception of S_{ordy} set out at the beginning. Secondly, the whole conception is here set out under the tacit assumption of a given state of the market. If there is a change in the state itself, here may be a change in the value of θ as well. One sees this very clearly by noting that when demand is high (in the market) all traders may be able to turn over their stocks faster -- θ is low -- and conversely, when demand is slack, θ is relatively large. Thus θ is to be taken as 'given' only as of a given state of the market in general. It is within this that it plays its role as a competitive norm and hence also as a technical coefficient as seen by an individual trader.

We are now almost through with our programme for this section. We have just gone over the conception of S_{ordy} within our framework of the process of trade of the last section. We now note that S_{mc}, or rather some structural core of it, is also by nature amenable to this frame by the very fact that it always exists. Let us give some clarification of this, and then pass on to some quantitative relations germane to the situation.

S_{mc} in its structural core is by definition a stock maintained through the situation concerned. A priori, this may mean two quite different things. One is that S_{mc} remains just as a "frozen

conglomerate"[5/] in the total stock of a big trader, never sold from. It is then automatically maintained intact through time. The alternative then is simply that S_{mc} is actually sold from, and the stock sold is replaced in the due course. This is the way we shall think of S_{mc} operationally, or in the "process sense".

The very fact that S_{mc} is sold from turns it into a purely notional component of the total stock, indistinguishable from the "ordinary stock" in the observational sense. This, however, raises no problem in the conception as such, as we already have an analytical relation defining S_{ordy}. It follows from this that, given the total stock (S, say) and the rate of sale (x, say), of a big trader, the magnitude of S_{mc} is defined as a pure residual:

$$(2) \qquad S_{mc} = S - \theta x .$$

Just for the record, we note that if we take the ratio of the total stock of a trader to his rate of sale, then it is necessarily larger for a big trader than a small trader, the difference being accounted for by S_{mc}. Let us also put this in symbols in a self-defining notation:

$$(3) \qquad (S/x)_{big} > (S/x)_{sm} = \theta .$$

We are now left with only one more point to discuss, viz., the two-way relationship between the profit motive and the motive of

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5/ The expression is from Georgescu-Roegen. See The Entropy Law and the Economic Process, p. 220.

market control of a big trader left in the open earlier. We can take the "profit motive" to be represented here — in the sense of a proxy or surrogate -- by S_{ordy}. So, the relationship boils down to the relationship between S_{mc} and S_{ordy}. There are two steps in this. First, by treating S_{mc} as a 'residual' we automatically grant a priority to S_{ordy} and hence to the profit motive. The proper interpretation is that a minimum benchmark of 'profit' — equivalently, of sale realising the profit, and hence also of the ordinary stock supporting the rate of sale — is to be first satisfied, only then does the object of market control become a reality, which is only to say that the trader has to be first a big trader, and then he has this objective. This benchmark already stipulates a minimum stock for the big trader, which we can treat here as equivalent to his capital. Our second step is simply that, above this minimum, the two motives stand in a general complementary relationship and hence we have both S_{ordy} and S_{mc} as increasing functions of the total stock or capital of the trader. Within this, we may suppose, as a general proposition, that S_{mc} increases faster than S_{ordy}, which is to say that the ratio S_{mc}/S_{ordy} is an increasing function of the total stock or capital. This rests on the simple point that at the benchmark itself S_{mc} is zero. So, it must initially account for an increasing proportion of the total, and we simply project this relation to larger and larger values of the total as well. The complete idea then is that once "profit" or "sale" or the "ordinary stock" has served to define the benchmark for the object of market control, it stays on

in the general objectives of the trader, but the focus is increasingly laid on the objective of market control.

Let us end simply by putting this in symbols. What we have just argued is that:

$$(4) \qquad \frac{S_{mc}}{S_{orly}} = F(S), \quad F' > 0 ,$$

where S and F(S) automatically satisfy the relations:

$$S \geq \bar{S} \quad \text{and} \quad F(\bar{S}) = 0 ,$$

where $\bar{S}$ is the benchmark stock defining a big trader.

Section 3 : Big and Small Traders II : The Complete Process-View

The last section was basically a detour from our mainline of conception of the process of trade, to which we now return to carry forward the task, picking up the loose ends left in Section 1, with the hindsight provided by the detour. Let us briefly go over this background.

Our arguments in Section 1 can be summed up as follows. Starting from the point that a trader at any point of time is selling from a stock of goods acquired in the past, we argue that for the sales to go on, the stock must, in some sense, be maintained, i.e., bought into, and not only sold from, and the money for this must come from within the process, implying the notions of ploughback and purchase fund. To give a

rigorous form to this intuitive conception, we are necessarily led to start from the trader selling at a definite rate per unit time, implying that the stock be maintained at some definite 'level' relative to the rate of sale, implying in turn the so-called ploughback rule or equation of the process, which finally is equivalent to the broader condition of maintenance of the capital engaged in the process. This, in brief, has been our conception of the essential logical structure of the process in Section 1.

The loose ends left within this were (a) the precise conception of the stock relative to the rate of sale, or the stock-flow relation, and (b) the precise way the stock and capital are maintained over time, or what we may call the time-pattern of their maintenance. Point (a) has now been closed as follows. Already in Section 1 we saw the trader as acquiring a rate of sale only through the competition between traders for the demand in the market, which implicitly placed his stock-holding in this background. Granting the frame of self-repetition or stationarity within which the whole of Section 1 was conceived, we then argued that this provided the complete background so far as the stock-holding of a small, competitive trader is concerned. So, as a given state of the market, it was thought to be 'competitively' necessary for him to hold a minimum stock to acquire a given rate of sale. This defined the notion of the so-called turnover period of stock -- the stock, or more precisely, the level at which the stock is maintained, divided

by the rate of sale -- as a competitive norm in the whole set-up, appearing as a "technical coefficient" to any individual trader. We note in the passing that no precise definition of the "level" itself, at which the stock is supposedly maintained through time, has so far been given. The turnover period of stock as conceived above was then taken to define a cut-off point in the total stock-holding of a big trader, setting apart his stock for market control from his ordinary stock as governed by the above considerations.

Let us now come to the second loose end left in Section 1, and settle down straight to work. We have to begin from a clean slate. Let us consider a <u>small trader</u> just after he has made a purchase -- his stock at this point is at its highest in a close view of time, i.e., a maximum within some neighbourhood of time. But this by definition is in some sense a small stock for a trader, for he is a <u>small</u> trader, and even within his low rate of sale, he is under compulsion not to let it dwindle too much. In short, he buys again within a short time. This is the whole meaning of his holding a minimum stock for his rate of sale. Let us now focus attention upon this 'next' purchase of the trader. His purchase fund at this point is given by his ploughback from sale-proceeds over the time between the two purchases <u>plus</u> the purchase-fund not spent in the last purchase. Now, a small trader by definition will have little of this "unspent purchase fund" -- this financial freedom, or manoeuvrability, is simply denied to him, which we can also express as

the basic financial constraint under which he operates. Whatever little 'margin' in this sense he may possess will be in the nature of a reserve not meant for spending in the ordinary course. So his purchase in the ordinary course is dependent entirely upon the ploughback over an immediate past — nothing more of 'time' comes into the picture. The whole notion of maintenance of stock takes on a very simple form in this frame: it means that each successive purchase by the trader simply restores the stock back to its pre-existing level after the previous purchase. This is already a statement of how precisely in time the stock is maintained. It is also implicitly a statement of how precisely in time capital is maintained, i.e., how the ploughback equation works out in time. To see this, we need just remember that the trader is now seen to finance any purchase entirely by his ploughback from sale-proceeds over the time from his last purchase. It follows at once from this and the statement of maintenance of stock just given that it is precisely his cost of purchase of the amount sold over the time between two successive purchases that he must ploughback from the sale-proceeds of this period. This is how the ploughback equation works out in time. As a result, his capital at the beginning of any such period is the same as at the end, and so, the 'profit made' and the 'profit taken out' also coincide in respect of the period.

Let us now call attention to some further aspects of the form of maintenance of stock under reference. First, since we now have each successive purchase by the trader restore his stock back to its

pre-existing value after the previous purchase, the stock immediately after a purchase -- its local maximum in time that we had started out with -- is the same all through. This "stock restored", as we may call it, gives a precise analytical definition of the level at which the stock is maintained. With this, we also have a clear analytical definition of the stock-flow ratio, or turnover period of stock. Next, we have a simple redefinition of the trader's capital. Earlier we defined it in reference to any point of time as simply the sum in value of his purchase fund and sales stock (= his stock of goods for sale). We can now define it only in reference to his purchase points in time, and it is then defined simply as the sum in value of the "stock restored" as just defined and the "reserve" in his purchase-fund (or the "reserve fund" for short). So, if we abstract altogether from the latter, we simply have the trader's capital defined as his sales stock in value immediately after a purchase — the purchase fund altogether drops out of the scene.

So much for the process as carried out by a small trader. The big trader process is already implicitly distanced from this. Let us briefly go over this again, before we come to a positive starting point for the task. The main point is that we do not have any meaningful relations defined through a close, or microscopic, view in time of the big trader process, as we do in the case of a small trader. Neither is he under any pressure to continuously replace the stock sold in order just to maintain the rate of sale, nor is

be dependent upon the sale-proceeds of any immediate past to finance his successive purchases -- the financial freedom is there. We must therefore start from a broader time-view of the process, and only then can we properly pose the questions already answered for the small trader. This is the positive starting point.

A "broader time-view" in respect of these questions can mean only one thing, viz., we pose the questions in terms of a sufficiently long period of time given a priori. "Sufficiently long" can be understood here as covering many times the time denoted by the turnover period of stock as a competitive norm, which is the only durational time we have from within our conceptual frame. But how do we understand the "period" itself? The point we want to make here is simply this, that we cannot just impose a period from nowhere upon the process, and view it (the process) through that period. The period has to come from within the process, i.e., the big trader process.

Our response to this is the notion of a plan in terms of which a big trader organises his whole activity, and the 'planning' has of necessity to begin with a periodised view of time taken in view of all things concerned. There is a universal unit for this, viz., the year, and so we are brought to the notion of an annual process of trade. Simultaneously, this is in some sense a planned process, and the 'year' defines the planning period.[6/]

6/ We note in the passing that no such planning period is defined for a small trader, for the whole notion of 'planning' hinges upon a financial freedom which we have already denied to him.

Let us now return to our opening questions, the precise way in time in which the stock and capital are maintained in the process. The general answer is that these are maintained on an annual basis, and so, we also have the ploughback equation of the process defined on an annual basis. This gives us a pair of annual balances, viz., (a) the total sale in a year = the total purchase in a year (condition of stock maintenance); and (b) the total ploughback from sale-proceeds in a year = the cost of purchase of the amount sold in a year (condition of maintenance of capital, or the ploughback equation). The point to note is that the equations say nothing about the precise distribution of these magnitudes over the year. This has to come from other considerations.

This takes us back to the fundamental asymmetry between the "buying" and the "selling" of the trader pointed out at the beginning.[1] As regards the "selling", we must start from the basic premise that the trader has a certain rate of sale acquired through competition. This defines a benchmark of uniform distribution of the total sale of a year over the year. Starting from this, we can see "other considerations" come into play, causing departures from the benchmark. The whole distribution or time-pattern will nevertheless have to be seen as adjustments in the rate of sale, for the point remains that at any time in the year, the trader must be selling at some definite rate of sale.

1/ See Section 1 of this chapter, pp. 115-117.

The time-distribution of the purchase of a year has to be thought of in quite different terms. In the framework of this chapter, the distribution is left completely in the open for the trader himself to decide on, this being equivalently a decision on the time-pattern of stock replacement. The moot question here is simply what timepath of stock in a year the trader may ideally desire. Having raised the question, we can only say that we see no 'general' answer to this question. This follows from the very nature of the stock for market control, by definition a component of the total stock of a big trader. We have nothing but the trader's perception of the 'annual reality' of the market, as we may call it, to shape its timepath through a year. This cannot simply be detached from the particularities of the market concerned, leaving us with no general proposition on the question raised. In short, we are left with an indeterminate timepath of stock through a year, within the boundary condition that the opening and the closing stocks are of the same magnitude. In a purely formal sense, one can talk of this magnitude as the 'level' at which the stock is maintained through time, but this has no distinction of its own compared with the magnitude of stock at other points in the year. This whole specification is left analytically arbitrary.

Let us now return to the ploughback equation of the process. We have already seen it to be defined on an annual basis. The precise relation between the ploughback from sale-proceeds and the trader's cost of purchase of the amount sold for any period within the year is

therefore left in the open. This is not a mere formalism. The ploughback is nothing but a reflection of the trader's self-finance of the stock-replacement or purchase. It is therefore only logical that the whole programme of ploughback in time is devised according to the programme of purchase, subject to the purely definitional relation that the ploughback is from sale-proceeds, hence less than it. The ploughback equation is by definition disregarded in this, and comes back into the picture only by the tie-up of purchase with stock-replacement which itself is defined only on an annual basis. Hence so is the ploughback equation.

We have now completed our conceptualisation of the distinct trade-processes of the big and the small trader. This has brought back to prominence the financial aspect of the process lying hidden behind the physical buying and selling and stock-holding of the trader, which is often all that one has in mind when describing the activity of a trader. We have seen that not only the physical relations, but also the financial relations internal to the process are quite different for the big and the small trader. Let us now follow the difference on the financial plane, to a problem kept in the open from the very beginning, viz., the trader's response to a change in price. For reasons to become clear as we go on, we need consider only the case of a rise in the buying price of the traders.

Let us now start from the common point that a trader has his purchase at any point of time limited by a purchase fund built up

by plough-back from sale-proceeds of the past. For the small trader, this is seen to be the binding limit at each successive purchase point,[3/] and only then is he seen to be able to maintain his rate of sale. This is as of a given buying price of the trader remaining unchanged through time. If there is now a rise in the price at some point, then the purchase fund as already accumulated at the old price permits by definition only a smaller purchase than earlier. This fails to restore the stock back to its previous level which maintained the rate of sale. Hence there is a fall in the 'level' of stock, at which it comes to be maintained under the new price, implying a fall in the rate of sale as well. This is the problem.

Having clarified the nature of the problem, we can now retrace the steps and point out several ways it can be got around by the trader. First, as we reinstate a reserve fund into the picture, we also note that one of its primary uses would be precisely to meet the higher cost, as we have just seen. Whether or not this suffices for stock replacement is of course a matter of the relative magnitudes of the reserve fund and price rise. We can say that a rise that is within the 'expected order' is already provided for in the reserve fund. Next, we point out that even when this limit is reached, the trader may cross it by not taking out some current profit, i.e., by turning back

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3/ We are here disregarding the small reserve fund he may possess.

upto the whole of sale-proceeds realised over the last "period" of purchase. Finally, as he reaches the limits of his self-finance, he may turn to loans. Thus unless it is a very significant rise taken place all of a sudden, the trader would be capable of maintaining his "physical process" intact through the change.

Let us now turn to the big trader. It is clear that the problem discussed above is unlethined for him. Neither is he under any pressure to 'immediately' replace the stock sold simply to maintain his rate of sale, nor is the accumulated purchase fund a binding constraint upon any particular purchases by him. He simply withstands the rise in price from within.[9] Finally, we mention that neither any change in the selling price of the trader, nor a fall in his buying price create a problem for the trader in any meaningful sense — the former already affects his profit from the process but not the process as such, while the latter by itself allows him an expansion of stock by arguments parallel to those given.[10] This justifies our initial narrowing down of the whole problem to a consideration of just the effect of rise in the buying price of the trader upon the "process" carried out by him.

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[9] It is important to remember in this context that once the new price has come into being, the ploughback too comes to be governed by it, so that the trader is automatically enabled to replace the stock from within the process.

[10] This is in abstraction from all the alleviating factors discussed above in respect of the rise in price. Once these factors are kept in mind, the fall in price has also to be seen symmetrically as, e.g., enabling the trader to build up/replace his reserve fund, to take out more than the current profit from out of the process, to repay or accelerate the repayment of loans taken previously, etc.

ction 4 : The Process of Speculation

Our fundamental objective here is to see the 'speculation' by a trader as a process in time; and our fundamental methodology for the objective consists simply of this, that the trader must have been already carrying out a process of trade as described so far, without speculation, before he gets into this process. We must simply see his process of speculation (or speculative process) as of this background all through. Stated explicitly, we must see the trader as selling at a certain rate, x_o say, out of an ordinary stock maintained through the selling, S_o say, at the time of his 'getting into' the process of speculation. S_o and x_o are related through the turnover period of stock understood as a competitive norm, θ say, by the relation:

(5) $$x_o = S_o / \theta \quad .$$

Let us now leave off this background and turn to some other aspects of the methodology. In Section 2 we defined the speculative stock of the trader as a stock held under the expectation of a rise in price in the future, to be sold only after the price rise, so as to make a "speculative gain". Leaving out the precise definition of "speculative gain" for the time, we can clearly say that the trader is engaged in a speculative process so long as he possesses a speculative stock. This process then has a definite beginning as well as end in time — it begins with the formation of the speculative stock and ends when this

stock is completely sold out. Within this, we have a certain time-point when the stock begins to be sold, which we can a priori close as the time-point at which the price rises.[11/] The time before this, we may call the waiting time in the process, and the time after, the realisation time, for the trader merely 'waits' for the price to rise in the first phase, and comes to 'realise' his speculative gain only in the second. We note in the passing that the "waiting time" as just conceived includes the time taken in creating or building up the speculative stock.

We have to call attention to another aspect of the situation before beginning on the substantive task. The "rise in price" just talked of can be a rise either in the buying price of the trader, or in his selling price. This already suggests the idea of two distinct processes of speculation for the trader, one in respect of each price, i.e., his expectations about the future course of it. The idea is pursued below.

Let us now begin by pointing out that there are really two distinct ways in which a trader may create a speculative stock. One is simply by buying; the other is by not selling, i.e., by withdrawing his

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11/ It is implicitly assumed here that the price does actually rise within the 'future' taken into consideration in the expectation generating the whole speculative process, which is simply to say that the expectation is in some sense fulfilled. If this is not the case, the speculative process is given up or abandoned somewhere halfway through. We need not go into this any further.

pre-existing ordinary stock or, more correctly, some part of it from current sale and turning it into a speculative stock. The speculative stock in the first case is an addition to the pre-existing ordinary stock, and in the second a subtraction from it. Let us denote the speculative stock by S^*. After S^* is created, we then have (S_o+S^*) as the total stock of the trader in the first case and (S_o-S^*) as his ordinary stock in the second case.

Let us now follow through these two distinct "beginnings" of the speculative process to its "end" one by one. As just seen, in the first case, the "beginning" leaves the ordinary stock of the trader and his rate of sale unaffected. So, S_o and x_o continue to remain his ordinary stock maintained through the sales and his rate of sale till we come to the beginning of his selling from S^*, i.e., the realisation phase of the process. At this point, S^* is merged into the ordinary stock and becomes one with it, and the sale is from this total (S_o+S^*). We must however suppose here that the rate of sale is not increased thereby, i.e., it continues to be x_o. This is simply to demarcate clearly the process of speculation from the process by which a trader augments his sale, which is a distinct process altogether.

Let us now proceed on. If our trader is selling all through at rate x_o and has (S_o+S^*) as the stock to sell from at a certain point of time, then he can simply suspend his whole replacement of stock till S^* is sold out, and the stock is back to its ordinary level, S_o. In

short, this means that the trader does not buy anything when he sells β^*, over the time necessary. This is how the process comes to end. Let us now remember that it began in this case simply with the buying of β^*. Connecting up the two, we see at once that the process as a whole boils down here simply to buying now in order not to buy later. This qualifies as a speculative process in the first place only under the trader's expectation of a future rise in his buying price. This takes us one step further in the idea of two distinct processes of the trader's speculation.

Let us now turn to the other "beginning" of the speculative process. We begin here with a fall in the trader's rate of sale from its previous value, x_o, and this new value, x_n say, continues till we come to the realisation time of the process. As before, the speculative stock is now merged into the ordinary stock at this point, but this now means simply that the ordinary stock itself is restored back to its original value β_o, at this point. This, we will now suppose, simply enables the trader to resume his old rate of sale, x_o. What has then simply happened is that a certain quantity, β^*, is withdrawn from sale at a certain point, only to be sold later. It is a case of "not selling now in order to sell later". This in turn qualifies as a speculative process in the first place only under the trader's expectation of a future rise in his selling price.

This completes the idea of two distinct processes of the trader's speculation, one each under the expectation of a future rise in the two

prices in which the trader is involved, each having a distinct structure of its own. In the absence of any better terms, we will rest content with denoting the two processes as simply the process of type I and type II respectively. We have to mention that these are the pure types defined in isolation in reference to each of our two prices. All that we will say outside of this is that when there is an expectation of future rise in both prices, the two processes will generally get superimposed upon one another. They do not cancel each other.

Let us now turn to the completions of the process idea itself. First, it is clear that the realisation time of the process in either case is given simply by dividing the speculative stock, S^*, by the rate of sale begun with, x_o. Denoting the realisation time by τ_r, we have :

$$\tau_r = S^* / x_o \quad . \tag{6}$$

This has an important consequence regarding the profitability of speculation. We have x_o as simply given by the 'background'. Hence what (6) means is simply that the larger the magnitude of the speculative stock, the longer it takes the trader to realise his speculative gain from it. This must a priori reduce the profitability of the whole speculation. In other words, we have the profitability of speculation as a decreasing function of the scale of speculation. It is then intuitively obvious that this defines a purely endogenous force coming from within the process, setting a limit to this scale. We will

presently give a formalisation of this point after defining the relevant terms.

Let us begin with the waiting time in the process. This we must simply leave in the open as defined by the trader's own expectation - the later he expects the price to rise, the longer, obviously, will be the waiting time, and hence the smaller again the profitability of speculation. Obviously, there need not be any speculation if the waiting time is too long. This, too, is formalised in the discussion below.

Let us now come to the financial calculation of the trader in regard to his speculation. The cost of speculation in our two cases are given respectively by the cost of purchase of S^* and the revenue or sale-proceeds foregone by withdrawing S^* from sale. Let us denote the buying and the selling price of the trader at the "beginning" -- when S^* is created — by q and p respectively. The cost, C, is then given for the two cases by :

$$(7) \qquad C = \begin{cases} qS^* , & \text{type I} \\ pS^* , & \text{type II} \end{cases}$$

Let us denote the rise expected in the two prices by Δq_e and Δp_e. We then have the expected speculative gain in the two cases defined by :

$$(8) \qquad G = \begin{cases} \Delta q_e S^* , & \text{type I} \\ \Delta p_e S^* , & \text{type II} \end{cases}$$

where G stands for speculative gain.

We are now set for the calculation of profitability of speculation. We consider first the case of a trader just going in for speculation in the sense of S^* being small. This is understood relative to S_0 and hence x_0, and so we have a small value of τ_r. Let us just equate this to zero. We then have the total (expected) duration of the speculative process as simply the waiting time in the process, which we denote by τ_w. Let us now define the rate of return from speculation as simply the speculative gain realised in the end per unit of the cost of speculation at the beginning, divided by the time between the beginning and end, i.e., the duration of the process. For reasons already clarified, the rate of return so defined will be a declining function of the speculative stock, S^*. So we will denote it by the notation $\rho(S^*)$. At present we are considering the limiting case of this, for a 'small' value of S^* and hence τ_r. Let us denote this by ρ_0. We then have :

$$\rho_0 = \frac{G/C}{\tau_w}$$

$$= \begin{cases} \Delta q_e / \tau_w q \ , & \text{type I} \\ \Delta p_e / \tau_w p \ , & \text{type II} \end{cases} .$$

The fact that the longer the waiting time, τ_w, the smaller is the profitability of speculation (which is the same idea as the rate of return) is obvious in this. We will presently give the formalisation of this rendering the whole

speculation "unprofitable" in the operational sense of the speculation being not actually taken up at all. Before this we just note a simplification of formula (9).

As already pointed out, τ_w is nothing but the time after which the price rise is expected by the trader, measured from the supposed "beginning" of the speculative process. So, the two right hand side expressions in (9) are nothing but the expected rates of rise of the two prices, as seen from the time referred. The simplification then is that we can write (9) as:

$$(10) \qquad \rho_o = \begin{cases} g_q, & \text{type I} \\ g_r, & \text{type II} \end{cases}$$

where g stands for the expected rate of price rise, the particular price under reference being shown by the suffix.

Let us now remember again that the whole process of speculation begins, if at all, from a background of the trader already carrying out a process of trade as defined by the pair (x_o, β_o). He is already enjoying a certain rate of profit, say r, from this process. Since this has not been defined previously, we take a minute off to put in the definition here. Avoiding all unnecessary complications for the purpose, we simply assume the process of trade to have the same structure as the small trader process described in the previous section. We also ignore the reserve fund in the trader's capital engaged in the process. The capital is then given by the value, at cost of the trader's stock

at the 'level' at which it is maintained. So if we denote the capital by K, we have :

(11) $$K = qS_o \quad .$$

The trader's profit per unit time, P say, is given by :

(12) $$P = (p-q)x_o \quad .$$

So, the rate of profit, r, is defined by :

(13) $$r = \frac{P}{K} = \frac{(p-q)x_o}{qS_o} = \frac{(p-q)}{q\theta} \quad \text{from (5)} \; .$$

Let us now return to the mainline. We can clearly say that the trader will at all go in for speculation only if this increases his rate of profit. This is equivalent to requiring the rate of return from speculation to be higher than the rate of profit already enjoyed from the trade process without speculation. This gives us the following profitability criterion of speculation :

(14) $$\rho_o > r \quad .$$

We can now simply return to the general definition of the rate of return from speculation given earlier. Formally, the definition boils down to :

(15) $$\rho(S^*) = \frac{G/C}{\tau_w + \tau_r}$$

$$= \begin{cases} \dfrac{\Delta q/q}{\tau_w + (S^*/x_o)} , & \text{type I} \\ \dfrac{\Delta p/p}{\tau_w + (S^*/x_o)} , & \text{type II} \quad . \end{cases}$$

That $\rho(S^*)$ is a declining function is again obvious in this. Purely as an analytical procedure, we can now turn the profitability criterion for speculation around for different magnitudes of S^*, and take S^* to be determined by the condition that the rate of return from speculation be equal to the rate of profit already earned. Formally, S^* is then set by the condition :

$$\rho(S^*) = r \quad . \tag{16}$$

This shows how the endogenous force of diminishing returns to speculation sets a limit to the scale of the speculative process from within.

Just to be in the complete, we should mention that there would also be other forces from within the trade process of a more structural nature to set the limit to the scale of the speculative process. Without going into the substance of these forces, we will just say that they will typically work to set a limit to the proportion of the speculative stock or capital of a trader to his total stock or capital. So, we could have some side-relation of the form :

$$S^* / (S^* + S_o) < \alpha \tag{17}$$

within which the condition (16) may operate, where α is a structural constant defined a priori.

Let us end this section by making an acknowledgement long overdue. The direct reference for this is our type II of the process

of speculation, beginning with the conversion of the ordinary stock of the trader into a speculative stock. The analytical essence of the idea goes back to Ricardo's famous chapter On Machinery in the third edition of his "Principles",[12] for what he did here was simply to describe, in complete logical terms, the mechanisation of a capitalist process of production by conversion of the circulating capital in it into a fixed capital. No notion of 'investment' just came into the picture. It is only when we understood this that we could properly distinguish between the two "beginnings" of the process of speculation discussed above. Off-hand — or conventionally, for that matter — one thinks of the introduction of machinery simply as 'investment', and similarly of the beginning of speculation simply as 'speculative purchase' (= speculative investment). This, we can say, is the 'addition' view of the things concerned. It is the other method — conversion of 'circulating' into 'fixed' capital, or the 'ordinary' into 'speculative' stock, as the case may be — that takes one to 'dynamics' in a more fundamental sense. This has a far-reaching significance from the standpoint of method per se. We can now point out that our own method of diversion of funds within agriculture (as we may call it) in the analysis of dynamics of marketed surplus earlier in the thesis, belongs precisely to the same genre. (See particularly Sections 2,3, Chapter 2, and Section 3, Chapter 3). We are happy to record our debt to Ricardo on all this.

12/ D. Ricardo, On the Principles of Political Economy and Taxation.

Section 5 : "Foodgrains Trade"

We have already set out the salient features of foodgrains trade that come within our purview in the thesis. Our object here is to see them as connected elements of the process of trade, thereby bringing the conceptual framework of this chapter to the point of its application for our purpose. This is the tying up of the chapter with the mainline of our concern in the thesis mentioned at the outset.

We have to begin by remembering the basic limitation of this framework for the purpose just stated — we have no room for the timepath of supply as a meaningful entity in it; traders are simply left free to buy as they want through time. The limitation is obvious from the fact that the whole "supply" in our case comes from an annual harvest of foodgrains. Traders are of course aware of this; they are also generally aware of the time-pattern of availability of the product in the market through a year. In our framework we have to simply disregard this latter awareness for conceiving the trade process carried out. The time-pattern of availability, or supply, will have to make itself felt through other factors, not directly. This is the methodology followed.

Let us now proceed in steps. Even though we have only one harvest in a year, we have a continuous market for the sale and purchase of the marketed surplus out of the harvest. This is what establishes the basic point of contact with our framework for the

trade process. We can still see the traders as choosing the precise time and quantum of their purchase through the year on their own — the fact of the harvest itself in time recedes into the background. This fits in exactly with the big trader process as we have conceived it in Section 3, with just this adaptation, that the "year" which they adopt as the planning period is now seen to be the same as the "agricultural year". This is taken for granted a priori. Let us now come to the small trader. For him, the whole "year" referred to comes from outside, having no prior basis in the "process" carried out. Its significance, therefore, has to come in through the behaviour of some exogenous variable through the year. The relevant variable is simply the price at which the product is sold to traders through the year; i.e., the so-called wholesale price of foodgrains. The price, as we know, is subject to a seasonal variation, the basic characteristics of which have already been noted (see pp. 21-24). Let us now see what shape the factor gives to the timepath of variables constituting the trade process of our traders through the year.

A priori, the question divides up into two parts, defined respectively by the price movement in "ex post" and "ex ante" terms. Now, the movement consists of a gradual rise in price beginning at the end of the so-called "busy season" of the wholesale market. We have already seen that a rise in the wholesale price as such may create difficulties for a small trader to maintain the stock and hence his rate of sale. But it is clear from the discussion of this problem

that the rise through the seasonal movement — which is entirely anticipated before-hand, and of a fairly limited extent — is most unlikely to have any actual effect on the physical process carried out by a trader. So, we may simply disregard this problem here and turn to the question in ex ante terms. This brings us to the speculative process of the trader.

One word of clarification before we begin. By the very regularity (self-repetition) of the phenomenon of the seasonal movement in price, it is doubtful whether we can really speak of any "speculation" by the trader in reference to it. Our use of the word here is purely formal. What we want to point out is simply that because the movement is more or less fully anticipated, the traders will in general tend to antedate their purchase in a year, i.e., buy at the beginning (when the price is low) some of what they would otherwise have bought only later in the year (when the price is high). This is precisely the speculative process (type I) of the trader, discussed at length in the previous section. For the rest, we need only make the following points.

First, we have seen that the trader would at all go in for speculative purchases only if he expects a sufficient rise in his buying price in the future. This "sufficiency" we simply take for granted for the rise in price through its seasonal movement.

Secondly, we have also seen that there are purely internal forces within the process of trade limiting the 'scale' of the

speculative process, so that we can meaningfully talk of the magnitude of speculative purchase or stock-holding as a function of the expected rate of price rise. It follows from this and the fact that the seasonal rise in price is of a fairly limited order of magnitude that so is the magnitude of speculative purchase or stock-holding induced by it.

Let us now bring in, one after another, the two basic facts that go with the notion of "seasons" underlying the seasonal movement of our price, what we referred to earlier as the qualitative and the quantitative aspects of the notion. We begin with the quantitative: there is a large concentration of the annual turnover of the wholesale market within its short initial busy season of the year. Obviously the turnover is to be seen from both the producer standpoint and the trader standpoint, i.e., in terms of their respective objectives and constraints. It is from the trader standpoint that we now look at the fact. This requires us to see the fact, which is purely about the purchase of traders, in conjunction with the facts regarding their stock-holding and sale through the year; i.e., to see all these as a connected fact. As mentioned on p. 26, Introductory Chapter, the basic fact here is that the large volume of purchase the traders undertake at the beginning of a year rapidly builds up their stock from a low level at the beginning of a year (the stock carried over from the last year) to a <u>peak stock</u> at the end of the busy season

from which it then gradually climbs down, through the rest of the year, to the stock carried over to the next year; further, this is a very significant peak. Nothing directly is stated about the time-pattern of sale through the year in this. What the actual fact regarding this may be, we shall come to only in the next chapter. Here we will go by the a priori benchmark mentioned at the outset, which is simply that traders sell uniformly through the year. The whole of this is simply a separation of issues. In this chapter we concentrate upon the time-pattern of purchase and stock-holding of our traders on the basis of a hypothetical time-pattern of sale which nevertheless has a very simple support in the very nature of the demand for our product as explained in the Introductory Chapter. Having built up this background, we then focus upon the actual time-pattern of sale as it may be in the next chapter.

Let us now proceed on with the analysis. We begin by noting that the peak stock of our traders in a year, just spoken of, is indeed a very significant peak. We cannot simply explain it as the sum of the ordinary stock of traders, and their speculative stock induced by the seasonal price movement. The ordinary stock here is at a constant level through the year (= the rate of sale times the competitive norm of a turnover period of stock). The speculative stock, it is true, is built up to a peak at the end of the busy season. But this, as already stated, is only a relatively moderate amount.

Our point is simply that this falls far short of the difference between the actual peak and the constant value of the ordinary stock. We cannot explain the whole building up of the trading stock that takes place over the busy season in terms of trader speculation in anticipation of the seasonal rise in price. No other speculation also enters the picture here, as we are concerned with a purely structural description of facts. We are thus necessarily led to other factors of the trade process for explaining the facts under reference.

This brings us to the element of <u>market control</u> in the big trader process. It is necessary first to see this element in the proper background of our traders, taking the whole structure of the market into account. We are thus brought to the division on the supply or producer side as well. It is from this that we will now argue the big traders' strategy for market control, which, as pointed out at the beginning, is nothing different from their bargaining strategy in the context of the market as a whole (see p. 20).

We start from the proposition that, to the extent he can, a big trader simply avoids entering into a direct relation with big producers.[13/] He avoids the confrontation. More fundamentally,

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13/ The point is also true on the other side: big producers would also avoid the relation with big traders, but this is not our concern here.

big traders recognise that their position in the market is dependent ultimately upon the existence of a class of small producers on the other side, and it is therefore in their basic interest to see to the latters' survival in the market. This they do simply by assuring the 'market' to them, i.e., by buying from them. Both points thus take us to the same conclusion which we can state simply as a big producer-small trader alignment in the buying-selling sense.

But small producers sell their whole marketed surplus immediately after the harvest (in the busy season). To the extent that this satisfies the requirements of big traders, they also buy only at this time.[14/] Next we remember that whatever a priori 'control' over the market the <u>big producers</u> may have remains more or less suspended in the busy season.[15/] So, insofar as big traders have to buy at all from big producers, they would much rather buy from them at this time than later. Taken together with the earlier point, this means simply that big traders would <u>rather buy only in the busy season of the year</u>; stated differently, their policy would be to buy more or less for the year as a whole, at the very beginning, every year.

So much is purely in terms of the qualitative relations of the market. It remains to see the buying strategy just outlined in

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14/ This is disregarding all other factors that operate on their buying strategy in a year. We will shortly come to this.

15/ See p. 102, Chapter 4.

terms of the object of market control. It is to be remembered that our traders are selling uniformly through the year. So, the buying strategy is automatically equivalent to a strategy of stock-holding defined by the "peak stock" in a year as already described. Our object now is to see how precisely the traders' objective of market control comes into the pattern of stock-holding.

For this we start from a very simple logical proposition. The proposition is that the magnitude of stock a trader needs to hold at a given point in time for a certain 'control' over the market, depends upon the precise length of time ahead that is kept in view for the control. The greater this length, the larger a priori is the stock required. Let us now put this within a scheme of annual self-repetition. Suppose that the trader begins the year with a stock appropriate for his desired control for the whole year ahead. Our point then is simply that he need not hold on to this magnitude all through, simply because, as time passes by, he has a smaller and smaller segment of the year for which to control the market. He can therefore let the stock dwindle through the year, retaining the same control over the market for the remaining period, restoring it back to the original level at the end of the year. This comes to the same as saying that he actually sells from the stock all through, replacing the stock sold only at the end. It is by this manner of its replacement, and hence the length of time on the average for which it is held that the stock distinguishes itself from the ordinary stock.

In the timepath of stock described above, we have a peak right at the beginning of a year. The logic of the analysis given is however not affected if we place the peak sometime later in the year. Under given circumstances, we will in fact have the same magnitude of the peak, for it is defined in respect of a year's length of time and not a 'year' in the sense of succession of years. The exact location of the peak in a year — in fact, the very notion of a stock for market control "for a year as a whole" depends upon the total context of the traders concerned. We can now simply take the context of a foodgrains market passing through the "seasons", as described, as justifying both the notion itself, as well as location of the peak stock at the end of the busy season. This completes our alignment of the buying strategy of big traders began with, with their strategy of market control.

The above is argued exclusively in terms of the trader's objective of market control, which, we had argued earlier, is not strictly subsumed under the objective of profit. Let us now take a more comprehensive view of the trade process in terms of both objectives. For this, let us abstract for the moment from the objective of market control and focus exclusively on profit. We will then have only S_{ordy} and no S_{mc} in the picture,[16/] with the stock sold

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16/ For simplicity, we abstract from the speculative stock here. This does not affect the argument.

being successively replaced at short intervals through the year, exactly as in the small trader process. This is what gives the trader the highest profit per unit of the capital put into the process. Let us now start from this benchmark, and introduce the objective of market control. We can think of this analytically as successive doses of transference of capital from the form S_{ordy}, to the form S_{mc}. This must, by definition, reduce the profit upon total capital. How? Let us think of the capital transferred in its original form of money or purchase-fund, specifically the purchase-fund at the beginning of the year. Whether deployed to build up S_{ordy} or S_{mc}, the money is first put to purchase, which converts it into a stock of the product. If this is the ordinary stock, then part of the money flowing back to the trader through sale — the part defined by the ploughback equation — is again used for purchase, i.e., replacement of the stock sold, within a short interval, and so on. The total profit obtained in the year upon the capital engaged in this manner depends upon the total sale effected through this scheme of repurchase, which depends simply upon how many times over the original amount of money is spent through the scheme. If, on the other hand, the stock built up at the beginning is a stock for market control, then it comes up for replacement only at the end of the year, being sold through the year, in line all through with the objective of keeping the market under control for the remainder of the year. The sale over the year in this case is equal to the stock

at the beginning, yielding a corresponding amount of profit. Obviously, this is a much smaller profit compared to the first alternative. This sets out the mechanism by which successive doses of transference of capital from S_{ordy} to S_{mc} successively reduce the total annual profit of the trader for a given amount of capital engaged in the process.

The relevance of this for the buying strategy of the trader is obvious. If we consider him only as of the objective of market control, then we see him as buying for the whole year ahead at the very beginning (in the "busy season"). If, on the other hand, we consider him only as of the objective of profit, we see him buying continuously -- in fact uniformly — through the year, financing the successive purchases out of the sale proceeds already realised. Given both objectives, his buying strategy has to be a compromise between the two, which is to say that his sale of the year as a whole comes in part from a sizeable stock built up at the very beginning to be replaced only at the end, which is his S_{mc} for the year as a whole, and in part from a revolving stock continuously replaced through the year, which is his S_{ordy}. Quantitatively, we can represent this buying strategy by a single variable, viz., the proportion of his total annual purchase that the trader carries out in the busy season. Let us denote this

proportion by z, $0 < z < 1$.[17/] The argument then is that the greater the relative strength of the object of market control -- relative to profit -- the larger will be the value of z .

Now, we have already argued in Section 2 that the relative strength of the two objectives is ultimately correlated with the total stock or capital of the trader, in the sense that the larger the capital, the greater is the relative strength of the objective of market control, and hence the greater also is the ratio (S_{mc} / S_{ordy}). So, in the present context, we have z as an increasing function of capital. Stated in symbols :

$$z = G(K) \quad G' > 0 \quad . \tag{18}$$

It may be helpful in this context to set out explicitly the relation between z and S_{ordy} and S_{mc} as they appear in the present framework. Let us remember that our trader begins the year with a certain opening stock of the product, say S_o, which he has carried over from the previous year. This may contain a speculative element, which we will presently look into. For the time, however, we simply ignore this element. We may also ignore any element of market control in S_o in view of the argument already given. So, we have S_o entirely in the

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17/ Stated more correctly, the lower bound of z is the fraction of a year accounted for by its busy season, say $\delta = \tau/T$, where τ denotes the length of the busy season, and T is a year's length of time.

nature of the ordinary stock of the trader concerned. We in fact have the equation :

$$(19) \qquad S_{ordy} = S_o \ ,$$

for the ordinary stock is now assumed to be a 'constant' through the year (no change in the rate of sale through the year). From this it follows that the trader's stock for market control for the year as a whole, S_{mc}, is given by the following equation :

$$(20) \qquad S_{mc} = S^* - S_o$$

where S^* is the trader's stock at the end of the busy season, which is his peak stock in the year.

Now, S^*, by definition, is the sum of S_o and the excess of the trader's busy season purchase over his sale within the duration of the busy season. Since the sale is distributed uniformly over the year, we can write this as :

$$(21) \qquad S^* = S_o + Z_b - \delta X$$

where Z_b is the total busy season purchase of the trader concerned, X is his annual sale, and δ, as already stated, is the fraction of the year accounted for by the busy season (see footnote 17). But X in turn is the same as the total annual purchase of the trader. So, we

we write (21) as :

$$S^* = S_o + (z - \delta) X \quad (22)$$

Finally, the ordinary stock of the trader is related to his rate of sale, and hence, the annual sale, by the turnover period of stock, θ . We may simply choose the unit of time in θ as a year. (So, in particular, θ too is now a small fraction.) This gives us :

$$S_{ordy} = \theta X \quad (23)$$

Combining all these relations above — equation (19) to (23) — we have the relation :

$$\frac{S_{mc}}{S_{ordy}} = \frac{S^* - S_o}{S_o} = \frac{z - \delta}{\theta}$$

or,

$$z = \theta \left(S_{mc} / S_{ordy} \right) + \delta \quad (24)$$

Since the ratio (S_{mc} / S_{ordy}) is already taken by us to be an increasing function of the total capital of the trader — see equation (4), Section 2 — equation (18) automatically follows from this.

We have now accomplished our basic objective of this section -- to see the salient features of foodgrains trade in our general context of reference as set at the beginning as connected elements of the process of trade. The basic feature has been simply that of a peak stock with traders at the end of the busy season. This is now seen as a completely integrated element in the process as carried out by big traders in our context. Within this, the ratio of the peak stock to the opening stock -- equivalently the proportion of the annual purchase made in the busy season -- is seen to be constrained by the capital of these traders, for a larger capital is now seen to lead not only to a larger value of both S^* and S_o, but also of the former relative to the latter for them. The specific value of the ratio is in this sense held back only by the capital commanded by the traders. Finally, at the back of all this, we have a relatively passive role of small traders in the sense that, given the continuity of the market, they are seen basically to buy and sell uniformly through the year. The only departure from this is caused by their speculative process in response to the seasonal movement of the price, but this, by definition, cannot account for any significant part of the phenomenon of the peak stock as we have it. It is for this reason alone, if nothing else, that the focus of attention has to be laid on big traders for explaining the structure of the process of foodgrains trade in our general context of reference.

We are now at the last point of our discussion in this chapter. The reference is to the stock carried over from one year to the next by the traders, appearing as their "closing stock" of the first year, and "opening stock" of the second. We had just referred to the possibility of a speculative element in this stock, leaving it for future discussion. This discussion has in fact already taken place under a different name, viz., that concerning the "stock at the end of a year" with producers (see Section 3, Chapter 1); as we see it, all the arguments concerning the speculative stock with producers at the end of a year hold equally well for traders. To repeat, then, we see the traders as carrying over a speculative stock from one year to the next only if the speculation was generated by their expectation of a poor harvest some way through the first year, which is turned into a fact by the end of the year, i.e., there is actually a poor harvest (for otherwise, of course, the stock would be liquidated by them). The speculative stock created in expectation of future rise in price on account of future rise in demand is liquidated within the year of its creation -- not carried through the "big event" of a harvest.

So much for the speculative stock with our traders at the beginning or end of a year. Let us now turn briefly to their ordinary stock at this point, the existence of which is purely definitional. Let us consider the precise magnitude of this stock. This has just

been formalised above in equations (19) and (23), which give us :

(25) $S_c = \theta X$.

Let us now look a little carefully into the meaning of this equation. Whether we talk of S_c as the "closing" or "opening stock" of a year, we necessarily take a forward view of the stock in this equation. So, X is the total sale over the year begun, as projected at the beginning. Let us now suppose that this is a "good year", it has begun with a good harvest. So, X will also be high as compared with a normal year. Does this mean that traders would carry over a larger stock through a good harvest than through a "normal" one? The answer is a definite no. The very "goodness" of the harvest provides them with ample opportunities of building up the stock necessary over and above a certain minimum to sustain their higher rate of sale through the year. It is not necessary to carry it forward from the last year. They will therefore carry forward only the minimum.

On the face of it, this minimum stock may appear simply as an arbitrary datum at this point. However, we can still bring it under our analytical expression by substituting X in (25) by the annual sale under normal harvest conditions, which is to say that it is only the stock necessary for this rate that is carried over from one year to the next as "ordinary stock", regardless of whether the harvest coming in between is good, bad or normal. It is immediately granted that

this does not then remain a minimum notion in the strict sense, for the rate of sale in the year with a poor harvest would be lower than that taken as the basis of calculation here. However, it is precisely in that year that we also have the speculative stock at the beginning, and so the ordinary stock loses its specific significance for explaining the magnitude of the opening stock. We may, as a pure convention, still define the ordinary stock as per the relation suggested, and measure the speculative stock as "excess" over it. No essential relations are disturbed by this.

Let us end the discussion by simply naming the benchmark established for the magnitude of ordinary stock carried over from one year to the next. We call it the normal stock.

Chapter 6

SEASONAL MOVEMENT II : THE RETAIL PRICE

Section 1 : Nature of the Problem and Strategy of Discussion

It appears impossible to approach the problem of a seasonal movement in the retail price of foodgrains without raising two fundamental analytical questions going to the very roots of the problem area. Our whole strategy of discussion here is governed by these two questions, and it is therefore necessary to set them out clearly at the very outset. Hence this rather lengthy introduction to the chapter.

Let us begin by remembering two elementary points mentioned at the beginning. One, by its very regularity (i.e., self-repetition), the so-called seasonal movement of price is to be explained on purely structural grounds. Two, we cannot speak of any regular movement in the demand conditions of our product through a year: the demand is intrinsically uniform in time. It follows from these two points that no notion of change in demand simply enters the explanation of the price-movement; further, unlike the 'demand' itself (i.e., the demand function) the quantity demanded of the product must be subject to a regular movement through the year, opposite to the movement in price, an-

so must be the quantity bought and sold.[1] Since we cannot a priori presume a priority of either the price movement over the quantity movement or vice versa, we must define our problem area afresh as containing both. What is known a priori is only that the price rises through the year through its seasonal movement; hence there must be a regular fall in the quantity through the year insofar as the purely structural elements are concerned.[2] But, to repeat, we do not know, a priori, which causes which. This is for the analysis to establish. It is also the first question referred above to govern the strategy of our discussion.

Stated in the abstract, the strategy as a whole is simply that we presume at the beginning a clear and unambiguous answer to the question, which we justify only at the end. The answer is that it is the movement (fall) in quantity that causes the movement (rise) in price, not the other way around! So, our problem becomes to explain the

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1/ This is based on the tacit assumption that the demand is fully satisfied through the year, or in other words the market is cleared all through. This is a just assumption as our whole conceptual framework here is set by structural factors, and 'excess' or 'unfulfilled demand' is certainly not a structural element in the working of our market.

2/ The only reason why this is not counted as prior knowledge is that on visiting the market one knows the price, not the total quantity transacted.

movement in quantity, of which the movement in price is left as a simple corollary.

Let us be a little more concrete. The 'quantity' under reference is the quantity bought and sold in the retail market of food-grains, i.e., the quantity bought by consumers and sold by traders. Any movement in the quantity bought by consumers must be dependant upon the movement in price by the very meaning of a demand function. Hence, what our problem becomes is simply to explain <u>why traders adopt a time-pattern of sale through the year that causes the price movement under reference</u>; that is, in the concrete again, why they on their own sell at a <u>declining</u> rate through the year, and therefore cause the price to be falling all through. It becomes a <u>problem in the process of trade</u>, belonging wholly to it. The whole lengthy preparation of the last chapter (and more) is to come into this, and this chapter itself becomes in some way a continuation of the last chapter.

Let us return here for a moment to the question of priority between the price and quantity movement. Suppose that one holds that it is the price-movement that is prior. This can mean only one thing, viz., the explanation of price movement is sought on the <u>supply side</u> independently of any movement in quantities. But the supply side here is made up first of traders, and then of producers through them. So one is back to the common denominator of the process of trade to argue about the priority question under reference. It is in this frame that we will come to justify our own stand at the end (Section 7).

Let us return to the mainline of argument. To say that our traders sell at a declining rate through a year is certainly to say that they do not sell uniformly through the year. Why not? -- this is the basic question we put before ourselves in this chapter. This is not as arbitrary as it may appear at first sight, for we have already argued at the beginning of the thesis that uniform sale does define a logical benchmark in our case in a purely a priori sense. The difference is that whereas earlier we looked into th' purely in terms of the structural characteristics of consumption and demand, now it is necessary for us to look at it from the standpoint of traders themselves, i.e., as a possible 'policy' for the traders to follow. Our whole exercise therefore begins by enquiring into whatever logic or rationale this policy may possess (Section 2 below). Granting the very existence of a logic, the rest of the analysis then consists simply of arguments pulling it down. In short, we proceed through arguments and counter-arguments -- at two distinct levels. One, at the level of priority between the price and quantity movements, and two, at the level of alternative trader policies in regard to the time pattern of sale through a year. This is the complete strategy.

Let us now bring this first point governing the strategy to a conclusion by establishing a convenient piece of terminology. Our whole discussion takes place in the background of a given harvest which has already taken place at the beginning of the "year" we talk of. This sets the marketed surplus for the year, which in turn sets the total sale of

traders over the year.[3] In short, we have a given total sale by traders through the year. What is left in the open is simply the way this total is distributed over the year. Let us now take uniform sale as benchmark of reference for this. Compared with this, the case of a declining rate of sale through the year amounts simply to selling at a higher rate at the beginning than that dictated by uniform sale, and hence at a lower rate than this at the end.[4] We can clearly call this the case of acceleration of sale or accelerated sale, and that is precisely how we address the alternative of declining rate of sale. With this, we can put the basic issue of our analysis as uniform vs. accelerated sale, in the sense of their relative merits and demerits as trader policy.

Let us now come to the second question governing our strategy of discussion. The starting point here is in a sense purely nomenclatural: we know that the so-called seasons of the foodgrains market are defined purely at the wholesale level of the market, but the seasonal price-movement we are concerned with here is at the retail level. Further, the a priori description of this movement does not in fact make any reference to the notion of seasons. The question arises, what specific significance, if any, does the notion have in explaining the phenomenon?

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[3] It is assumed that the traders carry over to the next year the same stock of the product as they had begun the year under reference with. This is completely in line with the very nature of our problem.

[4] We tacitly grant here a monotonicity of the whole path.

A logical approach to the question would be simply to abstract from the notion itself in the first place, and see if the movement still remains, at least in some 'basic' or 'core' sense. This, in a way, is what we do, and that is the second basic point about the strategy of discussion we follow.

However, the notion of seasons is not a simple one, and so what it means to "abstract" from it is not a priori very clear. We recall the two basic aspects of the notion, called the "qualitative" and, the "quantitative" in the Introduction. What we do is simply abstract from the "qualitative", but this in turn only magnifies the "quantitative" aspect instead of reducing it. Thus, in a sense, we abstract from one aspect of the notion, only to blow up the other.

Let us again be concrete. We have two seasons of the (wholesale) foodgrains market, the "busy" and the "slack". Viewed in purely qualitative terms, the "busy" gets defined as the period following the harvest over which the small producers have sold whatever marketed surplus they commanded, and this, a priori, is a short period; so, the "slack" is the long remaining stretch of the year over which only the big producers sell. Our initial abstraction from the notion of seasons boils down simply to assuming that there is no sale by producers in the slack season. In other words, it is an 'empty' season, which in turn nullifies the whole notion of seasons itself. Let us be clear that this is only a provisional assumption employed at the beginning to answer the question raised. It is given up at the end when it has

served its purpose, putting us back to discussing the seasonal movement in our price with the proper notion of seasons re-established in the background.

Let us now proceed on. As just stated, we will be assuming at the beginning that producers sell off their whole marketed surplus in a year within a short time from its beginning, i.e., the harvest. This immediately suggests a pure analytical simplification of the problem, viz., we can simply abstract from the 'time' in the release of marketed surplus, and thus take the marketed surplus to be sold all at once, immediately after the harvest. Thus the complete strategy here is to go through three distinct stages in the analysis of our problem: one, where the whole marketed surplus is assumed to be sold immediately after the harvest, without taking any time -- the case of 'point sale', so to say (Sections 2, 3 and 4); two, where it is taken to be distributed over a short period of time from the harvest corresponding to the duration of the so-called busy season of the market (Section 5); and finally, where it is distributed over the whole year as per the timepath actually observed through the seasons (Section 6). Since the timepath actually observed involves a significant concentration of sale in the busy season, the three steps clearly come in a string as successive approximations to the 'reality'. However, this is to look at the matter in purely quantitative terms. There is also the significant qualitative variation that in the first two steps of this scheme we have only "small producers" and "big traders" in our sense of these terms,

and the complete structure of big and small traders and producers is brought into the picture only at the final step.[5/] So, in a sense our whole analysis of the problem remains at a purely formal level until we come to Section 6, which we call the "complete problem". As already mentioned, this whole formal analysis concerns the logic or rationale of "accelerated sale" as trader policy, vis-a-vis the alternative of "uniform sale". The analysis proceeds by bringing up one substantive factor in the trade process after another, starting out from the simplest specification within our hypothetical market setting. We need not go over the factors at this point. We will end the chapter by taking an integrated view of our seasonal price movements (retail and wholesale) as well as a number of questions of theory, viewpoint, methodology etc., that come into our analysis of these two movements at different points (Section 7). This includes our defense of the logical priority that we assign to the quantity movement over the price movement in the retail market in reference to our problem area mentioned at the beginning.

Section 2 : The Rationale of Uniform Sale : Revenue and Profit

Let us begin directly by formalising the notion of uniform sale as relevant for our purpose. We consider a given year which we will

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5/ We note here in the passing that it would be possible to conceive afresh all these groups in the hypothetical market setting we begin with, but since this does not come into our line of analysis we do not pursue this matter any further.

denote by the pair (0, T), 0 and T being the time-points at which the year respectively begins and ends. T then also denotes the time-length of the year, which of course is a very different notion from the time-point T. However, no confusion should arise out of this. We have a certain harvest which has taken place at the point 0, and a certain marketed surplus out of this harvest, which is also sold off in toto at this point. Let us denote the marketed surplus by Q. As already stated, this sets the total sale of traders over the year, (0, T).[6] Let us denote this by X. We then have

(1) $X = Q$.

Uniform sale is now defined as the case where the traders sell at the same rate, say x_0, through the year. Obviously, x_0 is defined by

(2) $x_0 = X/T$.

Let us now denote the demand function for foodgrains by $d(p)$ where p is the price, i.e., of course, the retail price, of foodgrains. The fundamental mathematical property of $d(p)$ is simply that its derivative, $d'(p)$, is negative, ensuring the existence of its inverse, which we denote by $f(x)$, where x is the rate at which the quantity is demanded per unit time, equivalently, the rate of sale by traders, for

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[6] To be in the clear, we repeat that this is based on the assumption:

$$S_0 = S_c$$

where S_0 and S_c denote respectively the opening and closing stock of traders in the year.

assume that all demand is satisfied at the going price. Clearly, if traders sell uniformly through the year, the price is a constant through the year.[1] Denoting this constant price by p_o, we have:

$$d(p_o) = x_o$$

i.e.,

$$p_o = f(x_o) . \tag{3}$$

Let us now denote the total revenue or sale-proceeds and total profit earned in the year by traders in the case of uniform sale by R_o and Π_o respectively. Obviously,

$$R_o = p_o x_o T = p_o X . \tag{4}$$

As for Π_o, we assume here that the only cost incurred by traders in the year is their cost of purchase of the marketed surplus, Q. Let q denote the price paid by them in this purchase. Then their total cost in the year, C, is given by

$$C = qQ . \tag{5}$$

Hence,

$$\Pi_o = R_o - C . \tag{6}$$

So much for the benchmark of uniform sale purely on its own. Let us now see it in comparison with the alternative of accelerated sale.

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[1] To be in the clear again, this is based on the assumption that demand conditions remain unchanged through the year.

Unlike uniform sale, accelerated sale defines a general class of trader policy having its defining characteristic simply in a higher initial rate of sale than x. Let us consider a particular subclass of this, with the trader selling at the initial rate of sale $x+\varepsilon$, over a period of time τ, followed by a step down to a lower rate of sale over the remainder of the year, i.e., for $\tau < t < T$. This is the simplest case of accelerated sale, defined by the two parameters, ε and τ, variations in which trace out different members of the class. The rate of sale after the step-down, i.e., after τ, is given by some value $(x-\varepsilon')$, $\varepsilon' > 0$, where ε' is found from the identity:

$$(7) \qquad (x+\varepsilon)\tau + (x-\varepsilon')(T-\tau) = x ,$$

or, in other words,

$$(8) \qquad \varepsilon\tau - \varepsilon'(T-\tau) = 0 .$$

Thus the whole timepath of sale through the year is determined, and we can therefore represent any member of the class by a pair (ε, τ) without explicitly mentioning ε'.

Let us now go on to calculate the revenue of traders under a programme of accelerated sale. The timepath, p_t, of the selling price of traders over a year is then given (by Taylor's series approximation) by:

$$(9) \qquad p_t = \begin{cases} p_o + \varepsilon f'(x_o) , & 0 \leq t < \tau \\ p_o - \varepsilon' f'(x_o) , & \tau \leq t \leq T \end{cases}$$

If we denote the total revenue of traders over the year, under this programme, by R_ε, then we have :

$$(10) \quad R_\varepsilon = \left[p_o + \varepsilon f'(x_o) \right] \left[x_o + \varepsilon \right] \tau + \left[p_o - \varepsilon' f'(x_o) \right] \left[x_o - \varepsilon' \right] (T - \tau)$$

$$= p_o \left[(x_o + \varepsilon)\tau + (x_o - \varepsilon')(T - \tau) \right] + f'(x_o) \left[\varepsilon (x_o + \varepsilon)\tau - \varepsilon'(x_o - \varepsilon')(T - \tau) \right]$$

$$= p_o x_o + f'(x_o) \left[x_o \left[\varepsilon\tau - \varepsilon'(T - \tau) \right] + \varepsilon^2 \tau + \varepsilon'^2 (T - \tau) \right]$$

$$= p_o x_o + f'(x_o) \left[\varepsilon^2 \tau + \varepsilon'^2 (T - \tau) \right] ,$$

using the condition on ε' derived above.

The right hand side of the equation above is clearly less than $R_o = p_o x_o$, since $f'(x) < 0$. So, we have:

$$(11) \quad R_\varepsilon < R_o .$$

In other words, the revenue or sale-proceeds is highest when $\varepsilon = 0$, which is precisely the case of <u>uniform sale</u> (here obtained as a limiting case of accelerated sale, by letting $\varepsilon \to 0$). We thus have the result that the <u>sale-proceeds under uniform sale is greater than that under accelerated sale in the form considered</u>. Indeed, this appears to be a <u>general result</u>,

independent of this particular form. Let us sketch the argument. First, we approximate a timepath of accelerated sale by a step function of any number of steps. Suppose there are 'n' steps defining 'n' elementary intervals of the year. We group together each successive pair of intervals.[8] Now, over each of these pairs, we have a step function of just two steps, similar to the class considered above. By the result already established, the sale-proceeds over the interval covered by the pair under the timepath considered is less than that under uniform sale over the interval defined by the same quantity of sale over the period. We can now form larger intervals by grouping together again successive pairs of pairs of the original steps, and simply repeat the argument. The process ends up in establishing our result.[9]

Let us now proceed with the main argument. We have just seen that the sale-proceeds of traders for the year as a whole are at a maximum under uniform sale,[10] and so also is their profit for the year as a whole,

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[8] If 'n' is odd, this leaves us with just one step or interval at the end. We consider, for the present stage of the argument, only the first (n-1) steps. See the next footnote.

[9] If at any stage of the argument, we are left with an odd number of steps, we simply consider the pair defined by all but the last step, and the last step, as a distinct element in the calculations.

[10] We have to add the qualification "in the class considered". Since this is the relevant class for our purpose, we may take the qualification simply for granted and repeat statements like the one just made. Perhaps the qualification is unnecessary anyway, but we do not pursue this point.

that the total cost for the sale-proceeds under our present conditions depends only upon the total volume of sale in the year (= the purchase made at the beginning) and not upon the way this sale is distributed over the year. This is our basic proposition concerning the logic or rationale of uniform sale — to repeat, given the total sale of traders in a year, it maximises their sale-proceeds, and also their profit, so long as their cost for the sale is independent of the time-distribution of sale. This is a purely analytical statement in the sense that what precisely the 'costs' are do not matter so long as they satisfy the condition stated.

It is clear that we have now set out quite a strong case or argument for the policy of uniform sale. The only way a counter-argument can be built up, remaining within the profit objective, and within the present structure of the problem, is by introducing other trading costs into the picture, costs that depend specifically upon the way the one initial purchase of traders in a year is distributed over the year through sale. This sets our problem for the next section.

Let us end here by citing an analogy from price theory to the exercise carried out above, which may throw light upon the nature of the argument involved. We refer to the conventional theory of price discrimination by a monopolist, under given output. The analogy rests on thinking of the two intervals into which the 'year' is divided up here — the intervals $(0, \tau)$ and (τ, T) — simply as two markets for the seller. Assuming no cost of transference of the product from one

market to the other, we have the standard result that price-discrimination can be successful (raise revenue and hence profit) only under the condition of some difference in the demand conditions in the two markets. This hypothesis is simply denied in our case by the assumption that demand conditions remain unchanged through the year. So, there is no price-discrimination, which in our case translates as no variations in the price through the intervals. This is the same as no variation in sale through the intervals. This is exactly what is established above.

Section 3 : The Rationale of Accelerated Sale I: Storage Cost

To hold a stock of goods is necessarily to store it, and so the cost of storage is necessarily an element of the trading cost, the precise magnitude of which depends upon how long the good or goods are kept in store or stock. Given our present assumption that the traders have to buy for the year as a whole at the very beginning, this duration is entirely a matter of what quantities are sold at what points of time through the year, or the time distribution of the given annual sale. This puts us out on the route suggested at the end of the previous

notion.[11]

Let us see the storage cost from the standpoint of an individual trader. Obviously, the shorter the time for which he has to store the product, the smaller the storage cost he incurs, and hence the larger the profit he makes, for the selling price is simply 'given' to him. Carried to its logical conclusion, this simply means a "point sale", selling off the whole purchase right at that point, avoiding all storage, and hence, the storage cost. If one went by the textbook conception of 'perfect competition', such a conclusion would appear unavoidable, for an individual trader would then be seen to face an unlimited market, which in turn can mean only that he can sell any amount at any point of time he chooses. This whole framework has been eschewed by us from the very beginning — traders at any time are seen to sell at a certain rate all through which they themselves have come to acquire through competition. It is within this framework that we discuss their

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11/ Let us put in a word of justification of our neglect of this definitional element of the trade process (i.e., the storage cost) in our development of the notion of trade process in the last chapter. This whole development took place under the condition that the traders are simply free to choose the time of their purchase, which is quite the antithesis of our present assumption. While the present assumption makes the storage cost turn entirely around the time-pattern of sale, the previous assumption implicitly made it turn around the time-pattern of purchase, which in turn got submerged under the turnover period of stock in our framework. This was our critical variable of reference in the previous chapter, in the sense of being the vehicle of expression of all competitive factors in and around the trade process. As such, the storage cost was already implicitly present in the numerical value of this variable, and did not have to be explicitly mentioned. (See pp. 128-29, Chapter 5).

time-pattern of sale. The whole apparatus or tool of "accelerated vs. uniform sale" is geared to this. To spell out, the methodology requires to start out from uniform sale as the a priori benchmark, and look into the consequences of departing from it by selling at a higher rate at the beginning (called accelerated sale) for the 'objects' kept in sight by numbers, such as profit, cost, etc. (not necessarily seen through a right accounting framework), as well as control over the market, though we do not come to this immediately. There is no notion of 'profit maximisation' in this, whatever that may really mean.

A rationale of accelerated sale is already implicitly argued above on the basis of storage cost. Let us set this out in formal terms. Let us start from equation (1) of the previous section, interpreting this to mean the balance between the amount bought by an <u>individual trader</u> at the beginning of a year (Q), and the amount sold by him through the year (I). The year is thought of as (0, T) as before. Let $x(t)$ be the amount sold at time point t, $0 < t < T$. Then the trader has had to keep this amount in store precisely for the <u>time-length</u>, t (= t-0). If we denote the storage cost incurred per unit of the product, per unit time, by c, then the storage cost corresponding to $x(t)$ is $cx(t)t$. So the storage cost for the year as a whole, say C [12] is given by :

12/ Not to be confused with the purchase cost, which we had denoted by the same symbol in the last section.

(12) $$C = c \int_0^T x(t)t\,dt$$ [13/]

where $\int_0^T x(t)dt = X$.

Mathematically, it is the weighting of $x(t)$ by t in (12) that brings out the specific dependence of storage cost upon the time-pattern of sale; viz., the larger the volume of sale, the later in the year — $x(t)$ large for t large — the greater the cost incurred for the year as a whole for the given volume of sale, X .

Let x_o denote as before the rate of sale under uniform sale. Purely as a formalism, we now consider accelerated sale in its general form, which is defined by:

(13) $$x(t) = x_o + \varepsilon(t),$$

where $\varepsilon(t)$ is a parameter satisfying the conditions,

(i) $$\int_0^T \varepsilon(t)dt = 0$$

(ii) $\varepsilon(t)$ is a decreasing function of t

and hence

(iii) $\varepsilon(t) \gtrless 0$ as $t \lessgtr \tau$, for some τ, $0 < \tau < T$.

13/ We are abstracting here from the fixed element in storage cost, independent of the time distribution of sale in a year. Let us just point out that this element is purely definitional in our framework, as we do have an opening stock of the product in a year with our traders, which, in magnitude, is simply carried over to the next year, reappearing as the closing stock of the year under reference. The whole cost of storage of this amount can appear only as a "fixed charge" in the calculation of trading costs in a year.

It is clear from this that the storage cost under accelerated sale is smaller than that under uniform sale. If we denote the difference by $\Delta C_{\varepsilon(t)}$, then we have

$$\Delta C_{\varepsilon(t)} = c \int_0^T \varepsilon(t)t \, dt < 0 \text{ from (i) and (iii)} .$$

This sets out the basic rationale of accelerated sale, viz., by accelerating his sale, the trader reduces his storage cost from its benchmark value given by uniform sale. Since both, the trader's total sale over the year as well as the selling price, are now taken as given, and his purchase cost is the same in the two cases (uniform and accelerated sale), the reduction in storage cost appears simply as an increase in profit, and so accelerated sale also gives our trader a larger profit for the year as a whole. This gives us a statement of the rationale of accelerated sale in terms of profit, rather than cost. Stated in symbols:

$$\Delta \Pi_{\varepsilon(t)} = - \Delta C_{\varepsilon(t)} > 0$$

where $\Delta \Pi_{\varepsilon(t)}$ denotes the difference between the trader's profit in the year under accelerated sale and uniform sale.

Let us now proceed on. The increase in profit following from acceleration of sale has just been argued on the basis of no change in the selling price of the trader through this. However, taken as a general policy, acceleration of sale does not leave the

price — i.e., the whole timepath of price through a year — invariant, not produces an upward movement through the year, which is precisely that constitutes our explanation of the so-called seasonal movement in the price through the trade-process so far. We have already seen that this movement in price brings about a fall in the trader's revenue or sale-proceeds as a whole. Hence, for the class of traders as a whole, we have two opposite effects of acceleration of sale upon profit: a price or revenue effect, which reduces the profit (Section 2), and a cost effect -- through the specific element of storage cost -- which increases the profit (this Section). The net effect is therefore ambiguous on a priori grounds.

The question is, how does this bear upon our subject? At a first level, we may dispose off this question by saying that the price effect is defined only in reference to the action of traders as a whole, and traders do not act as a whole, i.e., collectively. In short, the price effect brings in an irrelevant issue, there is no need to go into any net or total effect of acceleration of sale.

The strength of this argument is certainly to be admitted. However, granting fully that trader policy by nature is the sum total of individual traders' policies, and no 'collective' policy, there arises the more fundamental question, whether traders individually are aware of the price-effect, and if so, what significance this has for their policy decisions. This takes us into deep waters, where we may only raise questions without really resolving anything.

So far as the first question is concerned, one has to grant, we believe, a general awareness on the part of traders that acceleration of sale brings down their total sale-proceeds in a year, for nothing more than the elementary knowledge of a demand function is involved in this. The deeper question is the second one -- how does this awareness enter their decisions, if it does so at all? Let us try to probe into this a little.

Let us go back and start from the two effects of acceleration of sale on profit, one defined through the selling price, and the other through the storage cost. Granting that a trader is aware of the first even though it is not the effect of his individual policy, we may say that the whole price effect constitutes ultimately 'soft information' for him, one that is only dimly perceived through the 'similar' actions of all. The storage cost on the other hand is directly an element of cost actually borne by him, and its reduction through the acceleration of sale has a tangible, or 'solid' content for him. We may call it 'hard information' and say that an actual policy decision is taken ultimately on the basis of this hard information, not the soft one. This reinstates the logic or rationale of accelerated sale as we have worked it out, and at the same time puts it under a general qualification that it is at bottom a compromise between 'unequals' (soft and hard), not something absolute. Had the soft information been more definite and tangible for an individual trader, it could have entered the calculations on a more equal basis.

Let us now leave off this purely qualitative discussion, and [illegible] the quantities involved, implicitly granting the equality just [illegible], i.e., taking the two effects to be simply comparable. We do [illegible] simply to form a more complete idea of the forces at work.

Let us begin with a preliminary observation. To form any [illegible] of the force that may be generated by the consideration of [illegible]duction of storage cost, we have to first see it as an element of the [illegible]ading cost as a whole, i.e., as part of it. There is no[illegible]ing [illegible]ntrinsically 'costly' about storing a commodity like foodgrains, and [illegible] its storage cost would a priori be only a small fraction of the total [illegible]ading cost. Hence we can argue in a purely qualitative sense that [illegible] full force of acceleration defined through this factor is only a [illegible]elatively weak one which we can express mathematically by saying that the parameter $\varepsilon(t)$ in (13) is bounded within a small region around 0 .

Let us digress for a minute from this to the end-point of our analysis. Since we have the relation between the volume of sale and the selling price of traders set simply by the demand function for foodgrains, the extent of price movement following from a given degree of acceleration of sale depends simply upon the elasticity of demand according to the formula

$$\frac{\dot{p}}{p} = -\frac{1}{\eta}\,\frac{\dot{x}}{x} \qquad (15)$$

where η is the elasticity of demand. Since the elasticity of demand for foodgrains is a priori low, even a mild degree of acceleration of

$\frac{\varepsilon}{x}$ small in absolute value) may generate quite a substantial movement in price. Thus smallness of the storage cost in the total does not constitute any argument invalidating an explanation of the seasonal movement in our price, in terms of the force of its reduction.

To return to the mainline of our argument, we may now set out the total effect of acceleration of sale on profit, recognising both the price effect and the cost effect by simply writing out $\Delta\Pi_{\varepsilon(t)}$ in full. Remembering that we have our timepath of price through a year, $p(t)$, $0 \leq t \leq T$, set by the relation

$$p(t) = f(x(t)) \doteq p_o + \varepsilon(t)\, f'(x_o) \text{ for } \varepsilon(t) \text{ small,}$$

where p_o and $f(x)$ have the same meaning as in the last section, we can write $\Delta\Pi_{\varepsilon(t)}$ as :

$$(16) \qquad \Delta\Pi_{\varepsilon(t)} = \int_o^T \left[(p_o + \varepsilon(t) f'(x_o))\,(x_o + \varepsilon(t)) - p_o x_o \right] dt$$

$$- c \int_o^T \varepsilon(t)\, t\, dt$$

$$= f'(x_o) \int_o^T \varepsilon^2(t)\, dt - c \int_o^T \varepsilon(t)\, t\, dt \,.$$

The first term gives us the price effect, which is negative, since $f'(x) < 0$, and the second term gives the cost effect, which is positive (including the negative sign before it) by the properties of the

function $\varepsilon(t)$. We can make the comparison between the two terms more transparent in economic terms by working out $f'(x_o)$ in terms of the elasticity of demand, η , evaluated at x_o . This reduces (16) to :

$$(17) \qquad \Delta\Pi_{\varepsilon(t)} = -\int_0^T \varepsilon(t)\left[\frac{p_o}{\eta_o}\,\frac{\varepsilon(t)}{x_o} + ct\right]dt \ .$$

Let us start back from the point just made that the storage cost in our case is a relatively small part of the total trading cost. The proper comparison has to be in terms of the year as a whole. The unit storage cost for a whole year is cT . This by definition has to be less than p_o, for we have at the back of our trade process a certain stock of the product carried through from one year to the next. Given that the storage cost is only a relatively small part of the total trading cost, cT would in fact be a small fraction of p_o . It follows that ct in (17) is a still smaller fraction of p_o/η_o, the smaller the smaller t is. This is as far as the comparison of the pure economic terms goes. Going just by this, we can say that the pure economic terms in the price effect dominate in some sense over those in the cost effect. The actual comparison of the two, however, has to be made in terms of the function, $\varepsilon(t)$, 'scaling' the two effects, so to say. Remembering that $\varepsilon(t)$ changes its sign from positive to negative in $(0, T)$ at τ , we can best see its effect on $\Delta\Pi_{\varepsilon(t)}$ by splitting the integral at τ .

s gives us :

$$18) \qquad \Delta\Pi_{\varepsilon(t)} = -\left[\int_{o}^{\tau} \varepsilon(t)\left[\frac{p_o}{\eta_o}\,\frac{\varepsilon(t)}{x_o} + ct\right]dt + \int_{\tau}^{T} \varepsilon(t)\left[\frac{p_o}{\eta_o}\,\frac{\varepsilon(t)}{x_o} + ct\right]dt\right]$$

The first integral on the right hand side is positive; so is second integral if

$$c\int_{\tau}^{T} tdt < -\frac{p_o}{\eta_o}\int_{\tau}^{T}\frac{\varepsilon(t)}{x_o}\,dt .$$

our previous arguments go in to show that this condition is in fact satisfied unless $|\varepsilon(t)/x_o|$ is a very small number over its range.[14/] This is the confirmation of the pure economic argument given above. It shows that if the degree of acceleration of sale is at all "significant", its total effect on profit is unambiguously negative. Conversely, it also establishes that the total profit of traders in a year under accelerated sale can be larger than that under uniform sale only if the

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14/ We consider the ratio $\varepsilon(t)/x_o$ rather than the function $\varepsilon(t)$ because it is a pure number, which, on a priori grounds is bounded within a small band around 0 for all t . This however does not establish in any way that $|\varepsilon(t)/x_o|$ is a "very small number over its range" in the sense that is required in the statement under reference.

degree of acceleration is very small. All this lies within the folds economic arguments given earlier.

Section 4: The Rationale of Accelerated Sale II: Loans and Interest

Our a priori conceptual background on trading loans is already given at the end of Section 1 of the previous chapter. Let us now simply grant the existence of the loan and place it in our present set-up of the trade process continued from the two preceding sections. To recapitulate, the essence of this set-up is that the traders have to make their whole purchase for the year at the very beginning of each year when the whole marketed surplus is disposed off. To finance this purchase, they have already built up a purchase fund by ploughback from sale-proceeds over the last year. The existence of trading loans in this context means simply that the purchase fund falls short of the purchase cost, and the gap is met by the loan. Obviously, the loan is taken at the very beginning of every year. Let us fix our attention on some particular year, and denote the purchase fund at its beginning by F_0. Then the loan amount, L, say, is given by the equation:

$$L = C - F_0 \tag{19}$$

where C stands for the total purchase cost of traders in a year, as in Section 2 (not to be confused with the storage cost as in Section 3).

Let us take off a little time at this point to provide some clarifications, though these do not come directly into our line of analysis. First, the purchase fund in the present setting is built up through a whole year to be spent only at the end. Rather than leave this idle inside the process through the whole year, the traders may earn something in the meanwhile by pure short-term placements of the fund outside the process. We can simply take the whole of this for granted. I_0 still gives us their purchase fund at the beginning of a year, being given now simply by the ploughback over the last year plus the earning made by such placements coming back within the year. Next, we may take the purchase fund, F_0, as well as the traders' opening stock of the product in the year, say S_0, as completely 'owned' by them. Their sum (in value) therefore defines their "own capital" as existing at the beginning of a year. L is then to be read simultaneously as their "debt capital" at this point. This defines the division of capital in the process as a whole from the ownership point of view.

Let us now get down to the specific point of interest to us in this situation, which is the interest the traders have to pay on the loan. This depends not only upon the loan amount, L, and the rate of interest, say i, but also the length of time for which the loan is taken, or the loan period, say t .[15] If I denotes the total interest payment

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[15] Let us again remember that since our 'year' begins at time 0, and that is when the loan is taken, t also stands for the timepoint at which the loan is cleared. The loan period, strictly, is represented by the pair $(0, t)$, and not t alone.

(also called the interest charge, interest cost, etc.), then it is given by

(20) $I = i \tau L$.

τ is implicitly restricted here to the interval (0, T), for we do not have any "debt capital" in the process at the end of a year; in other words, the loan is cleared through the year.

Let us now proceed on. It is obvious that the shorter the loan period, τ, the smaller is the interest cost, I, borne by traders in a year. If we can now relate τ to the traders' time-pattern of sale through the year in a 'policy' sense, we automatically line up with our strategy for the search of a rationale of accelerated sale established in Section 2 (see p. 185). This sets the basic direction of our enquiry here.

Now τ is nothing but the time taken by the trader to clear off or repay the loan, L. (So it can also be called the repayment period , which in fact is the more operational notion.) This whole repayment comes by definition out of sale-proceeds realised in the meanwhile.[16/] Given the relation between interest cost and the loan or repayment period just observed, we can at once formulate a very simple rule of loan repayment. This is that the repayment of loan takes precedence over all other 'uses' of sale-proceeds or revenue as it comes in;

16/ See page 122, Chapter 5.

In other words, it is only after the loan is fully cleared that the trader begins to rebuild his purchase fund exhausted at the beginning, as well as take out any profit for himself.[17] Till then, the whole of sale-proceeds is simply turned in for the repayment of loan. The argument is simply that this is what minimises the interest cost over all 'rules' of loan repayment.

It is clear that the rule just stated implicitly determines the loan or repayment period by the condition that the total sale-proceeds over this period equal precisely the loan taken at the beginning, i.e., L. If one denotes the revenue over the period $(0, \tau)$ by $R(0, \tau)$, then the condition is :

$$R(0, \tau) = L \quad (21)$$

.[18]

Now, $R(0, \tau)$ is the revenue earned over an initial stretch of time in the year. It follows at once from this that the faster the sale-proceeds begin to flow in in a year, the shorter the loan period: the rest of the time-stream of revenue, after the loan is repaid, does not come into this any more.

17/ For completeness, we mention that interest is deemed as paid out of 'profit', and not directly out of revenue.

18/ The loan repayment here does not include the interest on loan, the exact time of repayment of which is simply left in the open (after τ). It would be possible to include the payment of interest within the loan repayment, but since this neither adds to, nor detracts from the enquiry here, (but slightly complicates the equations), we do not consider the case.

It is necessary to go over one more step from this purely functional relation, given our rule of loan repayment. The step consists simply of switching over to the viewpoint of an individual trader viewing his own cost, revenue and profit. He takes the selling price as 'given',[19] and therefore sees the repayment period (and hence the interest cost) as simply dependent upon his own time-pattern of sale through the year: the higher the rate of sale he begins with, the later he sees the sale-proceeds as beginning to flow in, enabling him a quicker repayment of the loan. Again, carried to its logical extreme, this brings one to an instantaneous loan repayment through a large enough 'point sale' at the very beginning, whatever this may really mean. We avoid this kind of 'minimisation' by arguing just in terms of uniform vs. accelerated sale in the sense explained earlier. We note that the trader-calculation just set out is already in the frame of accelerated sale in its simplest form, discussed in Section 2. To recapitulate, this form was defined by two parameters, ε and τ, where the former gives us the deviation in the trader's rate of sale from the 'uniform rate' (denoted x_0) initially in the year, and the latter the duration of his sale at this rate (i.e., at rate $x_0 + \varepsilon$). We may now simply take the

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19/ The reference here is to the whole timepath of price over the year. However, we may now simply take this to be a constant for the simple reason that the precise shape of the timepath does not enter the argument given below. Hence we may as well keep to the simplest shape of a constant price through the year.

parameter τ to be one and the same as the time taken by the trader to repay the loan, already denoted by τ. It is thus endogenously determined from within the calculations of interest cost and loan period. ε, on the other hand, is simply left in the open. The meaning is straight-forward: the trader is now seen to consider the adoption of a certain 'high' rate of sale, $x_o + \varepsilon$, to enable him to pay off the loan within a 'short' time, and hence the rate persists till the loan is cleared. After that the rate of sale is given simply by what is left of the purchase made at the beginning, and the remaining time in the year. This is precisely the timepath of accelerated sale in its simplest form.

Let us now set out the argument in formal terms. We may simply adopt the notation to the case of an individual trader, and write the equation setting the loan period (equation 21) as:

$$p(x_o + \varepsilon)\tau = L \qquad (21)$$

where p is the selling price that the trader takes as 'given' and constant through the year (see footnote 19). We also have x_o and L as the a priori 'givens' in this equation. It is then clear that the higher the value of ε, the smaller is the value of τ and hence of I by equation (20). So, the <u>interest cost</u>, i.e., I, <u>under accelerated sale</u> ($\varepsilon > 0$) <u>is smaller than that under uniform sale</u> ($\varepsilon = 0$). This is the logic or rationale of accelerated sale in terms of trading loans, loan repayment and the interest charge.

As in the previous section, the rationale of accelerated sale is worked out here in terms of individual trader calculations, and hence on the basis of a timepath of price independent of the time-pattern of sale, i.e., disregarding the demand function. This independence does not of course hold in the total, which brings back the "price effect" into the relations considered. The methodological issues this gives rise to have already been discussed in the previous section, to which we have nothing new to add here. However, a fundamental analytical difference between the two cases is to be noted. In the case of storage cost, the price effect comes into the discussion only at the level of profit; the relations at the level of cost itself are the same, whether viewed from the standpoint of an individual trader or traders as a whole. The basic argument in terms of cost reduction is therefore left unaffected by the methodological issues. In the present case, this is not so. All that we have established is that, going by his own calculations, a trader thinks he can reduce his interest cost in a year by acceleration of sale, and so in fact goes in for this policy. Whether or not the cost is actually reduced, given that this is the general policy, depends upon how the price responds. This is easily followed up.

What matters for the repayment of loan is the volume of sale-proceeds, not of sale, over a certain period at the beginning of a year. For any such period, whether the volume of sale-proceeds increases or decreases with the volume of sale is a matter entirely of the numerical

value of the elasticity of demand, η. In our case, η is less than unity, and so the volume of sale-proceeds in fact increases with that of sale. So, acceleration of sale in fact brings in a lower volume of sale-proceeds at the beginning than uniform sale would. This lengthens the repayment period, instead of shortening it, and the net effect is a larger, not smaller, interest cost in the year. Viewed in the total, therefore, accelerated sale becomes a self-defeating policy on its own ground. This is a much stronger result than that derived in the last section. It also goes on its own to erode the reduction in storage cost the traders effect by acceleration of sale, not to speak of their profit. However, there is still no coming out of the logic of "hard" vs. "soft" information pointed out in the previous section, and so the "logic" of accelerated sale also remains.

Let us again go over this in formal terms. First we substitute p in (22) by the price corresponding to the rate of sale $(x_o + \varepsilon)$, i.e., $f(x_o+\varepsilon)$, where $f(.)$ is the inverse of the demand function. We can simplify this by writing x for $(x_o + \varepsilon)$. This gives us :

$$x\, f(x)\, \tau = L .$$

Differentiating this with respect to x around x_o, and substituting the expression p_o for $f(x_o)$ and η_o for the elasticity of demand evaluated at x_o, we have :

$$p_o\left(1 - \frac{1}{\eta_o}\right)\tau + x_o p_o \frac{d\tau}{dx} = 0 .$$

Clearly,

$$\frac{dt}{dx} \gtrless 0 \quad \text{as} \quad \eta_o \lesssim 1$$

which is the result claimed.

Let us now end this section by turning our attention from the logic of accelerated sale as such to the precise time-pattern of sale by traders. Qualitatively, this pattern has consisted simply of a switch in the rate of sale from a 'high' value initially, to a lower value at some point, τ, in the year. This is obviously a very rigid pattern. What we now wish to point out is that even when we keep to this rigid pattern at the level of an individual trader, the pattern for traders as a whole would take the form of a gradual decline in the rate of sale. The argument consists simply of bringing out the implications of different values of the incidence of loan[20] for different traders, which -- the difference per se -- is simply axiomatic. To give a proper shape to this, we begin with the general idea of a hierarchy of traders by the loan incidence, arranging them in a decreasing order. This hierarchy itself would be related to underlying hierarchies in terms of more fundamental factors, but we do not get into this here. Our general

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20/ By "incidence of loan", we mean simply the ratio, L/F_o. This is related to, but not the same as the ratio of the debt capital to the owned capital of traders.

point is that the greater the incidence of loan, i.e., the greater the incidence of interest in the total trading cost, the stronger would be the urge to reduce the interest charge and hence the stronger the tendency, in some sense, towards acceleration of sale. Let us see what this means in terms of the two parameters, ε and τ, defining the form of accelerated sale considered here.

To start with we note that for any individual trader with a given loan and a given total sale in the year, we are left with one degree of freedom between ε and τ by equation (22). If we now consider another trader with a larger loan but the same volume of sale, we would a priori find that he takes a larger time to repay the loan, i.e., we have a larger value of τ for him. So, we relate τ positively to the loan incidence. Within this, a stronger tendency towards acceleration of sale is revealed simply by a larger value of ε. Thus, both ε and τ would in general be increasing in value with the incidence of loan. Returning to our hierarchy of traders, we would then have a series of pairwise decreasing values of the two parameters as we go over the whole set, defining a corresponding series of time-patterns of sale. If we now aggregate over this series, we necessarily obtain a <u>time-path of sale characterised by a series of descending steps.</u> This is the gradual decline in rate of sale claimed above.

Section 5 : The Rationale of Accelerated Sale III : Turnover of Capital

This section introduces a methodological break in our analysis of the problem of this chapter, i.e., the problem, as stated at the beginning, of the timepath of sale of our traders over a year. We have so far discussed this problem under the assumption of a "point sale" of their marketed surplus by the producers. We now come out of this framework by supposing that the sale takes place over a short interval at the beginning of the year, not at the beginning point itself. It is not possible to attach any substantive significance to this step. It is a purely methodological step, whose whole significance has to lie simply in making room for some force denied a room in the earlier framework. This force itself has to come from elsewhere, in fact from within the body of discussion so far. This is why the section itself becomes a methodological break in the whole discussion.

We now identify the force in its "source" sense in the basic condition underlying our whole analysis of the previous section, which we may call the condition (or case) of capital constraint. So, our force here is a force generated by this constraint. To explain, by "capital constraint" we mean simply the condition that the traders are unable to finance their whole purchase in a year out of the funds internally generated through their trade process that year or

previously. The gap or deficit is then met by loans constituting the debt capital of the traders. We have already analysed in detail the force generated by this upon the time-pattern of sale of our traders through the element of interest charge upon the loans. The force, to be precise, was that of reducing the burden of interest charge in comparison with that under the a priori benchmark of uniform sale. Our problem now becomes to see what <u>other force</u> may be generated by the same condition, having a bearing upon our problem, once we have extended the framework as stated.[21] Implicitly, there is no room for this force in the previous framework. It may be pointed out here that in discussing this possible force we simply retain the bit of methodology expressed by the benchmark of uniform sale, i.e., the methodology of uniform vs. accelerated sale. Many other methodological continuities also exist through the two frameworks. The "break" is contained within these continuities.

Let us now begin by giving a formal expression to the condition of capital constraint. We start from its expression in the previous section which was simply :

(23) $F_o < C = qQ = qX$.[22]

21/ We may express this equivalently by saying that it is some other <u>form of expression</u> of the same basic force of capital constraint that we look for in this section.

22/ The constraint was not explicitly stated in this form in the previous section, but was implicit in its first equation, i.e., equation (19).

The notation remains the same as before. To repeat, F_o denotes the purchase fund carried over from the previous year by our traders (we will now call this their "initial" purchase fund), C their total purchase cost in the year, Q the volume of purchase, i.e., the volume sold by producers, q the price charged, i.e., the buying price of our traders, and X their total volume of sale in the year. In this framework, it was assumed that Q passed from producers to traders at point 0, representing the beginning of the year. As stated at the beginning, we now suppose that this passage is spread out over an interval $(0, \tau)$, which is a "short" stretch of the year $(0, T)$. It is assumed that this leaves q, and hence C, unchanged. We may call $(0, \tau)$ the <u>period of purchase</u>.

The first point to note as we try to adapt or generalise the statement of capital constraint to our present framework is that <u>our traders now have a second source of financing the purchase cost, C, from within the process, besides the "initial" purchase fund, F_o</u>. This source is defined simply by their <u>ploughback from sale-proceeds over the period of purchase</u> $(0, \tau)$ insofar as this can be spent within the period itself.[23/] Let us call this their <u>finance from within the period of purchase</u> and denote it by F_1. With this, we can broadly

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23/ Having given this qualification, we will carry out the rest of our arguments as if the whole of the ploughback could be spent within the purchase period. This does not materially affect the argument.

define the condition of capital constraint in the present context to mean simply[24/]

$$F_o + F_1 < C \quad , \tag{24}$$

i.e., the total internal finance of traders falls short of the purchase cost.

Let us stop for a few clarifications at this point. F_o and F_1 are thought of here in terms of an annual process of trade repeating itself over through the years. Since F_1 is already defined as the total ploughback over a certain initial period in the year, $(0, \tau)$, F_o becomes the ploughback over the remaining period $(\tau, 1)$ and their sum is therefore the total ploughback over the year as a whole. Within this, there is the significant difference that F_1 is spent completely within the period of its creation while F_o is carried forward in toto as "fund" to the next year. Since the capital invested in the process is properly defined only at the beginning of each successive year, we have only F_o, and not F_1, as belonging to this capital. In fact, we do not have any definite relation between F_1 and the capital in the process at any point of time in the year, for we only know that F_1 is created as well as annihilated within the

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[24/] We say "broadly" because it is possible to state the condition in a more precise form, which we will come to in the due course. See footnote 28 below; also equation (29).

period (0, t) — nothing is stated about what part of it exists as "fund" at what point of time. So, to repeat, F_o and F_1 are additive only as ploughback, not as purchase fund. There is nothing inconsistent about the scheme of calculation.

Let us now proceed on with our main objective. F_1 is clearly a new element in our framework, undefined earlier. We thus already know that the "force" we look for is expressed through F_1. Analytically, this requires us to see F_1 as a variable magnitude governed by this force. Since it is obviously in the interest of our traders to make do within their own capital as far as possible — which is only to restate our basic condition that traders go in for loans only after they have in some sense reached the limits of their self-finance[25] — the general direction of this force would be clearly to produce relatively large values of F_1. This of course is to be seen within some definite frame of reference for possible values of F_1, and we shall presently pursue this in terms of definite benchmark values for F_1 that can be argued a priori. Before this, we point out that because t is only a relatively small fraction of a year, F_1 must a priori remain small relative to F_o. It is within this general quantitative configuration that we explore the variability of F_1. Stated in slightly different language, we have F_o as a given fund for meeting the purchase

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25/ See Chapter 5, Section 1, p. 123.

cost at the beginning of a year and that, by definition, is also the major or dominant source of finance. We grant here a certain elasticity in the other source of finance, but this does not have more than a relatively marginal significance in the total scheme of finance.

Let us now turn to the question of benchmark values for F_1. Our first objective is to define a benchmark free of the "force" spoken of, so that we can speak of "large values of F_1" as implied by the force relative to it. Such a benchmark is defined by two underlying benchmarks, one each for the traders' time-pattern of sale over the year and the proportion of their ploughback from sale-proceeds. For the former, we simply have our old benchmark of uniform sale. For the latter, we have the rule that, over the period of purchase, traders ploughback only their purchase cost for what they sell over this period. In other words, the benchmark is obtained simply by applying the so-called ploughback equation of the process to the period of purchase. These two benchmarks together define our benchmark value of F_1 which we denote by F_1^*. Obviously, F_1^* is given by the equation

$$F_1^* = qx_o\tau \qquad (25)$$

where

$$x_o = X / T \quad .$$

Clearly, there are two different ways by which the value of F_1 can be increased beyond F_1^*. The first is by increasing the

proportion of ploughback over the period of purchase. There is clearly a logical limit to this, which is given simply by the ploughback of the entire sale proceeds of this period. Let us fix this as the new rule under our force. Retaining the rule or policy of uniform sale, we then have a second benchmark value of F_1 which we denote by F_1^{**} This is defined by :

$$(26) \qquad F_1^{**} = pr_o\tau > F_1^*$$

where p is the selling price of our traders, assumed constant over the year. The second way in which F_1 can be increased beyond F_1^* is by augmenting the sale-proceeds itself over the purchase period beyond that given by the policy of uniform sale. This is what brings us to our own point of interest in this section. Let us mark the steps a little carefully.

The first and foremost point to clarify is that, as in the previous sections, we must go over at this point to the standpoint of individual traders. The increase in the sale-proceeds is then seen as equivalent to increase in the volume of sale, which, in the presen context, simply boils down to acceleration of sale in our sense of th term. Indeed, our present case fits in at once with the simple form of accelerated sale defined at the beginning. To recapitulate, the form was defined by the two parameters ε and τ, representing respectively the margin over x_o (i.e., the rate of sale under the polic

of uniform sale) in the initial rate of sale in the year, and the duration of this initial phase of high rate of sale. We can now equate this τ simply with our τ in this section, i.e., the duration of the purchase period, which is simply given a priori. Hence the whole policy is represented by the single parameter, ε, which we leave in the open. The effect of this on the value of F_1, as calculated or estimated by the traders concerned is then given by the function, $F_1(\varepsilon)$ say, defined by the following relation :

$$(27) \qquad F_1(\varepsilon) = p(x_o + \varepsilon)\tau > F_1^{**}$$

As just stated, the important point to note about this relation is that it gives only the estimated and not the actual value of F_1. There is no room for the whole price effect of accelerated sale in these calculations, the inclusion of which obviously negates the equivalence of increase in the volume of sale and in sale-proceeds on which the whole policy is based. It is in fact seen at once that because the elasticity of demand in our case is less than unity, acceleration of sale in fact reduces and does not increase the total sale-proceeds of the purchase period. Thus the whole policy turns out to be self-defeating when viewed in the total, exactly as in the previous section. The maximum value of F_1 in short is given by F_1^{**} Having pointed this out, we however cannot but fall back upon the

methodology of trader policy as based upon individual trader calculations for our problem here. This has already been discussed at length.

Going purely by (27), it is clear that the degree of acceleration, ε, can always be chosen so as to negate the whole capital constraint. This again is reminiscent of points already discussed: sufficient acceleration of sale (if that is the term) will always reduce the storage cost and interest cost to zero. We cannot simply let the quantitative policy — as distinct from the qualitative — have a free run over its whole domain, whatever this may really mean.[26/] At a purely conceptual level, we will only say that there are always continuity considerati in the minds of traders that work against arbitrary degrees of acceleration of sale. At a somewhat more concrete level, we can also take the trader to have an implicit recognition of the price effect all through, which again works in the same direction. These are all general methodological points relating to the very nature of our problem in this chapter, which we already

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26/ This is exactly parallel to the structure of relations assumed in the previous section. The "quantitative policy" refers in either case to the degree of acceleration of sale. The "qualitative policy" refers to the rule, in the present case, that the entire sale-proceeds are ploughed back over the period of purchase, and, in the previous case, the repayment of loans takes priority over all other uses of the sale-proceeds. Both of these are logical extremes, meant simply to clarify the nature of the problem. Such logical extremes cannot however be granted to the quantitative policy per se.

touched upon earlier, and have just carried forward a little further.[27] Let us leave this general range of issues here and return to our specific context.

The general point we want to make in this context is very simple. For particular traders for whom the capital constraint is not a priori very significant,[28] we can grant a complete overcoming of the constraint by the policies discussed (rule of ploughback of the entire sale-proceeds of the period of purchase, and acceleration of sale). The degree of acceleration in this case is then by definition small, and that is quite consistent with the observations above. For the traders as a whole, however, we must retain the capital constraint in its general form defined in (24), i.e., allowing for the policies referred. In other words, the policies in the total only modify or alleviate the capital constraint, do not overcome it. The very fact of existence of trading loans is proof of this proposition. To be more explicit, we bring back the notion of "limits of self-finance". The limit in our case is set together by the rule of ploughback (which we hold fixed) and a certain maximum degree of acceleration of sale, and this degree is such that we still have a shortfall in the traders'

27/ See pp. 187-88 and pp. 190-92.

28/ The qualification "a priori" here means that F_1 is taken at its benchmark value, F_1^*, in equation (24), so that the equation involves a pure comparison of "knowns". This is what was meant earlier by a "more precise" statement of the capital constraint.

"own account", which is made up by loans taken. Stated formally, this gives us the relation

(28) $$F_o + F_1(\varepsilon^*) + L = C$$

where ε^* is the maximum degree of acceleration of sale just spoken of and L is the magnitude of loan calculated as a residual.[29/] Let us repeat that the equation represents trader calculations of the value of F_1 and hence also implicitly of L (for F_o and C are given a priori), not their actual values.

We are now at the last stage of the section. Let us begin with a general clarification of the precise "force" we have brought into the discussion here. For this we start back from the capital constraint in its a priori form suggested in footnote (28) above. Let us write this down explicitly :

(29) $$F_o + F_1^* < C$$

Now, F_c exists at the beginning of the year as part of the trader's capital at this point. Let us notionally abstract here from the other part and speak of F_o simply as equivalent to capital. Let us now see this capital in motion. First the capital is spent; next

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29/ Alternatively, we can take L as given a priori in the equation and interpret the value of ε satisfying the equation, i.e., ε^*, as the implicitly defined maximum degree of acceleration.

the goods so acquired are sold and simultaneously a part of the sale-proceeds is returned to capital (ploughback); finally, this new capital as it comes to be formed itself gets spent insofar as the formation takes place within the period of purchase. In this, the original capital simply turns itself over, and we see the whole source of finance from within the period of purchase as simply turnover of the original capital. The financing of purchase, in short, is done by the original capital itself (F_0) as well as its turnover within the period concerned (F_1). We now bring in a benchmark value for the latter, and see the sum total of the two as falling short of the required finance (C). This is the capital constraint in its a priori form stated above. The traders' response to this is then seen here as, in some sense, a greater, or more intensive, turnover of capital in both the form of greater ploughback from given sale-proceeds, and higher volume of sale it self initially (so as to increase sale-proceeds). This is the whole force brought into play by the framework of this section. We note that within this, the first form is purely internal to the process, having no outside significance. Hence we have only one outward expression of the force, which is simply the acceleration of sale. Notionally, we can simply subsume the first form under it and speak of the whole force as specifically a force upon the time-pattern of sale, originating in the capital constraint. It is in fact the force of this constraint itself, for this is what induces the

traders to accelerate their sale in the first place. Nothing comes in between the two. Turnover of capital is simply the form or vehicle of expression of this force.

This is quite distinct from the nature of the force discussed in the previous section. That too originated in the capital constraint, but then the force itself got defined only by the element of interest charge upon the loans. Something came in between. We can therefore say that the force discussed here is the direct force of the capital constraint, while that of the previous section is the indirect force, via the interest upon loans.

Let us now pass on to an explicit discussion of what we are already implicitly brought to, viz., the inter-relation between the two forces, or rather the channels of their operation. We can see this inter-relation at two successive levels. Let us again start from the capital constraint in its a priori form, i.e., equation (29). At the first level, we see the taking of a loan and the more intensive turnover of capital (in reference to the benchmark F_1^*) simply as alternative responses to the same condition. The second response already includes acceleration of sale, while the first is seen to lead to it for reducing the interest charge. This is the same as the direct-indirect distinction just made.

Let us now come to the second level. This starts from the point that loan is taken only after the trader has reached the limits

of self-finance. Since the fact of loan is taken for granted, we can now see the two forces together as a complete structure. Let us follow this up.

Two important analytical points enter right at the outset. First, the degree of acceleration under the direct force of the capital constraint is by definition the highest permissible. So, degree of acceleration generated by the indirect force, the reduction of interest charge, is smaller than this. Secondly, the whole of sale-proceeds is now ploughed back over the period of purchase. So, the repayment of loan begins after this. We therefore have a sequence of "periods": first the period of purchase, then the period of loan repayment and finally the rest of the year. By the first proposition, there is already a step-down in the rate of sale as we pass from the first to the second period. Let us now remember that the second period itself is marked by successive step-downs in the rate of sale through the factor of a hierarchy of traders with different incidences of loan, ending in a rate of sale for the remainder of the year defined residually.[30/] We now see the two forces under reference as synthesised into a general gradually declining timepath of sale over the year as a whole.

30/ See end of the previous section, pp. 205-06 .

Let us now end the section. At the very beginning we called the section a methodological break in our discussion. This has its roots far back in the discussion. Let us remember our basic approach of "arguments and counter-arguments". At the beginning we established a clear logic or rationale of trader-policy of uniform sale, and pointed out that a counter argument could be developed only by bringing in other trading costs neglected there, so far as the "present structure of the problem is concerned." (Section 2). Retaining this "structure", we then successively introduced the elements of storage cost and interest cost and built up the counter-argument (Sections 3 and 4). The argument in each case was essentially in terms of minimising the cost, though in a heavily qualified sense. One can also call this "optimisation" in a vague sense. In this section, we come out of the "structure" referred to. By the same stroke we also come out of the framework of trading costs and the associated "optimisation". The argument has been essentially in terms of the "givenness" of capital (capital constraint) and its structural implications. One sees this most clearly by abstracting from loans. One is then back to a certain degree of acceleration of sale as the only feasible policy. It is unnecessary to stress the methodological break this implies in respect of the analysis so far.

Section 6 : The Complete Problem

Let us begin with a brief recapitulation of our approach to the defining problem of this chapter, i.e., the explanation of a seasonal movement in the retail price of foodgrains in our general context of reference. The whole approach was motivated by two logical questions, one each regarding the priority between the movements in price and quantity (volume sold) in this case, and the significance of the notion of 'seasons' -- as defined in the wholesale market of foodgrains -- for the phenomenon. The approach itself was then defined by two provisional answers to these questions, left to be opened up only at the end. The first simply asserted the priority of the quantity movement and thus reduced our problem to an explanation of a particular timepath of sale in a year by traders, which we have called by the name of "accelerated sale". Secondly, we implicitly saw the whole significance of the notion of seasons for our purpose in the so-called quantitative aspect of the notion and blew it up to its logical extreme, which simply turned the so-called slack season of the market to an "empty" season (no transactions). We have since carried out a more or less extensive enquiry into the logic of accelerated sale -- vis-a-vis the alternative of uniform sale -- within this framework. This is what constitutes our whole ground-work for the original problem, in a way the whole substantive analysis of it. Our object now is to free the analysis of its provisional suppositions and in the process clarify our answers to

the questions raised. This comes in two steps. In this section we simply see our problem in the background of a wholesale market meeting continuously through the year in the way defined by its two seasons. This is called the "complete problem". The question of priority between the price and the quantity movement in our context is taken up only in the next section. The two sections thus come in a string and are essentially methodological in nature.

Let us now outline the section. Viewed in analytical terms, our problem here is essentially to extend the analysis of time-pattern of sale of traders given so far to the case where they buy continuously through the year. However, the pattern of purchase is not left 'free' to them but is essentially set from outside, i.e., by the producers, to which they are seen merely to adjust. The specific nature of this pattern -- the so-called quantitative aspect of the notion of seasons in our context -- is already known and defines the fundamental continuity between the framework presumed so far and that of this section. However, the matter is not left just there. Two important points come into the discussion now for which there was simply no room in the earlier framework. One is the fact of a seasonal movement in the wholesale price of foodgrains, which in turn raises the obvious question of inter-relation between the two price movements (i.e., the seasonal movement in the retail and the wholesale price). The other is the whole structure of big and small traders as we conceived them

in the last chapter. In all then, our discussion passes through three distinct stages. The object in the first stage is purely methodological clarification of the substance of our analysis so far. For this we simply abstract from both of these points and see our whole present extension as in some sense a purely formal extension of the framework. The next two stages are then given to the substantive extension of our arguments through these two points.

Let us now settle down to the work. We have to begin with a brief recapitulation of the substance of our analysis so far. Essentially, we have analysed the significance of three different factors in the trade-process -- the storage cost, the interest cost, and the so-called capital constraint on its own ("on its own" because it also lay behind the interest cost) — from the standpoint of the traders' time-pattern of sale in a year, and seen each to provide an independent motivation for the traders to go in for a policy of accelerated sale. To be in the clear, the motivation consisted of effecting some reduction in the storage and the interest cost and staying as far as possible within the limits set by 'own capital'. The important point to stress is that, given these motivations, the whole conclusion of accelerated sale was obtained only within the framework where the whole marketed surplus was sold off by producers at the very beginning of a year and so traders had to buy for the year as a whole at this beginning. Let us now come over to a framework of continuous

buying through the year by traders. Let us suppose, to begin with, that the traders can buy in any pattern through the year as they like. This is introduced as a purely logical step for the clarification of the substance of our analysis so far. All the "factors" we mention -- the storage cost, the capital constraint, and hence the interest cost -- will still be there, and so will the motives that we associate with them. But no policy of accelerated sale can simply by deduced from these motives any longer. The same motives will now appear in other ways in the trade process, not in the time-pattern of sale. Without going into the details, we just mention that we are now back to our original framework of trade-process of the last chapter, viz., to its key assumption that it is for the "trader himself to decide when to buy and in what amount". We also have the fundamental condition that there is no change in the rate of demand (at a given price) that is faced by the traders through a year. Under these conditions, traders will simply buy as well as sell uniformly through the year[31] maintaining the stock at some minimum permissible level which we have already conceptualised in the notion of a minimum turnover period of stock set as a competetive norm. The 'motives' we just talked of will get reflected here simply in the actual magnitude of this norm,[32] and that

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31/ This is in abstraction from any objective of "market control" in the trade-process.

32/ This is already alluded to above in footnote 11 of this chapter.

to where the matter ends. It is only by coming out of this framework that we come to see a specific significance of the very same "factors" for traders' policy regarding the time-path of sale. This significance is now discussed at length in reference to a rather extreme form of "coming out" which simply disregards the whole meeting of the market over its slack season. But since the whole argument so far has been of a purely quantitative nature, it is clear that we retain the same significance of the factors when we come out of the above framework in a less extreme form. Our framework now is precisely this. We do have the traders as having to buy largely, though not fully, for the year as a whole at its very beginning (in the busy season of the wholesale market). This is enough to make the factors under reference work in the same direction (accelerated sale). There would be some modification of the precise force of these factors, but this does not affect the qualitative outcome.

The above sets out in full the methodological clarification of the substance of our analysis so far. It shows first of all that only when the buying pattern of our traders in a year is a priori restricted in a certain way does it become possible to deduce some sort of a policy of accelerated sale on their part from the a priori motivation of reducing the storage cost etc. Without this restriction, the same motives simply lead one nowhere so far as the time-pattern of sale is concerned. Our whole abstraction from transactions in the

wholesale market in its slack season is therefore seen as a purely methodological step which simply cast the restriction referred to in a sharp manner. The whole methodology is now upheld.

Let us now come to the new points that come into our discussion with the extension of our framework. First, the fact of a seasonal movement in the wholesale price of foodgrains. We will take some time to discuss the significance of this factor for our purpose here.

Let us first set the stage by granting that traders in general do follow a policy of accelerated sale in the absence of this movement, i.e., when they buy at a constant price through the year, in the 'pattern' set by producers. More precisely, we take this policy to be defined entirely in reference to the factor of capital constraint and its derivative, the interest charge, i.e., we disregard the factor of storage cost in our present discussion.[33] Let us first adapt the statement of the constraint to the present context. For this, we start back from the constraint in its a priori form as given by equation (29) of the previous section. All that we have to do for our purpose now is to replace the purchase cost, C, in it by a fraction of it, say γC, $0 < \gamma < 1$, where γ denotes the ratio of the total busy season sale of producers to their total annual sale, i.e., the

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33/ See, however, footnote 34 below.

marketed surplus. By definition, γ is a relatively large fraction, much larger than the fraction of the year accounted for by the busy season of the wholesale market, say δ. Stated in full, the constraint is :

$$F_0 + q\,\delta Q < q\,\gamma\,Q$$

or

$$F_0 < q(\gamma - \delta)Q \quad , \quad \gamma > \delta \tag{30}$$

where Q denotes the total marketed surplus as before and q is now interpreted as the level of the wholesale price assumed constant through the year.

Now, obviously, the higher the value of q, the greater the shortfall or deficit of the traders' own capital from the required finance, which we can also put as "the stronger the capital constraint", and hence also the stronger the tendency towards acceleration of sale as defined by the twin mechanisms of turnover of capital (Section 5) and interest cost (Section 4). This was not stated previously simply because q was by definition taken as given for our problem.

Let us now explicitly introduce the seasonal movement in the wholesale price. Let us notionally separate out the movement as such from the level of the price. To do this, we simply interpret q now as the average level of the wholesale price over the year. This is what is taken as given for our purpose now. Because of the

seasonal movement in this price, we now have the busy season price as less than q . Clearly, the greater the extent of this movement (also called the "degree of seasonality"), the smaller the ratio of the busy season price to q, and so we have the reciprocal of this ratio as a measure of this degree of seasonality. Let us denote this ratio by μ so that the busy season price is given by μq (Note, $0 < \mu < 1$).

Let us now return to the capital constraint. The point to note is simply that the whole constraint is defined in reference to the busy season purchase of traders -- it is defined at the busy season price, μq . So, the equation defining the constraint is now given by :

$$(31) \qquad F_0 < \mu (\gamma - \delta) q Q .$$

It is obvious from this that the smaller the value of μ , the weaker the capital constraint and hence also the weaker the consequences of the capital constraint, i.e., ultimately, the seasonal movement in the retail price. In particular, since γ, δ, q, Q and F_0 all are taken here as given, there is always some value of μ small enough which just negates the capital constraint and hence all its derivatives. But a small value of μ is nothing but a small degree of seasonality in the wholesale price. We thus end up with an inverse relation between the two price movements, in the sense that the stronger the seasonal movement in the wholesale price, the weaker the seasonal movement in the

retail price, and in the end no such movement at all.[34] Viewed in terms of any mechanical cost-price relation,[35] this must surely appear as a "paradox". In view of the hold of such relations in general economic thinking one may as well call this inverse relation the paradox of the seasonal movement in foodgrains price as a whole.

There is however really no "paradox" here. To bring this out, we simply restate our argument in terms of demand and supply. We do this because between themselves the so-called "cost-price relations" and "demand-supply analysis" simply cover the whole of general economic thinking on price behaviour. Let us begin by focussing on the wholesale market and viewing the traders and producers respectively as the supply side of this market. Our starting point is a lopsided supply in the year, given a priori, which is nothing but the way the producers sell their marketed surplus. Turning to the demand side, we have the whole force of demand expressed in a "budget" which is really defined at each point by the accumulated purchase fund of traders. (We are temporarily

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34/ This is a good point to take account of the storage cost neglected so far. The point to note is simply that because it defines an independent ground for accelerated sale, we do not any longer have the conclusion of "no seasonal movement in the retail price" for a sufficiently small value of μ. But the inverse relation between the two seasonal movements is obviously left unaffected by the presence or absence of the storage cost in the argument.

35/ The reference here is simply to the fact that the wholesale price is by definition the "cost-base" of the retail price.

abstracting from possibilities of loan). This is the fundamental classical point about the our whole treatment of demand and supply in the present context. The relevant "purchase fund" for our purpose is at the very beginning of the year when a certain purchase fund is just given and the supply has begun to come in at its own high rate. If traders cannot take in this supply within their a priori budgetary limits -- which, in time, get defined only through certain a priori norms for their time-pattern of sale (uniform) and ploughback from sale-proceeds (ploughback equation) — then obviously something must give. Our own analysis then consisted of granting the hypothesis and allowing both the norms to give way. This is what defined the function $F_1(\varepsilon)$ in the last section.[36/] Giving away the norm of uniform sale meant here simply a "passing on" of the high initial rate of supply received by traders to the consumers, equivalently, a "passing on" of the lopsideness in supply. This has been the pure demand-supply analysis within our argument, after which we went on to consider the relaxation of the budget constraint by loans and influences coming in through interest cost. The point now is simply that the purchase fund is in money, and the purchasing power of the initial purchase fund F_0 depends entirely upon the initial price in the year, i.e., the busy season price. The lower the level of this price, the greater the possibility of

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36/ See equation 27, p. 214.

making do" within the given budget (successively for one class of traders after another, say), and hence the smaller the extent of passing on the high initial "rate of supply" of producers to consumers. This is already close to the inverse relation between our two seasonal movements under reference. To bridge the gap it is necessary to remember that the whole buying and selling and price-formation in our case is defined only in an annual frame of reference. So, we are not at liberty to arbitrarily vary the busy season price even as a thought experiment. We can vary it only relative to the average level of price in a year. So the conclusion drawn above from hypothetical variation in the level of the busy season price is really a conclusion drawn from hypothetical variations in the degree of seasonality of the wholesale price. This is nothing but the inverse relation between the two seasonalities talked of.

We are now ready for the other new point in our framework, viz., the structure of traders as defined by big and small traders in our original sense of these terms. Before moving on to this, let us just point out that we have in no way denied the significance of the seasonal movement in our wholesale price for that in the retail price. We have only shown that the influence of the first on the second is not at all in the direction one would a priori think of. It is in the opposite direction. One may call this a negative significance if one likes.

Let us now come to the significance of the structure of traders for our present problem. It is again necessary to begin with a recapitulation of the background. Granted the difference in size per se between big and small traders, we drew a string of qualitative distinctions between them, starting from their motives of stock-holding and ending in the complete processes of maintenance of stock. Very briefly, big traders were conceived as having an additional motive of stock holding for "control over the market", which not only implied a larger magnitude of stock relative to the rate of sale for them as compared to the smalls but also freed them of any necessity to maintain the stock in any strict short-run sense, which again was characteristic of the small traders by the very smallness of their capital. In the process, we put forward an analytical conception of the stock-holding of small traders in terms of a minimum "turnover period of stock" understood as a competitive norm. This is in abstraction from the speculative motive of stock holding.

So much was perfectly general, across all lines of trade. Coming to the specific context of "foodgrains trade" as relevant for our purpose (seasons of the wholesale market, etc.), we then argued that big traders on their own would follow a policy of buying as much of their year's requirements (sale) within the busy season as permitted by their capital. Specifically, this meant that the ratio of their busy season purchase to their total annual purchase was an increasing function of the

capital they owned, lying all through significantly above the fraction defined above.[37] All this was tacitly based on their selling uniformly through the year. Small traders on the other hand necessarily bought and sold uniformly through the year, insofar as their "ordinary" process of trade was concerned.

Let us now come to our problem here. The problem is already defined in the background of a seasonal movement in the wholesale price. This movement itself would generate some speculative purchase by traders early in the year. However, the speculative process as a whole leaves their time-pattern of sale unaffected, for this by definition is the speculative process of type I as defined in the previous chapter. So, obviously we do not move outside the norm of uniform sale by this route. The net upshot of this for our purpose is that we can simply take out the whole class of small traders from our purview here — no force of accelerated sale can simply be located in the trade process they carry out. The force can be located only in the big trader process.

The grounds for this are already independently laid in equation (18) of the previous chapter, which we had just referred to. To recapitulate we have z as an increasing function of K, where z and K denote respectively the proportion of the busy season purchase to the

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37/ See the discussion around equation (18) in Section 5 of the previous chapter.

total annual purchase and the capital of the big traders. Now, as we take out the small traders from our reference here, we obviously also take out the whole buying and selling accounted for by them. Since they buy more or less uniformly through the year,[38] the proportion of the remaining supply that is sold within the busy season is higher than γ, and since γ is already a large fraction, we have the new proportion, say γ', as nearly equal to unity. It is to this value that z is now to be equated by the very structure of the overall relationships in our model. This equation is satisfied at a particular value of K. A shortfall of the capital actually owned by big traders from this value then brings back the capital constraint and its implications discussed in the two foregoing sections. This is how the whole mechanism of accelerated sale now gets defined, given the basic premise of a capital constraint for the traders concerned.[39] As regards the validity of the premise itself, we now have both an empirical and an a priori argument. The former consists of the existence of trading loans as a fact, which is already proof of the existence of the constraint. The

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[38] This takes account of their speculative purchase at the beginning of the year.

[39] Needless to say, we also have the same mechanism for effecting reductions in the storage cost. We only mention that this too gets defined only for big traders, for it is for them alone that the whole process of buying largely for the year as a whole within the busy season applies.

a priori argument is based on the high value of γ' just noted, which obviously requires a very large value of K to "clear the market".

Thus starting with the absence of any force towards acceleration of sale within the small traders, we have now shown how the force comes from within the total structure of relationships within which our big traders are embedded. This completes the circle.

We have now gone over the three stages of our discussion in this section defined at the outset. There is a thread running through the three stages hardly visible from outside. Let us end by bringing this out. In the first stage we simply clarified afresh the significance of the so-called quantitative aspect of the notion of seasons for our phenomenon here. It is, so to say, the very sine qua non of the whole phenomenon, given our basic approach to the problem. In the second stage we brought out a negative significance, as we called it, of the seasonal movement in the wholesale price for this phenomenon. Now, a priori, the seasonal movement in the wholesale price can be looked upon as just another aspect of the very notion of the seasons (the price aspect, so to say), and so this stage too was given to a general clarification of the notion of seasons for our present phenomenon. Let us now come to the third stage. Here, we have laid the basis of the phenomenon in the total structure of relationships in which the big traders in our case are embedded. Viewed analytically, the central element in this structure is located simply in equation (18)

of the previous chapter. Let us now just point out that our key reference for deriving this equation was the fact that small producers sell their whole marketed surplus in the busy season.[40] This is precisely what we called the fundamental qualitative aspect of the notion of seasons in our case. The running thread through all the stages is thus the notion of seasons underlying our whole phenomenon. We have touched upon all the different aspects of the notion and shown what relevance they have for the phenomenon. Our original question, what specific significance the notion has for explaining the phenomenon is thus comprehensively answered.

Section 7 : Concluding Observations

Our basic object here is to justify the basic proposition on which we have based our whole analysis in the chapter, viz., it is because of a downward movement in the supply of foodgrains to consumers through a year that we have the so-called "seasonal movement" of the retail price of foodgrains, and not the other way around. The question necessarily opens up into a number of questions of "theory, viewpoint and methodology", most of which have already been touched upon at various points of the chapter. These now come up in a unified manner, and will be so discussed.

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[40] See the discussion in Section 5 of Chapter 5, particularly pp. 159-60.

been held back till this time, the producer would have indeed gained in a net sense. However, the 'cost' has to be incurred prior to this, and where it comes from is not explained. The explanation of our property then is that a small producer is unable to finance the product-storage for sale, and hence has to dispose the product off more or less as it comes off the ground.

The second point goes deeper and pertains to the very notion of the 'busy season' of the year. We had earlier distinguished between various aspects of the notion, one of which (the so called 'qualitative aspect'[5]) is precisely the object of our enquiry now. Let us now bring up another aspect left out earlier, which we may call the market aspect. The trader-producer transaction in foodgrains takes place under a variety of institutional arrangements. Within this, it is only the so called organised market -- which is the 'wholesale' market proper -- that meets regularly through the year. In the thesis we tacitly presumed only this market all through. There are also, however, purely local arrangements for sale which are of a purely temporary nature in the year -- there are hosts of miller's agents, itinerant merchants and other intermediaries going around the villages at harvest time to collect the produce.[6] These are all typical arrangements to mop up the 'surplus'

5/ See pp. 23-24.

6/ For an enumeration or listing of these arrangements see the Report on the Marketing of Rice (1954), pp 172-79; also S. Sarkar, Marketing of Foodgrains and Patterns of Exploitation

differential of the rate of price rise over the cost-sum referred to must in some sense be 'uniform' through the year, for otherwise the traders would sell only at the points of highest differential and not at other points. For reference, let us put this down in symbols. Let us assume for simplicity a simple rate of interest, say at rate i, and a constant storage cost per unit of the product per unit time, say s . According to the argument given we then have the equation,

$$\dot{p} = i + s + d , \quad 0 < t < T \tag{32}$$

where $d(\geq 0)$ represents the uniform differential of the rate of price rise, $\dot{p}$, over the cost-sum, $i + s$. To this can be appended a second line of reasoning which simply grants anyone the freedom of buying at any point of time in the year, and then selling it later at the price, $p(t)$, $0 < t < T$, established through the above equation. It is then argued that such buying and selling cannot fetch a higher rate of return than i , for then there will be an unlimited influx of 'capital' into the field. This simply reduces the differential, d, to zero, and so reduces the above equation to

$$\dot{p} = i + s . \tag{33}$$

Whichever equation one goes by, one now has a price movement through the year independent of the precise timepath of sale. The latter is now taken to be fixed by the demand function, i.e., the volume of sale at each point of time is equated to the demand forthcoming at

that point as per the timepath of price determined by the equation above subject to its initial condition. Implicitly, the price at time-point 0 is taken to be set at a level which clears the market for the year as a whole. This is where the whole quantity comes in. There is no feedback from the timepath of sale to trader calculations by any route.

We have now set up completely the argument for the "reverse situation". One can call this the pure "neoclassical" (or conventional) mode of reasoning. The whole reasoning turns around one basic proposition, viz., a <u>trader is left free to choose his time of sale in the prior qualitative sense of when to sell and when not</u> (No notion of quantities comes into this). This is evident from the basic form of cost calculations given above, which consists of simply calculating the cost associated with selling at different points in the year; selling <u>per se</u>, not any specific quantity, for the 'cost' is calculated only to be compared with the <u>price</u> at the corresponding points (and this is the sole calculation in the whole scheme). In short, we are presented here with the picture of a trader making a 'point-purchase' at the beginning of the year, and then making arbitrarily any number of 'point-sales' through the year, <u>nothing connecting these point sales</u>.

This whole picture, we believe, must simply be rejected out of hand as a pure fiction of a pre-conceived theory and nothing more. This is enough to pull down the whole argument. Once the missing

"connection" is put back, no sense can simply be given to the 'cost' associated with the selling as such at different points. The cost can be associated only with the timepath of sale over the year as a whole, and the whole motive of profit is then automatically defined with reference to this timepath, which is a purely quantitative notion. This has precisely been our own approach in the whole of this chapter insofar as cost and profit are concerned.

Once this step is taken, one simply has a complete reversal of the direction of causation or argument. This is because the cost-calculations being now made in terms of the time-path of sale (or "supply"), this timepath becomes automatically prior to the timepath of price. The latter gets shaped by the nature of the precise timepath of sale as decided in view of the "forces" associated with the costs under reference as well as the demand function. The same cost factors thus enter in very different ways in our way of explaining the seasonal movement in the retail price and the way according to the conventional mode of argument just gone over. For the sake of completion, we just point out that precisely because ours is a quantitative approach from the very beginning, we make room for other, more basic, factors in the explanation for which there is no room in the conventional mode of argument. The reference is to the factor of capital constraint.

This said, it still remains the fact that the same type of "isolated calculations" as we have just criticised can always come back

by the backdoor even after a beginning has been made to see the "cost" of traders in terms of their timepath of sale as a whole. Just the reality of "timepath of sale" accomplishes nothing. A "framework" has to be something complete in itself, guarded on all sides.

With this, we can now pass on to a more comprehensive clarification of our own framework than given hitherto. To begin with, we have already encountered the possibility of re-entrance of "isolated calculations" in our framework in the hypothesis of cost minimisation -- or profit maximisation, if you like -- by the trader subject to the condition of an "unlimited market". The point, as already mentioned, is that this condition can rigorously mean only one thing, viz., that the trader can sell any amount at any point of time he chooses.[43/] This is a complete denial of any "connection" between his sale at different points of time, and hence a straight opening up of "isolated calculations". In fact, one is not left with anything else in spite of the framework of "annual sale" etc. begun with.

Our own methodology in this regard has been simply to give up the very notion of 'point sale' and start instead from the notion of

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43/ Just to be in the complete, we add that replacing the notion of "point" in this context by that of an "interval" does not detract anything from our critique. It just makes things wonderfully vague. What interval is never answered.

rate of sale.[44] This obviously is a very radical step, for once the notion of point sale is given up, the necessity of establishing a "connection" between point sales also drops out of the scene. It is already there in the notion of rate of sale. However, this is being purely formal. At a more conceptual level, we can say that the same substance that one tries to capture by the "connection between point sales" now reappears more comprehensively under the notion of continuity from the past. We have already alluded to this aspect of the notion of rate of sale in our discussion.[45]

However, a rigorous analytical treatment of the concept is inherently difficult, and we are under no illusion of making much headway in this regard. Essentially, the continuity considerations have remained in the background of our analysis. The foreground was taken over by a policy-framework of degrees of acceleration of sale which we set up for our purpose here. This has really been a half-way house at best, for there can surely be no meaningful "continuities from the past" through arbitrary variations in the degree of acceleration. Our

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[44] The statement is to be clearly understood in reference to traders as distinct from producers. It is traders who meet the demand. They must of necessity sell continuously to satisfy this primary requirement. The producers are under no such obligation. The very nature of the production process in our case then makes it perfectly meaningful for a producer to make only a point sale of his output, which is precisely what set our initial framework in this chapter.

[45] Specifically in p. 187, and again in p. 215.

procedure at this point has been simply to implicitly restrict the variation by reference to the background factor of continuity.

A second point about our framework automatically comes into the discussion at this stage. This is the price effect of the policy of accelerated sale, which, we argue, the traders must clearly be aware of. Like the continuity considerations just referred to, this awareness too has remained only in the background of our analysis, with even lesser impact on things in the foreground. Actually, the very problem of trader-policy in this context brings one up against the fundamental macro-micro problem which we in a way simply dodged under the caveat of individual trader calculations as basis for trader policy. The point remains that the price effect in our case has a purely structural significance which is simply driven out of court by such a procedure. Admitting the limitation, we will only say that no satisfactory resolution of the macro-micro problem appears to be anywhere in sight in the whole of analytical economics.

We are now through with the clarification of our framework in the chapter. We will now return to the argument for the "reverse causation" begun with for two further observations, through which we come back to our own treatment of the problem of seasonal movement as a whole, i.e., the retail as well as the wholesale price of foodgrains. This will bring the chapter to its natural conclusion.

Our first observation relates to the element of interest cost in the trader calculations. Going by our approach, one will take the element to imply a capital constraint at the back. In the neoclassical scheme of "rational calculations", however, the interest "cost" will be there whether a loan is actually taken or not and therefore regardless of the capital constraint.[46/]

The argument is simply that whatever money the trader may have put into the business could have always earned an interest upon it, and so this "interest foregone" necessarily enters as cost in the calculations. The cost in short is the opportunity cost, reappearing as actual cost or notional cost depending upon whether the trader actually takes a loan for his business or not. This ties up directly with what we called earlier the "second line of reasoning" appending the first, i.e., the basic trader calculation set out. The point we now come up with is then simply that these are not two distinct lines at all, but alternate faces of the same nameless calculation.

This brings us to the second point. As just pointed out, the calculations are supposedly "universal". They apply to the trader as much as to the producer in our case. So, one has the same equation -- equation (32) or (33) as one likes — for explaining the seasonal movement in either the wholesale or the retail price. The

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46/ We take for granted at this point the identification of the reverse causation with the neoclassical mode of argument.

are reduced to the same phenomenon. Once this is recognised, it is seen at once that one can drop the initial assumption that the "hypothetical trader" we began with made only a single point purchase at the beginning of the year. This was just a convenient step to get into the argument. Even when the assumption is dropped, the "intertemporal calculations" would remain, for the sale of a trader can only follow his purchase. More to the point, dropping the assumption makes room for the choice of time of sale for the producers and a seasonal movement in the wholesale price. As just observed, this movement is now explained on precisely the same basis as the movement in the retail price. Underlying this is a particular view of the interest and storage cost on the quantitative plane which is worth bringing out.

The view at bottom is that there is a total of these costs for the year as a whole, to be shared between the traders and producers. This tacitly takes for granted the timepath of sale by traders within a framework of annual balance of their sale-purchase. The actual sharing is then taken to be given simply by the timepath of sale by producers -- the greater the concentration of "early sale" in this, the smaller is the cost borne by producers, and correspondingly the larger the share that falls to the part of traders.

This point is certainly granted by us. The point to be made is simply that there is no connection between this cost-sharing and the

relative rates of the two seasonal movements in this line of reasoning. The rates are still thought of in the absolute on a purely qualitative basis, leaving no room for any "gains" to either party. There is no answer in this framework to the question, what determines the timepath of sale by producers.

We are now in a position to briefly review our own treatment of the two seasonal movements. It is hardly necessary to say anything about the difference between our treatment and the treatment above, and so we confine ourselves to just what is stated. Actually, we need say only one thing, viz., we have paid heed all through to the essential structure within which our price is formed. The seasonal movement at both levels is seen only within this structure, without bringing in any exogenous elements. To recapitulate, the price in our case is formed purely in the sphere of circulation, i.e., the market, and therefore out of the forces defined on the two sides of the market, i.e., the forces of demand and supply. This is a statement about the price as a whole, i.e., the retail price, with both traders and producers making up the "supply side". The wholesale price is then formed "within" by the general force of trader-producer bargaining. Consistently with this, we have traced the whole seasonal movement in the wholesale price to the changing structure of the bargaining

relationship through the year. Nothing else comes into this.[47] The seasonal movement in the retail price on the other hand is argued purely through the process of trade in its complete sense. This is where the cost factors explicitly enter our analysis. But they enter only as factors shaping the precise time-pattern of "supply" on a prior quantitative basis already defined by the pattern of trader-producer transaction. The price movement itself is then worked out conjointly in terms of the whole "force" on the supply side coming out as above, and the demand function, i.e., the force of demand. This is again completely in line with the essential structure of our price-formation.

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[47] Let us however just mention that because the rise in the wholesale price through its seasonal movement is seen a gain to big producers on account of their improved bargaining position in the market, it is automatically implied that the magnitude of rise covers the storage cost incurred by them for sale later and later in the year. The so-called interest cost however has no logical room here simply because the harvest belongs to the producers in the first place.

Chapter 7

THE AVERAGE LEVEL OF PRICE IN A YEAR

Section 1 : The Retail Price or the Price as a Whole

This chapter starts back from step one of our subject. For clarity, let us freshly go over this elementary basis of the chapter. Let us begin from point one, that our price is formed entirely within the market or sphere of circulation, which itself is disjointed from the sphere of production or agrarian system below by the very mechanism of supply.[1] It follows straight from this that insofar as we want to talk about the level of our price as distinct from its change, we must talk in the first place about the balancing of demand (which depends upon the price), and supply (which does not). "In the first place" because this pertains directly to the price "as a whole" or the retail price at which the demand gets defined, and it is only from this that we can proceed to the price inside, i.e., the wholesale price, which brings in quite different principles into the picture. This explains our ordering of the sections of the chapter. The next point is simply to view the

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[1] Though not stated exactly in this language earlier, this is the whole import of the integrated view of the formation of marketed surplus and formation of price taken at the beginning of our section on price in the Introductory Chapter.

balancing of demand and supply in time. There is only one a priori time unit for a meaningful conception of this balancing in our context, viz., the harvest-to-harvest year. But the price is already subject to a regular movement through the year, and hence its level in respect of a year is meaningfully conceived only as an average through the movement. This explains our precise object of reference defining the chapter. The methodology is also straightforward. We have now already discussed this movement in full, i.e., the seasonal movement, and simply take it as given for our purpose here. Disregarding all other movements, we are left with only one degree of freedom in the timepath of price over a year. This degree of freedom is then closed once the average level of price in a year gets determined. Let us also point out that the other movements in our price over a year -- which we disregard — are precisely movements arising out of changes in the conditions of demand and supply through a year. The discussion of these comes later in the thesis. We must first prepare the groundwork for it by giving a complete view of our timepath of price in the absence of these changes. This sets our subject in this chapter in the background of our whole subject of price formation.

Let us now set out the subject in formal terms. Let us denote the timepath of our price (the retail price of foodgrains) over a year by p_t , $0 < t < T$, where 0 and T are respectively the beginning and end of our year of reference. Let p_{av} denote the average level of

price over the year. It is defined by

$$(1) \qquad p_{av} = \frac{1}{T} \int_0^T p_t \, dt \quad .$$

It is thus a completely closed expression within the timepath of price; no other quantities come into it.

As just stated, we now take the whole movement in our price over (0, T) as given. Formally, we conceive this movement now as a timepath of relative deviation of p_t from p_{av} over (0, T). Let us denote this timepath by β_t, $0 < t < T$. We can then express p_t itself as :

$$(2) \qquad p_t = (1+\beta_t)p_{av} , \quad 0 < t < T \quad .$$

Since the whole timepath, β_t, $0 < t < T$, is now taken as given, we obviously have only one degree of freedom in the specification of p_t, $0 < t < T$, which is represented by the variable p_{av}. We note in the passing that from (1) and (2) we have the relation

$$p_{av} = \frac{1}{T} \int_0^T (1+\beta_t)p_{av} \, dt$$

$$= p_{av} + \int_0^T \beta_t \, p_{av} \, dt$$

or,

$$\int_0^T \beta_t \, p_{av} \, dt = 0 \quad .$$

This is exactly as it should be, as β_t is conceived as the timepath of relative deviations from the average, p_{av}.

Let us now come to demand and supply. The elementary notion of demand is the demand function relating the rate of demand at any point of time to the ruling price, $d(p_t)$. Demand over the year as a whole is obtained by integrating the function over $(0, T)$, which we can clearly express as a function of p_{av}. Let us denote this function — the annual demand function, as we may call it — by $D(p_{av})$. By definition, then, we have

$$D(p_{av}) = \int_0^T d(p_t)dt$$

$$= \int_0^T d\left[(1+\beta_t)p_{av}\right] dt \ .$$

Since β_t is given a priori, $D(p_{av})$ is indeed a well defined function.

Let us now turn to supply. The elementary notion here is simply the marketed surplus out of the harvest taken place at the beginning of the year (or the "marketed surplus of the year" for short). This by definition is an annual quantity, which can be compared on the other side only with $D(p_{av})$. This is the whole meaning of the "meaningfulness" of the balancing of demand and supply over a year as a whole in our case, which is obviously denied to any fraction of the year.[3]

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[3] The point was already made in Chapter 4; see pp. 111-12.

Let us denote the harvest by H and the marketed surplus by Q . Our assumption is that Q is determined directly by the distribution of produce within agriculture, independently of price. So, we can conceive Q simply as a function of H subsuming the whole distribution of produce under the form of this function. Let us write this as

(4) $Q = Q(H)$.

We are now set for the balancing of demand and supply. This means only one thing, viz., demand is fully satisfied through the year, or in other words, no 'excess demand' is left in the market at any point. Within this, we may distinguish between two alternative frameworks of thought which we may call the frameworks of "closed" and "open" annual balancing of demand and supply. Although it is the latter framework of thought that we ourselves adopt, we begin with the former for reasons to become clear in a minute.

The closed framework is simply that the whole marketed surplus out of a harvest is sold off to consumers within the year: nothing is carried forward from one year to another. In other words, there are no closing or opening stocks of the product with sellers in a year. The whole "supply" in a year is then given by definition by Q. Therefore the annual balancing of demand and supply means simply the equation :

(5) $D(p_{av}) = Q(H)$

Q is given at the very beginning of the year. p_{av} is then 'determined' straight by this equation, and the matter ends there.

Let us now come to the open framework. This simply introduces the stocks referred to. The equation of supply then becomes :

$$X = Q + S_o - S_c \tag{6}$$

where X is the "supply", i.e., the supply over the whole year, and S_o and S_c are respectively the opening and the closing stock of the product with sellers, i.e., traders and producers taken together. So, the annual balancing of demand and supply in this case boils down to :

$$\begin{aligned} D(p_{av}) &= X \\ &= Q + S_o - S \end{aligned} \tag{7}$$

We may again distinguish between two alternative frameworks of thought, or rather, methods, at this point, one the short run method, and the other the method of stationarity. We shall adopt the latter for our substantive analysis of the problem and come back to the former at the end of the whole discussion.

Properly interpreted, the method of stationarity means only that the analysis of our problem has to have its logical beginning under the assumption of a stationary state from which to step out later

into the domain of change in conditions. The term "stationary state" in the present context means simply unchanged conditions of demand and supply all through, i.e., across the years. So, we have the same harvest year after year, which defines the normal harvest. Under these conditions, we have the same amount of the product carried over as stock from one year to the next by our sellers, which is nothing but the minimum ordinary stock of traders, for producers end up each year with zero stock.[3/] This is what we called earlier the normal stock of a year. Let us denote this magnitude by S_N. So, under the assumption of a stationary state, we have in our year of reference:

$$S_o = S_c = S_N .$$

This simply reduces equation (7) to equation (5), i.e., takes us back to this equation for the 'determination' of p_{av}. This explains why we originally started out with the framework of closed annual balancing of demand and supply. Needless to say, this does not mean that the two frameworks of thought are the same.

Let us now step out into the domain of change in the conditions. Let us consider a year beginning in a normal harvest and ending up in a different harvest. By the first condition we have :

$$S_o = S_N .$$

[3/] See the discussion in Chapter 1 (pp. 41-48) and Chapter 5 (pp. 169-71) for this point as well as for points immediately below for which we make a reference to our earlier arguments.

Let us now turn to S_c . Let us consider first the case of the year ending in a <u>better than the normal harvest or a good harvest</u>. We have already argued that producers in this case too end up the year with zero stock, while traders also carry over only their minimum ordinary stock to the next year. So, we again have

$$S_c = S_N \ .$$

This again takes us back to equation (5).

Let us now consider the case of the year ending in a <u>poor harvest</u>. We have already pointed out at length how this comes to be anticipated beforehand and leads to the emergence of a <u>speculative stock</u> at the end of the year, in the hands of both traders and producers. So we have in this case :

$$S_c > S_N \ .$$

The question that now arises is simply whether we can take S_c as <u>given</u> for our purpose here (given by the speculative process in the year under reference) and use equation (7) for the 'determination' of P_{av} . Several points of an essentially methodological order come into this and have to be first sorted out.

The first point to be stated is that the case necessarily takes us beyond the terms of reference set for the chapter at the beginning, for the very expectation of a poor harvest at the end of a year beginning in a normal harvest is a <u>change in the conditions of</u>

only occurring through the year. This granted, the reason why we nevertheless admit the question here is simply to be clear about the methodological scope of the very question of the average level of our price in a year. The point is simply that whatever the harvest before and after, there is every year an average level of the price. Since this is a priori the only level of our price whose determination can be meaningfully thought of in the demand-supply framework, the motivation is already automatically set for disregarding the finer qualification regarding "change".[4/] Obviously this is a different motivation from that originally set out.

Let us now proceed on. The important thing to check before using equation (7) for determining p_{av} in the present context is to verify that the underlying assumptions of this equation are satisfied. Two assumptions come in. Let us discuss them one by one.

The first assumption is that of full demand satisfaction through the year, which is the very meaning of "balancing" of demand and supply. Now, on the face of it, it may appear that the assumption is necessarily violated in our case, for the speculation under reference must begin by sellers' withdrawal of stocks from the market which by definition must leave some of the demand at its pre-existing rate unsatisfied. It is, however, to be remembered that the withdrawal

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[4/] It is to be pointed out in this context that we cannot however take the other parallel step — considering a change in the conditions of demand through a year — within the framework, for this simply renders undefined the annual demand function, $D(p_{av})$, which is the only analytical tool of the framework.

already raises the price according to the demand function. So, in the technical sense, demand continues to remain fully satisfied — at the price ruling. The assumption is thus granted.

The second assumption that comes in is that of the 'givenness' of the whole movement in our price through the year, which is necessary for the total demand in the year to be a function of p_{av}, i.e., for our "annual demand function" to be well-defined. This assumption cannot simply be retained in the present context, for the price rise just talked of is a fresh component of the movement, which we cannot take as given a priori. So, from a strict methodological viewpoint, we have to give up the idea of 'determining' p_{av} from equation (7). Stated more constructively, the movement in price and its level through the year have to be taken up together; we cannot any longer take the former as given and discuss the latter on this basis. We no longer have a single degree of freedom in p_t to be closed by equation (7).

Let us however not leave the point just at this. Let us approach our problem in a more "empirical" fashion in line with the different motivation just set out. This brings us to a line of argument in terms of a broad empirical approximation. The first point to be made along this line is that the definite expectation of the coming harvest being poor comes rather late in the year. A large part of the total potential supply of the year (defined as the sum, S_0+Q) is by then already sold out to consumers. There is therefore only a

relatively limited scope of variation of supply, i.e., the remaining supply, at this point. A second point already implicit in the argument is that the stock that is carried over by sellers from one year to the next is of a relatively small order of magnitude (within its range of variation) as compared to the marketed surplus of the year. Stated more formally, S_o and S_c remain individually small compared to Q. It follows from the two points taken together that no excess of S_c over S_o in the present case -- which is the speculative stock at the end of the year -- is of a still smaller value compared to Q. In a purely empirical sense, we can consider this as negligible. This reduces equation (6) to :

$$X \doteq Q \quad .$$

The other side of this approximation is simply that the actual speculative movement in price over the year is also of a relatively small order, which in a sense is already implied above, for we have this movement defined only towards the end of a year. The earlier part of p_t is left unaffected. Let us now take this to justify an approximation of the movement in our timepath by the same function, p_t. We then retain the annual demand function, $D(p_{av})$, as a well-defined entity, though not on as sound a basis as earlier. This gives us in the end the following equation :

$$D(p_{av}) \doteq Q(H) \quad .$$

p_{av}, in short, is now seen to be determined within certain bounds of approximation by the annual balancing of demand and supply, carrying the whole method to its furthest extreme. The methodological weakness of this is evident, particularly on the point of approximating the movement in p_t by β_t.

Let us now get back to our original question regarding the use of equation (7) for the purpose of determining p_{av}. The point is simply that nothing is directly 'solved' from this equation. The argument again takes us by the backdoor to equation (5), which in a purely formal sense we now simply write as an approximation rather than as an exact equation for the purpose at hand. Thus, in this purely formal sense, the extended supply equation — equation (6) — is of no use for the determination of p_{av}. This, however, is purely formal. Conceptually the whole argument is possible only by allowing stocks in the framework in the first place. Going by the framework of closed annual balancing of demand and supply, we are left with equation (5) as an identity. No question of any approximation simply comes into this.

We have now completed our substantive analysis of the problem. The <u>short run method</u>, which we did not use, can be outlined as follows. One cuts into time at a certain point and considers a short period of time ahead. Here, in our context, one cuts in at the beginning of a year when the harvest has just come in. The harvest

therefore becomes a given datum for the period. So also, by definition, is the opening stock of the product with our sellers. The sum of these two sets the maximum potential supply for the period extending upto the next harvest, which is now fixed as the "short run".

method proper is simply to leave the level of price open to whatever demand may be forthcoming over the period, implicitly treating the closing stock as a parameter set from outside. This obviously remains very formal. To go beyond, one has essentially to graft the line of reasoning followed earlier on to the short run method. There are problems in this — the main problem is whether to think of S_o as an arbitrary datum or as a 'normal stock' plus or minus something — but we need not pursue the matter any further.

Section 2 : The Wholesale Price or the Trader-Producer Division of Price

Our basic proposition regarding the formation of the wholesale price in foodgrains has been that it is formed relative to the retail price, out of the general bargaining forces defined on the two sides of the wholesale market, traders and producers. From this we can write straightaway the following equation :

$$(8) \qquad q_{av} = \alpha P_{av}$$

where q_{av} is the average level of the wholesale price in a year and

α is a parameter lying between 0 and 1 reflecting the strength of the bargaining forces on the producer side relative to those on the trader side — the larger the relative strength of producers in this sense, the higher is the "share" of the retail price or the price "as a whole" that they are able to secure. (We may call α in short the "bargaining parameter"). For completeness of reference, we point out that q_{av} is defined exactly parallel to p_{av} by the following equation :

$$(9) \qquad q_{av} = \frac{1}{T} \int_0^T q_t \, dt \quad ,$$

where q_t, $0 < t < T$, denotes the timepath of the wholesale price over the year, $(0, T)$.

Obviously, we do not leave things here. Stated formally, our first object here is to t u r n the parameter, α, into an endogenous variable of the "trader-producer system" within which the wholesale price is determined. The substantive basis of this transformation has already been implicitly laid out in our "quantitative argument" over the seasonal movement in the wholesale price of foodgrains.[5/] It remains basically to turn it into an argument concerning the determination of the ratio of this price to the retail price in respect of the year as a whole, i.e., the ratio q_{av} / p_{av}.

5/ See Chapter 4, pp. 104-10.

Let us start from the elementary point that the bargaining forces defined on the two sides of the market are those really of the big producers and big traders. Small producers and small traders do not have any bargaining force (or strength) of their own, but constrain the bargaining forces of their bigger partners. We can simply understand the bargaining forces of the "bigs" in this constrained sense, and pass between producers as a whole and big producers on one side, and traders as a whole and big traders on the other side when we talk of bargaining forces or bargaining strengths.

Let us now start back from our analysis in Chapter 4, which we also take the opportunity of stating here in more complete terms. Let us begin at the beginning of a year, with the harvest just come in. The whole marketed surplus out of the harvest is in the hands of producers at this point, from which it passes into the hands of traders (and then consumers) through the year. The fundamental bargaining strategy of producers in this context would simply be to retain as much control over the stock for as long as possible throughout the year, thereby keeping the traders in continued dependence upon them. The traders' strategy is precisely the mirror image of this -- to acquire as much of the stock and thus become as independent of producers in as short a time as possible.

This appears to be a perfect impasse. It is to be remembered, however, that the very notion of a bargaining strategy

is defined only for <u>big traders</u> and <u>big producers</u>.[6/] There are also the <u>small traders</u> and <u>small producers</u> providing the crucial cushioning to the whole system. The essential features of this are already noted: small producers perforce sell their whole marketed surplus more or less immediately after the harvest (in the busy season), providing a straight basis to big traders' strategy of building up a stock "for the year as a whole" at an early point, while small traders perforce buy more or less uniformly through the year providing a ready market to big producers all through.

The element of cushioning is obvious in this. It is granted that there are limits to this which are determined by the actual configuration of big and small traders and producers. However, there are also <u>forces other than bargaining</u> (or market control) which operate on big traders and big producers themselves, and these independently constrain their course of buying and selling through the year which therefore depart from the pure bargaining strategies. The

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6/ It is clear that what we have just stated as the bargaining strategy of traders collectively is the same as their strategy of market control individually as discussed at length in Section 5 of Chapter 5. It has not been necessary for our purpose to talk explicitly of market control in respect of big producers, but the substantive notion being the same, it is clear that the same equivalence between bargaining strategy and strategy for market control also holds for big producers. This completes the methodological transformability of the two notions, which lies at the basis of our treatment of big traders and producers. (See p. 20, Section on Price in the Introductory Chapter).

trader side of the picture has already been thoroughly discussed, giving us a rather complete idea of the "adjustments" on their part.[7] Nothing however has been said about "other forces" on the producer side. At the same time, the necessity of introducing these "other forces" is obvious from the fact that a very large proportion of the total marketed surplus of a year is already disposed off in the short initial busy season of the market.[8] As pointed out at the beginning, this must entail that even big producers do sell a large part of their marketed surplus within this season, which is clearly at variance with their bargaining interest (or object of market control). Hence the necessity of the presence of "other forces".

We can give only a very perfunctory treatment of this problem. Logically, these "other forces" must explain why big producers sell a large part of their marketed surplus more or less immediately after the harvest. Almost as a tautology, the answer seems to be that they have to meet certain heavy expenses of a structural nature at this time, which they finance out of the immediate sale proceeds. This is where we leave the matter. It is granted that, granting the existence of these expenses, the method of

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7/ See the discussion in Section 5 of Chapter 5.

8/ This of course is nothing but the quantitative aspect of the notion of seasons in our context. See p. 23, Section on Price in the Introductory Chapter.

finance is not so easily explained. The analytical limitation of this is plainly admitted. It is in fact the most important limitation of our whole scheme of analysis in the sense of internal consistency, which we are aware of.

Let us now proceed on with our main objective. Let us look at the value of our price ratio, q_{av} / p_{av}, from the side of producers. Clearly, the value depends upon the relative bargaining strength of producers, which depends both upon the importance of big producers within the class of producers as a whole, in the sense of their control over marketed surplus, as well as upon how strong the force of bargaining itself is within them, the whole of this being seen relative to similar factors on the trader side. The basic step now taken is that we can relate the relative bargaining strength of producers in this sense to the <u>timepath of the stock-holding of big producers through a year relative to that of big traders</u>. Mathematically, this is an intractable form. However, a <u>fundamental simplification of the whole expression</u> is at hand.

Let us remember the crucial significance of the <u>end of the busy season</u> from the standpoint of the whole structure of the market: on one side, small producers have all left the market and the bargaining power of big producers over the price comes of its own; the situation on the other side is more continuous, but even here big traders have already built up their stock for market control for the

year ahead, which is also the measure of their independence from producers, by this time. It follows from this that the critical measure of the relative bargaining strength in the market is provided simply by the stock on the two sides of the market at this point, say S_P^* (producers' stock) and S_T^* (traders' stock) respectively. To clarify, S_P^* is entirely the stock of big producers, and this by definition is a pure expression of their bargaining strategy, for their sale within the busy season has been for "other reasons". So it is only proper to use S_P^* as the index of the bargaining strength of producers in an absolute sense. Turning to the trader side, we have just recognised the big traders' stock for market control for the year ahead — let us denote this by S_{mc} as before — as the measure of their independence from producers and hence implicitly also of their bargaining strength in an absolute sense. This stock again is properly defined at the timepoint under reference (the end of the busy season). True, it accounts for only a part of S_T^* and not the whole of it. But the remainder is only the ordinary stock which traders, big and small, have to hold anyway.[2/] Analytically, its magnitude is already determined by the total marketed surplus at the back of the stocks we talk of here by the relation that the

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2/ We abstract here from the speculative stock of traders created in response to the seasonal movement in price.

liable to a considerable rise over a year. This is simply a paraphrasing of Kalecki, for the relevant variant of his "supply condition" (already noted). From this, we saw that a rigorous examination of the movement in price following from a rise in demand required us to first clearly locate this rise within a given year and then trace the price movement over the remainder of the year. This in turn required us to have a clear view of the entire course or timepath of price over a year, without the rise in demand. This is how we came upon the "unit".

Let us now briefly turn to our analysis of this price movement (Chapter 8). Again, the basic structure of the price movement -- a "primary movement" defined by the traders' demand management and a "secondary movement" defined by their speculative withdrawal of stocks superimposed upon it -- clearly follows the lines suggested by Kalecki. It is true that there is no actual diminution of stock in the primary movement as we described it. However, this by itself is of little consequence. What is important is the mode of argument behind, which, we think, is really a detailed spelling out of Kalecki. The really important step we took from Kalecki was to go from his rather generalised statement of the "supply condition" to the really important "production condition" behind (annual harvest) and stick to it all through. On this basis, we had a clear timepath of the stock through a year, relative to which to think about the change in stock,

This completes the task we had set before our ourselves. Let us now proceed on by pointing out that by its very nature, the function a gives only a very broad summary-view of the forces working upon the level of our price. Much remains implicit or unstated behind. Let us now focus attention on what lies behind the scenes.

Let us start afresh from the seasonal movement in our price. It would be correct to say that the average level of the price in a year is formed through this movement. To talk of the two separately represents only a conceptual separation and no more. We have already argued in Chapter 4 that the movement under reference is generated fundamentally by the changing structure of the bargaining relationship in our market through a year, which, in turn, we related to the trader-producer division of stock through the year. Hence the average level is also related to this division. This, in brief, is what we have argued above. Equation (10) is only an analytical simplification of the relation just referred to.

Let us now remember that we already have a parallel equation for the relation between the levels of our price in the two seasons (equation 1, Chaptor 4). Let us treat this equation as a broad summary-view of the whole seasonal movement in our price, and consider it together with equation (10) above. In doing this, we now explicitly treat the two levels of the price in this equation,

q_b and q_s, as the average levels of the price in the two seasons.[11/] This is to be understood throughout the following discussion. Again, it is clear that we can write the function $f(S_p^*, H)$ of Chapter 4 as a function of the single argument S_p^* / S_T^*. Let us denote this function by $\gamma(S_p^* / S_T^*)$. This brings it to the same form as our function $\alpha(S_p^* / S_T^*)$. The transformation leaves the properties of the function unaffected.

With this we can look into our question in terms of a system of equations for the determination of the three unknowns, q_{av}, q_b and q_s. The system consists of equation (1) of Chapter 4, equation (10) above, and the definition of q_{av} in terms of q_b and q_s. Let us set out these three equations together :

$$(10) \qquad q_{av} = \alpha (S_p^* / S_T^*)\, p_{av}$$

$$(11) \qquad q_{av} = \delta q_b + (1 - \delta) q_s$$

$$(12) \qquad q_s = \gamma (S_p^* / S_T^*)\, q_b$$

where δ represents the fraction of a year accounted for by the busy season, and so $(1 - \delta)$ is the fraction accounted for by the slack season.

11/ See footnote 5, Chapter 4 in this connection.

Viewed in purely formal terms, this is a determinate system in the sense that, given the values of p_{av} , S_P^* and S_T^* , we have a unique set of values of our three unknowns. However, it is what lies behind the scenes of this determination that needs to be looked into.

We have S_P^* and S_T^* as structural variables of our trader-producer system, as of any given harvest in the background. Since the working of the whole system is taken as given here, their ratio is also a priori given for our purpose. So we have $\alpha(S_P^* / S_T^*)$ and $\gamma(S_P^* / S_T^*)$ as constants. Now, it is obvious from the structure of our system of equations that q_{av} is determined directly by p_{av} in equation (10), which is then distributed, so to say, over the two seasons by equations (11) and (12), the substantive relation in this being given by the constant γ . This may be called a view of the determination "from above".

The problem with this view is that q_{av} is <u>not</u> seen to be formed through the seasonal movement as represented by (q_b, q_s). The whole direction of priority is simply reversed -- one starts with a value of q_{av} argued directly in reference to p_{av} , and then associates a seasonal movement around this value by equation (12). Let us now set this right. This takes us to a view of the determination "from below". The starting point is now equation (12).

Clearly, <u>given the value of q_b</u>, we have a certain value of q_s by this equation and hence of q_{av} by equation (11). By substitution

We then reduce the unknown in (10) to q_b. As a formal statement of consistency, this is all right. But the question is whether we have any independent force left in this equation to determine q_b in the substantive sense. The answer has to be in the negative, for the substantive force of bargaining — which is the only substantive force we have called upon in the whole argument — is now already spent out in the determination of q_s, being represented by the parameter γ. We cannot represent the same forces over again by the parameter α, and use it to determine q_b. This renders the whole system indeterminate.

Let us look at the problem in substantive terms. In the busy season of the wholesale market, we have the whole bargaining power of our big producers simply lying dormant — or suspended — under the sheer presence of the host of small producers. There is therefore nothing from within the producers to support the price in this season, i.e., q_b, from below. This whole support has to come from the side of traders as an <u>independent force</u> in the whole determination, for no such force can obviously be argued purely in terms of bargaining in any narrow sense. We have to cast our net wider.

We have <u>two distinct forces</u> in mind here, one coming from within the trader-producer system as we have conceived it so far, and

one from without. So we may call them the internal and the external force.

The internal force is this. Let us free ourselves of the restrictiveness of the bargaining framework and go back to the fundamental qualitative basis of the buying strategy of our big traders as discussed in Chapter 5. Our argument was that it is in the essential interest of big traders to see to the preservation or continued existence of small producers in the market; so they buy as much as possible from the small producers. But obviously, preserving this structure is not only "assuring a market" in this sense to small producers, but also assuring them a minimum price for the product. Since small producers sell only in the busy season, this automatically sets a floor to q_b. Further, since the whole basis of the offer still remains the price which the big producers themselves get for the product, i.e., the retail price, we have the floor as a ratio to the latter. It would be quite proper to take p_{av} as the 'base' in this context and so we end up with the relation:

$$(13) \qquad q_b = \mu p_{av}$$

where μ is the fraction of p_{av} that the big traders on their own offer to small producers. It is therefore by definition a relatively small fraction. Conceptually, it represents their long term interest as distinct from the bargaining interest per se viewed within a closed annual framework of calculations.

With this, it is q_b that gets directly determined by p_{av}, and this in turn sets the whole initial condition for the seasonal movement in price which determines q_s. This means of course that we now have the ratio of q_{av} to p_{av}, i.e., α, as determined out of the two parameters, μ and γ. There is no contradiction in this with the view of α taken earlier, for we have already pointed out that the latter gave only a broad summary representation of all the forces at work on the level of our price. The idea is now only made explicit by an actual derivation of α in terms of underlying parameters. Stated explicitly, we have :

$$\alpha = \mu\left[\delta + (1 - \delta)\gamma\right]. \quad 12/$$

Note that α has to be less than unity. This can be taken to be guaranteed by the fact that μ is a relatively small fraction, counteracting the effect of $\gamma > 1$. The analytical argument is that the traders concerned already take account of the seasonal movement in the wholesale price in setting their offer to small producers, which is to say that μ is chosen in view of the actual order of magnitude of γ, ensuring that the right hand side expression is indeed less than unity.

12/ It is obvious from this that because γ is ultimately a function of (S_p^* / S_T^*), so is α.

The external force we have in mind for setting a floor to q_b is simply the competition that our traders face from outside, i.e., the "free entry" of outside capital into the particular domain of our concern, foodgrains trade. This defines a substantive extension of the whole framework. The matter is discussed below in a new section.

Section 3 : "Free Entry" — an Extension of the Trader-Framework

In the conventional theory of price, "free entry" is looked upon as a long term force in the formation of price. It is one of the criteria used for setting apart the so-called "short-run" from the "long-run". This is not at all the way, nor the form, in which we consider the force. We consider it within our framework of the formation of price in respect of a year, which is the a priori "short-run" in our context. Within this, we take the "entry" itself to be by design for only a relatively short period (counted in "weeks", say). It is in this sense a purely short-term entry -- the motivation is simply to make money while the going is good (and leave thereafter). This has its substantive basis in the fact that there always exists in the economy a certain freely floating "speculative" capital in the pure sense, which by definition is invested only temporarily in any particular field -- where entry is "free" — solely for the quick returns it

affords at the moment. Once this profit is made, it leaves for other fields.

Let us now note that for the capital spoken of to be actually invested in a particular field, it is not only necessary that it be possible for the capital to be withdrawn within a short time, having yielded its profit (factor of "quick returns"), but also that the rate of return upon capital be of a very high order as judged in terms of the "normal" earnings of capital in those fields. This is because of two factors, viz., (a) there is almost always some field or other accessible to our capital, which is throwing up a high temporary yield at the moment; and (b) the capital is by definition prone to high risks, to cover which it sets the condition of "high" (and not only "quick") returns for entry.

Let us now denote the minimum rate of return for the entry of the speculative capital into any particular field by ρ. Let us go on to calculate its "prospective" rate of return in our field. We may suppose that the "speculators" can operate on the basis of the same turnover period of stock, θ, as the existing traders in our field. For any given pair of prices (p, q) where q is the buying price and p is the selling price of the traders, we then have the rate

of return, r say, defined by :

$$(14) \qquad r = \frac{p - q}{q\theta} \qquad 13/$$

It was just stated that ρ is of a very high order judged in terms of the "normal" earning of capital in the fields concerned. We can certainly take this to mean that ρ is larger than the value of r calculate on the basis of the average level of our two prices, p_{av} and q_{av} , i.e.,

$$\rho > (p_{av} - q_{av}) / \theta\, q_{av}$$

We note in the passing that this defines a clear lower bound on q_{av} relative to p_{av} , viz.

$$q_{av} > p_{av} / (1 + \rho\theta)$$

To interpret this condition, we may temporarily disregard the whole bargaining strength of big producers, and say that the big traders safeguard their own position in the field by offering on their own a high enough price to producers that "prevents" the

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13/ This is the same as the rate of profit on their capital earned by the small, "competitive", traders at the prices, p, q . See equation 13, Chapter 5, Section 4.

entry of speculative capital on a permanent basis.[14/]

Let us now pass on to the real point of our concern, viz., the determination of q_b. We disregard here all other forces operating on it, so that q_b is simply left without any support or floor. Such a situation clearly invites the entry of speculative capital, as we have characterised it above, into our field in the busy season of the market. Granting this entry, we must have the condition that the rate of return actually earned by the speculators is the same as that which they had set for their entry, i.e., ρ, otherwise there would not be any bound to the magnitude of capital entering the field. The actual rate of return here is calculated in terms of q_b as the buying price. As for the selling price, we may simply approximate it by p_{av} as, having entered the field, i.e., bought the product, the speculators must now take some time to sell it, over which the selling price too rises through its seasonal movement in the year. The assumption made is that by the time they sell it, the price has already risen to its average level in the year. (As just stated, this is an approximation).

With this, we have the actual rate of return on our speculative capital upon its entry into our field in the busy season

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14/ It is granted that speculative capital does not enter on a permanent basis. However, the threat of entry is always there. The statement given is meant simply to clarify the total structure to relations entailed by the present extension of our framework.

given by r in equation (14) after substituting p and q in it respectively by p_{av} and q_b. Equating this value of r to ρ, we now have :

$$\rho = \frac{p_{av} - q_b}{\theta\, q_b} ,$$

or,

$$(15) \qquad q = p_{av} / (1 + \rho\, \theta) .$$

This is the determination of q_b on the basis of "free entry" of capital into our field.

Our system of equations for the determination of the whole structure, (q_b, q_s, q_{av}), is now made up of equations (11), (12) and (15). This again yields an expression of our original parameter, α, in terms of a set of underlying parameters, viz., γ, ρ and θ. The whole structure is formally parallel to that of the earlier system of equations (11), (12) and (13). However, one difference in the interpretation of this structure is to be noted.

Let us first derive the expression for α. This is given by :

$$\alpha = \frac{\delta + (1 - \delta)\,\gamma}{1 + \rho\, \theta}$$

Again, the effect of $\gamma > 1$ upon α is counteracted by the fact that ρ is of a relatively high order of magnitude: this ensures the

meaningfulness of this equation in the sense of yielding a value of $\alpha < 1$. However, unlike previously, we now have ρ and θ as purely objective factors of the whole situation. Hence the analytical relation behind this meaningfulness boils down simply to an implicit restriction of the parameter γ, i.e., a restriction upon the order of magnitude of the rise in the wholesale price through its seasonal movement. Stated explicitly, this restriction is that :

$$\gamma < \frac{1 + \rho\theta - \delta}{1 - \delta} = 1 + \frac{\rho\theta}{1 - \delta}$$

This completes our analysis of the whole structure of inter-relationships coming into the determination of the level of our price through year on purely structural grounds.

Chapter 8

CONJUNCTURAL FACTORS I : CHANGE IN DEMAND

Section 1 : Retail Price

At the very beginning we pointed out that the very "unit" of our study of price-formation, viz., the entire course or timepath of price from one harvest to the next (a "year"), provides a rigorous framing to the question of effect of change or rise in the demand for our product upon its price. Our objective here is in a way simply to elaborate upon, and support, this methodological proposition, implying a fundamental concern with the process of price-change. It is here that the "key role" of traders — their whole "management of demand" spoken of in the Introductory Chapter — comes of its own. This sets the main theme of the chapter. However, before beginning on this we will freshly go over the conceptual basis of the problem area, thereby setting it in the background of our whole subject of the formation and dynamics of the price of foodgrains in our general context of reference (an underdeveloped country like ours).

Let us start from the elementary factual point that in this general context of reference there is a persistent rise or growth in

the demand for foodgrains.[1] This sets the main motivation for our problem. Let us now turn to some elementary clarifications. First, we point out that we can say that a year -- or the harvest-to-harvest gap in time -- is a considerable time in our context precisely because we can quite meaningfully conceive a considerable rise in the demand for foodgrains through this time. It is therefore only logical that we frame the *a priori question -- effect of change in demand upon* price -- in our "year"-frame. There is a methodological corollary to this. In order to meaningfully conceive in time the change or *rise in demand occurring* in a year, we must simply locate the rise or more precisely an initial rise at some definite time within the year. So, we now take the demand as continuing unchanged upto some point of time within our year, when there is a 'first' rise followed possibly by further rises through the remainder of the year. This clarifies the frame of reference for our problem. Lest there be any ambiguity, we just point out that "rise in demand" at a point is conceived as a shift in the demand function taking place at that point. Needless to say, this is a pure analytical specification. Change in demand in real life is a more complex phenomenon.

1/ Let us be clear that this is meant only in the sense of a rise in money demand, which is to say that more money flows into the purchase of foodgrains than previously through the passage of time. This automatically implies rise in the physical demand at the going price. Nothing is stated about the change in the purchasing power of money through time.

One final point. Starting from the 'momentary' demand, one can a priori define the change in demand through a year to mean any arbitrary pattern of changes (rise or fall) in the momentary demand through the time. We simply do not conceive our object defined this way. Change in demand is identified by us all through with rise as outlined above, and we simply use the two terms, "change" and "rise" interchangeably for our purpose.

Let us now settle down to the work. As just explained, our problem here is defined by a rise in demand coming in at a certain point in a year, say t_o .[2] This year itself had begun with a harvest generating a certain marketed surplus which is given for our purpose. Out of this total marketed surplus, a certain amount has already been sold to consumers upto the point t_o . The remainder appears at this point simply as stock with the sellers, divided in a certain manner between producers and traders.[3] This is not an arbitrary division. It is an outcome of the substantive forces in our trader-producer system as discussed in the previous chapters.[4] What is more important for our

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[2] Where $t_o \in (0, T)$ and $(0, T)$ denotes a given year of reference that we are concerned with.

[3] This includes the sellers' opening stock of the product in the year. To avoid totally unnecessary complications we may take it for granted here that the opening stock in our year exists only with traders, constituting what we called their normal stock. Its presence then does not at all affect our analysis and for simplicity of exposition, we simply do not refer to it at all.

[4] See particularly Section 2, Chapter 7.

purpose is to recognise that the stock itself -- let us denote it by S^o — is not an arbitrary datum — not simply a 'remainder', but what is deliberately left as remainder at the point t_o by traders and producers on their own, in recognition of the total situation. We have in the background a timepath of stock-holding for the year as a whole that is in some sense 'planned' by traders on the one hand and producers on the other, on the basis of their a priori reckoning of the total situation, and the stock in the total at any point is simply the sum of the respective points on these two paths at this date, granted that there has been no change in the total situation so far. Returning to our problem now we can see the change in demand at t_o as a change in the total situation. Since this is the only change so far, the traders' stock and the producers' stock at t_o belong by definition to their respective a priori or planned timepaths of stock-holding. For fixity of reference let us put these in symbols. Let $S_p(t)$ and $S_T(t)$, $0 < t < T$, denote the timepath of planned stock-holding of respectively the producers and traders over our year, (0, T). Let S_P^o and S_T^o denote their actual stock-holding at the point t_o, when the change in demand occurs. What we are then saying is simply that

$$S_P^o = S_p(t_o)$$

$$S_T^o = S_T(t_o)$$

and $$S^o = S_P^o + S_T^o$$

The question that arises now is whether the change in demand at t_o causes a departure from the timepaths, $S_p(t)$ and $S_T(t)$, for $t > t_o$, i.e., whether the traders and producers now revise their original plan of stock-holding through the year. This is the same question as whether producers now revise their original sales plan and traders revise their original plan of sales as well as purchase for the year as a whole, because of the change in demand conditions. We have to begin with the traders, for it is they who "meet" the demand. This is where the whole notion of "management of demand" comes in. It also brings us directly to the question of change in the retail price, which defines our problem for this section.

Let us now begin. The basic question here is simply whether, faced with a higher demand, traders at all sell more or not. If they do, they must also buy more, for otherwise they simply run down their stock from its pre-existing "maintained" level, whereas under the given structure — as reflected in the forces setting the turnover period of stock — they should now be holding (maintaining) a larger and not a smaller stock. Whether they in fact succeed in buying more or not depends upon how producers respond. So, we have to leave the case at this point simply as traders passing on the rise in demand to producers. The other alternative then is simply a denial of this, for if the traders continue to sell at the same rate as earlier, then their stock is automatically maintained intact by their original programme of

purchase, and it also remains at the proper level vis-a-vis the rate of sale. Thus we can transform the two alternatives into an equivalent one of traders passing or not passing the rise in demand that they face to producers.

Let us now continue from this point. By the very statement of the two alternatives, we have granted completely the "elasticity" in supply implicit in the very notion of trading stock. It is possible in principle and practice for the traders to meet, for the time, the rise in demand by running down immediately and hoping to replenish eventually this stock. But do they do this? Our basic point is simply that they are aware of the total situation and it is this awareness that guides their whole response to the situation under reference. In this total situation, there is simply a given total stock in the market at the timepoint concerned, S^o, to take care of the whole demand through the rest of the year, (t_o, T). Traders recognise that their own stock at the moment, S^o_T, is only part of S^o. What is more important is that they also recognise that, unlike them, producers have just a fixed stock for sale through (t_o, T). So there is no way that they can really buy more from the producers in respect of this interval as a whole — even if they succeed in buying more now (alternative one above), that will only mean their buying less later. This may have been consistent had they expected a fall in demand later (fall below the original rate). But the situation

projected is just the opposite (possibility of further rise later). So, purely in physical terms, the whole policy is doomed to failure, and the traders, to repeat, know this. This is already enough to reject the alternative. It will be seen later that financially, i.e., in terms of profit, traders actually lose by this alternative as compared to the other. We therefore conclude that our traders will not in fact sell more, even temporarily, in the face of the rise in demand. This is the essence of their "management of demand" : they manage the demand not with any myopic or isolated view of their buying and selling, but in a total view of the structure in which their whole action is embodded. This "structure" here is simply that the whole supply is coming ultimately from a harvest already taken place — what way the marketed surplus out of this harvest passes from the hands of producers to traders is quite immaterial for the supply to consumers. The total supply is in this sense inelastic . Knowing this, traders do not try to make their own supply elastic . We ascribe in short a structurally conditioned response (or "structural response", in brief) of traders to the change in demand, and the response, as just stated, is that they do not sell more. They "manage" the demand, in other ways.

It is obvious that management of demand boils down here simply to raising the price — raising it to a level that cuts back the demand to its pre-existing rate. In other words, the market is cleared in the sense of leaving no excess demand. In principle, not clearing the

market in this sense — leaving some demand unsatisfied at the going price — is itself an alternative method of demand management. But by this method traders simply forego the increase in sale-proceeds that they would otherwise have earned, by raising the price, for the rate of sale remains the same all through. Hence given that the price is set by traders — through some mechanism internal to them — they will simply have no use for this method, i.e., they will raise the price. It is granted that the very "mechanism" here may introduce its own "delay" into the price-adjustment so that there is a purely transient phase of unsatisfied demand at the beginning, over which the consumers are, so to say, prepared for the price rise.

A more important point to make in this context is that the very recognition of "rise in demand" — indeed the very fact of it[5/] — may take time, over which traders then simply sell what is demanded at the pre-existing price. This brings us back to the alternative of "selling more" which we had just rejected. Needless to say, this does not contradict the previous analysis; it only widens the terms of reference. Like the phase of "unsatisfied demand", the phase of "selling more" is only a purely transient phase of initial

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5/ This has already been recognised above when we said that change in demand in real life is a more complex phenomenon than suggested by our formulation of a shift in the demand function taken place at a point in time.

adjustment;[6] more significantly, it does not necessarily mean that traders pass on the rise in demand to producers -- they may in fact stop short just at this point, recognising the change in conditions.

We have now concluded the main analysis of our problem. Let us briefly recapitulate the argument. We had started with unchanged demand conditions in a year upto a certain point, t_o, when there is a rise in demand. At that time there was a given stock of the product with traders and producers which came out of their respective time paths of stock-holding for the year as a whole as originally planned. The paths were denoted $S_p(t)$ and $S_p(t)$, $0 < t < T$. The basic question put was whether there was any departure from these paths as a result of the change in demand. We took off with the traders and concluded that there would not be any departure. More specifically, there would not be any increased sale by them in response to the change, and hence no change in purchase either. So, there would be no departure of producers from $S_p(t)$ either. The whole stock paths, $S_p(t)$ and $S_T(t)$, then become simply independent of the change in demand conditions. Let us remember that this is as yet argued in reference to a single change in demand through the year. It remains to be seen whether

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6/ Obvious though it is, we point out the parallelism between the two cases in terms of price holds only in respect of the initial transient phase, not in respect of the whole interval, (t, T). In the case of "selling more", there is an initial running down of stock, implying a lower rate of sale and hence a greater magnitude of price rise later in the year. Nothing like this happens in the case of "excess demand", which simply postpones the rise in price, leaving its magnitude unaffected.

this holds when we pass on to successive changes in demand through the year. Let us, however, first complete the recapitulation, where we have not yet got to price.

Because we started off on our question with traders, we were also led directly to enquire into the change in the retail price following the rise in demand. Our basic conclusion is that the price would rise more or less immediately — through some mechanism internal to the traders — to the extent required to cut back the demand to its original rate. This in a word is the "demand management" done by traders. The important point to note from a purely analytical standpoint is that this is a purely self-contained movement in the retail price — whatever change in the wholesale price may occur in the meanwhile (our subject in the next section) simply does not enter this movement. We may rephrase this equivalently as a self-contained movement within the retail market. It is by definition a movement (or change) defined through the balancing of demand, the new demand, and supply, the unchanged, or inelastic, supply in the sense, ultimately, of trader-decision — which is again only another name for their demand management. Going back a step, we note that this "balancing" is also located entirely within the retail market.

As just mentioned, these are all equivalent statements of the same event. We simply felt inclined to make them in view of the intrinsic significance of our problem, simple though it is. Let us

now pass on to the case of successive shifts in the demand function through the year, what one a priori has in mind when talking about the rise in demand over or through a year.

On the face of it, this does not bring any new element into the picture -- traders simply continue selling at the old rate,[7] successively raising the price as required to wipe out the excess demand. So there is now a process of rising price through time, continuing till the end. Let us call this the primary movement in our price.

The point to note is simply that the very fact of this movement creates expectations some way through (say at timepoint $t_1 > t_o$) of its continuation into the future, and this in turn opens up the possibility of speculation by traders.[8] This is a new element in the picture.

We already have the groundwork done for analysing the impact of this new element upon our price movement. All that we have to do is update various points made earlier to the present context. First, the speculation under reference is generated by traders' expectation of

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[7] This is not necessarily a constant through the year on account of the trader policy of accelerated sale. Since this does not cross our line of analysis here, we simply abstract from it. So we also abstract from the seasonal movement in our price. The analysis is not affected by these abstractions.

[8] We take for granted that the criterion of speculation is satisfied.

a future rise in their selling price; it is what we called the speculative process type II of the trader in our discussion of the process of speculation.[9] The process begins simply with a withdrawal of stocks from the market, i.e., sale, and ends by releasing the speculative stock so created (created by the conversion of part of the original ordinary stock) after the materialisation of the initial expectation, the fact of which is simply taken for granted here. Let us now look into the implications of the process for the movement in price.

Traders' initial withdrawal of stocks from the market means simply a reduction in their rate of sale and hence a rise in price over and above its primary movement, granting that no demand is left unsatisfied at the ruling price at any point. Our price movement in the total therefore becomes the sum of the primary movement caused by the rise in demand and a secondary, speculative movement caused by the speculative withdrawal of stocks.[10]

Two related points of relevance to our discussion in this section may be noted at this point. First, there is now a departure from the original stock path, $S_T(t)$, by traders -- part of the original stock that would have otherwise disappeared by a certain time after t_1

9/ See Section 4, Chapter 5 (p. 147).

10/ This is in abstraction from the seasonal movement in price as assumed above. It is clear that reintroduction of this movement does not affect the substance of our analysis as there is no interaction between it and the movements under reference here.

is now held as speculative stock at that point, appearing as a bulge in the stock-path. Secondly, there is no speculative purchase by traders at any point (this is not their speculative process, type I), and so the wholesale market is left untouched in a physical sense by the whole developments in the retail market, exactly as before. The whole movement under reference is still purely self-contained within the retail price.

Let us now come to the end of our speculative process. Here we have to begin from a fresh point argued at the very beginning with respect to producers and then simply adapted to traders later. This is the point that the speculative process under reference — one generated ultimately by expectations of future rise in demand -- is simply not carried through a harvest. In other words, it is liquidated or terminated within the year.[11/]

We can go a little further with this point. We have assumed in the background a rising demand through the year; so the primary movement in price also continues till the end. We do not have any logical basis under these conditions of terminating the speculative process at any point before the end of the year. So, the process is terminated at the very end. "Termination" here is understood as complete liquidation of the speculative stock created earlier: the beginning of the liquidation (or release) is located at an earlier

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11/ See Section 3, Chapter 1 (pp. 46-47).

point, say $t_2 > t_1$, but it is only at the time-point T (end of the year) that the speculative stock is completely liquidated, implying a return of the total stock-path of traders to the path originally planned. The "bulge" in this path therefore lasts till then, i.e., it is defined for the whole interval, (t_1, T).

Let us now return to the timepath of price. Release of the speculative stock contributes its own, downward movement in the price, which now counteracts the primary, upward movement. The direction of the total movement therefore becomes indeterminate over (t_2, T). One further point is to be noted. We have just seen that the stock held by traders at the beginning as well as end of the speculative process - at time-points t, and T respectively -- both belong to their a priori timepaths of stock-holding, $S_T(t)$. Their purchase through the whole interval (t_1, T) also remains the same as originally planned. It follows that their total sale over the interval is the same, whether they engage in speculation or not. Now, without speculation, we have a reference path of sale determined by purely structural factors, and the speculation itself begins with a reduction in the rate of sale, i.e., a downward movement from this path. So, the ending of the speculative process, i.e., release of the speculative stock, must mean in our case not only an increase in the rate of sale but a crossing of this path from below at a certain point, $t_3 > t_2$, after which it simply stays above till the very end. This follows simply from the equality of

the total sale over (t_1, T) between the two cases, speculation and no speculation.[12/] It follows from this that the timepath of price in the case of speculation too must cross the timepath without speculation, i.e., the path defined through the primary movement, precisely at t_3 and remain below over the interval (t_3, T).

This completes the description of the price movement caused by the speculative process as a whole. It also completes our task in this section. Let us end by just re-iterating the essential closure of the whole argument within the body of traders. Whatever the words used, it is they who balance the demand and supply. Their whole "speculation" too can now be seen as an internal element within this balancing. We do not go outside the broad framework of what traders do to explain the whole movement in the retail price following, and in the face of, rising demand. The repercussion of all this on demand itself is however left out. The limitation of the scope is admitted.

12/ This is unlike our original description of the speculative process, type II, of the trader where he was seen only to resume his original rate of sale once he began releasing the speculative stock. The difference is to be put down to the difference between the purely micro-economic setting of the process in Chapter 5, without any reference to the total stock in the market, and its basically macro-economic setting here, deriving its essential structure from the "given-ness" of the total stock at a certain point, t_1, for the whole supply over a certain period ahead, (t_1, T).

ction 2 : Wholesale Price

Viewed from a conventional standpoint, the argument of the previous section leaves one with a complete blank for the problem of this section. The argument has been that the rise in the demand for our product through a year is met with by a purely self-contained movement in its retail price expressing in full the balancing of demand and supply, which is done by traders completely on their own without passing on the rise in demand to producers at any stage. There is therefore no change in the demand-supply position in the wholesale market. This is the "blank". Going by the demand-supply apparatus, one would conclude (or predict, if you like) no change in the wholesale price. However, there is, in the real world, a rise not only in the retail price but also in the wholesale price of foodgrains following a rise in its demand.

This poses no problem in our framework of analysis. On the contrary, the whole phenomenon only brings out all the more clearly the essential logical framework. This framework is simply that "demand and supply" operates on the price as a whole, i.e., the retail price, within which we have another principle -- that of bargaining -- for the determination of wholesale price which, by definition, divides the price as a whole between traders and producers. We have now explained the hange in retail price following a change in demand precisely by the forces of demand and supply. Let us now start directly from this

change and recognise it simply as a gain in the total for distribution between traders and producers, originating outside. It is, however, a first principle of bargaining that any such gain be shared between the two parties, the exact shares depending upon the forces of bargaining on the two sides. This already explains the rise in the wholesale price. No change in the demand-supply position in the wholesale market comes into this: the sole starting point of the argument, as just stated, is the rise in the retail price. Going one step further, we point out that even if there were a change in the demand-supply position, it would not introduce any new principle into the pricing, for the forces generated by the change have to work through the forces of bargaining in order to have any effect on price. The principles continue to remain the same as those of bargaining. We will come back to this point at the end of this section. Returning to the framework, let us just point out that the basic premise here — that "demand and supply" operates on the price as a whole — is itself a logical corollary to the whole mode of formation of marketed surplus we start from, which makes the formation of price entirely a matter of the "market" or "sphere of circulation", itself disjointed from the "sphere of production" below.[13/] But to say that the price is formed in the market is to say that it is formed out of the forces of demand

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13/ As pointed out in Chapter 7 (footnote 1), this was the whole import of the "integrated view" of the formation of marketed surplus and formation of price taken in the Introductory Chapter.

and supply. Hence the proposition. This completes the statement of the essential logical framework.

So much, as already stated, is at a purely logical level. Let us now translate the analysis into more operational terms. We can say that the "gain" just talked of accrues, in the first place, to the traders, for it is they who meet the rise in demand and raise the price, balancing demand and supply. They cannot however retain the gain entirely to themselves, but must share it with the producers by the very logic of bargaining. Stated in more operational terms, producers know that there has been a rise in the retail price, and claim or bargain for a part of it. How much they get depends of course upon their bargaining strength vis-a-vis traders. This depends in turn upon what part of the year we are talking of, for there is a systematic transformation of the whole bargaining position in our market through the year. We refer of course to the busy and slack seasons of the market.

Let us make a short methodological digression at this point. Let us denote the two seasons by the intervals of time occupied by them, say $(0, t)$ and (τ, T). We have t_o as the point of time in the year, at which the rise, or first rise in demand occurs. It is a "random point", so to say. Purely by this, we should locate t_o in (τ, T), for τ is only a small length of time compared to T. At a somewhat deeper level, our whole purpose here is to see the "change" as something

well-defined within the year, and not a continuation of past change. Conceptually, this requires us to locate t_o well inside the year, and therefore in (τ, T).

In view of the above arguments, we now assume $t_o \in (\tau, T)$. The wholesale market over this time ("slack season") has only the big producers on one side, and basically the small traders on the other side. The relative bargaining strength is obvious. We therefore conclude that a relatively big share of the rise in the retail pri : will in fact be bargained away to producers. Big traders do not lose out of this, for they have already largely built up their stock for the year as a whole, out of which they are selling at this point. The mechanism for the rise in the wholesale price too is rendered transparent. Knowing the rise in the retail price, big producers now simply demand a higher price, below which they refuse to sell. Traders' dependence enables them to actually realise the price. It is the same mechanism through which they (big producers) bring about the seasonal movement in the wholesale price.[14/]

Let us continue the analysis a little further. Let us now explicitly treat t_o as the date of the first rise in demand in our year, the rise itself continuing through the rest of the year, which is the real case of interest. Let us now suppose, for the sake of

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14/ See pp. 102-03, Chapter 4.

argument that $t_o \in (0, \tau)$, i.e., the rise begins in the busy season itself. The bargaining forces of big producers lie entirely dormant in the presence of small producers in this season. Let us suppose that, on account of this, there is no change in the wholesale price over the busy season.

Let us now move into the slack season. Two points are to be made. First, the wholesale price is now set afresh at a higher level through the "bargaining" of big producers. The higher level of the retail price is automatically reflected in this. (However, this is not a change in the price in time). Secondly, for the whole subsequent rise in demand and consequent rise in the retail price, big producers have a free hand in their bargaining for a higher price for themselves. Thus the substance of our analysis is not affected by the location of t_o, arguments regarding which were of a purely methodological order.

We are now through with the main analysis of the section. Before ending, we must return to the point made earlier that even if there were any change in the demand-supply position in our market, the forces generated have to work through the forces of bargaining to affect the price. So, for the argument, we now grant that traders do pass to producers, in some measure, the rise in demand they face; i.e., they sell more, and consequently try to buy more in order to replenish their stock. All that we have to point out in response to this is that

the traders' attempt to buy more necessarily strengthens the bargaining position of producers. They (the producers) therefore succeed in securing a larger rise in their selling price than would otherwise have been the case. It is only by this route that the change in the demand-supply position affects the price, upholding the point made earlier. Let us, in this context, also make the obvious point that traders only lose by passing on the rise in demand to producers, for this only raises their buying price without affecting the quantity bought for the whole interval under reference, (t, T). The conclusion had already been stated earlier, and we have now given the argument. This concludes our whole task set for this chapter.

We will, however, prolong the discussion a while longer to call attention to something already implicit in the discussion above, which is of great interest in itself. It appears best to devote a new section to this.

Section 3 : Concluding Observations: Distributive Aspects of the Price Movement

Let us start from the truism that any rise in our price as a whole is a gain to the sellers as a whole, traders and producers, big and small. The question then automatically arises as to how the gain is distributed over these parties for the price-rise discussed so

far in this chapter. The question formed an integral part of our discussion of the mechanism behind the price rise. We now take the question on its own, or, more precisely, in its a priori sense, and explicitly bring out something that has remained implicit in the discussion hitherto.

Let us first clarify the precise direction of our question. Viewed from the standpoint of mechanism of price change, the question of distribution that comes to the fore is simply the trader-producer distribution. The big-small distribution comes in only through this, not on its own. This whole ordering is just reversed when the question of distribution is taken in its a priori sense. This is because distribution in the a priori sense is a matter directly of the structure, which in our case is the structure of traders and producers. It is this that is represented by big and small producers on the one hand and big and small traders on the other. There is simply no crossing of this line. The trader-producer boundary on the other hand is ultimately a functional and not strictly a structural one — there is nothing to prevent a (big) producer from becoming also a trader, and this typically is often the case.[15/] The line being so

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15/ This is a point not touched upon previously as it does not belong to the essential structure of our problem. In support of this, we will only say that just the fact of the "crossing" mentioned does not turn the class of traders (or merchants or dealers) in foodgrains into an appendage of big producers. It retains its independence implicit in our structure. Further, the producers-cum-traders are likely to have a more specialised trading activity than our traders, and so their structure is not quite comparable.

stressed, no unambiguous interpretation of the trader-producer distribution of gains is simply possible in the a priori sense of the term "distribution". So, our focus now is simply on the distribution of the producers' gain and the traders' gain from the price rise between big and small producers on the one hand, and big and small traders on the other. This we feel is simply the right theme to end up with in a framework that has kept the distributional basis of the whole subject in view all through.

Let us now begin. We have seen that the rise in the price of our product following from the rise in demand through a year is a rise taken place essentially when the wholesale market is in its slack or lean season: no meaningful notion of this rise is simply defined in reference to the time corresponding to the so-called busy season of the market. The whole distributional implication of our price movement is contained in this specification taken in the background of the very notion of the seasons. Let us just give a systematic statement of this.

First, we have the small producers as selling their whole marketed surplus within the busy season of the wholesale market. So, no rise in the (wholesale) price that arises after the busy season can touch them. Hence the producers' gain out of our price movement is in fact a gain wholly of the big producers, and the matter ends there.

Let us now turn to the traders' gain. The point to start from here is the so-called quantitative aspect of our seasons according to which a large part of the marketed surplus of a year already passes into the hands of traders within the busy season of the year; and the traders in turn carry over the bulk of it for sale later in the year, i.e., over the duration of the slack season. It follows at once that so far as this sale is concerned, any rise in the retail price is a gain wholly of the traders concerned: how much the wholesale price rises in response to the rise in the retail price is completely immaterial as the purchase is already made before the price rise. Let us now remember the essential contrast between big and small traders. For the former, we have a meaningful objective of market control, and this dictates a policy of their buying as much of the annual sale at the beginning (busy season) as possible. Small traders, on the other hand, make their purchases by a continual process of turning over the sale-proceeds, and hence do not carry over a stock from the busy season for later sale in any special sense. It follows that the gain of traders just spoken of is a gain made entirely by the big traders. Stated in full, what this means is simply that big traders are necessarily assured of a gain out of the rise in the retail price following the rise in demand. This gain in the absolute is precisely equal to the rise in the sale-proceeds for the total quantum of sale

after the price rise that is made out of their purchase in the busy season. Nothing of the subsequent rise in the wholesale price simply comes into it. Turning to small traders, on the other hand, we find them as gaining out of the same event only to the extent of the difference in the rise in the retail price over that in the wholesale price. Nothing simply is assured about this a priori. Remembering that the producers in the market at this time are the big producers, chances are that little will be left for the small traders. We thus end up with the broad conclusion that it is only big producers and big traders who gain out of our price movement. Small producers do not partake of the gain simply by their time of sale and small traders by their continued dependence on fresh supplies through the year as well as their weak bargaining power vis-a-vis the big producers.

Chapter 9

CONJUNCTURAL FACTORS II : HARVEST EXPECTATIONS

At the very beginning, we called our thesis a methodological exploration of its field of study. The very problem of this chapter is a fruit of this exploration of the subfield of price-formation, and our first objective here is simply to set this out clearly. In doing this, we cannot but go over points already made in this thesis. We go over them from a broader methodological angle and thus see them in a general theoretical perspective.

Let us be a little more specific. We can broadly divide the methodological exploration behind our problem here into two successive stages, one relating to demand-supply, the other relating to our basic unit of study, i.e., the entire course or timepath of our price over a year. Let us again repeat that the basic substantive points in regard to these are already made. We simply go over them again to clarify the nature of the methodological exploration, and in the process clarify our own methodology. After this, we will simply continue the analysis already begun at these stages a little further into the general nature of the price movement located through the statement of the problem. It is to be clearly stated that this

analysis does not go very far. There is therefore little that is offered by way of substantive results in this chapter which is new. As in the previous chapter, we will end the discussion by returning to the broad theme of distributive aspects of our price movement.

Let us now begin. At the very beginning we pointed out that our whole exercise in the thesis is defined with reference to a few "bare elementary facts" underlying the substantive structure of our field. The whole problem (or problem area) of this chapter is defined with reference to one such fact, simply the fluctuation in harvest on account of weather. Viewed from a strictly methodological angle, our very first step from this here consists simply of extending the fact to cover the opposite fluctuation in the general level of our price through the years caused by the fluctuation of harvest. The next step consists of tracing the implications of the knowledge of this causal relation with the sellers for their actual sale over a year out of its given harvest. This is the basic substantive step in the whole argument. The matter is already discussed in detail in Section 3 of Chapter 1, and Section 5 of Chapter 5. We shall presently go over it again. For the time, we simply take the matter for granted and pass on to demand and supply.

The first point is that we now have the actual supply in a year out of its given harvest as essentially a variable. By this, we

pas on from the change in price between years begun with to possible changes in the price within a year stemming from the same cause. Viewed from the standpoint of the latter change, this "cause" is by definition a change in the supply condition occurring through the year. It is in fact the only change in supply conditions that falls within the scope of the short-run dynamics of our price, and hence of our discussion in the thesis. Now, in this framework, we already have the change in demand conditions occurring through a year as a source of price change. The change in supply conditions thus complements the change in demand conditions and gives a completion to the whole demand-supply framework for analysing the short-run change in our price. This, we would say, is our essential methodological contribution to the subject of formation and dynamics of our price in terms of demand and supply.

Let us be clear that all that we establish here is the fact of a possible change in supply conditions through a year in parallel with that of a possible change in demand conditions. This does not make the concept of the two changes parallel in any sense. In fact, they have totally different structures. The change in demand conditions here is first the change ex post. The change ex ante, or "expected" change is of a purely derivative status, for the sellers come to form this expectation only through a process of actual change already under way. The change in supply conditions, on the other hand, is defined entirely by the expected change in supply in its a priori

sense, i.e., the harvest. This has its prior basis simply in the fact of harvest fluctuations, and the matter is complete within this. This is the essential difference in the structure of the two concepts.

This completes the first stage of our methodological exploration behind the problem of this chapter. Let us now pass on to the second stage, which takes us inside the problem itself. The logical starting point here is the notion of harvest expectation which we claim as an a priori factor in the formation of the supply and hence the price over a year in our context. Someway through each year, our sellers come to form definite expectations about the coming harvest, which they go on revising in the light of the actual weather conditions materialising (and so, incidentally, the expectation at the end is also broadly the correct expectation). This is what we term the harvest expectation. Let us now pass on to its role in the formation of supply.

The starting point is already alluded to above; viz., the harvest expected comes to affect the supply prior to the harvest by the expectation it generates about the level of price after the harvest. Let us spell this out. Let us consider a year with a normal harvest. Sometime through this year the sellers come to expect a higher or lower price next year depending upon the way the weather has gone so far, upon which they base their expectations about the coming harvest.

Let us grant that the expectations are correct all through. Now, off hand, it may be thought that the coming harvest being "good" or being "bad" will have an entirely symmetric effect on the supply this year; viz., in the case of a bad harvest, sellers expect a rise in price thereafter, and therefore carry over a larger stock to the next year than what they would have carried over had the harvest been a "normal" one; and similarly, in the case of a good harvest they expect a fall in price and carry over a smaller stock than this.

Such an analysis however rests on a completely vague notion of the stock carried over from one year to the next. In particular, one has to start from a completely undefined benchmark for the magnitude of this stock under the condition of normal harvest throughout, tacitly allowing a departure in either direction from it. As against this, we have attempted a logical understanding of the stock under reference, which has led us to conclude that it is necessarily a minimum stock defined purely by structural factors.[1/] So, no smaller stock can, by definition, be carried over from one year to the next. It is therefore only the expectation of a poor harvest that we see as actually affecting the supply prior to the harvest. There is nothing symmetric to this in the opposite case. This is the

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1/ See Section 3, Chapter 1, and Section 5, Chapter 5.

second fundamental asymmetry that gets built into our whole conception of the demand-supply framework.

We are now in a position to end up in the 'unit' of our study. First, we have now established a rigorous connection between the change in supply in our case and "speculation" in the true sense, which by definition is based on an expectation of future rise in the price. The change in price resulting from this change in supply constitutes by definition a speculative movement in the price. Viewed through our unit, we have a significant framing of the whole notion as the speculative movement in our price preceding a poor harvest.

This is our subject in this chapter. The equation of "harvest expectation" as a factor in the formation of our price with this component of the timepath of price through a year was already mentioned in the Introductory Chapter. We have now given a rigorous justification of the equation. In the process, we have also rigorously established the notion of change in supply conditions through a year as an operative element in the formation (and dynamics) of our price, which again we just mentioned at the beginning. Finally, we have gone over the important asymmetries that mark the whole area, first between "demand" and "supply", and then within "supply" itself. All these constitute the basic methodological clarifications that we intended to provide in respect of our problem here.

However, two related methodological points in reference to the area remain yet to be made. Firstly, when we claim the "harvest expectation" of sellers as a factor in the formation of the course of supply, and hence of price, in a year, we take a purely a priori view of the matter. It is only when we see the factor in the background of the actual fluctuation in harvest that we read a precise operative significance into the statement as distinct from the purely notional, and this significance in fact boils down to bringing the price movement under reference within the folds of our analysis. If it were the case that there were no fluctuations in the harvest, then the factor would simply cease to have any operative significance or explanatory power, and could as well be left out of the conceptual scheme. This simply underscores the point that ours is an integrated framework for studying the formation and dynamics of our price, within, of course, the short-run framework.

The second point is this. As just stated, we see the element of harvest expectation in the background of fluctuations of harvest on account of weather. This phenomenon in turn has been conceived all through as fluctuations around a "normal" harvest, defining the "good" and "bad" (or rich and poor) harvests. To use these terms in their rigorous sense, we have always gone by an analytical scheme where the "year" under reference is seen to begin in a normal harvest, but then end in a good or bad harvest: the whole

phenomenon is then brought within the scope of analysis set by this year of reference. This has been our basic methodology all through, though the point is properly clarified only now. Having done this, let us now point out that it appears entirely straightforward to adapt our substantive analysis to a different analytical scheme where the year under reference simply ends with a different harvest than that begun with. We however do not explicitly take up this methodological extension.

We have completed the first objective of the chapter. Let us pass on to the second, which consists simply of spelling out the analytics of the speculative movement in our prices already located through the analysis so far. Again, some of the most important points that arise in this context have already been made.[2/] We simply go over the matter "as a whole".

Let us then start once again from the sellers' expectation some way through a year that the coming harvest is going to be poor. We assume all through that the expectations prove correct. Sellers cover both producers and traders. We begin with the former. Let us remember that without the expectation under reference they would have simply sold their whole marketed surplus within the year, i.e., would

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2/ See in particular.pp. 254-256, Section 1, Chapter 7.

not have carried over any stock at all to the next year.[3/] This plan is however now changed some way through, and they decide to carry over a stock for sale next year when the price will be higher. This is to say simply that they now sell less through the remainder of the year. Let us note that this by definition takes place through the slack season of the year when the wholesale price is set through the bargaining mechanism described in Chapter 4. Viewed through this, the reduction in supply by producers appears simply as an intensification of their bargaining over the price. So the price actually rises. This explains our price movement in reference to the wholesale price.

Let us now turn to traders. Under the stated expectation, they come to expect a higher price at both the retail and the wholesale level next year as compared to this. So, we have the grounds in principle for both the types of trader-speculation described in Chapter 5. Let us now proceed a little further into this.

In the situation in which we have already placed them, our traders are already finding it difficult to maintain their ordinary stock, for the producers have already withdrawn part of their stock from current sale. So they (the traders) are clearly aware that just on physical grounds they will not be able to build up a speculative

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3/ See Chapter 1, Section 3.

stock over and above the ordinary stock. On the contrary, their speculative purchase to this effect goes in only to strengthen the bargaining power of producers, resulting in a still higher price for the traders to pay. The upshot then is simply that traders will in general desist from type I of their speculative process.[4] We are therefore left with only type II of their speculative process, i.e., they withdraw part of their ordinary stock from current sale and carry over the speculative stock so created for sale next year when the price will be higher. This is exactly parallel to the speculative process engaged in by producers. The common point is simply reduction in sale or supply. The reduction in supply by traders then brings about a rise in the retail price, which constitutes its speculative movement preceding a poor harvest.

We have now completed our account of the speculative movement in our price preceding a poor harvest. Let us now remember that this is but a component of the total movement in our price over a year as a whole. The question arises whether there is any underlying relation between this component and the others. On the face of it, such a possibility would appear remote, for each "movement" discussed has its own distinct basis quite unconnected with the others. However,

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[4] It will be clearly recognised that the argument here is broadly parallel to our argument in the previous chapter that traders do not in general pass on a rise in demand to producers.

If we look carefully into the nature of the speculative process underlying the speculative movement in our price, we come to see that the seasonal movement in our price must have a certain influence upon it and therefore also upon the speculative movement in price. Let us now bring this out.

Our point at bottom is a very simple one. We have all along viewed the seasonal movement in our price from within the year, and therefore seen it simply as a regular upward movement through the year. Let us now look at this through the years. We then see at once that the primary characteristic of this movement is simply a post-harvest fall in the price. This is a characteristic through the years in general, good, bad or normal. So, we see in particular that the actual coming of a poor harvest in general only modifies the post-harvest fall in price, does not negate it. Or in other words, the price in absolute terms therefore falls, and does not rise, immediately after a poor harvest. This by nature must enter the whole price expectation which generates the speculative process and the speculative movement in price we had been talking of so far. Hence the influence talked of.

Seen in purely formal terms, the general nature of this influence is simply that the very fact of the seasonal movement in our price, i.e., the post-harvest fall in it, must to some extent modify

the earlier speculative withdrawal of stock.[5] More analytically, we can say that the speculation which is of a purely myopic nature simply goes out of the field in this context. The whole speculation that is relevant in this context has therefore to be based on a projection of price through its post-harvest fall. This is already tacitly recognised above as we have been speaking all along about the level of price between the years concerned. A certain minimum "waiting period" in the whole speculative process therefore gets defined by purely structural considerations.[6]

We are now at the last point of our discussion. As mentioned at the beginning, we return to the broad theme of distributive implications of the price movement that formed the subject of this chapter. The starting point for this purpose is simply the fact that the whole "harvest expectation" which lies behind this movement gets to be defined only after we have moved a considerable way through the year under reference. We are then by definition well inside the slack season of our wholesale market. The

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5/ We may note here that this post-harvest fall in price is also a factor that works towards containing within a year the speculative process generated by the expectation of a rising demand, thereby supplementing the more basic force for this "containment" arising from the very uncertainty regarding the precise effect of the harvest on the level of price, which we had spoken of earlier. (See Section 3, Chapter 1, pp. 46-47). This in a way defines a general rounding up of the "process of speculation" in our context.

6/ See the relevant discussion in Section 4, Chapter 5.

whole price movement is also by definition contained within it, as indeed suggested directly by the expression "speculative movement in price preceding a poor harvest". The rest of the analysis, i.e., the distributive implications themselves, simply follows that of Section 3 of the previous chapter with one small difference. So, we will just state the common part and then explain the difference.

We begin by looking upon our whole price movement as a gain in principle to "sellers" in general within the year concerned. It is then also again a gain, on the producer side, to big producers alone for they alone are the sellers in the slack season. Passing to the trader side, we again have a clear gain to big traders by their very buying strategy — they gain out of the rise in the retail price but do not lose out of the rise in the wholesale price as they have already bought largely for the year as a whole at the very beginning (busy season). Small traders on the other hand may gain or lose out of the process, depending entirely upon the relative rise in the retail and the wholesale price of foodgrains. This is the difference. Whereas previously, the rise in the retail price set an a priori limit to the rise in the wholesale price by the very logic of the situation, now the rises in the price at these two levels are really independent of one another, being defined by the two quite independent factors of trader speculation and producer speculation. It is therefore entirely

possible that the rise in the wholesale price exceeds the rise in retail price, leaving the small traders as net losers within our year out of the whole price movement. This possibility did not arise earlier.

Appendix 1

SMALL PRODUCERS, THE BUSY SEASON, AND RELATED ASPECTS OF THE MARKETED SURPLUS

Small producers were defined in the text as producers lying outside the surplus class in agriculture, where by 'producer' is meant only that they sell the product (as first sellers). This implies that they have a prior access to the product. In an agrarian system where the product already gets distributed by the relations of production, such 'access' may be defined in very many ways. The class therefore is a very 'mixed' one in the sense of relations. We will however not go into the details of this.

Let us instead start from a more logical question going to the very roots of the notion of marketed surplus. On the face of it, the sale by a producer would appear to be equivalent with a surplus over his own requirements of the product, which is the conventional notion of marketed surplus. We have already left behind this notion in the case of the big producer. Let us now begin by questioning the relevance of the notion for the small producer. This is not a new question in the literature. We simply go about it in a way that appears to be logically the most comprehensive.

We begin with a reference case where the 'sale' takes place more or less immediately after the harvest, followed, much later, by a purchase back of what was sold earlier. This is not just a hypothetical case; it is often met with and referred to in the literature by the term 'buying back'.[1/]

It is clear that in this case, the original sale of the producer does not necessarily connote a net sale for the year as a whole. In the net, the 'producer' concerned may be a 'seller' of the product as much as a 'buyer' -- this obviously depends upon the relative quantities bought and sold. This is however a purely accounting point. At a more basic level, a question that arises is, why sell at all, if only to buy back?

Before answering the question, let us consider a variation of this case where, rather than buying back the product at a later date, the producer meets the 'short-fall' in his consumption at this date by taking a consumption loan in the product. In this case, his sale earlier remains his 'net' sale, and there is no accounting problem; but from the standpoint of the 'producer', we are still left with the same question in essence -- why sell at all in the first place, if only to borrow for consumption later?

1/ See, for instance, A. Bhaduri, "Towards a Theory of Pre-capitalistic Exchange" in Economic Theory and Planning, Essays in Honour of A.K. Dasgupta, ed. A. Mitra; also, Dharm Narain, Distribution of Marketed Surplus of Agricultural Produce by Size Level of Holding in India, 1950-51.

In either case, it is clear that there is a 'loss' involved for the producer. In the first case, buying back is at a higher price than that at which he sold, due simply to the seasonal movement in price; in the second, he has to return the consumption loan taken with interest. It is clear then that the original sale must have taken place outside ordinary economic calculations or considerations of gain, and as such could not have been a free or voluntary sale. Almost definitionally, there must have been some element of force (or involuntariness) behind the sale. This brings us to a notion that is often met in the literature on marketed surplus which is reviewed in Appendix 2 below. Let us nevertheless give a systematic statement of the essence of the notion as we ourselves see it.

The 'force' behind the sale must stem from some obligation that the producer has to meet. If this sale is to be seen as a regular phenomenon, (and it is only then that it is of interest), i.e., as a part of his very mode of existence, then the 'obligation' too must lie at the very basis of his existence -- i.e., it must come out of his relations of production in the comprehensive sense. However, there is no need for us to specify this in details, and we simply leave it as an obligation coming out of his prior relations.

The distinctive point of this relation -- indeed the sine-qua-non of the whole phenomenon -- is that it calls forth some money payment by the 'producer' under reference. It is through this that he gets involved in the money nexus. Granting that his only

ose of cash is the sale of the product, we at once have an planation of the phenomenon in general terms.

We may follow this a step further: the very nature of the ligation forcing a 'producer' into sales makes it clear that it is for he 'other side' of the relation to dictate the time of payment. The producer himself has no choice regarding the time — it is part of the ery 'contract' of the prior relation 'forcing' the sale. The chief onsideration underlying this would be the producer's ability to pay. In a very general proposition, this ability is the highest immediately fter the harvest, and hence payment is insisted upon at this time. hus the time of sale — soon after the harvest -- is to be seen as an integral aspect of the whole phenomenon.

The phenomenon therefore must be seen as a whole. In sum, it consists of sales by the 'producer', despite the fact of his not having a genuine surplus to sell, under the force of some prior obligation calling for a money payment. The payment being insisted upon immediately after the harvest, the sales take place at this time. Thus the time of sale is indeed evidence or a form of expression of the whole phenomenon. The needs of subsistence or survival then force the producer into purchasing the product for consumption later on, perhaps by taking a loan in money,[2/] or into taking a consumption loan in the product;

[2/] This is the case that is developed by A. Bhaduri, reviewed in Appendix 2.

into whatever other alternative the system might throw up. The payment of these, to the extent that they involve a payment in money, stem force sales soon after the following harvest, and so the vicious circle is set up.

Let us put the matter in a perspective. First, let us put the term 'marketed surplus' for the cases described above. (This is merely for the language.) Forced marketed surplus, we may then say, represents a specific mode of formation of marketed surplus which is the polar opposite of the mode discussed in the thesis. One is defined through the monetisation of some agrarian relation essential to the very existence or survival of a class of small producers, the other through the 'product form' of the relations on the basis of which big producers extract a 'surplus' directly in the produce. Not only are the two domains mutually exclusive (small and big producers), the mechanism (i.e., mode proper) in one case is in essence a denial of that in the other. We now simply reiterate that the latter is overwhelmingly the dominant mode of formation of marketed surplus in our general context of reference. The other mode (forced marketed surplus) is not denied, but its incidence, or scope or coverage, is seen as fairly limited in so far as the quantum of sale (as distinct from the number of sellers) is concerned.

Let us now recognise that even for small producers, 'forced sale' defines one specific mode of formation of the marketed surplus. The remainder can be brought under the term free or voluntary sale,

which is what corresponds to the conventional notion of marketed surplus. Conceptually, it is proper to see this as a structural division, in the sense that it is the class of small producers as a whole (and not just their sale) that is first subdivided into two classes, one obliged by prior relations to sell part of the produce it owns, and the other free of such obligatory sales. This does not necessarily mean that the entire sale of the former class has to be to make the payments in cash arising out of the prior relations. They may also sell the produce to purchase some essential commodities (salt, kerosene, ...). The essential point, from a pure consumption standpoint, is that their own consumption of foodgrains remains below the 'subsistence requirement', so that a reduction in their obligatory payment in cash leads simply to an equal reduction in sale, the amount 'freed' being simply consumed. Thus, the marginal propensity to consume foodgrains for this class would be unity (or very nearly so). Let us now turn to the other class and spell out a little of the thought experiment behind the standard conception of its sale of foodgrains. This consists of granting a priori that the whole produce — which by definition is the subsistence crop -- is consumed at a sufficiently low level of income or output, and visualising the emergence of this sale as a 'surplus' released over consumption as the output is progressively increased. The marginal propensity to consume the product is thus strictly less than unity when the sale or marketed surplus is at all defined. This already gives one a precise criterion to distinguish between the two

classes in purely behavioural terms. It may be recalled in this context that the "propensity" under reference for the surplus class of agriculture was argued at an early stage to necessarily assume a zero value[3/] Thus we have a complete mapping out of the marketed surplus in terms of its variation with output over the entire agricultural population actually selling the product, defining appropriate zones for its three divisions, the surplus class (mpc[4/] = 0), outside the surplus class coming under the domain of 'forced sale' (mpc = 1), and the remainder, i.e., outside the surplus class coming under the domain of 'free sale' (0 < mpc < 1). This is the most that we think can be said for the relevance of the tools of consumer behaviour theory for our subject matter. Needless to say, none of the categories themselves are defined by these tools.

We have now completed the systematisation of the notion of marketed surplus in respect of small producers, which we said at the beginning was our main objective in this Appendix. The remainder of the Appendix is devoted to an explanation of a basic property of small producers, viz., that they sell all that they have to within a short time from the harvest (i.e., in the busy season of the market), which is

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3/ See footnote 7 of the Introduction.

4/ "mpc" stands for "marginal propensity to consume foodgrains".

of the crucial data in our whole framework for the price formation foodgrains.

Let us begin by admitting exceptions -- exceptions almost ming the rule. Small producers are by definition a diffused, mogenous lot. There would be 'producers' by name, selling matically as and when the situation permits, with no regular plan basis of sale. Such sales by definition take place outside the y season. We leave them out of account and consider only the ular sale as a self repetitive phenomenon in time.

We have already seen that sale immediately after the harvest an integral aspect of the very notion of forced sale. So, the planation of the property under reference in respect of this category already given. Let us now turn to the other category, i.e., the e or voluntary sale of small producers.

Let us begin with an analytical framing of the problem, which more or less self defined. The producers under reference are by finition free to choose the time of their sale. They are also aware of the called seasonal movement in price. So, they only lose, relatively eaking, by selling in the 'busy' rather than in the 'slack' season. y then do they do this? This is the framing.

Our answer consists of the two following points. First, he producer has to incur a storage cost if he is to sell the produce later in the year. It is true that the rise in price through the 'seasons' more than compensates for this cost. So, if the sales had

been held back till this time, the producer would have indeed gained in a net sense. However, the 'cost' has to be incurred prior to this, and where it comes from is not explained. The explanation of our property then is that a small producer is unable to finance the product-storage for sale, and hence has to dispose the product off more or less as it comes off the ground.

The second point goes deeper and pertains to the very notion of the 'busy season' of the year. We had earlier distinguished between various aspects of the notion, one of which (the so called 'qualitative aspect'[5]) is precisely the object of our enquiry now. Let us now bring up another aspect left out earlier, which we may call the market aspect. The trader-producer transaction in foodgrains takes place under a variety of institutional arrangements. Within this, it is only the so called organised market -- which is the 'wholesale' market proper -- that meets regularly through the year. In the thesis we tacitly presumed only this market all through. There are also, however, purely local arrangements for sale which are of a purely temporary nature in the year -- there are hosts of miller's agents, itinerant merchants and other intermediaries going around the villages at harvest time to collect the produce.[6] These are all typical arrangements to mop up the 'surplus'

5/ See pp. 23-24.

6/ For an enumeration or listing of these arrangements see the Report on the Marketing of Rice (1954), pp 172-79; also S. Sarkar, Marketing of Foodgrains and Patterns of Exploitation

that the small producers may have. Insofar as a small producer is dependent upon these channels for his sale, the sale has to be made at the time mentioned, i.e., at the time of the harvest itself. This explains both the 'market aspect' of the notion of busy season (these are 'markets' defined only for this season), as well as why small producers may have to sell within this season. However, the latter explanation hinges upon a clause of 'dependence' which itself is not explained.

This brings us back to a common denominator of the two points, viz., cost. The point here is simply that the 'wholesale market' in the proper sense is also a central market serving a relatively large geographical area. It is a feature of what one calls the 'market town' in agriculture -- which may in fact be a large village, but this does not matter here. What matters is that the producer must incur a transport cost to bring his produce to this market, which is simply absent in the case of his within-the-village sale. This again the small producermay not be able to finance on his own. Besides, it may also not be worth the trouble (including cost) to transport his meagre amount to this distant market — "meagre", for he must have already of necessity sold part of his 'surplus' more or less with the harvesting to meet the various expenses that fall due at this time and it is therefore only the 'residual' that he may hold on to till later. Our argument in full is that the two costs together do not make this worthwhile. Hence the whole sale takes place within the busy season, typically through its special institutions just described.

Appendix 2

REVIEW OF THE BACKGROUND I — MARKETED SURPLUS

Our objective here is not to give a general review of the literature on marketed surplus. The literature is replete with issues of no concern to us. Our concern is exclusively with ideas on the formation of marketed surplus in the literature. Only a few basic references in the whole subject come into this.

The review is both analytical and historical. The two are combined by simply beginning at the historical beginning of the subject, locating the essential idea about the formation of marketed surplus at this beginning and then following through its subsequent evolution in the literature, picking up fresh ideas that may come up. The end-point, as already mentioned, is the Ph.D. thesis of K. Nagaraj from which we ourselves had taken off in the thesis.[1/] Let us end by pointing out that this is also essentially a critical review of the whole background we had started from in writing the thesis. It is a statement implicitly of our rejections. This excludes the Ph.D. thesis of K. Nagaraj.

1/ K. Nagaraj, op. cit. (see p. 2 of our thesis).

Having set out the broad scope and nature of this review, let us begin on the review itself.

The subject of marketed surplus has had a more or less clear beginning in the 1950s with the interest taken in the industrialisation and economic development of the so-called underdeveloped countries. The specific background was the Soviet industrialisation of the 1920s, in the sense that it is from this experience that the subject matter was initially drawn. However, it is only by the transference of the subject matter from this particular background to "underdeveloped countries" in general (granted an implicit predominance of agriculture) that the subject got properly initiated. The credit for this goes almost single-handed to Maurice Dobb. So, we begin our review with him.

Just to set the perspective, let us quote two passages from Dobb, revealing the significance he attached to marketed surplus in the process of economic development, as well as the implicit transference of the concept from one background to another.

> " In a certain sense, the inelastic marketable surplus of agriculture in the U.S.S.R. in the 1920's ... could be regarded as forming "a fund of real working capital" which acted as the crucial limiting factor upon plans for industrialisation. As such many of the participants in the intense controversies of those years treated it. " 2/

2/ M. Dobb, Soviet Economic Development since 1917, p. 24.

" Now if there is any factor to be singled out as the fundamental limiting factor upon the pace of development then I suggest that it is this marketable surplus of agriculture: this, rather than the total product or the productivity of agriculture in general. " 3/

The impetus that the subject received from such a beginning is obvious.

Let us now come to Dobb's ideas on the formation of marketed surplus. It is again best to quote directly. We quote a passage from his Delhi lectures discussing the effect of the Soviet agricultural reforms of 1917 on marketed surplus.

" ... as the result of the agrarian reform of 1917, with its distribution of the landlords' estates among the peasantry, and greater equalisation of holdings, the peasantry had been consuming a larger proportion of their grain, and marketing less of it ... . Before 1917, it had been the landed estates and the larger kulak farms which had contributed most of the grain for the market; poor and middle peasants having been mainly subsistence farmers. A revival of kulak and capitalist large-scale farming would have raised this marketed proportion towards the pre-revolution level. But short of this expedient, the only alternative was a revolution in the traditional basis of village economy ... . " 4/

It is clear from the above that Dobb's basic view regarding the formation of marketed surplus was that the marketed surplus is

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3/ M. Dobb, Some Aspects of Economic Development (Three lectures at the Delhi School of Economics, 1955), p. 45.

4/ Ibid., p. 72.

formed essentially out of the output (harvest) of large farms. Just to fill in a possible blank, we mention that Dobb specified the "revolution" at the end of the passage quoted as "the building of large-scale farming on collectivist lines." The view thus cut across systems, so to say.

Elsewhere in the book, Dobb pointed out that the "marketed surplus constraint" (to use a more recent expression) on industrialisation was "institutional" in character; the proportion of marketed surplus was different under "different types of social and economic organisation of the village", being different "under large-scale farming and under small, specialised or mixed farming, under collective farms and under individual peasant holdings" etc.[5/] This, however, was nothing different from the view obtained above. Given the "system" in the broad, the type of organisation at the farm-level was seen to be set simply by the size of the farm, thereby enabling one to pass freely between the qualitative and quantitative factors. Thus, given private agriculture, expansion of the farm size beyond a certain limit meant, by definition, cultivation on the basis of hired labour, or capitalist farming. This is the difference in the type of organisation that Dobb had in mind. The basic explanatory variable in the formation of marketed surplus thus remained the farm size. This, we would simply say, set the

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5/ Ibid., pp. 45-46.

mainline of thought on the formation of marketed surplus over the whole subject.

Let us take a little time on this. First we give a more analytical statement of the view, then we go over the argument behind it and finally give a critique of the whole view, which is already implicit in the view we ourselves take in the thesis.

Let us recapitulate that the view, or theory, under reference is simply that the marketed surplus is formed essentially out of the output of big farms. This is to say the same as that it is formed out of the distribution of the total output over big and small farms, i.e., the size distribution of farms in general.[6/] This is the basic analytical framing of the subject in this theory, and the theory itself is defined by the proposition that the more unequal this distribution, the greater is the proportion of output marketed. Let us be clear that this is the defining proposition of the whole theory. As a result, we have the "distribution" itself as the fundamental determinant of the proportion of marketed surplus according to this theory.

Let us now turn to the argument behind, or the logical core of, the whole theory. This was really made up of two independent

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6/ This is saying something quite different from that the marketed surplus is formed out of the distribution of produce within agriculture as defined by its relations of production, which has been our own basic proposition for the subject all through. We shall come back to this point at the end of our discussion here.

points, one more or less explicitly stated, the other remaining implicit all through. Let us take these up one by one. The first point (explicitly stated) in turn was made up of two relations having the same analytical structure. The first and basic one was simply the so-called Engel's Law, viz., the relative share of foodgrains in total consumption expenditure decreases with the level of expenditure. The implication is that the more egalitarian the distribution within agriculture, the larger the proportion of grain consumed within, and hence, the smaller the proportion of marketed surplus. This is the primary effect of the agrarian reform of 1917 in Soviet Russia that Dobb talks of at the beginning of the passage. The second relation was that the higher the level of farm income, the higher the proportion of saving-investment out of it, and hence also of marketed surplus. This can be considered simply an extension of the first relation in the present context and hence subsumed under it, allowing us to refer to this whole point under the name of Engel's law.

The second, implicit, point behind the view was simply that there is a one-to-one correspondence between the distribution of levels of living within agriculture and the size distribution of holdings (farms), so that one could use one as a proxy for the other. That this remains an implicit postulate behind the whole view is clear, for without it one cannot simply bring Engel's law to bear upon the size

distribution of holdings, i.e., operational holdings, in the manner done here. Taking Engel's law for granted, we can call this the basic postulate of the whole view or theory.

Let us now come to the critique. Let us first be clear that we do not deny in any way the proposition that a more unequal distribution of farm size would lead to a larger proportion of marketed surplus in output via Engel's law. The question is what status to assign to this proposition in the total view of formation of marketed surplus. Is it in any sense the fundamental proposition as suggested by the theory under reference?

A simple point serves to drive our point home. Let us consider an agrarian system dominated by the landlord-tenant system of cultivation. Let us in fact focus exclusively on this dominant system (or subsystem). There is by definition no big farm in such a system, for the whole farming is on the basis of family labour. According to the theory under reference, there would be little marketed surplus out of the system as a whole. This is certainly not the case. The proportion of marketed surplus in the total output here is roughly equal to the rent-share, say 30% or 40% — certainly a high value for the proportion of marketed surplus by all available standards. Logically, the inequality in the size-distribution of farms or the operational holding simply drops out of

the scene so far as the total quantity or proportion of marketed surplus is concerned.

This can now be suitably generalised to the agrarian system as a whole. Our point is simply that the rent-share on its own would remain simply the most important determinant of the proportion of output marketed. The size-distribution of farms just does not come into it. This factor only comes in through the other subsystem, capitalist farming. Dobb does explicitly refer to capitalist farming in this context. The error lies in simply taking the relation specific to it as the general relation valid across systems. Let us add that this is not just a logical criticism -- the landlord-tenant system does remain a significant subsystem of the agrarian system as a whole in underdeveloped countries, and so long as this is the case, no over-riding logical significance can simply be assigned to the inequality in farm size among determinants of the total marketed surplus or its proportion.

Let us now point out the essential difference between this view of the formation of marketed surplus and ours -- "essential" because we readily grant that variation in the size-distribution of farms will affect the proportion of marketed surplus. The difference is ultimately one of approach or framework. When we say that the marketed surplus is formed out of the distribution of produce

within agriculture as defined by its relations of production, it is the intra-farm and not the inter-farm distribution of produce that we start from. This in a sense is the essential difference. Our starting point is directly the relations of production and that enables us to see the distribution at the level of an individual farm, from which we then proceed to the system as a whole through its subsystems. In the theory under reference on the one hand, the relations of production, or institutions, come in only indirectly under the size-distribution of farms. We have already seen that there are gaps in the relation between this distribution and the relations of production as thought of in the theory under reference. However, the difference in approach or framework is prior to that, and resides ultimately in the governing notion of "distribution" in the two frameworks.

We have now covered the "beginning" of our subject. We shall now take a bird's eye view of its subsequent evolution, upto the point of Nagaraj's thesis. This is the gist of our main review. It will also set the directions for the detailed review.

Let us remember the mainstream view of the formation of marketed surplus already identified, according to which the fundamental quantitative relation in the subject is the relation between the size-distribution of farms and the proportion of marketed surplus in the total output. The single most important work in the whole field -- that of Dharm Narain[1] -- was in fact an attempt at an empirical estimation of this relation from the available data sources on Indian agriculture. By its very nature, this was a very difficult task, which the author set about with considerable ingenuity as well as concern with conceptual rigour. This brought him very close to a recognition of the true nature of the "distribution within agriculture" which we have ourselves spoken of in the thesis as the base of the whole formation of marketed surplus. Unfortunately, Dharm Narain stopped short of this, remaining content with merely reckoning the "distribution", or rather just the "product form" of the distributive variables (wage, rent, etc.) -- receipts and payments in kind as he called them -- for the purpose of estimating the "budget equation" of the basic units of the frame that he needed for estimating his relation under reference. This is one of the things to be gone over below in the detailed review.

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[1] Dharm Narain, Distribution of Marketed Surplus of Agricultural Produce by Size Level of Holding in India, 1950-51

A second point of interest in Dharm Narain's work from our point of view lies in the interpretation which he advanced for his empirical findings (which we have not yet stated). These findings have since been questioned,[8] but the points he made in this connection have remained. This was in fact one of the independent starting points of the whole idea of <u>forced or involuntary marketed surplus</u> which we have already gone over in the previous appendix. Having come to it, let us just say that it appears to have been the most influential idea in the whole subject, next to the farm size-marketed surplus relation. In fact, viewed in purely analytical terms, these two ideas together exhaust the whole field insofar as the <u>published</u> literature is concerned.[9]

To continue with the bird's-eye view, a second independent source of the idea of forced or involuntary marketed surplus was a paper by Mathur and Ezekiel[10] published in the same year as Dharm Narain. This was a purely theoretical paper built around a particular behavioural hypothesis which we will go over in the due course. The

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8/ See U. Patnaik, "Contributions to the Output and Marketable Surplus of Agricultural Products by Cultivating Groups in India, 1960-61", 1975.

9/ This of course excludes the unpublished thesis of K. Nagaraj.

10/ See P.N. Mathur and H. Ezekiel, "Marketable Surplus of Food and Price Fluctuations in a Developing Economy", 1961.

hypothesis called forth a good deal of criticism at that time, and seems to have died out, though the hypothesis generated (forced marketed surplus) stayed on (a striking parallel to the case of Dharm Narain's findings just mentioned). We will pay some attention to the most important critique -- that of Dandekar[11/] — for a valuable point it makes in reference to the formation of marketed surplus, albeit in a "negative" way. We will also briefly go over the subsequent evolution of the notion of forced marketed surplus, though this is already partly covered in the previous appendix.

We have almost completed our bird's-eye view of the evolution of ideas on the formation of marketed surplus starting from Dobb. It remains to take note of only one recent contribution — that of Griffin[12/] — which makes interesting reading both as sequel to Dharm Narain and as precursor of ideas in the thesis of Nagaraj.

Let us now begin. As just stated, Dharm Narain's main object was to arrive at the <u>empirical relation</u> between the proportion of marketed surplus in total output and the size distribution of farms. This is evident from the title of his work. Right at the beginning he

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11/ V.M. Dandekar, "Prices, Production and Marketed Surplus of Foodgrains", 1964.

12/ K. Griffin, <u>The Political Economy of Agrarian Change: An Essay on the Green Revolution</u>.

said that the enquiry was suggested by "the need to analyse the effect of changes in cultivators' incomes on marketed surplus".[13] "Change" meant, in this context, going from the implicit income at one size-class of farm to another at the given base year reference of his data. The object was thus equivalently to do the empirical groundwork for estimating the "income effect" on a cross-sectional basis. The basic unit of reference for this purpose was taken to be the "individual cultivating family". (We shall come back to this point later). The first necessity then was to set up the budget-equation for the units within each cross-section of the population. As already mentioned, this is what brought Dharm Narain close to the "distribution of produce within agriculture" in our sense of the term. Let us just quote :

> " For an individual cultivating family production receipts form only a part of its total receipts of agricultural produce in kind, the other part consisting of kind receipts received from other cultivating families. And, its marketed surplus is the difference between its total receipts and total retentions. "[14]

The term "production receipt" here meant simply the harvest.[15] "Kind payments received from other cultivating families" meant basically

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13/ Dharm Narain, op. cit., p. 1.

14/ Ibid., p. 2.

15/ Even what we called the "seed fund" created out of the harvest was counted as "retention in kind" and put on the other side of the account.

two things. One, for families leasing out part of the land owned, it meant the rent received in kind ("rent in produce" in our language). Secondly, Dharm Narain attributed the whole wage earning within his population to the bottom class as per the size-distribution of holdings and counted this wage, insofar as it was "in kind", as kind payments received by this class from other classes of the population. So much for the "receipts". The "retentions" that were subtracted from the "total receipts" to define the marketed surplus were then the same wages and rents as paid by the families concerned, besides their own consumption (and items like seed, cattle feed, etc.). (The whole receipts and payments on account of consumption loans, were left out on the ground that these cancelled out "within a year".[16/]

This is as close as Dharm Narain came to recognising the "distribution of produce within agriculture". Actually, as we have already pointed out, he recognised only the product form of the distributive variables, not the "distribution" itself. The "distribution" for his purpose was set by the distribution of holding size, and the matter ended there. We have already criticised this view, and do not repeat it here. The limitation is inherent in the very object of his enquiry, something a priori.

16/ This of course is not correct, for although the time between the borrowing and the repayment of a loan is less than a year, the two are separated by the harvest, and so do not cancel within a "year". This apart there is also the interest charge (included in repayment) driving a wedge between the two.

Let us now come to a more internal critique of the whole study. Let us start from the payment of wage and rent in kind by the units of the study, which, we just saw, appeared under the head of "retentions". Let us remember that the frame was set by "cultivating families". So, these payments were both to units within the frame, where they cancelled out in the total, as well as to outside the frame, where they did not. As a result, the marketed surplus out of the payments going outside the frame was left out. This was by the very a priori scope of the term marketed surplus as defined by Dharm Narain.[17] So, the whole marketed surplus out of rent was left out insofar as the rent went to pure landlords. The point to note is that there is simply no recognition of this specific limitation of the scope anywhere in the study: this in the background of Dharm Narain's repeated calling attention to his exclusion of part of the wages paid in kind "eventually flowing back to the market".[18] It is this totally lopsided view of the formation of marketed surplus in the total in the background of the study that constitutes the main point of our criticism. It is a criticism not so much of the scope of the study -- which, let us say, was a priori -- but of the awareness of the limitation of the scope.

17/ He defined the term to mean simply the produce marketed by cultivating families. This was stated right at the beginning before the "accounting" of the marketed surplus already quoted.

18/ Dharm Narain, op. cit., p. 2; and passim.

However, this is to be seen in a historical perspective. Dharm Narain was writing in a period of enthusiasm over planning, when it was simply believed that there were no "pure landlords" around — agrarian reforms had already seen to that. This is the mood summed up by Daniel Thorner in his eloquent phrase "agrarian revolution by census redefinition".[19] It is only this mood that appears to explain Dharm Narain's strange silence on the rent-source of marketed surplus. The implicit assumption was that the source was already covered within the frame and need not be mentioned.

Let us not go into the empirical validity of this assumption but simply take it for granted. So all "landlords" came by definition into Dharm Narain's frame of reference. They came into the size-class of this frame as defined by the size of their respective operational holdings, which in turn could be no more than a small part of their total ownership holdings. We will just say that any procedure of estimating their marketed surplus on this slender base is a priori suspect — the main burden of estimation falls simply on extraneous information for estimating missing links of the original data frame.

Let us now come to the second point of interest in Dharm Narain's work from our point of view. His main empirical finding was

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19/ D. Thorner, "Agrarian Revolution by Census Redefinition", 1956.

that the proportion of the value of output marketed did not steadily increase with the farm size; on the contrary, it first declined upto a critical point located at the 10-15 acre size-class and then increased steadily. As already mentioned, the precise point of our reference here is not the finding as such but the interpretation or explanation given by Dharm Narain. Let us quote this in full, as it constitutes one of the original statements of the doctrine of forced or involuntary marketed surplus, though these terms as such do not occur in Dharm Narain.

> " The pattern reveals even as it pinpoints the working of those pressures which flow from the onerous character the farmer's money requirements assume in the context of his meagre resources, and compel a lower-strata cultivator to market more of his produce than he would if the constraining influence were not there. These pressures arise from certain money obligations of the farmer like land-revenue, rent and debt service and the need to purchase such necessities of life as salt, kerosene and cloth. They derive their onerous character from the poverty of the farmer and the institutional set-up in which he operates. His weaker economic position is turned to their own advantage by the trading-money-lending community and social considerations compel him to incur expenses on marriage and other ceremonies which in many cases are out of all proportion to his income-earning capacities. And once he falls into the clutches of the money-lender it becomes difficult for him to get out of them so that his debt-

obligations become a continuing source of pressure to acquire more cash, through a 'distress sale' of his own produce. If in stinted consumption we have one, in the compulsion to borrow ... we have another facet of the same phenomenon. " 20/

The main point to be made in regard to this is that the whole explanation remains ultimately purely qualitative as well as a priori in nature. We are simply not given any indication of the orders of magnitude of the specific types of "money requirements" that the author calls upon to explain the high proportion of marketed surplus at the lower ranges of his data-frame. No references are also cited for this purpose. It is therefore very difficult to form any judgement on the quality of the explanation offered. This in fact is our main critique of the whole doctrine of forced or involuntary marketed surplus, already suggested in the previous appendix. To repeat, nowhere are we given any idea of the orders of magnitude involved, either regarding the part of the total marketed surplus that may fall under this category, or regarding factors that call this category into existence in the first place. This is a general critique of the literature concerned, not specifically of Dharm Narain.

20/ Dharm Narain, op. cit., p. 36.

It is now time to leave behind Dharm Narain and move on to Mathur and Ezekiel. It is best to do this taking note of the very last sentence in Dharm Narain's monograph. Referring to the lower range of his data frame, Dharm Narain ended his study by saying that it constituted the "range to which the most embarrassing developments flowing from a rise in agricultural prices may be expected to belong". What the "embarassing developments" were was simply left as understood. They were the possibility of a negative response of marketed surplus to price -- the quantum of marketed surplus actually falling with a rise in price. This was the point highlighted by Mathur and Ezekiel as a basic theoretical proposition, starting from a general critique of the very concept of marketed surplus.

Mathur and Ezekiel addressed themselves in their own words to the "reality behind the marketing of foodgrains by the vast masses of semi subsistence farmers in underdeveloped countries."[21] For this "reality" they argued :

> " It would be much more accurate and certainly much more helpful in understanding the situation to say that farmers sell that amount of the output which will give them the amount of money needed to satisfy their cash requirements and retain the balance of their output for their own consumption. The residual is thus not the amount sold, but the amount retained. "[22]

21/ Mathur and Ezekiel, op. cit., p. 397.

22/ Ibid., p. 397.

This was their basic critique of the concept as such. The way this linked up with the idea of forced sale or marketed surplus is obvious, for if the sale was for payments arising out of prior relations lying at the basis of the mode of existence of the farmers concerned, then their sale itself had to take priority over their own retention of the product, and conversely, this appears to be the only logical explanation of the priority of sale over retention.

To proceed on, Mathur and Ezekiel restated their critique in terms of a general behaviour hypothesis that the farmers had a relatively fixed requirement of cash which governed their whole marketing decision. The negative price response of marketed surplus alluded to by Dharm Narain followed at once from this hypothesis. The result evoked various responses in the literature. To some, viewing the matter as "supply function", the case appeared "perverse", "paradoxical", etc.[23] To others, viewing the matter as "consumer behaviour", the case appeared perfectly normal.[24] In the main, however, the case continued to be seen as a pointer to the forced or involuntary nature of the sale.

We have already covered the notion of forced sale in detail in the previous appendix. So we will cut short our review of the

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23/ Eg., D.R. Khatkhate, "Some Notes on the Real Effects of Foreign Surplus Disposal in Underdeveloped Economies", 1962.

24/ See Dandekar, op. cit., p. 191; see also T.N. Krishnan, "The Marketed Surplus of Foodgrains: Is it Inversely Related to Price?", 1965

further evolution of it and come straight to the endpoint represented by the paper by Amit Bhaduri referred to in the previous appendix. For the background, we just note that by and large terms like "forced sale", "distress sale" etc. have remained merely as interpretation of certain observed characteristics of the sale without any further integration. Bhaduri started from the characteristics implied by the phenomenon of "buying back" and saw this as expression of an underlying process of "commercial exploitation", as he called it. The gist of the process is in fact already there in the excerpt from Dharm Narain just quoted above.[25] Bhaduri simply set this out in precise analytical terms, which we may now just quote :

> " To meet his cash requirement, the peasant is forced to sell such a high proportion of his output ('distress sale') immediately after the harvest that he is left with too little to survive till the next harvest. Consequently, he borrows cash at a high rate of interest to buy foodgrains from the market ('distress buying'). For the small peasantry as a whole a regular cycle of distress buying and selling is thus set up. " [26]

25/ The reference here is to his point about the "weaker economic position" of cultivators being "turned to their advantage by the trading-money-lending community".

26/ A. Bhaduri, op. cit., p. 136.

We now pass on to Dandekar's critique of the paper by Mathur & Ezekiel. As already stated, our interest lies in a point regarding the formation of marketed surplus that he made in the course of this critique. The point appears to have gone almost unnoticed in the literature, and so we take a little time on it.

For the background we note that Dandekar first took issue with Mathur and Ezekiel on the significance of their very frame of reference. The point made was that just ascribing "vast masses" to subsistence or "semi-subsistence" farming did not really establish anything so far as the total marketed surplus was concerned. The major part of this total came from a "relatively small class of large farmers" who by definition were left out of Mathur and Ezekiel's frame of reference.[27] Coming to this frame, he then immediately made the point we refer to. Let us again just quote :

> " The fact of the matter is that these farmers do not derive their cash incomes by sale of foodgrains. For their cash needs, they depend mainly on other means, such as sale of other crops or wages earned from farm and off-farm employment or even remittances received from family members working in cities. This is quite generally true. It may be seen from the Rural Credit Survey [Technical Report, RBI] that in district after district, the small cultivators derive their cash incomes mainly from sources other than sale of farm

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27/ This of course was nothing but going back to the mainline idea starting from Dobb.

produce. If we further distinguish the sale of farm produce as between sale of foodgrains and sale of other farm produce, the point may be emphasized all the more. To sum up, for a large class of small farmers, their own production of foodgrains is not adequate to meet their needs. Therefore, they sell little of it. They derive their cash income from other sources such as by sale of other farm produce or as wages earned on farm and off-farm employment. It is mainly through such cash earnings that they meet their cash needs including in many cases purchases of foodgrains." 28/

This simply cuts the ground from under the whole conventional (text-book) view of the formation of marketed surplus, as well as the doctrine of forced sale. At bottom, one is left with no single "budget" for the farmer-qua-consumer to be allocated between "food" and "non-food". So the question of either substitution or priority did not simply arise. There was first a "food budget" defined in purely physical terms without any "surplus" in it. There was then a "cash budget" defined by sources other than sale of foodgrains. This is what accounted for the whole cash expenditure and payments of the farmer. No sale of foodgrains, voluntary or involuntary, therefore came into the picture anywhere.

28/ V.M. Dandekar, op. cit., p. 190.

As mentioned at the beginning, we have only a negative clarification of the formation of marketed surplus in this passage. This does not however detract from the significance of the point when viewed in the background of the general literature on marketed surplus. Taken on its own, the passage sets out a clear "structural" view of the total consumption of the farmer under reference. This is something rare in the literature.

In Griffin[29] we meet for the first time a clear assertion of the dominant role of the landlord in the formation of marketed surplus. This sets him apart from the whole literature reviewed so far. Let us again bring out the position through direct quotations.[30]

> " The conventional model of subsistence agriculture fails to capture an essence of the rural economy of many countries -- its dominance of powerful landowners. "

> " In the tenant farming communities, the landlord is the key figure in the marketing. . . . Through his control of the land, he is able to appropriate the surplus and sell it to the towns. "

Let us proceed a little further. From the passages above, it would appear that Griffin simply took for granted that the rent is

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29/ K. Griffin, The Political Economy of Agrarian Changes, Chapter 5.

30/ Ibid., p. 106.

directly in the produce, for this is the only way the landlords get a foothold as sellers of products. The impression is strengthened by his hypothetical examples of "a tenant in India" (p. 114) and "share-cropping in Latin America" (p. 116). But elsewhere we find him talking at the same length of all "large landowners", whether they are "capitalist farmers or landlords", whether the system of production is "based on share-cropping, extensive ranching or commercial farming" (p. 117), "whether the rents are in cash or in kind" (p. 118).

It is hardly necessary to point out that this completely cuts the ground from under any dominant position of the landlord's marketed surplus. Indeed, nowhere did Griffin try to develop a consistent view of the formation of marketed surplus. He just concentrated on the total quantum of marketed surplus and took it to be somehow related to the land distribution. To cap it all, his basic empirical reference was the study by Utsa Patnaik already referred to, which simply claimed a positive relation between the proportion of marketed surplus and size-class of holding all through, in opposition to Dharm Narain's earlier findings.[31] This was still "operational" and not "ownership" holdings, and "landlords" simply did not come into the frame !

31/ This was on the basis of a different set of data for the same population.

We are now at the endpoint of our review. This is what we ourselves took off from in writing the thesis. Once again, let us quote :

> " The most important fact about the product market in our economy[32] is the very major role of traditional landlords[33] as supply parties in the market, far exceeding that permitted by their own production or self-cultivation. The principal basis of their 'supply' or 'marketed surplus' is the rent and repayment of holi loans[34] they receive in produce after the harvest. It is the total output directly controlled by them through various means — self-production, land-lease for rent in produce, and extension of holi loans on the basis of these two -- that is at the basis of their marketed surplus. The other side of the coin is simply that the payment of rent and repayment of holi loans leave the tenants and poor peasants with little marketed surplus to sell. " [35]

The author called this the "principal method of formation of marketed surplus" in his economy. Our whole taking from this view is

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32/ The district of South Kanara in the state of Karnataka.

33/ They were called "traditional" to set them apart from a distinct set of much smaller "absentee" landlords. They were just seen to dominate the whole economy on the basis of their very large "family holdings" held through generations.

34/ This refers to an indigenous system of grain loans prevalent in the district.

35/ K. Nagaraj, op. cit., p. 182.

clear, and so we just stop with a word on the different perspectives in which the same elements are viewed in his thesis and ours.

Nagaraj's thesis was about the "modes of interrelation" between the land, labour, credit and product market of his economy. He therefore saw the product-form of rent, wage and the loans -- which was a general fact in his "economy" -- as specific links connecting the "product market" of his economy to the general terms and conditions of its land, labour & credit markets respectively. The whole formed a mode of interrelation defined purely through the "medium" in these "factor markets". Our interest on the other hand focuses directly upon the formation of marketed surplus. Seen from this standpoint, the same fact is seen to end in a general "distribution of produce" within agriculture from which the formation of marketed surplus begins. Though not stated explicitly in this form, Nagaraj made the same point when he said that the product market represented "a snapshot of the way the land, labour and credit markets work."[36] He also talked of the factor markets as belonging to the interior of his "rural economy" while the product market was located on the boundary. This again is a point we have taken over.

Let us now end by seeing Nagaraj's work in a perspective. Two specific precedents of the work — in two very different ways — are already located. One is given by the "accounting" of marketed surplus

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36/ Op. cit., p. 8.

at the level of his basic "units" (the individual cultivating families) by Dharm Narain. This clearly recognised the product form of wage, rent, etc. and in this way put the finger on the actual functioning of the agrarian system prior to the formation of marketed surplus. The whole analytical and methodological consequences of this however simply eluded his notice as he went along with an inherited view of the formation of marketed surplus i. terms of the size-distribution of holdings. The other precedent is Griffin's emphatic assertion of the dominant role of the landlord in the marketing of produce. Empirically, this is the same conclusion we have in Nagaraj. But the whole logical basis of the proposition that we have in Nagaraj is simply missing in Griffin.

Appendix 3

REVIEW OF THE BACKGROUND II : PRICE

Unlike marketed surplus, foodgrains pricing is no special subject or topic in economics. The "background" here is simply the theory of price. By the same token, we are cut off from the specific context of an underdeveloped country. We shall return to the general import of this point for our purpose at the end of the review.

In the Introductory Chapter, we cited the works of Kalecki, Robinson and Eatwell, and Hicks as making up the "specific background" for our purpose.[1/] We called this the "modern" price theory. We will presently clarify this observation. First, let us point out that each of these authors attempts in some sense a "fresh" comprehensive view of price-formation, within which they provide some meaningful direction with appropriate delineations to come up to our subject, without, of course, the "underdeveloped country" reference. This is why the works define the specific background for our purpose. We will confine our review here to only these works, which we will try to see in a connected fashion, which we do not think has been done before. By the very nature of this effort, the whole of price theory implicitly comes into the review. We will of course remain purposive all through and thus cover only those

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1/ On p. 4.

parts of these works that provide a meaningful background to our subject. In the process, we will also clarify our relationship with this background.

Let us now come to the term "modern". This must not be taken to mean "current". We have used the term merely to separate our authors from the conventional mould of price theory in which it still continues in the textbooks. The very fact that they do not find room in the textbooks at any level is proof of their not being "current" in any sense.[2/] It is also granted completely that there is nothing as yet unified about modern price theory in this sense. There is really no modern price theory in the proper sense, but only different attempts in this direction, still very preliminary and with hardly any general acceptance.

Let us now begin. As just stated, each of our authors has attempted a fresh comprehensive view of price-formation in general. This is what we must begin with. Actually, this fresh comprehensive view has consisted straight of a broad separation of "two types of price formation" in the economy and a corresponding divisioning of the whole subject of price formation. Our first object then is to go over the nature of these divisions as found in each of our authors. Let us first note the terms used : "demand determined and cost determined price" (Kalecki), "primary products and manufactures" (Robinson and Eatwell), and "flex-price and

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2/ Robinson and Eatwell's 'textbook' is here truly the exception to prove the rule. Let us just add that we have used the term "modern" after the title of their book, Introduction to Modern Economics.

fix-price markets" (Hicks). Let us now go over these divisions one by one.

Kalecki addressed himself directly to factors governing the change in price in the short run and defined his division on that basis. To quote :

> " Short term price changes may be classified into two broad groups; those determined mainly by changes in the cost of production and those determined mainly by changes in demand. Generally speaking, changes in the prices of finished goods are 'cost-determined' while changes in the prices of raw materials inclusive of primary foodstuffs are 'demand-determined' " 3/

So, what he meant by the terms demand determined and cost-determined prices — which appeared as title of this section — was simply that the short term change in the price was governed respectively by changes in demand and the cost of production. Nothing was stated directly about the level of price. His was thus a completely "dynamic" approach from the beginning. Kalecki immediately followed up the passage quoted (which was the opening passage) with the statement that the "two types of price-formation arise out of different conditions of supply." 4/ We will come back to this point — which is what really constituted the

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3/ M. Kalecki, "Costs and Prices", in Selected Essays on the Dynamics of the Capitalist Economy, p. 43.

4/ Ibid., p. 43.

heart of his views on price formation -- after we have similarly acquainted ourselves with the broad nature of the division (or "dichotomy") in Robinson and Eatwell, and Hicks.

Robinson and Eatwell traced the idea of the dichotomy back to classical economics, and then gave it a turn of their own. It is perhaps to be stated that "classical economics" here means their own interpretation or reading of classical economics, but we will leave the point at that. Let us again quote :

> " The classical economists drew a sharp distinction between scarce goods, the prices of which depend upon demand, and produced goods, of which prices depend on costs, primarily in terms of labour time. The distinction corresponds, in the main, to the distinction between products requiring specific natural resources and those for which man-made equipment can be provided as required. " 5/

Let us first avoid a possible terminological confusion that immediately arises here. Nothing would be more natural than to call the distinction made here a distinction between demand-determined and cost-determined (or demand dependent and cost dependent) prices. This is not to be confused with the terms as implied by Kalecki. The whole reference in Kalecki, as just seen, was to the change in price (in the short run); the

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5/ Robinson and Eatwell, op. cit., p. 147.

reference here, on the other hand, is simply to the level of price understood in a general sense.

Let us now come to the "turn" given to the above by Robinson and Eatwell, i.e., what they put in on their own. They really made a fresh beginning with the notion of market and brought in explicitly the traders or dealers.6/ They then went on to write

> " There are two broad categories of markets in which the relations of supply and demand for particular commodities operate differently. Although, in a complex economy, many borderline cases and overlapping relationships exist, the two principles can be clearly distinguished. In the first type, the producer offers his goods to a dealer and takes whatever price they will fetch; in the second, the producer sets his price and sells as much as the market will take. " 7/

This is the specific formulation of the dichotomy that we have in Robinson and Eatwell. Now that there is yet no tie-up with the product distinction begun with. This came in the next sentence :

> " These two types of market are linked to the two categories of commodities distinguished above. " 8/

6/ "Except in rare cases ... , market transactions are not made directly between an original producer and a final buyer. Markets are formed by groups or intermediaries who buy and sell, intending to make a profit out of the difference between buying and selling prices". (op. cit., p. 148).

7/, 8/ Ibid., p. 148.

With this, Robinson and Eatwell simply went over to the expressions "primary product" and "manufactures" for the headings of their two types of price formation. This was nothing but a renaming of the product distinction begun with. Implicitly, the whole "classical dichotomy" — primary product prices as "demand determined" and manufactures prices as "cost determined" in the sense explained above — was also carried on with. We will again leave this off here to acquaint ourselves with th dichotomy in Hicks.

Hicks saw his two types of markets in a very different framework. Both Kalecki and Robinson and Eatwell based their division of price-formation ultimately on differences in production conditions, and the division itself was in this sense a structural division. Superficially it may appear that one has roughly the same structural division in Hicks, for, according to him, his fix-price markets covered "most industrial products"[9] while the main example of flex-price markets (within commodities[10]) was "staple commodities".[11] This however is not so. The above were cited by him merely as examples. Production conditions were just never brought into the discussion. He thus completely shunned a structural approach and followed instead a purely historical one. His framework was in a word the evolution of markets.

9/ J.R. Hicks, The Crisis in Keynesian Economics, p. 23.

10/ The qualification is necessary because Hicks talked of just markets per se, for any object.

11/ Ibid., p. 24.

The evolution in brief was as follows. One begins with the flex-price market which works "in a demand-supply manner". This had been the "dominant market form throughout most of history" and included two further types called "unorganised" and "organised" and associated respectively with the names of Marshall and Walras. Working in a demand-supply manner was then explained for the former by the "key figure of the merchant who would play the part of Walras' functionary -- it would be he who would make prices". As for the organised markets, we are just told that they are "like Walrasian markets, in that they work under rules, but the rules are the rules of a club", and as for this "club", we are taken back to "groups of traders (who) have become habituated to trading with one another". To continue, all this however,

> " ... has been largely replaced by what I have called <u>fix-price markets</u>, in which prices are set by the producers themselves (or by some authority); so they are <u>not</u> determined by supply and demand. It is of course granted that cost conditions, and sometimes also demand conditions, affect the prices that are fixed; but when these are changed, prices do not change automatically. ... Organised markets, which are more competitive markets, so that they do work, on the whole, in a recognisably demand-supply manner, remain in existence in some particular fields; but the unorganised flex-price market, the old type, is on the way out. " 12/

12/ For references given here and immediately above, see Hicks, <u>Economic Perspectives</u>, pp. ix - xi .

As already noted, Hicks cited staple commodities as example of "particular fields" in which the flex price type still continues in existence, while industrial products by and large come under the fix-price type. But, to repeat, there was nothing structural about this.

We have now gone over the broad nature of the division in price-formation suggested by our three authors. The relevance of this for our purpose is obvious, as we can see our subject as falling unambiguously within one clear category in each of Kalecki, Robinson and Eatwell, and Hicks, viz., the category of "demand determined prices" in Kalecki, "primary products" in Robinson and Eatwell, and "flex price markets" in Hicks. So we will now concern ourselves exclusively with these categories. This is really where we start our review of the "specific background".

As already noted, Kalecki saw the basis of his division in "different conditions of supply". The condition at the basis of the demand determined category was stated simply as "increase in supply takes a considerable time".[13/] He explicitly referred to agriculture in this context, but stopped short of any explicit time-view of the 'output' as such. This is a point worth calling attention to, for how the output is obtained in time is obviously prior to what time may be needed to increase the supply. To be explicit, if the output is obtained only discretely in time, then obviously no notion of change or

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13/ Kalecki, op. cit., p. 43.

increase in output is defined for any period of time less than the time-gap between successive outputs. This is precisely the case in agriculture, where the output is obtained only in successive harvests. But the condition in Kalecki is also satisfied if the output is continuous in time, provided that the output for a certain period ahead is "predetermined" by particular conditions at any point of time. These two quite different cases were simply clubbed together by Kalecki under his condition which he also stated as the condition of the supply being "inelastic over short periods".

Let us now come to Kalecki's demonstration of this category, i.e., the claim that the short term change in price in this category is determined mainly by changes in demand. Actually, what Kalecki did was to set out very tersely a complete statement of the mechanism of price change/movement following a rise in demand for this category. Let us quote this passage in full.

> " With supply inelastic in short periods, an increase in demand causes a diminution of stocks and a consequent increase in price. This initial price movement may be enhanced by the addition of a speculative element. The commodities in question are normally standardized and are subject to quotation at commodity exchanges. A primary rise in demand which causes an increase in prices is frequently accompanied by secondary speculative demand. This makes it even more difficult in the short run for production to catch up with demand. " [14]

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[14] Op. cit., pp. 43-44.

Let us go over this a little carefully. Kalecki clearly brought one factor after another to explain successive rises in the price -- in the sense of successive layers, one on top of another -- caused by the same rise in demand. The first factor was simply the "diminution in stock" caused by the increase in demand and implicitly -- for some time at any rate — in the volume of sale. In other words, it is the change in the size of stock that was seen to lie behind the change in price. This defined the primary mechanism of price change in the context under reference. The second factor was left simply as a "speculative element" in the price movement. This obviously meant at bottom a speculative withdrawal of stocks in expectation of further rise in the price, which actually caused the price to rise by reducing the supply. The third and final factor was the superimposition of a "speculative demand" upon the primary rise in demand begun with, which caused the price to rise still further.

Let us now take a little time off to establish the relationship of our work with Kalecki. First and foremost we have to state that we owe the whole motivation for the basic unit of our study of price formation, viz., the entire course or timepath of price running from one harvest to the next (a "year"), to Kalecki's notion of "demand determined price" as set out above. The argument was as follows. First, we argued that a "year" in this context (price-formation) is a relatively "considerable time" precisely because the demand for our product is

liable to a considerable rise over a year. This is simply a paraphrasing of Kalecki, for the relevant variant of his "supply condition" (already noted). From this, we saw that a rigorous examination of the movement in price following from a rise in demand required us to first clearly locate this rise within a given year and then trace the price movement over the remainder of the year. This in turn required us to have a clear view of the entire course or timepath of price over a year, without the rise in demand. This is how we came upon the "unit".

Let us now briefly turn to our analysis of this price movement (Chapter 8). Again, the basic structure of the price movement -- a "primary movement" defined by the traders' demand management and a "secondary movement" defined by their speculative withdrawal of stocks superimposed upon it -- clearly follows the lines suggested by Kalecki. It is true that there is no actual diminution of stock in the primary movement as we described it. However, this by itself is of little consequence. What is important is the mode of argument behind, which, we think, is really a detailed spelling out of Kalecki. The really important step we took from Kalecki was to go from his rather generalised statement of the "supply condition" to the really important "production condition" behind (annual harvest) and stick to it all through. On this basis, we had a clear timepath of the stock through a year, relative to which to think about the change in stock,

which was absent in Kalecki. We may also point out in this context that in our framework the basic perspective in which Kalecki saw the formation of price -- "production catching up with demand" as he put it at the end -- somewhat recedes into the background, being 'overtaken' in some sense by the more proximate factor of harvest fluctuations. However, the same factor stated, say, as "harvest uncertainty", can also be looked upon as an additional component of the "difficulties" in production catching up with demand.

So much for the relationship of our work with Kalecki. Let us now pass on to Robinson and Eatwell and Hicks. Again our basic relationship with them is similar to that with Kalecki. Just as Kalecki's work motivated us to look into the formation of our price explicitly in an annual frame of reference, so also the works of Robinson and Eatwell and Hicks motivated us to study it in a frame of reference with an explicit account of traders. It motivated the whole frame of reference of the trade-process. In either case, there remained enormous steps to be taken from these starting points to a proper framework of study complete with its "tools of analysis".[15/] This apart, we also draw a more specific lineage from Robinson and Eatwell, to be immediately clarified.

15/ We once again acknowledge our debt to the unpublished works of our colleague for the whole framework of the trade-process.

Let us now come to the substantive analysis of Robinson and Eatwell and Hicks. Robinson and Eatwell began by laying down more clearly the production conditions they had in mind. This was stated as

> " ... agriculture or animal husbandry conducted by small-scale competitive producers spread over a large area. Final purchasers are also scattered and centres of consumption are distant from regions of production. Dealers (often at several stages) are therefore indispensable. The dealer provides finance to carry stocks, collecting produce as it becomes available and feeding it out as required. "16/

The "structural approach" in Robinson and Eatwell and Kalecki that we spoke of earlier is in clear evidence here as the whole existence of traders is here argued out in purely structural terms. Following this, we have their key proposition on the trader-producer relation:

> " Dealers are in more or less close competition with each other but, collectively, they are in a generally stronger economic position than producers. This is especially so when the producer is a peasant who lacks both commercial knowledge, and finance to hold stocks for himself, and is obliged to sell as soon as the harvest comes in, "17/
>
> [which, let us point out, is precisely what corresponds to the description given — V.N.]

It is clear that Robinson and Eatwell view the trader producer relation as a general bargaining relation. Within this, they assigned

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16/ Robinson and Eatwell, op. cit., p. 148.

17/ Ibid., p. 148.

a clear superior position to traders. Their proposition that it is the dealer who in some sense fixes the price while the producer merely "accepts" it can now be seen as a logical corollary to this proposition. This is why we called this their "key" proposition.

Our lineage is also obvious from this. We have simply carried over the whole bargaining view of the trader-producer relation that one finds here, without, of course, their a priori assertion about the relative bargaining strengths. It is hardly necessary to point out what analytical distance this opened up.

Before leaving this off, let us just call attention to the final point in Robinson and Eatwell's description of the "peasant" they were concerned with — "obliged to sell as soon as the harvest comes in". There is a clear tie-up of this to their original proposition "the producer offers his goods to a dealer and takes whatever price they will fetch". The point is that the proposition is meaningfully understood only in reference to a fixed quantity "offered" by the producer at a <u>given</u> point of time. Such would be the case if the producer is "obliged to sell as soon as the harvest comes in" (sell presumably the whole amount). When this is not so, the original proposition is made dubious, for no a priori fixed quantity is then "offered" by the producer at any point of time — the whole becomes open to bargaining, which takes one outside the structural frame of reference in Robinson and Eatwell. This "bargaining" has been studied by us at length.

Next, Robinson and Eatwell went on to discuss the process of change in price. This was a complete return to "demand and supply", which indeed they put up as heading of their discussion. They started simply by asserting that in "the above kind of business" (primary products) one "can make use of something like the notion of an equilibrium between supply and demand". The equilibrium was then restated as "balance" in the following terms:

> " The market is in balance at a moment when the flow of output available for sale equals the flow of purchases, so that the dealers' stocks are neither silting up nor running down. " 18/

Starting from this, they just saw the change in supply (flow of output) and demand (flow of purchase) as completely symmetric forces on price, raising or lowering it as the case may be (fall in supply or rise in demand, and vice versa). Next, they pointed out that the change in price could not have much effect on the "amount offered", for the "essence of the situation" was that the "supply is governed, at any moment, by natural conditions which set a more or less rigid limit to production." 19/ This obviously was very close to the "supply condition" at the basis of the demand determined category in Kalecki. Unfortunately, Robinson and Eatwell just let the point pass, and went on to discuss

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18/ Ibid., p. 149.

19/ The emphasis is ours.

problems that came in the way of re-establishing an equilibrium. The main point was that the very change in demand/supply gave rise to expectations of further change which had an inherent indeterminancy as regards the sign of change.

Let us continue with the point of contact between Robinson and Eatwell and Kalecki just mentioned. The point, to be explicit, is that if "supply is governed, at any moment, by natural conditions which set a more or less rigid limit to production", then supply is "inelastic" in the short run — unless the expression "at any moment" is taken in a meaningless literal sense. Unfortunately, this is what Robinson and Eatwell appear to step into, for how else do we account for their completely symmetric notions of changes in demand and supply? If supply is inelastic in the short run, then there is only the change in demand to consider. This simple point is simply frittered away by Robinson and Eatwell in their eagerness to demonstrate the relevance of the "notion of equilibrium between supply and demand" for the case of primary products. Perhaps they meant this as a concession, but the whole point remains enigmatic to say the least, as Robinson and Eatwell themselves traced the whole subject of price formation from a "classical" and not a "neoclassical" background. How bold was the step taken by Kalecki can now be seen in retrospect with none of the notions of "equilibrium", "balance at a moment", "flow of output and flow of purchase" etc. just coming into the framework.

This sets the stage for our coming to Hicks. At the beginning we clarified the term "modern price theory" that we applied collectively to our three references to denote some separation -- or coming out -- from "the conventional mode of price theory in which it still exists in the text-books". This conventional mould is of course the "equilibrium of demand and supply". It is now clear that our three authors represent a wide spectrum in regard to the "coming out" referred. In Kalecki we have a complete break. Robinson and Eatwell, we just saw, maintained a tenuous connection with the above background for the case of primary products — for reasons that remain an enigma to us. Hicks stands on a very different platform. The conventional mould for him is valid "throughout most of history". It is only in the "modern" economy (his word, repeated time and again[20/]) that he finds a coming out of this mould, in reality, in the form of what he calls the "fix price market". The "flexprice market" represented the continuity. This was by definition so. The market for "staple commodities", as we saw, was simply thrown in as example, as well as proof, of this — the why and how of this was never set out. It was left simply as axiomatic.

It is only in his Crisis in Keynesian Economics that Hicks gave some spelling out of how he saw his "flexprice markets" in operation; elsewhere he simply left this as understood under expressions we have

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20/ See e.g., Crisis in Keynesian Economics, p. 23; also Economic Perspectives, p. xi.

already given examples of.[21] The key to this is contained in the alternative designation that he finds for the category -- "flexprice or speculative markets" became his own key expression now,[22] allowing him to switch between the terms as he liked.

The idea was as follows. First, there was the blanket assertion (or perhaps another definition) that the "equilibrium" in the flexprice market is a "stock equilibrium". The point is supposedly derived from Keynes. To quote,

> " One of the most important things which we have learned from Keynes is that prices, in a flexprice market, though they appear to be determined by current demand for the commodity and new supplies coming forward, are in reality determined by the willingness of traders to hold stocks. The equilibrium of the market is a stock equilibrium, not a flow equilibrium. "

This contradistinction was then explained by the point that the demand and supply could be in balance -- Hicks called these the "outside" demand and "outside" supply, meaning that these did not come from within the traders -- but traders could still want to "increase their stocks", which would raise the "actual price" above the "flow equilibrium price". The "market", he concluded,

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21/ E.g., "they work, on the whole, in a recognisably demand-supply manner".

22/ For references made here and immediately below, see Crisis in Keynesian Economics, pp. 22-26.

> " will find a temporary equilibrium, at a price which makes outside demand less than outside supply -- the difference being made up by an addition (a desired addition) to traders' stocks. "

From this he claimed that the "major difference" between his fixprice and flexprice market was that

> " in the fixprice market, actual stocks may be greater, or maybe less, than desired stocks; in the flexprice market, on the other hand, actual stocks are always equal to desired stocks. "

So, the flexprice market was always in equilibrium !

The puzzle was explained by the fact that desired stock included — indeed, boiled down at heart to -- the speculative stock. He made allowances for the "uncertainty of price expectations" as well as the act that traders required to "keep some minimum stock in order ' stay in business", but *everything depended ultimately upon* the speculative stock-holding -- and buying and selling — of traders. The vagaries of this did not stand in the way of the market being "in equilibrium". Remembering the ending in Robinson and Eatwell, we can say that what they saw as "problems that *come* in the way of re-establishing an equilibrium" are now all seen as non-problems within an equilibrium path.

It is hard to see anything more than mere play of words -- equilibrium, temporary equilibrium, flow equilibrium, stock equilibrium,

inside equilibrium, outside equilibrium and so on and so forth — in all this, Robinson and Eatwell included. We cannot, however, exclude the points on that account; they remain as part of the "specific background" to our subject in the literature, the only relevant background that the whole of price theory in fact provides for it. It is hardly necessary to point out that we ourselves have not taken anything from this part of the background surveyed. The "taking", as already stated, is limited to the idea that the trader or merchant is a "key figure" (Hicks' word) in the subject matter we study. The rest has been our own development starting from the unpublished works of our colleague (P. Gajapathi). We do take out the subject, we believe, from a state of mere lip-service in both Robinson and Eatwell, and Hicks, whether the reference be to the "two prices" a trader is involved with, the "normal stock" of traders (Hicks' expression, The Crisis in Keynesian Economics, p. 26), or the turnover period of stock, or the "speculation" engaged in by them.

We are to end by saying something on the general import of the specific context (an under-developed country) of our subject, in the background of the above review. Let us start back from Kalecki, and note the contradistinction implied by his division of "demand-determined" and "cost-determined" prices. Neither Robinson and Eatwell nor Hicks also ever speak of the cost of production in connection with the price-formation of "primary products" or in the "flexprice market" respectively

A running thread through the whole of the background surveyed — albeit a negative and an implicit one — is thus the exclusion of "cost of production" as a relevant factor in the formation of price, at least in the short run, so far as our "commodity" is concerned. By its very nature, the exclusion never comes up for any defence or justification.

At this level of generality, we have nothing to say on the exclusion. But, given the background of an under-developed country, we do provide a very deep defence of it, for we simply deny any meaningful notion of "cost of production" in this context: "meaningful" in the sense of its elementary coverage (covering the 'costs' of the so called primary factors of agriculture, land and labour) and form of expression (in money, i.e., commensurate with price). This has nothing to do with the short or long view of time, i.e., the time perspective in which the formation of price is viewed. It is a matter simply of the agrarian system as it is in our general context of reference.

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