A review of concepts and previous studies is useful to define precisely the concepts used in the present study, to place the problem in proper perspective and to decide the framework for analysis. Precise definition of the concepts would enable both the collection of relevant data, and meaningful interpretation of the results of analysis.

A. CONCEPTS

Market:

Market means a concourse of buyers and sellers. The term market was derived from Latin word 'Mercatus' to denote a "Market Place". Bain defined market as closely interrelated groups of sellers and buyers. According to Narver and Savitt, a market was the contract between demanders (buyers or lessees) and suppliers (sellers or lessors) for transferring ownership or right to use a factor, good or service. Demanders were consumers or customers with wants, and the financial ability (cash or credit) to acquire legal rights from firms offering the factor, good or service.


Wentz and Byrich opined that a market could be defined in many ways - geographically, demographically, institutionally or politically.⁵ Dahl and Hammond characterised a market as some sphere or space, where the forces of demand and supply were at work to determine, or modify price, since the ownership of some quantity of good or services was transferred and certain physical and institutional arrangements might be in existence.⁶ Stanton defined market as people with needs to satisfy, the money to spend, and the willingness to spend it.⁷ According to Kotler a market was a set of all actual and potential buyers of a product.⁸

Kohls and Uhl pointed out that in economic analysis, the term market had the special significance of an arena, wherein all buyers and sellers were highly sensitive to each other's transactions, and where what one did affected the other. In this market, all buyers and sellers should be able to communicate with one another, should be capable

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of exchanging products with each other, and also be exposed to similar price signals.\(^9\)

Cochrane conceptualised the market as some sphere, or space, where the forces of demand and supply were at work, to determine or modify price since the ownership of some quantity of a good, or service was transferred, and certain physical and institutional arrangements might be in evidence.\(^10\)

Shepherd \textit{et al.} defined market as a group of buyers and sellers with facilities for trading with each other. They might be gathered together at one point, or in one market place, or scattered over a large area — that was only incidental.\(^11\) This definition is used in the present study.

**Marketing:**

A review of the evolution of the concept of marketing would show that it had changed with the time, first upon commodities, later upon institutions necessary to carry out


\(^10\)Willard W. Cochrane, "The Market as a Unit of Inquir\textit{y in Agricultural Economics Research}", \textit{Journal of Farm Econo-\textit{mics}}, XXXIX(2), 1957, pp.21-.

marketing processes, and still later upon the functions that were preformed in making the marketing transaction possible. It had been described differently by various persons - as a business activity, as a group of related business activities, as a trade phenomenon, as a frame of mind, as a co-ordinative and integrative function in policy making, as a sense of business purpose, as an economic process, as a structure of institutions, as a process of exchange, or transferring ownership of products, as a process of concentration, equalisation and dispersion, as the creation of time, place, and possession utilities, as a process of demand and supply adjustment and as many other things.12

Marketing was defined as a human activity directed at satisfying needs and wants through exchange processes.13 Kohls and Uhl defined food marketing as the performance of all business activities involved in the flow of food products and services from the point of initial production until they were in the hands of consumers.14


13 Philip Kotler, op. cit., p.19.

Stanton considered marketing as a system of business activities designed to plan, price, promote, and distribute something of value, want satisfying goods and services, to the benefit of the present or potential household consumers or industrial users.\(^{15}\) Dahl and Hammond observed that the end result of primary good production, assembling, storage, transportation, manufacture, and distribution was consumption. All of the intermediate steps, from primary production to ultimate consumption, were encompassed by the term marketing.\(^{16}\) For Garry, marketing was that phase or aspect of an economy that had to do with, and resulted in, the changes in custody of, responsibility for, and authority over goods, to the end that goods produced by many agencies were made available for the convenience and satisfaction of different users.\(^{17}\)

Narver and Savitt would prefer to identify marketing with all pre- and post-purchase activities, in any way related to transactions of ownership or use rights of any factor, good or service.\(^{18}\) Pyle thought marketing to be

\(^{15}\)William J. Stanton, *op. cit.*, p.5.

\(^{16}\)Dale C. Dahl and Jerome W. Hammond, *op. cit.*, p.4.


that phase of business activity through which human wants were satisfied by the exchange of goods and services, on the one hand, and for valuable consideration — usually money or its equivalent — on the other.\(^{19}\) According to Philips, marketing — which was frequently referred to as distribution by businessman — included all the steps or activities necessary to place tangible goods in the consumer's hands, including only such activities as would involve a significant change in the form of the goods.\(^{20}\) Purcell pointed out that marketing was nothing more than one dimension of an on-going process within the exchange system that served to bridge the gap between producer and consumer.\(^{21}\)

Newberg circumscribed marketing (of a farm product) so as to include everything done with the commodity from the time it left the farm gate or first changed hands, whichever was sooner, until it was in the hands of the consumer.\(^{22}\) The definition of marketing by Irwin gave the


functional classification of marketing. Intangible functions, stemming from the transfer of ownership included pricing plus financing and risk taking, and guiding products to consumers in place, form and time. Physical functions included mainly the transporting, processing, storing, and grading of products. 23 According to Cundiff and Still, it was the business process by which products were matched with markets and through which transfers of ownership were effected. 24

Gill included in marketing all the intermediaries and functions which happened to fall in the channel to move the produce from producer to the consumer. 25

According to American Marketing Association, marketing consisted of performance of business activities that directed the flow of goods and services from producer to the ultimate consumer or user. 26


Mamoria and Joshi defined marketing as those business functions which were most directly concerned with demand stimulation and demand fulfilling activities of the business enterprise. 27

According to Marion and Handy, Marketing in a free society was the system which tried to make certain that the goods and services produced by private enterprises reflected reasonably well the performance of the population. 28

Abbott and Makeham, pointed out that marketing meant different things to different people: to the house wife it meant shopping for food; to the farmer it meant the sale of his produce; and to the fertilizer distributor it meant selling to the farmer. Some people thought of marketing as high pressure salesmanship. Teachers of marketing practice included all those business activities associated with the flow of goods and services from production to consumption. All these views reflected different aspects


of the same marketing process and constituted parts of the whole. 29

Schewe and Smith stated that marketing directed the flow of goods and services from producers to ultimate consumers. Obviously, then, marketing came last. But marketing also uncovered the opportunities that existed to satisfy wants and needs. 30

Ramamoorthy defined marketing to include all the activities that were performed from the point of production till the product reached the ultimate consumer. 31

For the purpose of present study, the term marketing of cane jaggery has been defined to include all such business activities that would be done from the point of production (farms) to the point of ultimate consumption of cane jaggery.

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Agricultural Marketing:

Shepherd et al. defined agricultural marketing in physical terms as it began, when the product was loaded at the farm gate and ended when the goods reached the consumer's table. 32

Moore et al. stated that foodgrain marketing included all the business activities involved in moving foodgrains from producers to consumers through time (storage), space (transport), form (processing), and transferring ownership at the various stages in the marketing channels. 33

Mamoria and Joshi observed that agricultural marketing, in its widest sense, comprised of all the operations involved in the movement of food and raw materials from the field to the final consumer. 34

Thambi pointed out that agricultural marketing was not mere selling or distribution but it embraced all the activities that began with ascertaining the needs of the consumers and the market opportunity, setting up production to meet the anticipated demand, pricing, distribution, advertising, and culminated in the sale of product. 35

32 Geoffery S. Shepherd et al., op. cit., p. 7.
34 Mamoria C. B. and Joshi R. I., op. cit., p. 575.
Wells described agricultural marketing on the basis that the goods that farmers grew and sold had to be stored, transported, processed, and delivered in the form and at the time and to the places that consumer desired. 36

According to Spinks, agricultural marketing comprised of all the operations involved in the movement of food and raw materials from farm to the final consumer. It also included aspects of the organisation of raw materials supply to processing industries and the marketing of processed products, including assessment of demand, as well as policy related to agricultural marketing. 37

As per the definition of Frederick, agricultural marketing comprised of all the operations, and the agencies conducting them involved in the movement of farm produce – food and raw materials – and their derivatives such as textiles, from farm to final consumers and the effects of such operation on farmers, middlemen and consumers. 38


Mackline analysed the term agricultural marketing and defined it as rendering of those essential services which enabled consumer to utilise the products of farms. 39

Hence for the present study, agricultural marketing includes all the business activities involved in moving cane jaggery from farm to consumers through time, space and form and transferring ownership at various stages in the marketing channel. These activities were in fact performed by different agencies and therefore, their number, relationship to each other and their market power were important determinants of efficiency in performance of the market as a whole, and they would draw attention to several related concepts. The first concept would be 'market channel'.

Marketing Channel:

McVey stated that a channel of distribution was simply the set of relationships between suppliers and their immediate consumers. 40

A channel of distribution for a product was the route taken by the title to the good as it moved from the producer to the ultimate consumer or industrial user. 41


41 William J. Stanton, op. cit., p. 254.
Narver and Savitt defined market channel as the collection of agencies and flows associated with the transactions of any given good or service. 42

According to Cundiff and Still, marketing channel was the path traced in the direct or indirect transfer of title to a product as it moved from a producer to ultimate consumer or individual user. 43

Ramamoorthy and Srinivasan pointed out that a channel of distribution was the course taken in the transfer of the title to a product. 44

According to the Committee on Definition of the American Marketing Association, a channel of distribution or marketing channel was the structure of extra company agents-wholesale and retail-through which a commodity, product or service was marketed. 45

For Philips and Duncan, the channel of distribution referred to the course taken by the product in its journey from producer to consumer. 46

42 Narver and Savitt, op. cit., p.145.


For each commodity, the various agencies might be arranged in rather particular ways to accomplish the movement of a product from the producer to the final consumer. These arrangements made up what was known as the marketing channel. 47

According to Kotler, every producer would seek to link together the set of marketing intermediaries that would best fulfill the firm's objectives. This set of marketing intermediaries was called the marketing channel (also trade channel, channel of distribution). 48

Kohls and Uhl, meant by marketing channel alternative routes of product flows from producer to consumer. 49

Namoria and Josni explained that marketing contained one or more of the "transfer points" at each of which there was either an institution or a final buyer of the product. Further more, the transfer of title might be direct, as when the producer sold the product outright to a wholesaler or retailer, or it might be indirect as when an agent middleman simply negotiated its transfer to the consumer. From the view point of producer, such a network of

institutions used for reaching a market was known as a marketing channel. A channel always included both the producer and the final consumer for the product, as well as all agents and merchant middlemen involved in the transfer of title. This was the definition used in the present study. The concept of market channel would lead to the more general concept of market structure.

Market structure:

Bain pointed out that, market structure, for all practical purposes would mean those characteristics of the organisation of a market which seemed to influence strategically the nature of competition and pricing within the market.

According to Lele, the market structure included various market channels, intermediaries, and traders involved in moving the produce from the producer to the consumer.

Caves considered seller concentration, product differentiation, barriers to entry of new firms, buyer concentration, height of fixed costs, and growth rate

of market demand as important elements in deciding market structure.53

Schultz meant by the term 'structure', those conditions that were commonly assumed as given by economists in their more formal or theoretical work and those conditions when analysed, had some strategic variables which controlled or explained the behaviour of the firm in that market.54

Mueller classified empirical research, involving a market structure approach, into three broad categories: (i) measurement of the various structural variables which economic theory suggested as relevant to performance, (ii) empirical determination of the economic and other basis of these variables, and (iii) specification and measurement of the interrelationships between market structure, firm conduct, and industrial performance.55

Clodius elucidated the major features in the concepts of market structure. They were the number and size

distribution of firms, the class of product, and the mobility of firms in and out of the industry. 56

Purcell defined structure as the organisational characteristics of the industry or economic system that were of interest. The common characteristics of market structure were: (i) seller concentration, (ii) buyer concentration, (iii) barriers to entry, and (iv) degree of product differentiation. 57

Dahl and Hammond, identified four market structure characteristics that were important determinants of the type of conduct that prevailed in all markets. These included (i) number and size of firms, (ii) nature of the product (as viewed by the buyers), (iii) entry and exit conditions, (iv) status of knowledge about costs, prices, and market conditions among the participants. 58

Narver and Savitt pointed out that structure in marketing or in any other area of human decision making represented the elements that a decision maker took into

58 Dale C. Dahl and Jerome W. Hammond, op. cit., p. 234.
consideration, explicitly or implicitly in making a decision, or in general in performing an activity. It followed that structure affected behaviour.\textsuperscript{59}

According to Rao, market structure referred to the degree of concentration in the village market and its link with the market centres in the vertical chain.\textsuperscript{60}

George and Singh found that market structure referred to those characteristics of organisation of the market which influenced the nature of competition and pricing in the market and conduct of business firms.\textsuperscript{61}

Cundiff and Still established, that structure was the whole network of marketing institutions that serviced society's needs. At one end of the network, producers initiated the flow of goods and services and various intermediaries such as wholesalers and retailers, maintained flow, finally discharging the goods and services for consumer's use.\textsuperscript{62}

\textsuperscript{59}John C. Narver and Ronald Savitt, \textit{op. cit.}, p. 88.


Garoian said that market structure referred to the number of buyers or sellers for a community in a market area, their size in relation to each other, the extent of product differentiation, the ease of entry of new firms to exercise some degree of market control, the nature of price determination and the nature and types of competition in existence.  

According to Stifel, market structure referred to the characteristics of the market which affected the trader's behaviour and, in turn, their performance.

Bhide et al. interpreted the term market structure to mean those characteristics of the organisation of the market which seemed to influence the nature of competition and pricing within the market. The characteristics most emphasised were: (a) degree of seller concentration, described by the size-distribution of sellers in the market, (b) degree of buyers concentration, described by the size

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distribution of buyers in the market, and (c) condition of entry into the market. 65

In this study, market structure for jaggery has been defined as the organisational characteristics of the market for jaggery in North Arcot District which effected the marketing business, and the competition prevailing in the market, and decided the price. It included the characteristics identified by Dahl and Hammond. Broadly, the structure thus, referred to the basic conditions (taken generally as given in the short run) within which market functionaries had to act. Therefore, the structure would determine the conduct of the market. Then, the concept of market conduct would need a precise definition.

Market conduct:

According to Bain, market conduct referred to the pattern of behaviour that enterprises followed in adapting or adjusting to the markets in which they sold (or bought). 66

To Dahl and Hammond, market conduct referred to pattern of behaviour that enterprises followed in relation to their


66 Joe S. Bain, op. cit., pp. 4-18.
markets. It included the methods employed by groups of firms in determining price, output, sales promotion policies, policies that were directed at altering the nature of the product sold, and various selling tactics that were employed to achieve specific market results.\footnote{67}

Kohls and Uhl defined market conduct in the following words: "It is the manner in which firms within an industry adjust prices, output, product, quality, and promotional efforts in response to competitive pressures."\footnote{68}

Narver and Savitt pointed out that at the unit level, conduct referred to the activities of decision making including both establishing goals and policies and implementing them.\footnote{69}

According to Stifel, market conduct referred to pricing policies and practices designed to stabilise market relationship and reduce the significance of price competition.\footnote{70}

Moore et al. included in market conduct various methods used by traders in competing for customers.

They included overt price competition and various hidden and non-price inducements. 71

According to Harriss, the principal features of market conduct were the way in which price was formed and flow of goods directed, the regulatory activities of government, and the ways in which they might be circumvented. 72

Purcell pointed out that market conduct referred to the behaviour and action programme by firms given the structure within which they operated. Pricing policies, non-price competition, expenditures on advertising and actions to change market share might be examples of firm 'Conduct' that were frequently mentioned. 73 Definition of Harriss was found to be comprehensive and used in this study.

Conduct of market functionaries, as conditioned by the structure of the market would decide the specific outcomes. Collectively they would define the performance of the market. Therefore, the concept of market performance would be reviewed next.


72 Barbara Harriss, Paddy and Rice Marketing in Northern Tamil Nadu, (Madras: Sangam Publishers, 1979, p. 120.

73 Wayne D. Purcell, op. cit., p. 65.
Market performance:

According to Bain, market performance was the composite of end results which firms in any market arrived at by pursuing whatever lines of conduct, and results seen in the dimensions of price, output, producing and selling costs, product design, and so forth.74

Purcell defined market performance as the end result of the pattern of conduct that evolved. The consuming public was generally concerned with performance since this was the observable part price levels, pricing patterns, profit margins, investment, and reinvestment of profits, research and product development.75

Dahl and Hammond stated that output decisions and the negotiative and competitive conduct of firms in the market, viewed in terms of public welfare, provided dimensions of market performance. Just as the performance of an entire economy or economic system was judged through the standard of living it provided, its efficiency of production, pattern of income distribution, progressiveness and stability were judged and measured by similar criteria.76

74Joe S. Bain, op. cit., pp. 4-18.
75Wayne D. Purcell, op. cit., p. 65.
76Dale C. Dahl and Jerome W. Hammond, op. cit., p. 284.
According to Kohls and Uhl, marketing performance was defined as how well the foodgrain marketing system performed against what the society and the market participants expected, of it.77

For Narver and Savitt, marketing performance was the net result of the conduct, and was usually measured and expressed for commercial units in terms of net profits, rate of return on owner's equity, efficiency with which plant, equipment and other resources were used; progressiveness and so on.78

Stifel evaluated market performance in relationship to its structural conditions and conduct with regard to pricing and product policies. The criteria of market performance were static efficiency in the use of resources, the absence of monopsony profits, and dynamic progressiveness in the improvement of the system so as to maximise the general welfare of the society.79

In this study, performance of jaggery market has been defined as the end result of its structure and conduct. It related to the height of price, efficiency of the firm, sales promotion cost, progressiveness of firm and character

77 Richard L.Kohls and Joseph N.Uhl, op.cit., p.36.
78 John C.Narver and Ronald Savitt, op.cit., p.112.
79 Laurence D.Stifel. op.cit. p.84.
of product. Thus, there were several dimensions to market performance and each could be evaluated separately. Yet there is the need for a single measure to judge the performance of the overall market. This measure is the marketing efficiency which would however need a precise definition to make it operational.

**Marketing efficiency:**

Harriss defined efficiency of a marketing system in terms of the relation between the consumption utilities created by it (form utility in processing and bulking, time utility in storage and place utility in transport) and the resources used in its creation (principally labour and capital).80

According to Kohls, efficiency of marketing was defined as maximisation of the input-output ratio, output being consumer's satisfaction, and input being various resources of labour, capital, and management that marketing firms used in the process.81

80 Barbara Harriss, *op. cit.*, p. 84.

Desai assessed the efficiency of marketing by the share which the producer obtained in the ultimate price paid by the consumer.\textsuperscript{82}

Purcell was concerned with two types of efficiency: (i) technical efficiency referred to the input-output relationships involved in the task of producing utility throughout the marketing system, and (ii) pricing efficiency was a related concept. It referred to the capacity of the system to effect change and to prompt a reallocation of resources to maintain consistency between what was produced and what was demanded by consumers. In effect, the price mechanism would serve as a communication system to relay the wishes of the consuming public to the producing segment.\textsuperscript{83}

According to Danl and Hammond, public policy makers and consumers were concerned that the marketing system remained efficient and responsive. These performance aspects of marketing and pricing were generally referred to as operational efficiency and pricing efficiency respectively. Operational efficiency meant the achievement of minimum costs in accomplishing the basic marketing


\textsuperscript{83} Wayne D. Purcell, \textit{op.cit.}, pp. 8-9.
functions of assembly, processing, transportation, storage, distribution, and related physical and facilitative activities. Pricing efficiency signifies the ability of prices and price signals to allocate commodities among buyers, and the returns for them among sellers, and thereby to give expression to consumer preferences as guides to the use of productive resources in both primary production and marketing itself. 84

Kohls and Uhl measured marketing efficiency as a ratio of output to input. Marketing input included the resources (labour, packaging, machinery, energy, and so forth) necessary to perform the marketing functions. Marketing output included time, form, place and the possession utilities created in the process. Thus, resources were the costs, and utilities were the benefits of the marketing efficiency ratio. Efficiency in marketing was therefore in maximisation of this input-output ratio. 85

According to Joshi and Sharma, economic efficiency of a market was generally measured by minimization of net price spread, the larger the net price spread the greater the inefficiency in the marketing system and vice versa. 86

85 Richard L. Kohls and Joseph N. Uhl, op. cit., p. 38.
Jasdanwala defined marketing efficiency broadly as the effectiveness or competence with which a structure performed its desired functions.  

Moore et al. pointed out that if a marketing system had to make the maximum contribution to a society's welfare it had to operate with maximum physical efficiency (achieve the highest output per unit of input); otherwise, more goods and services could be produced with the same resources providing greater satisfaction to society.  

Shepherd et al. pointed out that in measuring efficiency or productivity (of market process), the measure of costs covered not only the costs incurred by the marketers (otherwise the most efficient market would be one where producers sold their goods themselves directly to consumers) but by producers, consumers, and marketers altogether. 

For the present study, the jaggery market would be considered efficient when its cost of business is the least, or the average cost per unit is minimum without sacrificing the quality of the product and services to the customers. The concept of marketing efficiency had been defined as

87John R. Moore et al., op. cit., p. 18.
88L. Y. Jasdanwala, Marketing Efficiency in Indian Agriculture, (Bombay: Allied Publishers), 1966, p. 3.
89Geoffrey S. Shepherd et al., op. cit., p. 234.
the minimization of input-output ratio, and inputs and outputs in the marketing process were identified. In its empirical application this concept of marketing efficiency would need precise measures of costs of inputs and value of outputs that would fairly accurately reflect the consumer's satisfaction. Such a measure is provided by the concept of price spread.

**Price spread:**

According to Krishnasamy et al., price spread was made up of various costs incurred and margins of intermediaries in the marketing processes such as those of assembling, processing, storage, transport, wholesaling and retailing.\(^{90}\)

Singh and George defined price spread as the difference between the price received by the producer and the price paid for it by the consumer. It would include marketing costs incurred and marketing margins earned or lost in the movement of the produce from the primary source to the ultimate consumer.\(^{91}\)

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Price spread was a term applied sometimes to an absolute margin, particularly one representing the combined margins of several types of dealers. 92

Ran and Swarup considered that farm - consumer spread was the difference between the price received by the farmer producer and that paid by the consumer. The spread then included costs incurred and margins earned or lost in the process of bringing the produce from grower to consumer. 93

Ranji and Sadhu defined price spread as the difference between the price paid by the consumer and the price received by the producer for an equivalent quantity of product. This spread consisted of marketing and incidental costs and margins of the intermediaries which ultimately determined the overall effectiveness of marketing system. 94

George interpreted price spread to mean the difference between the retail price of product and its value in production. The spread included the cost incurred and the profit gained by the agencies involved. These charges often included payment


for services like assembling products from producers, processing, storage, transportation, wholesaling and retailing.\(^95\)

In the present study, price spread was taken to be the difference between the price received by the farmer, or other maker of cane jaggery, and the price paid by the consumer. Defined this way, it would increase with the number of intermediaries and the extent of market services done between producer and consumers, generally lessor this spread was, higher the efficiency of the market.

**Marketing margin:**

According to Krishnasamy et al. marketing margin comprised of margins, some of which were linked with the quantity marked and some others linked with the value of the commodity. The former were in the nature of fixed charges while the latter were variable in nature.\(^96\)

Marketing margin referred to the difference between the values of physical quantity equivalents at different levels of marketing.\(^97\)

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\(^{95}\) P. S. George, "Role of price spread in Determining Agricultural price policy", *Agricultural Situation in India*, XXVII(9), 1972, pp. 617-619.

\(^{96}\) I. Krishnasamy et al., 1968, pp. 317-324.

\(^{97}\) Dale C. Dahl and Jerome W. Hammond, *op. cit.*, 1977, p. 139.
Singh and Kahlon defined marketing margin as the difference between values of physical quantity equivalents at different levels of marketing. These were represented by the spread between the price paid and received by any specific marketing agency.  

To Dahl and Hammond marketing margin referred to the difference between prices at different levels of the marketing system.

To Kohls and Uhl, marketing margin was that portion of the consumer's price paid to marketing firms for their services and value adding activities i.e., the price of all marketing activities.

According to Thakur, it was the amount of revenue (both costs and profits) received for the marketing functions and services.

Marketing margin represented the income to the marketing agencies which might themselves pay out most of their income to other agencies involved in the marketing system.


margins to cover their own costs, the price they paid for their labour and equipment employed in carrying out their marketing functions, leaving relatively small proportion as a reward for management enterprise and risk.  

Moore et al. considered that marketing margins were the actual amounts received by the marketing agencies in the marketing process. In competitive markets, marketing costs (including normal profits) and margins were the same in the long run. In the short period, marketing costs might be greater or less than marketing margins depending on how well traders had anticipated price changes. Traders generally made, 'windfall gains', when market prices rose unexpectedly, and suffered similar losses when market prices fell unexpectedly. Farmers were in effect the residual claimants of retail price. They received what was left over after marketing firms had deducted their margins from the retail price.  

Ramamoorthy considered margin as the amount received by the different marketing agencies to perform their functions. Marketing margin, marketing cost, and price spread were used synonymously. The sum of costs, and margins to all the intermediaries would, therefore, equal

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103 John R. Moore et al., op. cit., pp. 40-41.
price spread. This was the approach in the present study. The price spread depended upon the performance of the intermediaries between the producer and the consumer, and there were many categories of them. Grouping them by the nature of their activities would be convenient to understand their role and cost in marketing. This would be the next discussion.

Market functionaries:

People involved in the process of marketing might be classified according to the functions they performed, and they were called market functionaries. The following were the functionaries involved in the marketing of cane jaggery.

Middlemen:

Middlemen were those who rendered services which were directly connected with the purchase and sale of goods in the process of marketing. According to Mamoria and Joshi, a middleman was one who specialised in performing operations or rendering services that were directly involved in marketing process spread from the purchase to final consumer. Learner defined a middleman as a business concern operating between the producer and the consumer, who specialised in


\[105\] *op. cit.*, p. 444.
purchase or sale, and furnished other marketing services related thereto. 106

Wholesaler: -

Wholesaler was one who sold to retailer, and merchants or to large consumers like industries, institutions and commercial users. He would not conduct business in insignificant quantity with the ultimate consumer. He would do assembling, help concentration, and in most cases equalisation too.

Commission Agent: -

The Commission Agent is one who negotiated price for the sale of goods he handled, but did not bear title to the goods he handled. He would generally act as a mediator, collect the value, deduct his fees and remit the balance to the principal for whom he transacted. He might also extend necessary credits.

Broker: -

Broker was one who performed the duty of bringing the buyer and seller together. He might represent either the buyer or seller; and his main and only function was to assist in the consummation of sales and purchases. For his

services, he would receive a commission from the person for whom he acted. 107

Retailer:—

Retailer was the person who would be in close contact with the ultimate consumer. He would help in the dispersion of goods, generally in small quantities.

Processing:—

According to Singh and Verma, processing was that part of marketing which deal with the conversion of raw produce into finished products before it was offered for sale to the final consumer. It was the creation of form utility, and was an important service in the marketing of produce as it rendered the goods to the consumer in the desired form. 108 Kamala and Khot defined agro-processing industries as those industries concerned with the conversion of raw materials into finished products, which fell under two categories viz., primary processing and secondary processing industries. 109

107 D. Tousley et al., op. cit., p. 323.
The processing of jaggery involved crushing of sugarcane, boiling juice for solidification to make into balls or other shapes of different sizes before sale to the consumer.

Grading:

Buyers might not have uniform tastes, or purchasing power and grading would help them obtain the quality they wanted. Grading would also provide for meaningful price quotation, sale of goods by sample and would facilitate easy financing in marketing channels and storage. 110

Svardstrom meant by grading of an agricultural commodity some systematic division into groups, classes or grades. It would require definition of group characteristics (called standardization) and actual grouping of the commodity into defined groups (grading). In marketing, the two words are used more precisely. Grading is a systematic division simplified by some mechanical process with respect to weight, shape, or something similar, which is obvious and simple enough for mechanisation to be applied, given the standards. 111


According to Tandon and Dhondyal, grading consisted of grouping a produce on the basis of uniformity in kind, size and quality. It was done in accordance with the given standards. Various definitions of market functionaries and functions discussed above were used in this study.

B. REVIEW OF PAST STUDIES

a. Market structure:

Aherwadkar studied agricultural marketing in Marathwada with a special reference to cotton and groundnut. The study examined the features of rural economy and its influence on the marketing of commodities, marketing functions performed in this region, the significant elements in the marketing cost of cotton and groundnut, the highlights of the behaviour of prices and their significance for the marketing mechanism, and the extent to which marketing improvement programmes had modified the marketing conditions in this region. The study revealed the backwardness of transport facilities, domination of private agencies in financing the cultivators, and 'rapid marketing' or 'rush sales' within few months after harvest. The analysis of marketing functions revealed that these were performed in a rudimentary manner, and there were glaring short comings in the performance of these functions.

The share of producer in the price paid by the buyer, worked out to 88.06 per cent for cotton and 83.59 per cent for groundnut. If the unauthorised deductions were taken into account the producer's share shrunk to 82.3 per cent for cotton, and 81.3 per cent for groundnut. The author concluded that if price spread was to be regarded as an indicator for judging the marketing efficiency, conditions in Marathwada did not conform to an efficient marketing. The method of analysis and conclusion about general nature of market for farm products were useful for the present study.

Dwivedi studied agricultural marketing practices with special reference to Mirazpur District, Uttar Pradesh, wherein he examined different aspects of the problem of marketing practices in agriculture with paddy, wheat, sugarcane and oil seeds. He concluded that distress sale was a common feature among cultivators of all the size groups. Prices were governed by the time factor i.e., lower price immediately after harvest, and relatively higher price if the produce was sold sometime after it was harvested. But the produce was invariably sold to these money lenders immediately after harvesting, because, most of the credit

needs of the farmers were met by private agencies who advanced loans on personal security on a higher rate of interest.\(^{114}\)

Gadgil studied the marketing of Turmeric in Sangili District. The study was intended to identify the problem and assess the performance of the marketing system. It was found that the extent or degree of concentration in the commission agency business and in buying turmeric was not so high as to suggest the existence of oligopolistic practices. The marketing system in turmeric was found efficient ensuring justified intermarket price differentials and had minimised seasonal price variations.\(^{115}\) Such a finding for a cash crop like turmeric should be kept in mind in studying jaggery market.

In his study on the marketing of rice in Orissa, Mallick probed the problems of organisational institutional features of the marketing system in terms of performance. The study indicated that Government of Orissa did not take adequate steps to improve the institutional marketing in the state. The regulated markets which were functioning in different parts of the state did not exercise sufficient


influence to control prices and they suffered from inadequacy of transport facilities for improvement of marketing. The attention to the institutional aspect is useful for the present study also.

Bhandutia analysed the marketing of fruits in South Gujarat with special reference to marketing of mangoes. The study was set to answer the questions like atomistic competition between producer – seller, oligopolistic competition between the merchant buyers, relative strength of sellers and buyers, outcome of given market structure in terms of price received by producer sellers, cost of production and marketing, profits in terms of investment, effect of marketing practices on production. It was found that the functioning of marketing of fruits especially mangoes was efficient, and the margins taken by the marketing functionaries were relatively low. The structure, conduct and performance approach was adopted for the present study.

Rao and Rao analysed the impact of producer's prices on small farmers in marketing of rice in Marupka and Godavari villages in Andhra Pradesh. According to them, small and


marginal farmers experienced disabilities in the process of marketing their produce. These disabilities emanated from the imperfections in the marketing system resulting in lower prices received for their produce, when compared to the price received by the large farmers and lack of holding capacity, and lack of competition among the buyers. These disabilities, reflected in lower product price, were owing to bulk sales being effected in village itself rather than in the larger primary market, heavy post harvest sales owing to lack of physical storage facilities, oligopsonistic practices by the money lender traders. Losses suffered by the small farmers on account of various imperfections in the marketing system were not as large as was generally believed, especially when the losses were related to their total income. Infrastructural under development which was common to all classes of farmers was probably the most important source of such losses. Factors, like economics of scale and credit ties were those which impinged on the small farmers not only as sellers of produce, but also as producers. The attention to scale effect, and need to make size classification of farms were noted for the present study.

Lele, focusing on the problem of marketing of paddy, rice wheat, and jowar, investigated how storage losses reduced production, the ability of private trade to adopt to rapidly changing supply conditions, the size of margins, and the degree of competition in the marketing and processing of foodgrains. She used correlation co-efficient to find out market integration. According to her, the degree to which price formation in an individual market was influenced by prices in another market and the degree of correlation was taken as an indicator of the extent to which two markets were integrated. She concluded that correlations between prices in different markets were expected to be less than perfect because of three factors: basic transport costs, temporary transport bottlenecks and the resulting uncertainty arising from time taken for transport.119 The study by Lele was important both for its methodology and findings. Particularly, its attention to market integration through correlation studies was important for the present study.

Harriss tested the efficiency in marketing through the application of structure, conduct, and performance model in her study on paddy and rice marketing in northern Tamil Nadu. She observed that the size distribution of private firms would suggest tendencies in some towns (but not all) towards

oligopoly. Neither milling nor storage capacity was adequately utilised. Considerations of caste effectively barred a large proportion of the population from setting up trade should they so desire and that, within private firms, particularistic vertical ties of patronage were manipulated to secure potential employee's access to the scarce resources.

In terms of free market conduct, although price information circulated freely, systems of commercial contacts were rigid and limited the usefulness of information. Traders also knew more about remote price and markets than they did about local ones, and might use ruling destination prices as basis against which to establish selling prices rather than adding their costs and profit margins to the buying price. In terms of performance, the structure of marketing margins varied enormously within the trading region and over time, and the preponderance of instances of statistically insignificant or significant, but negative correlations between paddy and rice prices in pairs of market towns showed a likelihood of acute market imperfections and local spatial monopolies of a type never observed before in academic studies. 120

This recent study provided a critical review of approaches to market studies and pointed out their limitations.

120 Barbara Harriss, op. cit., pp. 289-290.
Bhide et al. examined the structure of arecanut marketing in Mangalore of Karnataka State by using data on the size in distribution of firms and co-efficients of inequality. It projected the distribution of firms in different size categories by using Markov chain analysis and analysed the impact of changes in the market structure. The analysis of seller and buyer concentration, and size-distribution in an agricultural market suggested an increasing degree of competitiveness in the market structure. Markov chain analysis also projected a distribution of firms characterised by more equal distribution of share of market transactions. The methodology was adopted for the present study though Markov chain analysis was not attempted.

In their study on marketing of paddy in Haryana, Gupta et al. examined different marketing channels and costs incurred in marketing of paddy. The marketing cost was higher in the channel where the Government agency was involved between the rice miller and fair price shops.

Farrukh analysed the structure, conduct, and performance of rice market in East Pakistan. The study covered the metropolitan Dacca and its suburbs, two wholesale rice

121 Bhide et al., op. cit., 1981, pp. 25-34.
markets which supplied rice to Dacca and two terminal wholesale markets of the Dacca district. It was found that arhatdars were the dominant market functionaries. The correlation coefficient for prices between pairs of markets on a particular grade of rice were computed. Most of these markets showed quite high correlation, suggesting that prices in spatially separated markets moved in unison. The data failed to demonstrate that oligopolistic elements in the trade caused a chronic condition of excessively wide margins and costs.  

Karve and Acharya studied the role of weekly markets in the tribal, rural and urban setting, and concluded that the interaction between markets that prevailed in the weekly markets controlled the behaviour of the participants.  

Lundahl and Peterson in their research on price series correlation and market integration in Haitian marketing system, found that markets were well integrated, but the correlation appeared to be lower, and reliance on correlation alone was shown to be unsatisfactory.  


Ramamoorthy, in his economic analysis of production, marketing and consumption of tomato in Coimbatore region used both conventional and regression analysis to find out the costs and returns of producers and traders. Gini ratio was used to assess the business concentration among traders. Profit functions were used to identify and measure the relative importance of major determinants of profits of farmers and traders. For analysis of market integration, correlation co-efficients were estimated between link markets. It was found that the markets for tomato were found to be interrelated, and the degree of their integration depended on the distance between them. Closer the markets, more integrated they were. 126

Fletschner studied the structural patterns in the marketing of rice, potatoes and tomatoes in Chile. These case studies were conducted for each product. The important results of the study on tomatoes were that (i) different zones at different seasons, competing only briefly in the market until one zone's tomatoes were displaced by the more abundant and lower cost of production of other zones; (ii) in the wholesale markets, middlemen often controlled the flow of products, and might influence net prices received by growers. The processing industry dictated operational norms, and set prices received by growers.

The processing industry dictated operational norms and set prices unilaterally. In both cases, small growers, especially those operating individually, were considerably more vulnerable than large growers.127

b. Price spread:

Sharma and Sharma studied the marketing channels and price spread in temperate fruits in Almora and found that producer's share in consumer's rupee was highest because of direct dealing between producer and the consumer.128 The result was important for any agricultural commodity.

In their study on price spread of important foodgrains in two agricultural markets of Bihar, Sinha et al. adopted two methods - concurrent margins and lagged margins and observed that the producer's share in the consumer's price in different foodgrains at Muzzafarpur market varied between 76.13 per cent, and 81.68 per cent, whereas at Chalukia Market, the variation was between 79.96 per cent and 91.93 per cent.129 The concept of concurrent margins and lagged margins were used in this study.

127 Carlos Pletschner, "Structural Patterns in the Marketing of selected Agricultural Products in Chile: Small and Large Growers, RP No. 42 (Wisconsin: Land Tenure Centre, The University of Wisconsin 1971).


Joshi and Sharma measured the retail farm price spread in two periods, viz., prior to and during the green revolution period, and studied the effect of shifts in the demand and supply schedules on the price spread. The results of the study revealed that there existed wide seasonal as well as spatial variations in price spread. The shift in the demand for the supply of rice significantly influenced the retail farm price spread. On the demand side, the size of population was a more important factor than per capita income of the consuming population in shifting the price spread upwards. On the other hand, the supply schedule which was determined by production was inversely related to the retail farm price spread. The attention to shifter variable in demand and supply was noted.

Pandey et al. examined the price spread for paddy, potato and wheat and concluded that the producer's share in consumer's price for paddy, potato and wheat were 49 per cent, 58 per cent, and 80 per cent respectively. The net price received by the farmer had a negative and significant relationship with the marketed surplus.


Shete et al. in their study on measurement of price spread on tomatoes, concluded that among marketing costs, those of transport, grading, packing, labour and garam-
barasaj t-cost were the major items. The share of the intermediaries was also high.\footnote{132}

Varadarajan in his study on cost price relationship of sugarcane, estimated the cost of production of sugarcane and jaggery in important cane growing areas of Tamil Nadu with the help of analysis of variance, co-efficient of variation and multiple linear regression methods. The analysis showed that cost of production of sugarcane had no relation with the price received by farmers for sugarcane, jaggery or sugar.\footnote{133} This interrelationship between jaggery and sugar markets was paid special attention in this study.

c. Price Analysis:

Mehta studied the movement of American cotton prices in Punjab. The study examined the seasonal index of price variation implications of fluctuations in price parity of


\footnotetext{133}{S. Varadarajan, "Cost price relationship in Sugarcane" Project No. B.1. Ag. Econ. 515/82, CARDS, Tamil Nadu Agricultural University, 1982, pp. 57-58.}
variation in the flow of surplus over year. Time series data were collected and Bartlett's test for homogeneity of variance was used to test the variation in prices between markets. Seasonal behaviour was also studied. Similar attempt has been made in this study.

George and Singh studied the structure of paddy price wherein they examined the trend and seasonal fluctuations in prices of paddy and rice, and concluded that the trend in price was much subdued as compared to the trend of arrivals due to the ceiling price by government.

Jasdanwalla, in the study on marketing efficiency in Indian agriculture, identified the factors influencing prices of groundnut and the marketing pattern and information. She concluded that there existed coordination in prices over the entire market area showing the efficiency and perfection of the market. There was a significant degree of coordination of the prices of the raw product and the final product. She confirmed the existence of market perfection


because of the significant reduction in seasonal variation in groundnut prices.  

Bhatia and Sukheja studied the behaviour of paddy price, the relationship between prices and grades of paddy and other foodgrains. They found that there was a positive correlation between paddy and rice prices. There also existed a positive correlation between prices of rice and other foodgrains.

Thamarajakshi analysed the determinants of wheat prices. The study examined the relative importance of factors affecting the prices of wheat with the help of time series data and concluded that per capita availability of wheat had to be increased by 3.2 per cent to off-set the rise in price caused by a one per cent increase in current incomes.

Manger and Singh inquired into the market structure, price behaviour and marketing margins for fodder market. Since the quality variation in fodder was not much, the


high variation in price was attributed to the highly imperfect nature of the market.\(^\text{139}\)

Gill and Johl, in their inquiry on gram price structure in Punjab, analysed the trend in production, arrivals and prices, their variation and price differentials. It was found that prices showed a significant increase, while production and arrivals showed an irregular movement for the period under study.\(^\text{140}\)

Sinha and Verma explored the trends and variations in the prices of foodgrains in Bihar with special reference to cereals. They found the rise and fall in the prices of cereals had no influence on production. They recommended improvement of marketing arrangements, communication and market intelligence for efficient market system.\(^\text{141}\)

Rathod, in his study of response of sugarcane producers to prices empirically tested the hypothesis, that if the


farmers responded to relative gur price, they should also respond to individual price of gur and wheat (competitive crop) taken separately with different magnitudes. It was found that the association of gur price with cane acreage was more sizeable than that of wheat prices. 142

Chauhan et al. investigated the wheat price structure by fitting a multivariate model and working out of the trend values. It was found that the rate of growth of arrivals was greater than the prices. Cyclical movement depended on prices of other food values. Seasonal variation in the arrivals and prices were negatively correlated. They concluded that the high degree of year to year variation in the prices of food grains revealed the failure of government policy to a greater extent. 143

d. Marketing efficiency:

Ram and Swarup found that the marketing costs, margins, and transportation costs were high because of the bulkiness of agricultural products studied by them. A comparison

142 R.L. Rathod, "Response of Sugarcane Producer's to prices - A case study of Western Uttar Pradesh", Agricultural Situation in India, XXVIII(6), 1973.

between regulated and unregulated markets showed no marked improvement in marketing efficiency between the two. 144

Kochar and Thakur, in their analytical study on price differentials in apple, observed that greater concentration of demand, large number of commission agents, locational advantages, and different means of transport were the reasons for the price differentials in the markets. 145

Thakur examined the foodgrain marketing efficiency in Gujarat and studied the operational efficiency through partial budgeting, pricing efficiency by analysing price trends, market integration and price spread, and concluded that the existing marketing system was inefficient. 146

In his study on pricing efficiency of the Indian Apple market, Thakur analysed the structure and behaviour of apple market and examined pricing efficiency to explore the possibility of improving economic efficiency of the existing apple markets. The trend and seasonal pattern of changes in apple prices were studied through regression and time series analysis. Pricing efficiency of the marketing system was


examined by obtaining correlation matrix of weekly market prices and by analysis of marketing margins and price spread. The study showed that the marketing system for apple in India was fairly integrated in so far as the traders profit margin accounted for quite a large proportion of the price paid by the consumers, and it was considered as a symptom of inefficiency. 147

Rao and Murthy, in their econometric study of rice prices in India, constructed a model with annual observations of farm price, wholesale price and retail price. They concluded that the farm harvest price influenced the wholesale price very significantly and the retail price was practically determined by wholesale price. 148

Srivastava and Jain studied the correlation between arrivals and prices of cotton, wheat and groundnut in Amaravathi market and concluded that because of zonal restrictions, there was no significant effect of supply and demand on arrivals and prices. 149


Singh and Arora inquired into the price differentials, competitive nature and causes for price movement. They observed wide price variation in the market and this by the variation in the number of commission agents, the number of processing units and the increasing demand for its by-product.  

Stifel studied the efficiency of the sheet rubber marketing system with the help of structure-conduct-performance model. Market performance was evaluated by the degree of monopsony profits and progressiveness. Examination of the multiple relationships at the three principal levels of the vertical network indicated that the system did not fit pure models of micro economic theory.

Chandrakanath et al. analysed the prices and arrivals of ragi in Karnataka. They used a multivariate model to estimate seasonal variation and concluded that the short-run seasonal fluctuation in the prices of ragi was significant.


Suryaprakash et al. traced the relationship between prices and arrivals of potato using multiperiod model of time series. They expressed that the seasonal price fluctuation was predictable and it would help the farmer in timing production. ¹⁵³

Bhatia and Ram inquired the marketing efficiency in retail vegetable markets in Delhi through marketing costs and margins, consumer prices, availability of physical marketing facilities and market competition. They found that the retailer's margins accounted for about 50 per cent of the consumer's price and the consumers were to pay high prices due to the perishability and bulkiness of the product. Among the different classes of retailers pavement sellers got the lowest net retail margins. ¹⁵⁴

Hays studied the efficiency of the rural urban link in foodgrain marketing system. In this study he described the traditional market organisation for millet and sorghum. He also evaluated the structure of the market. A detailed investigation was made into the extent and nature of imperfection in the traditional marketing system at each stage of distributive process from the farmers to the final


consumer. Marketing channels were examined in an attempt to determine the operational efficiency of the major rural urban marketing link in one area of the northern Nigeria, while pricing efficiency of the marketing system was examined by 115 selected locations in four of the northern states. An investigation of spatial price differentials among the 15 selected markets in the four northern states indicated weak inter-relationships among markets with price differentials being in excess of transfer costs in many cases. Seasonal price increases were generally greater than storage costs. 155

Arora and Jayaprakash in their analysis of comparative efficiency of alternative marketing agencies of groundnut in Tamil Nadu found that 38 per cent of marginal farmers and 28 per cent of the small farmers had chosen private mandies, whereas only four per cent of large farmers approached the private mandies. The marketing cost incurred by the farmers in the private mandies was 77 per cent higher than that incurred in the regulated markets. 156


e. Problems in Marketing:

Mohandoss et al. investigated the problems of marketing of fruits and vegetables in Bangalore and Kolar districts in Karnataka State. The main objective of the study was to identify the problems faced by the fruits and vegetable growers in marketing their produce in these two districts. It was found that the low and fluctuating prices were concern for small and marginal growers of fruits and vegetable growers, whereas it did not seem to affect the big farmers much. 157

Sarkar, in his study on marketing of foodgrains, found that different classes of producers, the relative importance of a channel for a class of producers being judged by the extent of its marketed surplus actually channelled through it; that different classes of traders or marketing channels depended exclusively on different classes of producers and that different classes of traders paid different prices to different classes of producers and followed different practices in making advance payments to poor producers. 158


Bhalerao and Kalicharan analysed the fluctuations in arrivals and prices by calculating percentage variations in arrivals and prices from the average monthly arrival/price for the year 63-64 in the Visheswarganj market. The study revealed that there were wide fluctuations in arrivals and prices in the market. The undue seasonal fluctuations in supply and prices pointed out the need for institutionalisation of procurement, storage, transport and distribution of wheat. This would also help reduce price spread which accounted for about 1/5th of the consumer's price. 159

Lowe studied the influence of market information on market performance. Spatial pricing efficiency of the inter-regional market was considered using weekly, quarterly and annual data for both statistical and linear programming techniques. The results indicated that reported inter-regional price differentials varied considerably from estimated transportation and handling costs. Temporal aspects of the market performance were analysed using regression models of the lagged relationship between feeder pig price and slaughter hog price for various time periods. Results revealed that the market did not generate the type

of factor product relationship when the production process required time. 160

f. Market Models:

Bradley studied the apple industry. The purpose of the study being to identify areas of conflict and common interest between growers and processors and to present information on a number of aspects of the industry, which would enable both the parties to decide on an appropriate course of action. Data on prices and quantities for fresh and processed apple, the number and size of processing firms in the state, and the cost of processing apples were collected from firms and published sources and analysed within a regression framework. The result indicated a lack of understanding between producer and processors. 161

Connolly measured and analysed aggregate marketing margins and compared the situations prevalent in Ireland and U.K. The aim of this study was to measure the aggregate marketing margins on food going to human consumption for the period 60-70. The marketing sector was one that used


resources employed in the post-farm and the pre-consumer movement of food. The marketing margin was calculated as the difference between the value of output and input. The average annual changes in the Irish and U.K. absolute margins were decomposed into a portion due to change in the composition of the base period product mix, another due to change in the volume of products and a third portion due to change in value of service. During the study period, the Irish domestic marketing sector increased its unit cost of marketing service at a slightly higher rate than the U.K. marketing sector. 162

Barreyro analysed the supply of grains in the Pergamino region of Argentina, by using a recursive linear programming model. Basic property of this model was that the hectarages of any of the crops in a year had to be either larger than, or smaller than a lower or an upper limit generated as a proportion of hectarage of year $t-1$. The solution of the model involved the determination of the time path of the crops in a ten years period. The time path of the crop was dependent on the net returns of the crop. In this recursive linear programming model, net returns of the crops changed as price changed or as the yield per unit crop changed.

The changes in yield and its effect on the time path of the crops were therefore analysed in the context of technology changes over time. The changes in price were also analysed in the context of supply analysis. 163

Haassan estimated demand parameters with the empirical analysis of consumer behaviour in the U.S. Traditionally, estimates of demand parameters in empirical analysis were based on a single equation least squares approach. Thoretically, however, the estimation of demand parameters would call for the complete set of demand functions to be considered as a whole. The objective of this study was to examine consumer behaviour in the U.S. for the period 1929-69 by assuming a utility function and by using a complete system of demand functions of the type proposed by barter. Using time series data, consisting of annual observations of personal consumption expenditure and price indices, it was possible to estimate demand elasticity for all the nine commodities. Estimates of demand parameters for two commodity groups were first derived. The statistical information available from this first stage was then combined

with combined with the sample information to compute a complete set of demand parameters for nine food groups. 164

Lee gave a framework of location theory, pure trade theory and production theory. The non-linear spatial equilibrium model and its programming problem were elucidated in this study with the empirical application of the model to the tomato subsector of U.S. Agriculture. In the empirical analysis, firstly the U.S. demands for and regional supply (major producing regions) of processed and fresh tomatoes were estimated. In both products, the estimation of the demand equation was found to be statistically significant with high value of co-efficient of determination. Most variables, including dummy variables for fresh tomatoes were ascertained to have significant effects on consumption. Income and price elasticities were estimated as 0.508 and 0.318 for processed tomatoes and 0.008 and 0.320 for fresh tomatoes. For specification of regional supply structure, the Nerlove's expectation model was adopted. The estimates showed that regional supply, lagged price, lagged quantity and productivity per acre were statistically significant. 165


Alhambra estimated the demand for beef in Japan. This study was a quantitative analysis of Japanese beef consumption and prices. It was primarily concerned with the economic analysis or expected changes in domestic prices as a result of changes in imports which Japan could initiate in the near future. A simultaneous econometric model was estimated to account for the interdependence of the beef, pork and poultry sector.\textsuperscript{166}

Vose analysed market structure, conduct and performance of the Mid-West Dairy Industries. He found that the structure of sellers (retailers) was oligopolistic, while the structure of buyers (individual consumers) was purely competitive.\textsuperscript{167}

The above review of literature on past works in agricultural marketing and precise definition of concepts provided the basis for the development of empirical model and methods of analysis for the present study. In the absence of sufficient number of studies on jaggery market, studies on other agricultural products were reviewed and used for the present study.
