I agree that the above thesis/dissertation shall be available for reading in accordance with the regulations governing the use of University of Surrey theses.

Author's Signature

USER'S DECLARATION

I undertake not to reproduce any portion of, or to use any information derived from, this thesis without first obtaining the permission, in writing, of the Librarian of the University of Surrey.

<table>
<thead>
<tr>
<th>Date</th>
<th>Signature</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th March 1970</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29th May 1970</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22nd June 1970</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Regulations for Higher Degrees: Copyright

Preamble

Dissemination of knowledge is one of the objects of the University. Therefore Members of the University and others who submit theses/dissertations for higher degrees are expected to relinquish to the University certain rights of reproduction and distribution.

Moreover it is recognised that applicants owe a duty to their Departments of study, the Academic Staff and sponsoring bodies for their respective contributions to the research. Within the limits of these requirements, the author’s copyright is safeguarded.

Regulations

1. When submitting a thesis/dissertation for the purposes of a higher degree the applicant shall sign an irrevocable authority in prescribed form appointing the Librarian his attorney with the right to reproduce the thesis/dissertation by photocopy or in microfilm and to distribute copies to those institutions or persons who in the Librarian’s opinion require them for academic (as distinct from commercial) purposes.

2. The Librarian in consultation with the appropriate Department of study or sponsoring body shall have the right to refuse to provide copies, or to impose such conditions as he thinks fit on the provision of copies, with the object of safeguarding the applicant’s copyright and the interests of the University and the sponsoring body.

3. These Regulations are subject to requirements of any body under whose sponsorship the research project giving rise to the thesis/dissertation is carried on.
FOOD SERVICES IN BRITAIN 1970 - 1980

by

M. Bryn Jones

Submission for the degree of
Master of Philosophy

University of Surrey
1969
This thesis is concerned with analysing the factors which influence the demand for meals bought away from home in the United Kingdom, forecasting their influence for the decade 1970-1980, and distinguishing the consequent implications for the catering industry. Divided into three main parts, each of which represents a different level of objectivity, it starts in econometric rigour, and proceeds through generality to the conjecture of prediction.

The analysis begins with a summary of the history, and methodology of family budget analysis, together with a review of previous work in the field as it relates to meals bought away from home. It continues by examining the available sources of suitable data and then applies the relevant techniques. Attention is then transferred to the time series data and a similar analysis assayed, but in this case, the nature of the information results in a different procedure being adopted and therefore a somewhat condensed examination. The resulting two approaches are then compared, and their quantitative relevance in forecasting discussed.

Part Two commences with the acceptance that the econometric approach has limitations and that a less formal analysis should be followed. Nevertheless the dangers of leaving a well defined theoretical framework are recognised and some attempt is therefore made to structure the discussion. These attempts are however not altogether successful and the analysis eventually descends to more subjective treatment.

In Part Three the final level of abstraction is reached when the future is conjectured. Like all forecasting this section is necessarily suppositional, but to avoid any accusation of academic adventurism, the attempt has been made to contain the conjecture within specified limits. The thesis ends with a brief examination of the implications the forecasts hold for the catering industry, and some suggestions are made for future research.
Abstract

List of Tables

List of Figures

Introduction

1. The frontier and its links with theory
2. On quantification
3. Economic phenomena in a social situation
4. On definition
   (a) The conceptual discussion
   (b) Statistical availability
   (c) The theory specified
5. The definition chosen
6. The order of the discussion

PART ONE: ECONOMETRIC DEMAND ANALYSIS

Prologue

Chapter II: Family Budget Analysis

1. Introduction
2. History
3. The form of the demand function
   (a) Additivity
   (b) Decreasing elasticities
   (c) Satiety
   (d) Initial income
4. The nature of the variables
   (a) Consumption
   (b) Income
   (c) Preferences
5. The results of family budget studies with reference to meals bought away from home
6. Conclusion
7. Summary
Chapter II: Sources of Statistics for Budget Analysis

1. Introduction
2. The Family Expenditure Survey
   (a) History
   (b) Reliability
      i. National Income and Expenditure
      ii. Ministry of Agriculture Fisheries and Food
      iii. Kemaley and Ginsberg
   iv. Assessment
3. Conclusion
4. Summary

Chapter III: The Analysis

1. Introduction
2. Development of the model
3. Description of the data
4. The model used
5. The variables introduced
   (a) The dependent variable
   (b) The independent variable
6. The form of the demand function
7. Computational methods
   (a) Deflation
   (b) Weighting
   (c) The computer program
8. Results
9. Extension of the analysis
   (a) Household composition
   (b) Economies of scale
10. Economic interpretation
11. Summary

Chapter IV: The Analysis of Time Series

1. History
2. Sources of statistics for time series analysis
   (a) Quantity
      i. National Income and Expenditure
      ii. Board of Trade
      iii. Family Expenditure Survey

3. Critical Appraisal of the available time series data
4. Empirical analysis of time series data
   (a) The model
   (b) The data
   (c) The function
5. Discussion of the results
   (a) Biases
   (b) The confusion of time
      i. Trends
      ii. Lagging
6. Conclusion
7. Summary

Chapter V: A Comparison of Income Elasticities Obtained from Family Budget Data with those Derived from Market Statistics

PART TWO: EMPIRICAL DEMAND ANALYSIS
Chapter VII: The Search for Determinants

1. Introduction
2. Hypothesis generation
   (a) Pleiades approach
   (b) Designating the variables
   (c) Multicollinearity
   (d) First differences
   (e) Partial correlation
   (f) Autocorrelation
3. Conclusion
4. Summary

Chapter VIII: The General Analysis

Introduction

1. Age
   1. Propensity
   2. Expenditure
   3. Summary
II: Occupation
1. Presence in the labour force
   (a) Propensity
   (b) Expenditure
2. Occupation
   (a) Analysis by industry
   (b) Occupational status
3. Summary

III: Household Composition
1. The National Food Survey
2. The Family Expenditure Survey
3. Summary

IV: Social Class
Summary

V: Location
1. Region
   (a) Propensity
   (b) Expenditure
2. Administrative Area
   (a) Propensity
   (b) Expenditure
3. Summary

IV: Income
1. Propensity
2. Expenditure
   (a) Kemsley and Ginsberg
   (b) The Family Expenditure Survey
3. Summary

Chapter VIII: The Extended General Analysis
1. Introduction
2. Mobility and eating out
   (a) The need to be mobile
   (b) The ability to be mobile
   (c) The desire to be mobile
3. Conclusion
4. The pragmatic attitude
5. Summary
### PART THREE: FORECASTING

#### Chapter IX: Forecasting: The Conceptual Background

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>228.</td>
</tr>
<tr>
<td>2. Terminology</td>
<td>229.</td>
</tr>
<tr>
<td>(a) Structural certainties</td>
<td>231.</td>
</tr>
<tr>
<td>(b) The nature of the future</td>
<td>232.</td>
</tr>
<tr>
<td>(c) A classification of forecasting</td>
<td>233.</td>
</tr>
<tr>
<td>4. The methodology of forecasting</td>
<td>234.</td>
</tr>
<tr>
<td>(a) Naive forecasting</td>
<td>235.</td>
</tr>
<tr>
<td>(b) The start of a more systematic approach</td>
<td>237.</td>
</tr>
<tr>
<td>5. Predictive accuracy</td>
<td>238.</td>
</tr>
<tr>
<td>6. Summary</td>
<td>239.</td>
</tr>
</tbody>
</table>

#### Chapter X: The Forecast

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>241.</td>
</tr>
<tr>
<td>(a) Extrapolation</td>
<td>243.</td>
</tr>
<tr>
<td>(b) Prices</td>
<td>244.</td>
</tr>
<tr>
<td>(a) The future growth of income</td>
<td>246.</td>
</tr>
<tr>
<td>(b) The application of demand elasticities</td>
<td>247.</td>
</tr>
<tr>
<td>5. Summary</td>
<td>249.</td>
</tr>
</tbody>
</table>

#### Chapter XI: Implications and Suggestions

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Implications</td>
<td>264.</td>
</tr>
<tr>
<td>2. Suggestions</td>
<td>265.</td>
</tr>
<tr>
<td>3. Summary</td>
<td>266.</td>
</tr>
<tr>
<td>(a) Implications</td>
<td>267.</td>
</tr>
<tr>
<td>(b) Suggestions</td>
<td>268.</td>
</tr>
</tbody>
</table>

Appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>272.</td>
</tr>
<tr>
<td>The reconciliation of National Income and</td>
<td></td>
</tr>
<tr>
<td>Expenditure data with information from the</td>
<td></td>
</tr>
<tr>
<td>Family Expenditure Survey</td>
<td>273.</td>
</tr>
<tr>
<td>Appendix B</td>
<td>277.</td>
</tr>
<tr>
<td>The approximation to disposable income</td>
<td></td>
</tr>
<tr>
<td>Appendix C</td>
<td>279.</td>
</tr>
<tr>
<td>Forecasts of expenditure on meals away from</td>
<td></td>
</tr>
<tr>
<td>home: 1970-1980, derived by using an income</td>
<td></td>
</tr>
<tr>
<td>elasticity of 1.4C.</td>
<td>279.</td>
</tr>
<tr>
<td>Appendix D</td>
<td>280.</td>
</tr>
<tr>
<td>The demand for meals away from home by</td>
<td></td>
</tr>
<tr>
<td>businessmen and overseas visitors</td>
<td>280.</td>
</tr>
<tr>
<td>References</td>
<td>286.</td>
</tr>
</tbody>
</table>
### LIST OF TABLES

1. Demand functions. page 36.

2. Proportionate distribution of expenditure and estimates of total expenditure elasticities as given by Prais and Houthakker. 45.

2a. Weighting of meals for the calculation of Net Balance. 51.

3. Consumers' expenditure on catering (meals and accommodation) 1964. 56.

4. Consumers' expenditure on meals away from home as recorded by National Income and Expenditure statistics, but including only those categories recorded by the Family Expenditure Survey. 58.

5. Family Expenditure Survey 1966: Number of persons by income of household. 69.


7. A comparison of the use of income and expenditure as the determining variable. 77.


9. Von Neumann ratio: Table of bounds. 80.


12. Results from the extended models. 86.


14. Consumers' expenditure on meals bought away from home: food costs only. 99.


17. Sales of meals and refreshments as a percentage of turnover, and as a percentage of total meal and refreshment sales. 106.

18. Price index for meals bought away from home; food costs only. 110.
19. Time series analysis; Income and expenditure data


21. The trend in income elasticity between 1961 and 1967 as described by three selected functions.


23. The percentage of the total sum of squares of $Y$ (Expenditure on meals away from home; 1958 prices) accounted for by the independent variables taken one at a time.

24. The three strongest combinations of independent variables taken 1, 2, 3 and 4 at a time.

25. The three strongest combinations of independent variables taken 1, 2, 3 and 4 at a time (excluding $X_7$).


27. Matrix of first order partial correlation coefficients.


29. Description of surveys used.

30. Percentage change in the income elasticity of domestic food expenditure, when adjusted for the incidence of meals out and meals served to visitors.

31. The propensity to eat out, by social class.

32. The propensity to eat out, by size of administrative area.

33. General propensity to eat out, by income groups.

34. The propensity to eat out within the previous seven days, by income groups.


37. Standard error and range of forecast.

38. Index of Retail Prices (all items): 1957-1967.


41. Range of forecast, constant prices.


44. Forecasts of expenditure on meals away from home: 1970-1980, derived by using an income elasticity of 1.40.
LIST OF FIGURES

2. Income elasticities for meals away from home 1938-1967. 89.
4. Age: Percentage with expenditure on meals away from home. 146.
5. Age: Expenditure on meals away from home per person eating out, shillings per week. 146.
6. Age of head of household: Expenditure on meals away from home, shillings per week. 149.
7. Presence in the labour force: Percentage with expenditure on meals away from home. 152.
8. Presence in the labour force: Expenditure on meals away from home, shillings per week. 152.
9. Occupation: Expenditure on meals away from home and propensity to eat out. 155.
10. Occupation: Expenditure on meals away from home per head, per household, as a percentage of total expenditure and of total food expenditure. 157.
11. Occupation: Expenditure on meals away from home as percentage of total expenditure and total food expenditure, by disposable income. 159.
12. Household Composition: Expenditure on meals away from home, shillings per household per week. 166.
13. Household Composition: Expenditure on meals away from home, shillings per head per week. 167.
14. Household Composition: Expenditure on meals away from home, as a percentage of total food expenditure. 168.
15. Household Composition: Expenditure on meals away from home as a percentage of total expenditure. 169.
16. Household Composition: Expenditure on meals away from home by disposable income per household. 171.
17. Household Composition: Expenditure on meals away from home by disposable income per head. 172.
18. Household Composition: Expenditure on meals away from home as a percentage of total food expenditure, by disposable income. 174.
19. Household Composition: Expenditure on meals away from home as percentage of total expenditure, by disposable income. 175.
20. Social Class: Percentage eating out by time of last visit.

21. Location: Expenditure on meals away from home by region.

22. Regions: Expenditure on meals away from home, shillings per household per week, showing standard errors.

23. Administrative area: Expenditure on meals away from home as percentage of total expenditure and total food expenditure.

24. Administrative Area: Expenditure on meals away from home, by disposable income per household and per head.

25. Administrative Area: Expenditure on meals away from home as percentage of total expenditure and total food expenditure by disposable income.

26. Income: Percentage with expenditure on meals away from home: (a) total, (b) regular, (c) occasional.

27. Income: Percentage with expenditure on meals away from home by place of consumption.

28. Income: Total food expenditure, domestic food expenditure and expenditure on meals away from home.

29. Income: Expenditure on meals away from home per person in the sample and per person eating out.

30. Income: (a) Weekly expenditure on meals away from home, shillings per person.

(b) Percentage with expenditure on meals away from home.


32. Income: Expenditure on meals away from home as percentage of total food expenditure, 1961-1967.

33. Expenditure on meals away from home as percentage of total food expenditure, 1959-1967.

34. Income: Expenditure on meals away from home as percentage of total expenditure, by disposable income per household and per head of household.

35. Income: Expenditure on meals away from home as percentage of total expenditure and total food expenditure, by disposable income per head of household within disposable income of household.

36. Mobility and eating

INTRODUCTION

1. The Frontier and its Links with Theory

It is only in the immediate past that eating out as a subject for research has stimulated anything more than token academic interest, and despite its importance in the economy, the fact that it involves between 6-7% of total consumers' expenditure has until recently not been regarded as sufficient cause for concern over its complete lack of definition and analysis. Of late, however, the increasing awareness of the industry itself, albeit in the face of considerable scepticism, both of the need to reinforce its claim to recognition as an entity in its own right and to free its educational foundations from their craft entrenchment, has led to the establishment of research projects. The existence of a terra incognita in a field where horizons until now have been distinctly myopic has however resulted in confusion, for in the ensuing haste the frontier is being constructed whilst its direction has yet to be established; the field has grave need of an Ackerman to ask 'Where is a Research Frontier?' (1)

Much of the instability can perhaps be related to the ambivalent position of catering studies within the academic structure of this country. Until the recent elevation to University status of two hotel and catering management departments incurred the obligation for research, academic investigation had been left to other disciplines which found in the catering industry a suitable subject for study. For example, an economist at Durham University produced an analysis of the economic structure of the hotel and catering industry, (92) historians at Oxford a description of related developments during the sixteenth to eighteenth centuries (82) and biochemists at London a study of 'The Englishman's Food'. (42) They had, in the Quaker terminology a 'concern' for the hotel and catering industry and their disparate backgrounds brought to the subject a diversity of approach, each deeply embedded in their respective disciplines.
The creation of hotel and catering management as a technological subject, has suggested that the experience of these disciplines is not enough and that a body of theory of special relevance to the new subject should be constructed. The founding of this theory had however to be assigned to research workers from those disciplines that had previously exhibited affinity, but far from the emergence of multi-disciplinary harmony the discussion has generated into noise, and the frontier remains still to be established. Whilst the validity of developing a separate body of theory with techniques, traditions and a literature of its own may be doubted, it is not the place here to continue the debate over the classificatory or functional view of the subject, lest it leads to a demarcation similar to Vining's weary conclusion that 'economies is what economists do'. (Quoted by 59 p.13)

The position of hotel and catering studies within the academic structure has nevertheless strong implications for the present research. The absence of an established theoretical framework has presented the choice of either using the theories and techniques of corollary disciplines or, in neglect of these, proceeding on an ad hoc basis by an appeal to the facts. Although this latter approach would indeed be possible, it involves as Stone points out the 'undesirable process of implicit theorising' and it is 'a wasteful way of going to work, since almost everything in economic life is directly or indirectly connected with everything else and the possibilities to be examined are enormous. The role of theory is to reduce the number of possibilities to be examined at any one stage and to permit the investigator to interpret the results of his analysis. It is a simple device for economising and should be used for that reason wherever possible.' (152, p.XXX)

In fact, in the light of the limited human, temporal and physical facilities available, it was this need for economising which determined that the research must be founded on the experience of other disciplines. That these disciplines should necessarily be economics and sociology is made clear by the title of the project, but in the end, a further requirement forced the emphasis away from expected egality, and the final methodology was highly biased towards the use of economic techniques. The crucial determining factor which caused this partiality was this desire to present a numerical analysis, for it is within economics rather than sociology that expertise in quantified analysis, as
opposed quantified description, has reached relative refinement.

2. On Quantification

It is always surprising to someone who has accepted the credo of numeracy, that the need for quantification should ever be questioned, especially when the criticism is often stimulated more by incomprehension than by sophistry. This uncertainty has nevertheless a distinguished tradition and even such people as Marshall expressed the view, 'that since it never happens that all (of the many factors involved in a problem) can be expressed in numbers, the application of exact mathematical methods to those which can is nearly always a waste of time, while in the large majority of cases it is positively misleading.....' (88, p.422)

Basically the case against quantification as stated by Stone in devile advocacy (152, p. XXVIII) is that quantitative analysis is incapable of improving upon the values of the parameters commonly assumed on the basis of casual empiricism; that the world is such that no important part of it could be isolated for separate investigation and, that the imponderable influences are altogether more important than the influences that could be brought within the scope of manageable economic models.

It is, however, of considerable doubt whether these conditions operate for 'it is evident that casual empiricism leads different investigators to different conclusions about the value of the same parameters in many of the cases in which any view at all can be formed by such means'. In addition experience has shown that 'not only can relationships be formulated in such a way that certain groups of influences can be separated and their effect measured, without taking all possible influences into account' but that 'while imponderable influences are usually important in practical problems so that cut and dried solutions cannot ordinarily be given by quantitative analysis or indeed by any other means, nevertheless some idea can be formed by quantitative analysis of the magnitude of certain responses and this has the result essential for any progress that the variance due to unmeasured factors is reduced'. (152, p. XXIX)

This substantial vindication for quantitative analysis is of particular importance for any research focusing on the catering industry. Hitherto the majority of work has been highly
speculative and in specific topics such as eating out has, on
the whole, been attracted to the more emotive aspects of the
subject. The lack of objectivity has fostered assumptions of
causal interconnection and acceptance of widely held beliefs which
have little foundation in fact, and have, in certain cases,
proved to be quite unjustified.

One of the fallacies most frequently repeated is that the
demand for meals away from home is a growth sector of the economy
and that the next decade will witness an unprecedented expansion.
The infectious optimism that the approach of a new decade engenders
is, in itself, not to be criticised on the grounds of veracity,
for although this view may be contested, as indeed it will, there
is an uncertainty implicit in forecasting which admits that in
the end any prediction is but a guess. More serious, however,
are the statements that see the recent history of the industry as
one of dynamic growth. Whilst not wishing to anticipate the
conclusions of the demand analysis this conception is refuted in
this study. It is part of contemporary mythology; a classic
example of "Tony Pandy". (156 pp.93-94)

Because without quantification such subjectivity must
necessarily be perpetuated, a numerical approach is essential,
and even if the ideals of a complete quantified analysis are
not achieved one must be confident that a measure of objectivity
can be introduced to a subject where previously it had been wanting.

3. Economic Phenomena in a Social Situation

There is little doubt that the importance assigned to
quantification has oriented the study, and is the reason for the
stress of the economic, rather than the social, aspects of eating out.
The fact that consumer behaviour is influenced by social factors
as well is, however, not altogether relegated to obscurity, for
although the conclusions dictate that economic influences are the
dominant determinants of demand for eating out, economic analysis
has but a limited autocracy and recourse to social considerations
eventually becomes necessary.

* Not confined to this country, however. Similar sentiments
are expressed in the United States of America and Van Tassel
notes the meagre increase in per capita sales in eating and
drinking places relative to many other types of consumer retail
sales, 'contrary to the general impression that people are
eating out more'. (155, p.67. Erroneously attributed to Loeb,85)
Whilst it is probably true to say that "neither Freud's vision of man driven by inner and largely unknown impulses, nor the rigid principles of classical economics (with its vision of *Homo economicus* bending to every flicker in the Stock Market) give a satisfactory framework" (59, p. 26) and that they may in retrospect seem "as mistaken as the attempts of the early physicists to explain temperament in terms of four humours," (78, p. 7) there is also little doubt that both of these extremes provide a point of departure, without which the implied desired compromise will never be achieved.

Although this study has followed the economic path, minding of these strictures, it has realised that "problems of the actual world, though they may have an important economic aspect, are seldom if ever wholly economic....." (152, p. 272) The bias imparted by this approach needs to be corrected in subsequent research, for behavioural concepts must be more fully introduced. Nevertheless without a sound objective foundation, future progress must necessarily be restricted and it is to be hoped therefore that if this study can be said to achieve anything, it is in the direction of laying this foundation.

### On Definition

Having selected the general area of study and delimited certain minimum standards of approach, it is necessary to specify the extent of the research more rigorously. To define eating out is, however, not a straightforward task, for it has a common usage rather than lexicographic distinction. As a wide variety of interpretation is thus possible, criteria must be established by which its jurisdiction can be prescribed. As far as this study is concerned, eating out has been required to satisfy three conditions, that of conceptual definition, the availability of the statistical information and the demands of theoretical analysis.

(a) The Conceptual Discussion.

Conceptually, a study which examines the social and economic factors which may influence eating out is concerned with the catering industry from the consumer or demand side rather than in its supply context. This is unfortunate, for hitherto all definitions have been framed with the latter applicability in mind. Not wishing to omit any aspect which could conceivably be called catering, the definitions have usually been of the 'blanket' type and range from that stiltedly proposed by the *Catering Wages Act in 1943* "Undertakings consisting wholly or
mainly of the carrying on (whether for profit or not) of one or more of the following activities:

1. the supply of food or drink for immediate consumption.
2. the provision of living accommodation for guests or lodgers or for persons employed in the undertaking; and any other activity incidental or ancillary to any of these activities or undertakings"; (22)

to the equally polite, but more literate description used by the Economic Development Committee for the Hotel and Catering Industry, "For the purposes of its own work the Little Noddy defines the Industry as covering all hotel and catering activities wherever they may be found." (117, p.3)

Eating out is very much a contemporary expression and whilst no doubt early examples of its adoption can be found, it is only in the last few decades that its usage has become widespread. It is used almost solely to describe consumption on the premises; picnics, the taking of food to work, or dining with friends are therefore excluded. The meaning has however tended to become even more specific and is sometimes only used when buying a meal at a commercial establishment. One does not normally speak of eating out when referring to the office canteen, and in some interpretations eating out is even reserved for use when implying pleasure, rather than necessity connotations, the culmination of such an approach being the gourmet outlook of the food guides.

It can be appreciated that conceptually there is considerable scope for discussion as to the exact types of meals bought away from home to be included in the study, but as it seemed highly probable many of the arguments would be resolved by examining the requirements of the other two criteria, there appeared to be little benefit to be achieved from a detailed conceptual discussion, when the results might so easily be invalidated by the additional considerations.

(b) Statistical Availability

However regrettable it may appear, the major determining factor in research is more often than not the availability of statistical information. This is not so serious when the research is supported on a scale which permits data gathering to repair the deficiencies, but when the facilities are more modest, and existing information has to be used, conceptual niceties are often submerged in statistical expedience.
One of the principal reasons why eating out has suffered nebulous assessment is because of the highly amorphous nature of the information which describes it, and this becomes even more serious for this study for as with the conceptual definitions, most information relates to supply rather than demand. There are nevertheless four main groups of information which are of relevance and which can be utilised in refining a definition of eating out. The first consists of ad hoc surveys of the type commonly, although not exclusively produced by Market Research Agencies. Because the majority of these do not define precisely what is covered by their questions, their use for both classificatory and analytic purposes is limited and they have consequently been relegated to secondary importance. There is one series however which has a much more conscientious approach and does not take the definition of eating out as granted. These are the four surveys produced by the Government Social Survey between 1949 and 1956, which examine consumers expenditure in catering establishments. (75) As they deal with the subject not only in its desired demand context, but also from a specific rather than a representative interest, the definition approaches the ideal more closely than any other type of information available.

Basically, it covers personal expenditure on meals bought outside the place where a person lives. It therefore excludes all meals in establishments such as boarding schools, hostels, hospitals, prisons and by people resident in hotels, places which generally have been accepted as part of the catering industry. These are treated as substitute domestic situations and so if a meal was eaten by staff of an institution or by hotel or hostel residents outside these institutions or hotels, they were included. Meals in hotels were therefore excluded if consumed by residents (whether permanent or temporary) of those hotels, but were included if eaten in the hotel by non-residents. Business expenditure is included but expenditure on school meals (again a quasi-domestic situation) and that by foreign tourists are excluded.

The surveys were designed to cover all items of expenditure provided they were consumed outside the place of residence and thus included small snacks such as cakes, fruit, ice-cream and fish and chips bought by the person being questioned and eaten in the street, at work or in the open. The cost of the meal included tips and a drink when consumed with a meal but not when consumed separately.
2. The second group of information is that published annually by the Central Statistical Office as part of national accounts estimates. (90) Expenditure on eating out is recorded under the general heading of consumers’ expenditure and more specifically under ‘Catering (meals and accommodation)’. This information includes expenditure in “both commercial and non-commercial establishments, for example, cafés, restaurants, hotels, fish and chip shops, canteens, office dining rooms, schools (providing school meals and milk) and communal establishments such as orphanages”. (90 p.156) Unlike the previous type of information, it excludes business expenditure, but includes tourist expenditure and generally may be said to cover a broad range of expenditure that would imply accepting a much wider definition of eating out. For example whilst it does exclude catering in such places as hospitals, prisons, borstal institutions and homes for the aged, it still covers items of questionable relevance, among which school meals and milk, fish and chips bought to eat at home and staff food and accommodation are perhaps the most arguable. The complete exclusion of any expenditure on alcoholic drink even when part of the meal, may also be cause for debate. In addition and perhaps more seriously, however, is the fact that the information is only available either with the exclusion of the service element or with the inclusion of accommodation expenditure.

3. The third group of catering statistics from which a definition of eating out can possibly be achieved is the Board of Trade catering inquiry in 1964. (15) This inquiry was designed to provide “an analysis of turnover in the catering establishments for use in improving data on consumers expenditure for national income and expenditure purposes and as a benchmark for the monthly series of turnover in the catering trades”. (15, p. 1066) It is not surprising therefore that its scope covers a field very similar to that dealt with in the previous section, but as it collects turnover information it includes expenditure by both tourists and business men.

The main differences between the Inquiry and the National Income and Expenditure estimates are in the exclusion in the former of expenditure in unlicensed hotels, boarding houses, in shop restaurants and in schools (unless provided by an outside caterer). Use of turnover, however, includes expenditure other than that concerned with the purchase of meals and apart from the year of the Inquiry itself, it is impossible to separate the expenditure on meals, from expenditure on accommodation,
alcoholic drink, cigarettes and tobacco sales, receipts for other services and the sales of other goods. In addition it excludes important expenditure connected with a meal such as tips.

The last group of information used to define eating out is that produced by the Government Social Survey for the Department of Employment and Productivity. The Family Expenditure Survey (54) is an annual survey which shows household expenditure on meals bought away from home. As this approaches expenditure on eating out from the demand rather than the supply context, it tends to comply more with the definition described by the Government Social Surveys than with those implied by the two previous types of information.

It indicates perhaps the most useful description of eating out, for whilst including tips and drinks consumed with a meal, it excludes those items taken home to eat and the sundry items consumed in the streets. However, being a budget survey, it excludes non-domestic expenditure. Those not living in a domestic environment such as hospitals, prisons, institutions, hostels are omitted and thus it also does not cover expenditure by foreign tourists or expenditure by business men.

As published, the information includes expenditure on school meals, but separate breakdowns with this item omitted are obtainable.

From this brief summary of the statistical data available it would appear the hope that the definition of eating out may be refined by recourse to extant information was in fact too facile. No one source suggests an ideal description, yet if all were to be used, the result would be somewhat akin to Simhuber's conclusions when examining the area variously designated Mitteleuropa, that the area considered by everyone to satisfy the definition, turns out to be remarkably small. (141) On the other hand, to admit all definitions would be just to burr the edges of the all enveloping definition implied by the Hotel and Catering Economic Development Committee.

One of the sectors could be eliminated in this way however, for the institutions which represent a substitute domestic environment, such as hospitals, prisons, borstals etc., are not included in any of this information. Apart from this, the question of how to define eating out is clearly not yet solved and although definition will probably depend on which of these
four categories of information is eventually used, the choice cannot be made until the theoretical arguments have been considered.

(c) The Theory Specified

Whilst economics has been selected to provide the suitable theoretical framework for this study, the theory to be used has still to be specified. Since the pioneering efforts of Allen A Bovley before the last war (5) there has developed within economics considerable experience in the use of empirical data about consumer behaviour. It was found however, that a gap existed between the assumptions of classical consumption theory and the conditions under which actual observations are obtained. As Leontief pointed out, there is in economics too much theory with little or no factual support and too many facts which cannot as they stand be related to any theory. (63, p.5) The theory of choice for a single consumer was therefore developed by generalisation into the theory of many consumers and in this way, market demand relationships formulated.

Even a cursory examination of the literature and existing studies suggested that the formulation of demand relationships according to the techniques in existence would direct research on eating out along well structured and disciplined channels, and lead to far more satisfactory results than could ever be hoped for by ad hoc methods. In fact, it was found that some preliminary estimates of the relationship between expenditure on meals away from home and its determinants had already been calculated, (see chapter 1, section 5) but it was also clear that with the production of subsequent information, results needed to be both refined and brought up to date. Expenditure on meals bought away from home in these previous investigations, had been but one of over a hundred commodities examined, and it was necessary to bring it from its peripheral context to the centre of focus.

In choosing to follow the economist's approach to consumer behaviour, some of the difficulty in defining eating out is resolved, for the techniques require data of a certain type. One must return therefore to a consideration of the information available, for in the end it is to be the arbiter of definition.
5. The Definition Chosen

The techniques of analysing consumers' expenditure as crystallized by Stone (152) use two types of data. The first is time series information of the type given in the National Income and Expenditure estimates or by the Board of Trade indices and the second is that obtained from household budget surveys like the Family Expenditure Survey. This meant that there is no room to admit the type of definition used by the early ad hoc government social surveys, even though they may appear to satisfy more of the requirements than the alternate surveys. The choices must therefore devolve onto the remaining three groups. As will be seen from Chapters II and IV, of these, only the information from the Family Expenditure Survey was able to match the rigorous econometric standards required, so the definition of eating out had to be aligned to the way it is used there.

Eating out as far as this study is concerned is therefore the expenditure on meals away from home by domestic households. As a definition it is not entirely satisfactory for it omits two important sections of the market, namely expenditure by overseas tourists and expenditure by businessmen. (see Appendix B.) On the other hand, it embodies realistic conceptual distinctions, in that it does not exclude important subsidiary expenditure such as tips or drinks consumed with the meal, and neither does it contain inapplicable information such as expenditure on accommodation. It also permits the exclusion of expenditure on school meals, which are arguably of doubtful relevance to a study of eating out (see chapter 3, section 5).

Whilst the acceptance of the econometric approach has in effect defined eating out, (a definition which is used for the majority of the demand analysis and for the whole of forecasting) it has not dictated the entire approach. As will be seen numerical techniques have tangible limits and eventually more subjective analysis has to be employed. With this change of emphasis, the nature of the data alters and so therefore do the definitions employed. Because the data becomes less specific the definition of eating out becomes more nebulous. Although some of the omissions of the budget data are repaired, the less secure definition results in less satisfactory analysis and the subjectivity of the norm in catering research returns.
It is clear that as far as defining eating out is concerned, the standards of accuracy required must affect the choice of definition. If quantitative objectivity is to be attained, then the area covered by eating out must inevitably suffer some incompleteness. Alternatively, if the analysis is able to rest content with less demanding techniques, the definition can be perfectly in keeping with a particular conceptual attitude posed. The only difficulty is that the supporting information will not sustain manipulation and its fragility will be reflected in any conclusions reached.

It is no use trying to attain conceptual perfection if the concepts remain in their ivory towers, aloof and quite disembodied from demonstrable causal interpretation. Far better that practical requirements prevail and the determinants assayed. "It is useless to expect that any one analysis will provide a complete solution to some particular problem. By chance it may, but the process of induction should be regarded as the adoption of more or less relevant facts. If on the whole, the methods, theories and facts are more rather than less efficient, fruitful or relevant as the case may be, it is to be expected that a sound body of inference will gradually be built up which improves in reliability and extends in scope as time goes on. This process of learning is essentially a circular one. An analysis is made which adds a little to knowledge. It also suggests new problems, the need to improve methods or theory at some point or the need for more, or a different kind of, factual information. These new needs are attended to and a new analysis is made. This may further extend knowledge but it may also involve a revision of previous knowledge. If knowledge is being consolidated it is to be expected that on the whole new analysis will narrow the margins of uncertainty of previous estimates within their old limits. Progress in science consists very largely of the narrowing of margins of uncertainty by a continuous process of this kind."

6. The Order of the Discussion

Intent on attaining a degree of flexibility in the presentation, so that subsequent workers in the field are able to reject those sections with which they disagree or whose findings have proved untenable in the light of later events, the study has been divided into three main parts, each representing a different level of objectivity. Starting in econometric rigour it proceeds through generality to the conjecture of prediction.
Part One maintains a belief in economic regularities. As Haggett has pointed out order and chaos are not part of nature but are part of the human mind (59, p.2) "that there is more order in the world than appears at first sight is not discovered until the order is looked for". (61, p.204) The search is therefore for economic order and this is pursued econometrically.

The analysis begins with a summary of the history, methodology of family budget analysis and reviews previous work in the field as relating to expenditure on meals away from home (Chapter I). It continues by examining the present sources of suitable data (Chapter II) and then applies the relevant techniques (Chapter III). Attention is then transferred to the time series data and a similar analysis assayed. The nature of the data however results in a different procedure being adopted and a somewhat condensed examination. (Chapter IV) The resulting two approaches are then compared and their quantitative relevance in forecasting discussed (Chapter V).

Throughout this first section the argument is often technical. No excuse is however offered, for as Stone points out "It is to be hoped that in the course of time reliable econometric techniques will become generally known and accepted. When this happens it will become possible to write on econometric subjects more in the spirit of Marshall, since the techniques will be established and can be introduced simply by reference. In the meantime the econometrician cannot follow that course for in the present stage of development econometrics for every man would be unintelligible" (152, p. XL)

Nevertheless at the end of each chapter the results are discussed less technically and for the reader not concerned with the methods adopted interest can be restricted to these paragraphs.

Part Two commences with the acceptance that the econometric approach has limitations and that a less formal analysis should be followed. Nevertheless the dangers of leaving a well defined theoretical framework are recognised and Chapter VI therefore makes some attempt to structure the discussion. Order is still sought although the ideals originally conceived have suffered some amendment. The conclusions of Chapter VI further disillusion these ideals however, and the last two chapters of this section have to descend to more subjective analysis (Chapter VII) and the traditional postulations of the contemporary catering literature (Chapter VIII). Chapter VIII concludes on a slightly
less depressing note nevertheless and summarizes the relevance of the analysis for the forecasting to come.

In Part Three the final level of abstraction is reached when the future is conjectured. (Chapter X) Like all forecasting this section must necessarily be suppositional, but to avoid any accusation of academic adventurism the attempt has been made however to contain the conjecture within specified limits (Chapter IX). The study ends with a brief examination of the implications the forecasts hold for the catering industry, and some suggestions are made for future research (Chapter XI).
ECONOMETRIC DEMAND ANALYSIS
Demand for a service such as meals away from home is influenced by many factors, among which one would expect to find such classical determinants as the market price of the commodity, the availability and the price of a substitute, the size of a consumer’s income and his own tastes and preferences. In order to summarise these conveniently, and in order to achieve more than a purely qualitative assessment it is necessary to express these relationships in a numerical form.

The construction of such a relationship is in essence an econometric problem, and the relationship studied is commonly termed a statistical demand function to distinguish it from the basically theoretical ones, which according to Cramer, are of little use to the empirical researcher. "The pure economic theory of consumer behaviour has recently developed into an elaborate, precise and highly technical piece of abstract reasoning. We do not believe that in its present form this theory can contribute much to empirical research. It is insufficiently specific to yield fruitful hypotheses and not well enough established in fact to be applicable to observed phenomena. It would therefore be a mistake to impose a priori considerations of this theory on the assumptions of our statistical analysis." (29, p.1).

Income is accepted as a major determinant of consumer behaviour and it is usual to take the influence of income on consumption as a starting point. "The basic result to be derived from an econometric analysis of family budgets is the relationship showing how expenditure (or consumption of) a particular commodity varies with the income level of the household."(129,p.79) This relationship is called an Engel curve and is often expressed in terms of income elasticity coefficients. These represent the percentage increase or decrease in demand which accompanies a one percent rise in income and are widely used due to their property of being a non-dimensional number independent of units of measurement.

Income elasticities however, are not necessarily constants, as their value at different income levels may differ, but as Lasier points out, "Experience shows that it is often legitimate to treat

* By 'preferences' is meant the non-economic determinants of expenditures. (129, p.11)
them as approximately constant within a moderately wide range of the variables." (ib., p. 76) Demand is said to be inelastic, or the commodity a necessity, if the income elasticity for that particular item is less than one, and elastic or a luxury if greater than one.

The two main types of statistics used in demand analysis from which one can derive income elasticities are, firstly household budget data, and secondly market data. The former provides cross sectional information and in this study is dealt with in Chapters I to III, whilst the latter expresses the data as a time series, which is analysed in Chapter IV.
Chapter I

FAMILY BUDGET ANALYSIS

1. Introduction

"The household is often regarded as the point of convergence of the various branches of the social sciences; in economics in particular, as the original meaning of the word testifies, it is impossible to go very far without a knowledge of the behaviour of the household in typical circumstances. The collection and analysis of the detailed records of a larger number of households - records which are especially concerned with their expenditures and hence known as family budgets - are therefore of considerable importance from a number of points of view." (129 p.) Prais and Houthakker indicate three areas where family budgets are of importance. They are a source of information about the life of a nation on which social policies can be formed; they provide weights for the cost of living index and are one of the basic sources for econometric studies which analyse the determinants of consumer demand; the context in which they will be examined in this study.

2. History

The main work in the field of econometrics and family budgets started in the 1930's when economists began to understand the significance of the results to be obtained from family budget data, the potential having been brilliantly revealed by Allen and Bowley who were the first workers to place the examination of family budgets on a systematic and econometric basis. There was a considerable amount of work done before this time however, and both Douglas (41) and Stigler (149) give comprehensive accounts of the early history of empirical studies of consumer behaviour.

Most of the early studies were stimulated by the distress of the working classes and though one can find isolated references to family budgets collected as far back as the late eighteenth century, (34) the modern era of family budget studies really started in the middle of the nineteenth century. Stigler sees two reasons for this; firstly the socialist unrest which swept Europe culminating in the revolutions of 1848 and which caused increasing concern for the economic condition of the working class, and secondly, the popularisation of statistical analysis as applied to collections of social data, following the contributions to statistical method by such people as Laplace, Poisson and Gauss.
The first and most famous statistical analysis of family budgets was that of Ernst Engel, a German statistician, who in 1857 examined 153 Belgian budgets which had been published by Édouard Drobertin two years earlier. (47a and 42a) In his essay, Engel made the first empirical generalization from budget data; that, the poorer a family, the greater the proportion of its total expenditure that must be devoted to the provision of food. This is the foundation of what later became known as Engel's Law, although Stigler in fact, attributes most present day statements to Carroll Wright, Commissioner of Labour Statistics in Massachusetts, who in 1875 gave an excessively free translation of Engel's original. "The distinct propositions are:

First, That the greater the income, the smaller the relative percentage of outlay of subsistence.  
Second, That the percentage of outlay for clothing is approximately the same, whatever the income.  
Third, That the percentage of outlay for lodging or rent, and for fuel and light is invariably the same, whatever the income.  
Fourth, That as income increases in amount the percentage of outlay for 'sundries' becomes greater." (20)

These laws have usually been confirmed by more recent work (apart from expenditure on clothing which has been observed to rise proportionately with income) although as Leob points out, all they really do is "give statistical expression to the rather obvious fact that a poor family must spend all or almost all of its income on necessities, whereas a more prosperous family can transfer some of its expenditure to non-necessities". (85, p.85)

The field of study indicated by Engel did not progress very rapidly in a quantitative direction however, and whilst both Vecchio and Ogburn made some progress around the turn of the century, (162 and 123) family budgets had to wait until 1935 before Allen and Bowley's pioneering monograph revealed the benefits a detailed econometric analysis might yield. Their book, Family Expenditure, (4) has become a classic in the subject and although some of their conclusions are now recognised as gross simplifications, their analysis has been accepted as the model for all subsequent work.

Further progress was however, limited by the absence of acceptable data and no suitable information became available until the Government surveys of 1937-1939. (103 and 89) The War interrupted much of the work on this material and whilst it was in fact analysed by such people as Nicholson and Massey, (120 and 89) detailed investigation did not begin until after
the Var. At this time the Department of Applied Economics at Cambridge began a programme of research on demand analysis under the direction of Richard Stone, which indicated the need for more detailed examination of family budgets. As rationing was still in force and consumer demand thus strictly controlled, the pre-war data was considered to be more relevant to a post-war market situation than any study which might be carried out in 1950. It was for this reason therefore that when a rigorous analysis of family budget eventually appeared in 1955 it was concerned with information over fifteen years out of date.

The 1953-54 'Report of an Inquiry into Household Expenditure' which was issued in 1957 provided the first comprehensive post-war collection of family budgets and since then the results of a continuing smaller survey have been published annually. (105-111 and 27) This new source of statistics has not attracted as much attention as might have been expected for whilst several of the surveys have been analysed (52 and 163) much of the impetus of the 1950's has faded and very little work has in fact been published during recent years.

3. The Form of the Demand Function

Together with the choice of the variables to be included in the analysis, (discussed in Section 4) the form of the statistical demand function is the area of debate about which most family budget studies seem to centre, and in making a selection it is usual to keep in mind the statistical accuracy of the fitting, its economic interpretation and the simplicity of its computation.

A priori one might expect the curve shown in Figure 1 to represent changes in quantities consumed when income rises from a very low to a very high level. This curve, which can be represented by the log-log-inverse function, Log y = a - \frac{b}{x} - c log x + u is interpreted as follows; the first part of the curve represents the consumption of a luxury item which increases rapidly with income, the middle section shows the consumption of a necessity when the rate of increase in consumption diminishes progressively as income rises and the last segment indicates the position of an inferior or Giffen good, the consumption of which falls as income rises. The income elasticities for the three categories would be for a luxury good >1, for a necessity <1, and for an Giffen good <0.
FIGURE 1  CURVE REPRESENTING THE LOG-LOG-INVERSE FUNCTION

Income Elasticity $\eta = \frac{b - cX}{X}$

Source: 57
Goreux illustrates this by showing how this function would be suitable for the study of the consumption of cereals where one was considering a broad range of income such as may be found in different countries. The lower part of the curve would represent the consumption in poor countries like India where cereal is a luxury, the middle portion countries like Portugal or Turkey where cereal is a necessity and the last section, the wealthy countries of Europe or North America where cereal is a Giffen good. (57, p.1) However, as Goreux points out, it is unlikely that one has suitable statistics to cover the whole range of the curve and so in practice "it is preferable to confine oneself to simpler functions which can provide good representations of consumption changes within the observable range of income" (57, p.2)

This is in fact the approach adopted by previous workers in the field. Allen and Bovley (4, p.8) suggested that the relationship between consumption and income was rectilinear, and they saw the applicability of Engel's Laws to rest in the closeness of fit to straight lines. As Prais and Houthakker later commented, "When a relationship is expected to exist between a number of variables, the simplest assumption that can be made about its form is that it is linear. Provided that the range of variables is small this assumption is generally adequate and leads to the well-known and straightforward solution of the resulting normal equations." (129, p.47) Later workers however discovered that the linear form was inappropriate, a criticism in fact appreciated by Allen and Bovley who realised that the linear relationship was only a first approximation to a regular curve, and one which might cease to apply at low or high incomes. (4, p.8)

The linear form was found to be unsatisfactory when the range of variation was large. While sums of squares could still be minimised, they could not be minimised uniformly, and over some ranges the fit was much better than others. Increasing availability of information, covering a wider range of incomes, encouraged the development of more suitable functions of a non linear type which would have the property of minimising deviations over the whole range investigated, and so by the mid 1950's a substantial number of curvilinear forms had been suggested. More recent work has done little to clarify the situation and today it is quite clear that there is no ideal curvilinear form.
The choice is very much up to the preference of the individual worker, his requirements and the limitations of his data. The principal problem in fitting Engel curves, as Prais and Houthakker note is to find an algebraic expression which satisfies both economic and statistical criteria, (129,p.82) the nature of which has in fact been reduced to a discussion of four basic questions; that of additivity, decreasing elasticities, satiety and initial income.

(a) Additivity

The problem of additivity was first raised by Nicholson, (120) who indicated that if all commodities are to be described by the same type of equation then the regressions for individual commodities should add up identically to total expenditure, which meant that it would be impossible for all items in the budget to have asymptotic values, "for then there would be some income level at which the whole of income would not be spent".(129,pp.83-84) This is not an unreasonable assumption to make for there are some categories of expenditure such as entertainment and the hybrid 'all other expenditure' for which there is no a priori basis for assuming a ceiling expenditure, and indeed one might even consider it to apply to meals away from home as well.

However as there is no real reason for assuming that all Engel curves can be described by the same equation, the additivity property is not generally stressed and is in fact often disregarded. "In building aggregate models of the economy as a whole it is clear that if it is ignored there is a danger of introducing spurious behaviour properties. But in examining the detailed form of the Engel curve for a particular commodity it may be unwise to restrain the formulation by imposing the same algebraic forms on all the curves for all items of expenditure; a better representation of consumers' behaviour may be obtained by formulating different forms of Engel curves for different types of commodities". (129, p.84)

(b) Decreasing Elasticities

Many authors have suggested that the equation should yield decreasing elasticities, an argument which is founded in the proposal that whilst many commodities may be in the first instance classed as luxuries, the effect of increasing incomes or falling
prices tend to make them more and more essential until they become first semi-luxuries and eventually necessities. (The question of the inferior good is nearly always conveniently left out of consideration). The classic example of this is due to Wold and Juréen (165) who drew attention to Sveistrup's unlikely work on the demand for coffee in Greenland where coffee was very strikingly shown to be a decreasing linear function of income, as Eskimos' spending habits were analysed every ten years between 1840 and 1938. (148)

(c) Satiety

Decreasing elasticities also introduce the question of satiety; the level of maximum consumption that will not be exceeded however high income rises. The two concepts are indeed very similar, for decreasing elasticities imply a saturation level. They are however, generally distinguished, as it is possible to derive a function which has decreasing elasticities yet does not allow for a saturation level. The desirability of a saturation level for all commodities has in fact been debated for as was noted earlier there are some items in the budget for which there is no evidence of postulating saturation levels. Clearly such levels will be most apparent with regard to necessities and so systems which incorporate satiety will be of most use for describing the more essential items in the budget.

(d) Initial Income

The last area of debate is that of initial income. Prais and MOUTHAKKER suggest the need for a parameter that indicates the total expenditure below which a particular commodity is not purchased. (129, p.82) This requirement is not satisfied by those equations which pass through the origin as they contain the implicit assumption that as long as total expenditure is positive, however small, there is always some expenditure on each of the items making up the total expenditure.

The characteristics of the Engel Curves most generally in use have been summarised in Table 1 and as will be readily appreciated, each has its own advantages and limitations. Often the more theoretically pleasing systems have equations that are the most difficult and laborious to fit, whilst those that are
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>FORM</th>
<th>COEFFICIENT OF ELASTICITY</th>
<th>BEHAVIOUR OF ELASTICITY</th>
<th>SATURATION LEVEL</th>
<th>ADDITIVITY</th>
<th>ALLOWANCE FOR INITIAL INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LINEAR</td>
<td>( y = a + bx + u )</td>
<td>( b \frac{x}{y} = \frac{x}{x + a/b} )</td>
<td>Tends to Unity from above if ( a' &lt; 0 ) and from below if ( a' \geq 0 ) or equals unity if line goes through origin</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2. SEMI-LOGARITHMIC*</td>
<td>( y = a + b \log x + u )</td>
<td>( \frac{b}{y} = \frac{b}{a + \log x} )</td>
<td>Decreasing</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3. LOGARITHMIC*</td>
<td>( \log y = a + b \log x + u )</td>
<td>( b )</td>
<td>Constant</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4. INVERSE (simple hyperbola)</td>
<td>( y = a - \frac{b}{x} + u )</td>
<td>( \frac{b}{x} = \frac{b}{a - b} )</td>
<td>Decreasing</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>5. LOG-INVVERSE</td>
<td>( \log y = a - \frac{b}{x} + u )</td>
<td>( \frac{b}{x} )</td>
<td>Decreasing</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6. LOG-LOG-INVVERSE*</td>
<td>( \log y = a - \frac{b - c \log x + u}{x} )</td>
<td>( \frac{b - c \alpha}{x} )</td>
<td>Allows for both decreasing and increasing</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7. LOGNORMAL*</td>
<td>( y = y_{00} \frac{P\left((\log x/\mu, \sigma^2)\right)u}{\sigma} \frac{1}{\theta} )</td>
<td>( \frac{\beta}{\theta} )</td>
<td>Decreasing</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>8. TÖRNQUIST HYPERBOLAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Necessities</td>
<td>( y = \frac{\alpha \frac{x}{x + \beta}}{x + \beta} )</td>
<td>( \beta )</td>
<td>Decreasing</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>b. Semi-luxuries</td>
<td>( y = \frac{\alpha (x - Y)}{x + \beta} )</td>
<td>( \beta ) + ( Y )</td>
<td></td>
<td></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>c. Luxuries</td>
<td>( y = \frac{\alpha (x - Y)}{x + \beta} )</td>
<td>( 1 + \frac{\beta}{x + \beta} + \frac{Y}{x - Y} )</td>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
much easier to calculate require the adoption of less satisfying premises. The wide choice of curvilinear forms in general use leaves one (with the impression however, that the objections to any particular form are frequently purely theoretical and have probably little practical significance.

4. The Nature of the Variables

Having chosen the system of demand equations, the next problem is which variables should be included in the analysis. The basis for selection is usually the theory of the single consumer, which states that consumption is determined by an individual's income, market prices and his preferences. The extension of this to the household is usually accompanied by the assumption that the household is the unit of decision as far as the economics of consumption is concerned. (129, p.11)

In the analysis of family budgets however, one of the factors suggested by theory can be omitted. It is generally accepted that the effect of price should be excluded from the equation as prices may be considered constant within the data published for one period, and are therefore the same for all families in the survey. This leaves three main types of variable to be chosen which will in turn describe consumption, income and preferences.

(a) Consumption

There is usually little debate about the dependent variable which has become established as the expenditure on the particular commodity in question. This is because quantity data is not generally collected in family budget surveys even though the desirability for collecting such information has been recognised for a long time. (146a, p.350) As Stone points out, if "commodities were so defined that their prices were the same for all consumers, then the deficiency would be of no consequence", (152, p.276) but Tobin has shown that in some cases the increase in expenditure on a given commodity with increasing income reflects an increase in average price as the income level rises (160, p.147) Despite this the immense difficulties involved in collecting suitable data for non-food commodities means that expenditure continues to be used and that estimates are presented without any adjustment for quality changes.
(b) Income

There is however considerable debate about the variables on the other side of the equation. Income has been recognised as the cardinal independent variable, but the actual choice of an indicator to represent it is one of the fundamental problems, for as Cramer points out, the pragmatic attitude adopted by Engel that income was a major determinant of consumer behaviour has been succeeded by the current view that income is one of the several possible measures of an ill-defined standard of living. Which measure to choose is however, hampered by the fact that in family budget surveys expenditure usually exceeds income.

When this phenomenon was analysed by Cole and Utting (32) they discovered that expenditure tended to be overstated by about 5% and income understated by approximately 10%. Abel-Smith and Townsend (146) give several reasons for the discrepancies observed. Expenditure may be overstated because of unwitting double counting, an exaggeration of expenditure on necessities, the fact that people tend to telescope time and attribute expenditure to the more recent past than is justified, and also to what is known as 'end period effect', when expenditure, if recorded for more than two weeks, is found to be higher in the first week than subsequent weeks.

Conversely income might be understated because its definition may omit such categories as withdrawals from past savings, small sources may be overlooked, deliberate under reporting of the kind experienced by the tax authorities, and the fact that income information usually relates to periods further in the past than expenditure information. However, in addition to these practical difficulties there are also problems on the conceptual level. "......the income received in a particular period may be a very poor indicator of its (the household's) standard of life. The true determinants..... are a complicated function of past, present and expected incomes." (129, p. 80)

The various hypotheses which attempt to define income have been summarised by Ferber (49). Unfortunately, like much of the theoretical thinking in the field of consumer behaviour, they are of little value to the empiricist. Whilst the possibility of using Modigliani's relative income hypothesis (113) whereby expenditure is related to previous peak consumption, or Friedman's
proposals (55) of a permanent income based on average actual and anticipated income would be welcomed, the fact that such concepts are not measurable precludes their use in econometric demand analysis.

As income is therefore difficult to ascertain satisfactorily, and as its influence may in any case be lagged as has been noted by Tobin, (160) total expenditure is usually adopted instead. "The gain in statistical precision probably outweighs any theoretical difficulties this may cause; it might even be argued that total expenditure fits much better into a theoretical scheme which effectively ignores savings." (67, p. 2)

(c) Preferences

Most studies begin with the assumption that income is the only important variable which influences expenditure apart from a random error term. This is in fact not implausible where a ceteris paribus situation obtains, when the effect of other factors can be eliminated. Unfortunately such a situation is rarely achieved. Generally in family budget analysis it is not possible to adopt the classical methods of the natural sciences whereby the effect of any one factor can be examined by holding all other factors constant, as the reduction in the number of available observations which this involves does not provide a sufficient base for analysis.

Nevertheless Georeux was able to use this method in an international study of food consumption, because he had at his disposal about 60 surveys some with a coverage of over 20,000 households. (57) The extent of his data thus allowed him to divide the population into strata, homogeneous except for income, and fit regressions to each stratum. The majority of workers in the field however, have used an alternative method which involves introducing additional variables into the equation to reduce some of the variation not explained by income alone, and to account for what are usually described as the preferences of the consumer. These preferences are in fact non-economic determinants of demand such as family composition, social class, occupation, location, religion and a whole host of psychological characteristics.

As the economist is unable to isolate all the sources of variation he has to be content "with introducing the more
conspicuous ones explicitly and assume that the others, which are presumably numerous and unimportant individually, give rise to an error term." (129, p. 11) There seems to be no systematic method for selecting which factors are of greatest importance, but the variable which has emerged as the main non-economic determinant of consumers' expenditure is family size. It was found that if family size was taken into account the amount of residual variation could be considerably reduced. "Indeed since in most sample surveys of household expenditure it is found that large families tend to have high household incomes (but low values of income per person), it is important to isolate the effects of household size variation if we are to avoid ascribing to income part of the variation in consumption properly ascribable to the size and composition of the household." (129, p. 90)

The early attempts at a solution to this difficulty were to construct equivalent adult scales whereby the contribution of each member of the household was expressed as a proportion of some standard family member such as a male adult. Usually these were based on nutritional requirements (117a, p. 14) but sometimes on the 'cost' of feeding a person of a given age and sex. (36c) Sydenstricker and King (153) were the first to point out the imperfections of these methods and it is generally held that such scales "have little relation to what a family actually does when it is enlarged by the addition of another member." (52, p. 568)

In his attempt to obviate the need for scales of equivalence Allen tried to measure the economic effects of family size by considering the behaviour of families of different sizes. (3a) He found that the observed differences in expenditure could not be explained by an equivalent adult scale hypothesis and concluded that if any scales at all were to be constructed, there would have to be one to represent each commodity and that it was only likely to be possible for families consisting of parents and children. Following this in 1949 Nicholson also sought to provide a solution by ceteris paribus methods. (120) However, Houthakker decided so much information was lost by this procedure that the sacrifice of coverage and sample size to achieve what was in fact an unobtainable uniformity was unwise. (67) Together with Pras he preferred to reopen the question of scales of equivalence and by so doing rejected Allen's doubts that such scales could ever be readily constructed.

They adopted as a working hypothesis the proposal that the "effects of variation in household size is given by supposing that consumption per person depends only on the level of income
per person," (129, p.88), which is in fact the simplest way of allowing for the effects of family size. This is usually termed the homogeneity hypothesis and implies that the "expenditure elasticity with regard to income depends ...... only on the distribution of income per person and not on household size." (128) If the hypothesis is true, then the usual definition of a luxury or necessity based on income elasticity (see Prologue) can be re-formulated by describing a luxury as a commodity, the consumption of which decreases as household size increases, and a necessity as one which becomes more essential with increasing household size. The implications of this argument are that scatter diagrams for a luxury should show the Engel curves for the smaller households lying systematically above those for larger households, whilst for a necessity it will be the other way round. In addition the curves will cross, if the elasticity is about unity.

Prais and Houthakker established that this is in fact what happens and provided justification for the homogeneity hypothesis by demonstrating how the Engel curves for the different households can be made to coalesce when both income and expenditure were divided by household size. (129, p.93) They then proceeded to develop this model by introducing the effects of the age and sex of the members of the family. Household size was thus redefined in terms of household composition. The formulation which they devised distinguished the direct effect of a change in family size and the indirect effect through the alteration in the family's standard of living. It enabled them to construct adult equivalent scales for food and led them to believe that similar methods could readily be extended to the rest of the budget. (129, p.145)

Forsyth however, in a later study in which he worked with the more tractable data from the 1953-54 'Report of an Inquiry into Household Expenditure', considered that "Prais and Houthakker were over-optimistic in assuming that separate specific and income effects of a change in family size could be estimated." (52, p.369) He showed the inadequacy of the equivalent adult scale hypothesis and concluded that it was much too simple/to provide anything more than a very rough approximation to the observed patterns of family expenditure." (52, p.386)
Porsyth's rather negative results have tended to restrict the development of family budget studies and of the many non-economic determinants of consumer demand, family size is the only one in fact to have been analysed in any detail. Whilst Prais and Houthakker pointed the way towards the evaluation of other preference factors, (129, pp.153-164) the extent to which they can be included in this type of analysis is clearly limited by the difficulty presented by family size. It would seem therefore that in the future, workers in the field will need to follow Utting's suggestion (32, p. 399) and confine their studies to groups which are considerably more homogeneous, although it is clear that major progress will have to await improved data.

5. The Results of Family Budget Studies with Reference to Meals Away from Home.

Family budgets have been the object of quantified analysis for several reasons; to provide objective information for governmental policy decisions with regard to such things as family allowances, to afford valid measures for the nutritionist or to help find the value of the extraneous estimator of one of the parameters in a linear expenditure model. Nowhere has the main area of investigation been meals away from home and in fact, only a very few surveys deal explicitly with the category at all. Most research is concerned with the study of complete family budgets rather than individual items and so expenditure is usually only broken down into broad commodity groups. Quite often these have to be compatible with those used by other workers, or to conform to a central model, and even those categories which have in fact been dealt with more specifically have not been analysed per se but as part of an integral system. It can be appreciated therefore that the information about meals away from home in the existing literature on family budget analysis is extremely fragmentary and its value is clearly conditioned by the limitations of the study from which it is taken.

The first econometric study which mentions meals away from home is an early paper by Stone, (151) who in 1951 examined the demand for food in the United Kingdom before the War, using material from the Ministry of Labour survey of working-class households (103) and the Civil Service Research Association.
inquiry into expenditure by public officials. (89) A logarithmic function was used for all items in the budget and meals away from home yielded a high $r^2$ (0.98) as well as the highest elasticity for any category (2.66 ± 0.18) As the aim of the analysis was to obtain good estimates of expenditure elasticities, the other results were of a secondary nature and were, in fact, mostly unsatisfactory. The coefficient representing the size of the household tended to be of suspect accuracy and the occupational coefficient, generally insignificant, was found not to affect the elasticity of expenditure on a given item with respect to total expenditure. Because the elasticities were based on total expenditure rather than income, Stone suggested that the derived elasticities ought to be reduced by 10% to counteract any over-estimation, thus Stone's final estimate of the income elasticity for meals away from home was 2.39.

The two pre-war surveys which he used in this study were re-examined later in the 1950's by Prais and Houthakker. The main outcome of their work was a book published in 1955 (129) and two preliminary papers in 1952 and 1953, (67 and 128) all of which mentioned meals away from home. Like Stone, Houthakker in 1952 used a logarithmic function although instead of employing variables to represent household size and occupation he introduced into the system two parameters to show the effect, firstly, of children and secondly of whether the family lived in London. Whilst this was a preliminary experiment and the derived percentages not particularly accurate, the results in fact seem quite interesting and conform to a priori concepts. There were however imperfections in the data which tended to exaggerate the London differences in the case of highly income elastic commodities such as meals away from home, and the treatment of family composition, as was reiterated in later studies, appeared to need considerable improvement. The total expenditure elasticity (2.36 ± 0.35) was of the same order as that derived by Stone but the $r^2$ was very much lower at 0.68 The two non-economic coefficients indicated that an additional child would result in a drop of expenditure on meals out by 33.9% and that expenditure by families living in London is 144.5% higher than comparable families living elsewhere.

Prais' 1953 paper dealt with the problem of non-linear
estimates of the Engel curves. In it he analysed the effects of household size and considered the merits of the homogeneity hypothesis. To illustrate that this concept accorded with the observed facts he chose meals away from home as a typical luxury good, the scatter diagram of which clearly showed the Engel curves for the smaller households to lie systematically higher than those for the larger households. Later, Pras and Neathakker provided justification for the hypothesis by demonstrating how, for this expenditure, the Engel curves for households of different sizes could be made to coincide by dividing both income and expenditure by household size (129, p.93)

The culmination of Pras and Neathakker's work at Cambridge was the Department of Applied Economics' Monograph, 'The Analysis of Family Budgets', (129) which provided the first detailed information about the two pre-war surveys. In this, they expanded their previous findings and showed how much of the family's budget was spent on meals away from home, as well as the estimated total expenditure elasticities. The results (Table 2) were given for the surveys separately so that differences between working class and middle class households could be distinguished. Expenditure on meals away from home was subdivided into four categories: Meals at School; Other food at School; Other Meals away from Home; dinners (i.e. mid-day meals), and Other Meals all of which were analysed with a semi-logarithmic function.

On the whole the results are uneven. For the first two categories dealing with food at school, there is little significant expenditure and the elasticities have very high standard errors. The other two categories provide results which are slightly more plausible, but differences between the two social classes do not accord to what one would expect to find. In both the case of mid-day and 'other meals', the middle class elasticities are higher than those for the working class. This suggests that meals out are more of a luxury for middle class households than for those of the working class, even though the former spend a greater proportion of their budget on eating out. This apparent discrepancy can be adequately explained however, for as Pras and Neathakker point out, differences between the classes often occur where the dietary habits of working and professional classes can be expected to differ and that meals away from home are in fact a point in case. From this one might conclude, that the
TABLE 2

Proportionate Distribution of Expenditure and Estimates of Total Expenditure Elasticities
as given by Prais and Houthakker

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>PROPORTIONATE DISTRIBUTION OF EXPENDITURE PER CENT.</th>
<th>ESTIMATES OF TOTAL EXPENDITURE ELASTICITIES (SEMI-LOG FUNCTION)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>WORKING CLASS</td>
<td>MIDDLE CLASS</td>
</tr>
<tr>
<td>J4</td>
<td>MEALS AT SCHOOL</td>
<td>0.0</td>
<td>0.1</td>
</tr>
<tr>
<td>J5</td>
<td>OTHER FOOD AT SCHOOL</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>J6</td>
<td>OTHER MEALS AWAY FROM HOME (DINNERS)</td>
<td>0.6</td>
<td>1.1</td>
</tr>
<tr>
<td>J7</td>
<td>OTHER MEALS</td>
<td>0.7</td>
<td>0.5</td>
</tr>
</tbody>
</table>

working class elasticity for meals away from home is lower than that for the middle classes, because of differences in the type of meal consumed, for example a canteen meal as opposed to one eaten in a restaurant, rather than any luxury - necessity concepts. Comparing these elasticities with those obtained from other studies, it can be seen that the middle class elasticity is of the same order of magnitude as has been found elsewhere, which tends to confirm the general impression that before the war meals away from home was a highly elastic commodity.

Further information about the results in Table 2 are provided by Praia and Houthakker who list the data on which their analyses were based. The material they used was slightly different from that originally published by the Ministry of Labour (109) and by Massey (89), as they were able to have the data retabulated in a two-way classification by total expenditure and by the number of people in the household. They list the number of people recording expenditure on an item as well as total expenditure and from this it is clear that the reason why the results for meals and other food at school were insignificant is the number of people actually recording expenditure on these two items was extremely small. The data for mid-day and other meals away from home are somewhat more comprehensive than this however, although it is still too variable to be of very much use. On the whole, absolute values are so low, that analyses of relative variation between income groups and family sizes can have but dubious economic interpretation. For example the average expenditure per week, on mid-day meals away from home by working class households is under 7d. whilst that for middle class households is still only 1/10d.

The largest and most comprehensive contribution to demand analysis to emerge from Cambridge was Richard Stone's 'Measurement of Consumers' Expenditure and Behaviour in the United Kingdom, 1928-1930' (152) in which he collected together the work of his Department of Applied Economics. It drew heavily on previously published results and as far as meals away from home is concerned the information he published was that of his 1951 paper, together with some of Houthakker's preliminary findings. Little new material was produced except for details of all the equations mentioned in 1951 and consequently the reservations about these studies expressed earlier, still obtain.
The last authors to have worked with the pre-war survey material were Aitchison and Brown, who used the 1938 working class inquiry to test their lognormal model. As has been noted in Table 1 this type of demand function allows for a saturation level and in fact, nearly all the commodities that they investigated yielded Engel curves which flattened out in the upper part of the curve, suggesting that saturation was nearly attained. Expenditure on meals away from home did not follow this pattern however, and proved to be highly elastic throughout all the income range. Aitchison and Brown did not pursue their analysis of this category any further than the preliminary graphical stage however.

Since Aitchison and Brown's experiments with the lognormal distribution, there has been only one study which has mentioned meals away from home, and it is also the sole paper which includes this category in any analysis of post-war data. Produced by W. Welfe of the University of Lodz in connection with the Cambridge Growth Project, (163) it examined the early Family Expenditure Surveys, using a methodology similar to that developed by Prais and Houthakker, in order to derive some elasticities for use in Stone's linear expenditure model.

Unfortunately this model involved a rearrangement of much of the data. The ninety commodity groups of the Family Expenditure Surveys were reduced to fifty two, the most important change in classification being the redistribution of expenditure on meals away from home. Half of this expenditure was divided proportionately between the different food groups and half was included in the category 'other Services'. As a result most of the study is not of direct interest, in that meals out are not mentioned explicitly, although Welfe did in fact produce some estimates of total expenditure elasticities for this item. Using a logarithmic function he found that meals away from home had an elasticity of 1.66 ± 0.23 for the 1953-1954 survey, and 1.66 ± 0.10 when based on the combined surveys for 1959-1962.

6. Conclusion.

Existing econometric analyses of family budget data are very limited as far as meals away from home are concerned. The results always need qualification and provide little information beyond a general indication of total expenditure elasticities.
They do suggest, however, that the demand for meals away from home has altered in character between the late 1930's and the mid 1950's. The pre-war surveys showed that the elasticity for this type of expenditure was one of the highest in the family budget (2.66), whilst the surveys twenty years later indicated that the elasticity was substantially lower. (1.66)

Before the war meals away from home were clearly a luxury and although by 1954 expenditure was still highly elastic, the fact that the elasticities have exhibited a classic decreasing form suggests that eating out is becoming more of a necessity.

7. Summary

In order to achieve something more than just a qualitative assessment of the demand for a commodity, it is necessary to express the relationship between demand and its determinants numerically. Called a demand function, this usually takes the form of showing how expenditure on a commodity varies with income and is often presented in the form of income elasticities (the percentage increase or decrease in demand accompanying a one percent rise in income). When family budget data are used for the analysis, the discussion has fallen into two distinct sections concerned with the form of the demand function, and the choice of variables to be included in the analysis.

Initially, the relationship was thought to approximate to a straight line, but later it was realised that this was a simplification and in fact the relationship was much more complicated. A variety of curved forms were therefore investigated, but as no ideal type has yet emerged, the eventual choice is generally considered to be dependent upon the preference of the individual worker, his requirements and the limitations of the data.

As expenditure information is often the only data available, there is usually no choice of variable that can be used to represent the demand for a particular commodity. More problematical however, is the selection of factors to represent the determinants of such a demand, for whilst income has been accepted as the main determinant, the question of whether it would be better to use income or total expenditure (as a substitute for income), has still to be resolved. Income is, however, not the only factor which affects expenditure, and additional variables are therefore introduced to account for the variation not explained by income alone. Family size is the most common of these subsidiary determinants.
although to date the complexities involved in estimating its effect precisely, have limited the introduction of other variables and the consequent extension of the analysis.

Family budget studies have, on the whole, been concerned with the analyses of complete budgets rather than with individual items, and because of this meals away from home have received rather desultory treatment in the literature. Nevertheless the studies which have mentioned them, all indicate that they are a luxury, with a high income elasticity. The most recent work suggests however, that whilst they are still highly elastic they may be becoming more of a necessity.
Chapter IX

SOURCES OF STATISTICS FOR BUDGET ANALYSIS

1. Introduction

In this country there are two sources of family budget statistics sufficiently detailed for econometric analysis; the National Food Survey, which was started in 1940 to gather information about changes in diet as a guide to wartime food policy, and the Family Expenditure Survey, which arose out of the need for data on which to base a new retail price index. (54 and 65)

These are both continuous surveys within the framework of official government statistics, the former being mainly concerned with food consumption and nutrition, and the latter with income and expenditure patterns. As both have been used in previous demand studies they would appear to offer possibilities for further analysis with regard to meals away from home.

The great difficulty in using the National Food Survey however, is that the information about meals away from home is ancillary to the main object of the survey which is home food consumption. The informant, usually the housewife, is asked to keep a log-book of all the food entering the household during the survey week and this means that food bought by other members of the household without her knowledge, such as sweets, ice cream, alcoholic drink, fish and chips and all meals eaten outside the home are excluded.

Nevertheless, in order to compare the estimates of consumption with an estimate of nutritional need, the nutritional requirements of the household are adjusted to allow both for meals eaten by visitors, and meals eaten out by members of the household. The log-book records, therefore, the numbers and types of meals consumed outside the home and these are arbitrarily weighted according to their relative importance. The weekly total for each person is taken as 100 and after deducting the meals eaten out, the resulting figure is the 'net balance' of meals eaten at home by that person. (Table 2a)

As the survey then bases its calculations of nutritional requirements in terms of the net balance per person, only the final figure for the net balance is required and so the information about eating out, being subsidiary to the main aim of the survey, is lost in the computing process. (98) It is not possible, therefore, to use the National Food Survey for an econometric analysis of meals away from home, although some secondary material published in 1952 (95, pp.53-61) provides the opportunity for a more general
analysis (Chapter 7).

The Family Expenditure Survey on the other hand, specifically includes meals away from home as a separate commodity in its breakdown of total household expenditure, and as such, affords the only recent information suitable for an analysis following the established methodology.

**TABLE 2A.**

**WEIGHTING OF MEALS FOR THE CALCULATION OF NET BALANCE**

<table>
<thead>
<tr>
<th></th>
<th>Up to and including 1959</th>
<th>1960 and subsequently</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>per day</td>
<td>per week</td>
</tr>
<tr>
<td>Breakfast</td>
<td>.04</td>
<td>.28</td>
</tr>
<tr>
<td>Dinner</td>
<td>.05</td>
<td>.35</td>
</tr>
<tr>
<td>Tea</td>
<td>.03</td>
<td>.21</td>
</tr>
<tr>
<td>Supper</td>
<td>.02</td>
<td>.14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>.98</td>
<td>(say 1.00)</td>
</tr>
</tbody>
</table>

(a) These weights are interchangeable, whichever is the larger; if only one evening meal is taken, the two weights are combined.

Source: 97a.
The Family Expenditure Survey is an annual survey carried out by the Government Social Survey for the Department of Employment and Productivity. Whilst primarily it is to help the Department construct the Index of Retail Prices, it was in fact designed to meet a variety of needs. The Central Statistical Office use it in their official estimates of national expenditure, to study the redistributive effects on income of taxation and social benefits, and for demand analyses. (54, pp.38-39)

The Family Expenditure Survey is the successor of the government pre-war surveys which have, as has already been noted, provided most of the statistics for the early work in family budget analysis. It was originally intended that these early surveys should be used in revising the Retail Price Index, which even in 1937 was considerably out of date being based on fewer than 2,000 budgets collected in 1904. (146, p.13) Unfortunately the war interfered with the adoption of the results, and it was not until 1946 that the newly formed Cost of Living Advisory Committee was able to implement the findings. They did so however with considerable misgivings, as they appreciated the fact that pre-war budget information was probably not relevant to post-war income and expenditure patterns, and should only be adopted as an interim measure "to serve as a temporary expedient until a new full scale inquiry could be undertaken to provide an up-to-date weighting basis for a new index." (101, p.iii)

In 1951, the Committee recommended that a survey should be undertaken as soon as possible, and this was carried out in 1953-54. A new index was introduced in 1956 based on advance information, and the full results of the survey published in 1957. (104) The Committee also recommended that this survey should be followed by "smaller-scale inquiries at frequent intervals thereafter" (100,p.2) and as a result the Family Expenditure Survey was instigated on an annual basis in 1957. It provides therefore, together with the 1953-54 survey, the data used in this demand analysis.

A general account of the history of the survey as well as these details of its methods not relevant to the present discussion can be found in Fowler and Mass (54) and more comprehensive descriptions of the sample, field work procedure, and response rate in Ministry of Labour and National Service (104) for details of the 1953-54 survey, and Kemaley (76) for the continuing survey. A copy of the forms, together with a list of the definitions and
codes used in the surveys has been published in the appendices to the 1962 survey. (107)

(b) Reliability

Although the Family Expenditure Survey has varied in size during the past fifteen years, (see Table 29, Chapter VII) and whilst several minor changes have been made in the sampling arrangements, the Department of Employment and Productivity in its latest report expresses its confidence in the general reliability of the survey over successive years. (37, p.2) Nevertheless, they do note that the surveys have certain limitations, the most important of which, from the present point of view, is that there is 'appreciable under-estimating of expenditure on meals bought and consumed outside the home'. There is no internal evidence in the survey on which to base a statement such as this however, (77) and the Department cite the Cost of Living Advisory Committee as the authority for this remark. (38) The Committee uses the Family Expenditure Survey to weight the Index of Retail Prices and since the survey's inception, they have continued to stress the fact that expenditure on meals bought and consumed outside the home is under-estimated. (102)

Traditionally, this type of expenditure is one which is always considered to be under-recorded in sample surveys and, 'it has been suggested that the results of these inquiries into eating out give results only a mere fraction of what they should be, say \( \frac{1}{2} \) or even \( \frac{1}{4} \) of the true figure. (75, p.46) Despite the work of Kemaley and Ginsberg, who in 1951 showed that such large discrepancies were 'simple outside any reasonable possibility', (75,p.46) by 1956 the Cost of Living Advisory Committee were still noting that the Family Expenditure Survey was only recording about \( \frac{2}{3} \) of the actual expenditure on meals away from home. The exact extent of the under-estimation has, however, never been revealed and it was not until prices for meals away from home were eventually included in the Index of Retail Prices that the extent of the discrepancy could be calculated. In the Index the total weight for all the items together is 1000 and the weight given to meals away from home is 41. This means that the Committee consider 4.1\% of consumer's total expenditure is spent on eating out. The 1967 Family Expenditure Survey however, shows the proportion of the budget accounted for by this item is 3.19\% and so we must assume
therefore that the Committee have reason to believe that expenditure
on meals away from home has been under-estimated by 28.5%.

Unfortunately it is very difficult to find out exactly why
the Cost of Living Advisory Committee state that the Family
Expenditure Survey under-estimates expenditure on eating out, for
clearly before one can prove under-estimation one has to have other
more reliable statistics with which to compare it. The Committee
profess such information to exist, for they note, "There are other
statistics which provide a basis for reliable estimates of the real
level of expenditure on them by the households concerned." (103, p.8)
They are however, unwilling to disclose the exact nature of these
more accurate statistics, although it appears that the data to which
they refer are firstly National Income and Expenditure figures, and
secondly a highly confidential note passed to them from the Ministry
of Agriculture Fisheries and Food. (112) In the absence of any
details about this last source of information it is only possible
to surmise its contents, the main reconciliation of the Family
Expenditure Survey must therefore be with National Income and
Expenditure data, although some tentative comparison can also be
made with Kemsley and Ginsberg's 1956 survey (75).

(1) National Income and Expenditure

In order to be able to make a comparison between the Family
Expenditure Survey and National Income and Expenditure Blue Book
statistics, it is first necessary to gross up the Family Expenditure
Survey data which is only given in expenditure per household per
week. There are no official annual estimates of the number of
households in the country, however, and so a reasonably accurate
estimate is usually obtained by dividing the de facto or home
population, as given by the Registrars General, by the average
number of people shown in the Family Expenditure Survey. From this
one can calculate the gross annual expenditure on meals away from
home, which for 1964 totalled £355 million. The equivalent Blue
Book figure for consumers' expenditure on catering is £1,240 million,
which would, prima facie, show the Family Expenditure Survey to be
a considerable under-estimate. This simple comparison is, however,
grossly misleading, as the definitions of catering on the one hand
and meals away from home on the other include different types of
expenditure. Before the Family Expenditure Survey can be judged
an under estimate it must correlated with the comparable National
Income and Expenditure data.
It is impossible to do this from published statistics, for although the Family Expenditure Survey lists what items are covered by each of its categories, the Central Statistical Office gives no detailed indication what types of expenditure constitute the Blue Book series. Both the Department of Employment and Productivity and the Central Statistical Office have, however, supplied a breakdown of the information which they publish for the year 1964 and this provides a suitable basis for comparison.

In the Family Expenditure Survey, the category, 'Meals bought away from home' comprises (a) meals (other than State school meals) bought away from home including tips, and b) State school meals.

Weekly expenditure per household in 1964 for these two items was 11·11 shillings and 98 shillings respectively. It was, however, thought desirable to exclude state school meals from the analysis at this point, because it is apparent that the Blue Book definition of expenditure on school meals is not the same as that used by the Family Expenditure Survey. The latter does not cover free school meals, and as these are included by the Blue Book one would expect the Family Expenditure Survey figure to be considerably lower on this count alone. Leaving out school meals the grossed up figure for meals away from home is £510 million.

The breakdown of the Blue Book figure of £1,240 million is given in Table 3, and it can be seen that many categories are included which are not covered at all by the Family Expenditure Survey. Some categories can be immediately excluded from our calculations; items 3, 4, 6, 17, together with part of 11 and part of 18 are concerned solely with accommodation; item 15 is school meals, which has already been omitted from the analysis and item 16 is school milk, which as a free commodity is excluded from all Family Expenditure Survey income and expenditure tables. Item 12 is the subsidy on the operation of a canteen which would not show up in any personal expenditure record, and the food part of items 11 and 18 need not be considered, because the value of concessionary goods such as free meals from employers is not covered, and people living in institutions are excluded from the sample. One is left therefore with eight relevant categories (1, 2, 5, 7, 8, 9, 10 and 14) although these too contain types of expenditure which are omitted from the Family Expenditure Survey. If such expenditure is excluded as well, then the more relevant Blue Book figure to compare with that derived from the Family Expenditure Survey, is £579 million.
TABLE 3

CONSUMERS' EXPENDITURE ON CATERING (MEALS AND ACCOMMODATION) 1964

<table>
<thead>
<tr>
<th>Description</th>
<th>£ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meals and refreshments (Catering Inquiry)</td>
<td>664</td>
</tr>
<tr>
<td>2. Less estimated alcoholic drink included in (1)</td>
<td>-13</td>
</tr>
<tr>
<td>3. Accommodation (Catering Inquiry)</td>
<td>138</td>
</tr>
<tr>
<td>4. Unlicensed hotels and boarding houses (accommodation)</td>
<td>70</td>
</tr>
<tr>
<td>5. Unlicensed hotels and boarding houses (meals)</td>
<td>30</td>
</tr>
<tr>
<td>6. Estimated expenditure of permanent residents and foreign visitors in unlicensed hotels (accommodation)</td>
<td>23</td>
</tr>
<tr>
<td>7. Estimated expenditure of permanent residents and foreign visitors in unlicensed hotels (meals)</td>
<td>17</td>
</tr>
<tr>
<td>8. Catering by retailers (based on Census of Distribution)</td>
<td>30</td>
</tr>
<tr>
<td>9. Less estimated business expenditure included in above categories</td>
<td>-122</td>
</tr>
<tr>
<td>10. Estimated tips</td>
<td>49</td>
</tr>
<tr>
<td>11. Estimated staff food and accommodation in catering establishments</td>
<td>40</td>
</tr>
<tr>
<td>12. Estimated canteen subsidies by employers</td>
<td>53</td>
</tr>
<tr>
<td>13. Total of above</td>
<td>1,019</td>
</tr>
<tr>
<td>14. Allowance for Northern Ireland (1½%)</td>
<td>13</td>
</tr>
<tr>
<td>15. School Meals</td>
<td>103</td>
</tr>
<tr>
<td>16. School Milk</td>
<td>13</td>
</tr>
<tr>
<td>17. Holiday caravans, cottages, etc.</td>
<td>24</td>
</tr>
<tr>
<td>18. Other communal establishments*</td>
<td>64</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,240</strong></td>
</tr>
</tbody>
</table>

*e.g. meals and accommodation in profit making schools (for staff only) in National Health Service hospitals, meals in universities and other non profit making establishments.

Note: Items 6 and 7 were given gross as £40 million, but have been broken down into meals and accommodation in proportion to the ratio of items 4 and 5.

Source: 27
Table 4 shows how this total was calculated and the notes in Appendix (A) explain how those items not specifically extracted from Table 3, have been achieved.

Before the estimates can be compared however, there is one further point to consider, which suggests that the total obtained from the Family Expenditure Survey may be subject to error. The grossing up procedure was based on an estimate of the number of households in the United Kingdom, which in turn, was calculated by dividing the average number of people per household shown in the survey into total population. This method is not ideal, for as Kemaley has pointed out there is some evidence that the distribution by household size for co-operating households in the Family Expenditure Survey is slightly biased upwards, and that any estimate of households calculated by using average household size obtained from the survey might therefore be too low. (77) On the other hand, the de facto population figure, from which it is also derived, includes people living in institutions, and this would lead to a compensating bias.

There is however, no information about the extent to which these influences counteract each other, and an assessment of the method must be obtained by comparing the results it yields for 1961 and 1966 with the numbers of households recorded in the Censuses.(56a & b) In this way it would appear that it tends to over-estimate the number of households by between 5.25% and 1.80%.

Amending the expenditure figures grossed up from the Family Expenditure Survey accordingly, provides a final total expenditure for meals away from home of between £485 million and £500 million and an estimate of the discrepancy with the National Income and Expenditure data of 14% - 16%.

11 Ministry of Agriculture, Fisheries and Food

The second of the sources cited by the Cost of Living Advisory Committee as its authority for the statement that the Family Expenditure Survey under-records expenditure on meals away from home, are some estimates produced for the Committee by the Ministry of Agriculture, Fisheries and Food. Unfortunately, these are regarded as recommendations made in confidence between government departments, and therefore not available for release.

It is apparent however, that no hitherto undisclosed original material exists, and that the calculations are based on existing sources of government statistics.(98) A fortiori, one would have expected the results to be similar to those produced in the
<table>
<thead>
<tr>
<th>£'s Millions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>664</td>
<td>Meals and Refreshments (item 1)</td>
</tr>
<tr>
<td>50</td>
<td>plus Meals in unlicensed hotels, boarding houses etc. (item 5)</td>
</tr>
<tr>
<td>50</td>
<td>plus Catering by retailers (item 8)</td>
</tr>
<tr>
<td>764</td>
<td>less Expenditure on meals which is included under hotel and holiday expenses in the Family Expenditure Survey (Note I)</td>
</tr>
<tr>
<td>37</td>
<td>less Expenditure on fish and chips consumed at home (Note II)</td>
</tr>
<tr>
<td>2</td>
<td>less Business expenditure on alcoholic drink (Note III)</td>
</tr>
<tr>
<td>93</td>
<td>less Business expenditure on meals out (Note IV)</td>
</tr>
<tr>
<td>15</td>
<td>less Luncheon vouchers (Note V)</td>
</tr>
<tr>
<td>367</td>
<td>plus Tips (Note VI)</td>
</tr>
<tr>
<td>600</td>
<td>plus 1¾% allowance for Northern Ireland (cf item 14)</td>
</tr>
<tr>
<td>609</td>
<td>less Expenditure on meals by tourists (Note VII)</td>
</tr>
<tr>
<td>579</td>
<td>Total</td>
</tr>
</tbody>
</table>

Note: See Appendix (A)

Source: 27
previous section, and for this reason, until the Committee provide the necessary evidence to support their claims, one must continue to remain sceptical about the viability of any such covert information.

iii Kemsley and Ginsberg

The last piece of evidence which can be used to establish the accuracy of the Family Expenditure Survey is not mentioned by the Cost of Living Advisory Committee, although it is part of a series of Government social surveys which specifically deal with consumers' expenditure on meals in catering establishments. (75) Although Kemsley and Ginsberg carried out two surveys in 1949, one in 1951, and one in 1956, only the last of these overlaps the Family Expenditure Survey series. Unfortunately it falls in one of the two years when there was no survey and one has therefore to compare it with the surveys in either 1953-54 or 1957.

The large 1953-54 survey can be discounted immediately however, because not only does the data cover the United Kingdom when Kemsley and Ginsberg deal with Great Britain, but the data includes expenditure on school meals, a category which Kemsley and Ginsberg omit. Attention must be turned, therefore, to the 1957 Family Expenditure Survey, where it is possible to isolate expenditure on school meals and, unlike every other survey in the series, the information most opportunely refers to Great Britain alone.

Before the two surveys can be compared, however, several adjustments have to be made to the data. Using the method described in section (1) the grossed up Family Expenditure Survey provides a total expenditure for meals away from home of £340 million in 1957, but as was also pointed out, because of the degree of bias thought to arise when employing this procedure, the estimate has in fact to be reduced. According to the amount of error involved, expenditure on eating out probably falls within the range £323 million to £334 million.

It is clear, however, that average weekly expenditure per person, which it records as 9·64 shillings, includes expenditure for business purposes which the Family Expenditure Survey specifically omits, and in addition it is also averaged on the number of people eating out rather than the number in the sample. As business expenditure amounts to 1·11 shillings per person per week, by grossing up the non-business expenditure and then averaging over the number of people in the sample, the average weekly
expenditure per person on meals away from home is reduced to 4.43 shillings.

Unfortunately part of this amount is incurred by people living in hotels, boarding houses and institutions which are not covered by the Family Expenditure Survey. In their first survey, Kemsley and Ginsberg showed that these people spend about 50% more than average on meals away from home and that they constitute about 3% of the sample. (75, p.29) Taking this into account reduces average expenditure to 4.36 shillings which grossed up by the number of people aged 18 or over in Great Britain gives a national expenditure of £414 million.

There are however, several other factors still to be taken into account. As the sampling frame used by Kemsley and Ginsberg was the Register of Electors, this means that only people over twenty-one were sampled. Nevertheless, allowance was made for people aged eighteen to twenty-one and so the final sample covered everyone over eighteen. As the Family Expenditure Survey data on the other hand includes expenditure by anyone who is sixteen or more, the Kemsley and Ginsberg survey has to be adjusted to allow for expenditure by children of sixteen and seventeen.

This is not a very easy adjustment, and although Kemsley and Ginsberg make an attempt at estimating the personal expenditure by children, they consider their results to be not very accurate. Whilst they estimate children's expenditure as 2.44 shillings per person per week, 2.08 shillings of this can be omitted as it covers school meals, cakes and ice cream. The residual 0.36 shillings is therefore the most that could have been spent on meals out, and so a further £1 million has to be added to allow for children's personal expenditure.

The last two adjustments that have to be made are with regard to the timing of both surveys. As it was not possible to compare the two surveys for the same year, the Family Expenditure Survey results were deflated in order to approximate the level of expenditure in 1956. Between 1957 and 1966 the average annual increase in expenditure on meals away from home has been about 5% and expenditure for 1957 was therefore reduced by this amount to give a final Family Expenditure Survey estimate for 1956 of between £307 million and £316 million.
Lastly, it seems highly probable that as the Kemsley and Ginsberg survey was carried out in June, it incurred seasonal bias. This factor would not affect the Family Expenditure Survey however, where the interviewing proceeds throughout the year, and any seasonal variation is therefore absorbed into the results. Some indication of the amount of bias introduced by seasonal variation can be obtained from the 1953-54 Ministry of Labour Survey, which shows that expenditure on meals away from home in the month of June is approximately 10% higher than the average for the rest of the year. (104, pp.230-231).

The grossed up total calculated from Kemsley and Ginsberg was thus reduced by 10% to allow for this, to give a final estimate of £374 million. Kemsley has, however, pointed out that the true figure may be even less, for one would expect an ad hoc survey concentrating on a narrow sector to produce higher estimates than a more general inquiry. (77) Nevertheless, in the absence of more tangible information, this feeling cannot be given quantitative expression, and one must conclude that the Kemsley and Ginsberg survey shows the Family Expenditure Survey to under-estimate expenditure on meals away from home by about 16-18%.

iv Assessment

In examining the basis for the Cost of Living Advisory Committee's consistent emphasis on the under-recording of expenditure on meals away from home by the Family Expenditure Survey, one has to conclude that the available material provides some support for such an opinion. The debate is therefore not one of fact but rather of degree, and there would appear to be little doubt that an estimate of 28-5% exaggerates the error involved. Certainly the present reconciliations suggest that the discrepancy is about half this amount.

The complexity of the argument used to reach this conclusion should not, however, cloud a rational assessment of its validity. Clearly the calculations which have been carried out are of a very rudimentary nature and are no doubt replete with faulty estimates and gross simplifications; for example it is impossible to allow for children's expenditure in the Family Expenditure Survey, which might indicate that the figure derived from the survey should be higher still. Nevertheless, whilst the fragility of the reconciliations cannot be overemphasised, the results provide sufficient evidence to cast considerable doubt on the amount by which the Cost of Living Advisory Committee regard expenditure on meals
away from home to have been under-recorded by the Family Expenditure Survey.

(c) Biases

Whilst the Cost of Living Advisory Committee may be mistaken in their criticism of the Family Expenditure Survey, the fact still remains that the information about meals away from home is under-recorded. There are many reasons why this may be so and Prais and Houthakker note that bias is likely to occur at three stages during a survey: in selecting the households, in recording their expenditure, and in its interpretation. (129, p.36)

A detailed discussion of common biases can be found in Prais and Houthakker (129, pp.36-42), and clearly most of them will have relevance to a category such as meals away from home, although there is no reason to suppose that they will influence information about expenditure on eating out any more than other items. The problems of literacy, overstatement by the poor, understatement by the rich apply to all categories and indeed Prais and Houthakker feel that no single predominating factor causes a bias in one direction or another, but rather that there are a number of factors at work which may lead to inclusion in the survey of certain kinds of households and consequent bias in the results. (129, p.38)

There are some particular biases however which may be the basis for much of the under-recording of expenditure on eating out. In the 1967 Family Expenditure Survey for example, it was found that among the proportion of households which failed to co-operate, there was a slightly higher number without children, (37, p.3), and the general analysis in Chapter VII also shows that it is these households who have a higher per person expenditure on meals away from home. In addition sample surveys commonly suffer from an over-representation of households with children, because housewives with children are more likely to be at home when the interviewer calls. Whilst the importance of repeating calls when no one is at home is stressed (37, p.1) there is little doubt that the highly mobile person is still under-represented in the sample and prima facie, those who eat out most of all are much more likely to be those who are continually not at home. This factor is possibly more important in the earlier Family Expenditure Surveys, for the response rate has gradually increased from just under 60% in 1937 to 75% in 1966, which would suggest that some of the bias due to non co-operation has been reduced.
The second type of bias noted by Prais and Houthakker occurs in the process of obtaining and recording the information. Most of these, however, will not have a special relevance to meals away from home. It is unlikely, for example, that the biases such as survey suggestion (where the mere process of keeping accounts may suggest to the housewife that she is spending too much or too little on certain items) or end period effect (where expenditure incurred outside the period of the inquiry is included) will be greater for meals away from home than for other items, and in addition, as the Family Expenditure Survey is principally a record book survey, interviewer variability may also be discounted.

There are some recording biases, however, which are much more nebulous and in general, may be the ones expected to have the greatest effect on eating out. Specific non disclosure of the type experienced by the tax authorities will affect certain types of expenditure more than others. Understatement of expenditure on drink and tobacco is well known in this respect, because it can be compared to national estimates of consumption derived from excise statistics, but clearly inaccurate statements about items which are connected with such categories as gambling or meals away from home are harder to determine. Meals out might be affected by members of a family not wanting to disclose to either other members of the family, or the interviewer, how much they actually spend on a category which, in certain circumstances, could afford a measure of disapproval. A more probable cause of understatement is due to ignorance or subconscious lying. Here it is really a case of the difficulty in remembering the exact amount spent.

The last type of bias may arise through faulty interpretation of the data. As Prais and Houthakker point out, the number of biases which might occur in this way is not enumerable a priori, and indeed one of the main objects of an investigation of family budget data is to reveal hitherto unsuspected sources of bias. There are some recording biases, however, which are much more nebulous and in general, may be the ones expected to have the greatest effect on eating out. Specific non disclosure of the type experienced by the tax authorities will affect certain types of expenditure more than others. Understatement of expenditure on drink and tobacco is well known in this respect, because it can be compared to national estimates of consumption derived from excise statistics, but clearly inaccurate statements about items which are connected with such categories as gambling or meals away from home are harder to determine. Meals out might be affected by members of a family not wanting to disclose to either other members of the family, or the interviewer, how much they actually spend on a category which, in certain circumstances, could afford a measure of disapproval. A more probable cause of understatement is due to ignorance or subconscious lying. Here it is really a case of the difficulty in remembering the exact amount spent.

The last type of bias may arise through faulty interpretation of the data. As Prais and Houthakker point out, the number of biases which might occur in this way is not enumerable a priori, and indeed one of the main objects of an investigation of family budget data is to reveal hitherto unsuspected sources of bias. The examples they use to indicate the kind of difficulty involved are, however, not relevant to this study.

3. Conclusion

Having discovered the fact that the only possible source of statistics sufficiently detailed for econometric analysis underestimates expenditure on the category in question, a decision has to be made whether the limitations which this involves inhibits its use.
When dealing with a subject such as meals away from home however, the paucity of information tends to increase the value of data which, in other fields, might be discarded in favour of more reliable evidence, and it must be stressed that if one is to reject the information published by the Family Expenditure Survey on this subject, then one must abandon all hope of a quantified demand analysis.

The great difficulty in making this decision is that one has no indication either which of the many biases referred to leads to under-recording, or how the under-recording is distributed. Until now all calculations have been made on average expenditure and it is this which has been found to be under-recorded. If one could assume that the under-recording is distributed proportionally throughout the income ranges then most of the demand analysis would not be affected and one could derive such values as income elasticities with confidence. This of course, may not be true and such an assumption could undermine the value of the results even if the analysis was restricted to dealing with average consumers' response to income changes, and the more detailed investigations into specific sections of the population were not dealt with.

It is, however, a question of faute de mieux, and in this particular study it was considered more valuable to attempt a quantified analysis in full acceptance of the limitations this may involve, than to set the requirements of viable data so high as to preclude anything more than purely qualitative examination. In a subject in which the lack of objectivity has been a major failing in research until now there is clearly no real choice.

4. **Summary**

In the United Kingdom only the Family Expenditure Survey and the National Food Survey provide information sufficiently detailed for econometric analysis, but in the latter, data about meals away from home is only incidental to the main purpose of the survey and is inadequately recorded. Whilst only the Family Expenditure Survey can be used therefore, doubt has been expressed about its accuracy. The Cost of Living Advisory Committee estimate that it under-records expenditure on meals away from home by 28.5% but the present study has shown that this is probably an exaggeration and that a more realistic estimate would be about half this amount. Although expenditure information in the Family Expenditure Survey
is thus not as reliable as might have been hoped, it was considered more valuable to attempt a quantified analysis than to set the requirements of viable data so high as to preclude anything more than a purely qualitative examination.
The theoretical concepts which frame the analysis have been described in Chapter I and most of the techniques used can be traced back to individual studies cited there. More specifically, however, the analysis owes much of its structure to an unpublished study by Velfe, in which the Family Expenditure Survey was examined as part of the Cambridge Growth Project. This paper answered many of the basic difficulties which arise through using the Family Expenditure Survey for family budget analysis, and indeed the model eventually adopted here is that suggested by Velfe.

2. Development of the Model

Velfe's model is developed from the general model of consumer demand whereby the demand of an average household is seen as a function of prices, the household's income, and its preferences, the most important of which has been empirically recognised as household composition and size. Velfe notes this relationship as

$$q_{it} = f(y_t, p_t, h_t, m_t, \varepsilon_{it})$$

where $q_{it}$ is the average expenditure per household on commodity $i$ in the family group $t$ which is homogeneous with respect to income; $y_t$ is the average income per household in income group $t$; $p$ is a vector of prices of $i = 1, \ldots, m$ commodities; $h_t$ is a vector of the average number of persons in income group $t$ and distinguished according to some criteria standing for household composition; $m_t$ is the average household size in income group $t$; $\varepsilon_{it}$ is the variable standing for unspecified determinants of the household's preferences. However, as was noted in Chapter I section 4, prices are usually omitted.

Velfe then shows how the simple model proposed by Prais and Houthakker to take into account the effects of household composition can be derived from this, and how their ideas can be summarized by the equation

$$q_{it}/h_{it} = f(y_t/v_t, m_t, \varepsilon_{it})$$

in which $q_{it}$ and $y_t$ are expressed per equivalent adult and $m_t$ allows for economies of scale. $h_{it}$ represents the specific effect attached to commodity $i$, and $v_t$ the income effect. It is not possible to use this model with the present data, however, because Prais and Houthakker were able to obtain their expenditure information broken down into comprehensive two-way tables, by income and family size simultaneously, a classification never given by the Family Expenditure Survey. Consequently Velfe suggests
three additional methods which can be used according to whether the information is grouped by household size, household composition, or them both together. (163, pp.5-6) The last of these is in essence the procedure adopted by Gerson who feels the only way to measure the specific influence of income is to obtain a ceteris paribus situation, by stratifying the sample into homogeneous groups. (57, p.3) The 1953-54 survey in fact provides this type of classification, (a couple and a child, a man living alone etc.) and Forsyth has tested the equivalent adult hypothesis in these terms (52). The demand equation is greatly simplified as a result and can be reduced to

\[ q_{it} = f_i (y_t + E_{it}) \]  

(III)

This will yield an estimate for each sub-sample, which can then be theoretically averaged to obtain an estimate for the sample as a whole.

In practice, however, this method has several limitations. It is not possible to cover every household type, and the National Food Survey found that 30% of all households were omitted when analysed in this way. (96, p.26) Whilst it was felt that the inclusion of more complex household types would not materially alter the conclusions, no study has yet shown this to be the case with the Family Expenditure Survey. More important than this though, is the fact that the Family Expenditure Survey does not provide this type of information for all years, and when the sample is sub-divided in this way, the numbers in each household type are drastically reduced. In some groups where the numbers are very small the Family Expenditure Survey only gives expenditure for one or two income groups, which precludes using this approach. However in the light of the general conclusion reached in Chapter I, section 4c, this method is re-examined later.

The second approach suggested by Weife (163, p.6) is for use when the data is grouped according to family size alone (one person, two persons, three persons, etc.) The data has only been published in this form for the 1953-54 and 1964 surveys, which restricts the analysis to an even greater extent than does the previous method. In addition it suffers from the disadvantage that the difficulties involved in estimating equivalent adults or households still remain, and the equation is the same as (I) with the exception that the term \( q_{it} \) is omitted.
The last model which Velfe proposes (129,p.6) also has limitations, but on balance is the one to be preferred when analysing the Family Expenditure Survey data. It is for use when the data is grouped according to household composition alone, so that they contain similar numbers of each sex and age, but the household size varies. In this case the demand equation is written

\[ \frac{q_{it}}{n_t} = f_i \left( \frac{y_t}{n_t}, n_t, \xi_{it} \right) \]  

Here \( n_t \) is substituted for \( k_{it} \) and \( v_i \) to allow for proportionate changes in household size, and again for \( n_t \) to allow for economies of scale. Velfe feels that whilst using this approach, one would be unlikely to obtain strictly homogeneous groups, and that a considerable loss of information is unavoidable, this method can in fact yield satisfactory results with data from the Family Expenditure Survey (129,p.6)

3. Description of the Data

The adoption of the last model described, results mainly from the form in which the Family Expenditure Survey data is published. Every year expenditure by all households in the sample is broken down into about nine income groups, for each of which, the age and sex composition is also shown. Although only three groups are distinguished, (children under the age of sixteen, persons aged sixteen to sixty-five, and persons sixty-five and over) the information is enough to divide the sample into two approximately homogeneous sub-samples. The examination of the data about sex and age shows that the majority of income groups contain about 30% children, 64% people aged sixteen to sixty-five and 6% people aged sixty-five and over. The lowest two or three groups however, contain predominantly people who are of this last age category and who are also classified as retired.

Both Velfe and Brown have found that the Engel curves for these two sub-samples are, as might be expected, significantly different from each other, and the sub-sample comprising old people contains too few income groups to afford a basis for any estimates. (163, p.7 19a and 19b) Consequently Velfe proposes that demand analysis ought to be based on a sub-sample which excludes old people, although he appreciates the fact that this arrangement might give a slight bias to any elasticities subsequently derived.

Table 5 shows for 1966 how the sample is sub-divided and Table 6 the income groups for each year used in the analysis.
### Table 5

**FAMILY EXPENDITURE SURVEY 1966: NUMBER OF PERSONS BY INCOME OF HOUSEHOLD.**

Number of Persons per household by Weekly income of household.

<table>
<thead>
<tr>
<th>Category</th>
<th>under £6</th>
<th>£6 but under £10</th>
<th>£10 but under £15</th>
<th>£15 but under £20</th>
<th>£20 but under £25</th>
<th>£25 but under £30</th>
<th>£30 but under £40</th>
<th>£40 but under £50</th>
<th>£50 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children under 16</td>
<td>-</td>
<td>0.09</td>
<td>0.47</td>
<td>0.87</td>
<td>1.22</td>
<td>1.15</td>
<td>0.97</td>
<td>0.82</td>
<td>0.81</td>
</tr>
<tr>
<td>Persons 16 &amp; under 65</td>
<td>0.22</td>
<td>0.51</td>
<td>1.09</td>
<td>1.69</td>
<td>1.91</td>
<td>2.14</td>
<td>2.33</td>
<td>2.70</td>
<td>2.99</td>
</tr>
<tr>
<td>Persons 65 or over</td>
<td>0.81</td>
<td>0.98</td>
<td>0.63</td>
<td>0.29</td>
<td>0.20</td>
<td>0.15</td>
<td>0.17</td>
<td>0.15</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Source: III, Table 2, p.28.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>£6 but under £8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£8 but under £10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£10 but under £14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£14 but under £20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£20 but under £30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£30 but under £50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£50 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£10 but under £15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£15 but under £20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£20 but under £25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£25 but under £30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£30 but under £40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£40 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£15 but under £20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£20 but under £25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£25 but under £30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£30 but under £35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£35 but under £40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£40 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£15 but under £20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£20 but under £25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£25 but under £30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£30 but under £35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£35 but under £40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£40 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£15 but under £20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£20 but under £25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£25 but under £30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£30 but under £35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£35 but under £40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£40 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£15 but under £20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£20 but under £25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£25 but under £30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£30 but under £35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£35 but under £40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£40 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£15 but under £20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£20 but under £25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£25 but under £30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£30 but under £35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£35 but under £40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>£40 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** 104 - 111 and 37

**Note:** The surveys for 1957 and 1958 do not contain a detailed breakdown by income groups.
4. The Model Used

The model which is used for the first part of the analysis is basically that described by equation (IV), but it has one slight modification in that the assumption has been made (following Welfe) that economies of scale and other factors not explicitly distinguished, may be described by the variate \( \bar{\epsilon} \) which is supposed to be independent (in the probability sense) of income.\(^{163}\), p.8

The equation therefore reduces to \( q_{it}/n_t = f_1(y_t/n_t, \bar{\epsilon}_{it}) \) \(^{19}\) and this was applied to the Family Expenditure Survey for 1953-54 and from 1959-1966.

5. The Variables Introduced.

Until now the analysis has followed the approach adopted by Welfe very closely. The subject of which variables to incorporate into the model however, introduces additional problems hitherto seldom considered by workers in the field.

(a) The Dependent Variable

It would seem on first examining the Family Expenditure Survey that the choice of dependent variable is really limited to category 43, 'Meals bought away from home'. The choice, however, is a little wider than would appear from the published surveys, for the Department of Employment and Productivity have kindly provided breakdowns not generally available. These afford a subdivision of category 43 into 'Meals bought away from home' and 'school meals', together with the separation of 'hotel expenses' and also 'holiday expenses' from the extremely heterogeneous category 93, 'subscriptions and donations; hotel and holiday expenses; miscellaneous other services'.

They also supplied the relevant information on free and concessionary goods, such as free meals from employers and meal vouchers, which are collected but not included in any of the Family Expenditure Survey tables. Because no separate apportionment of the meal content was available for hotel and holiday expenses, and the fact that the standard errors provided for all this additional data were extremely high, soon made it quite clear that only category 43, 'Meals bought away from home' was suitable for quantitative analysis.

A decision had to be made however, whether to use this category as it stood in the published Family Expenditure Survey, or whether to omit expenditure on school meals. Conceptually they are two different types of expenditure, which ought to be analysed separately and it is clear that the inclusion of expendit-
ure on school meals would lead to biased income elasticities if as seems likely such expenditure is determined by factors other than income.

Prima facie, one would expect expenditure on school meals to be determined more by the number of children in the household than by income, and this indeed is shown to be the case. Using 1961 data for all income groups, expenditure on school meals was found to be highly correlated with the number of children (0.92) and poorly correlated with income (0.57). However when the lowest income groups were left out of the calculation, the correlation coefficients fell to 0.37 and 0.21 respectively.

It is apparent that the main determinants of expenditure on school meals in the lower income groups is the number of children in the household, which ceases to be the case in the upper income groups, where neither income nor the number of children appear to have a particular influence on expenditure. The results for 1961 were supported by analysis of the 1966 data, and together they indicate that the inclusion of school meals cannot in fact help the main analysis, and that it may even confuse the issue.

(b) The Independent Variable

As was seen in Chapter I, both theoretical and practical difficulties arise when choosing the determining variable, and the general problem of whether to use expenditure or income was, in fact, briefly discussed there. It is not possible to consider the attractive conceptual models described by Ferber (49) which cannot be quantified, and as is seen throughout demand analysis, the real limitations are those provided by the data available. Until now most family budget studies have used expenditure, although Abel-Smith and Townsend, after carrying out a special analysis of the relationship between income and expenditure as provided by the Family Expenditure Survey, in fact decided to hedge their bets and use expenditure for one year and income for another.*(146)

*It must be remembered, however, that their choice was heavily influenced by the nature of their study which was an examination of poverty. As they were therefore mainly concerned with the lowest income groups given in the surveys, which are omitted from the present analysis, the reasons for this eclectic decision are not relevant to the case in hand. Nevertheless their discussion of the advantages and disadvantages of using a particular series is of interest and it contains useful summary of the commonly proposed reasons why expenditure is found to exceed income.
The arguments for using expenditure have been proposed so persuasively by most authors, however that one is convinced that the use of expenditure is not only desirable but almost obligatory. Unfortunately, this apparent conviction is, undermined when it is realised that in most cases there is no choice of which variable to use as only expenditure is available. Until 1962, the Family Expenditure Survey did not publish tables showing average weekly incomes for each income group, and so the only way of calculating a figure for income was to take the mean point of each income group interval. In certain instances this may be a reasonable method to adopt when more precise information is not available, but in the Family Expenditure Survey the top income group is left open, for example £50 and above, so that according to which arbitrary amount is chosen for this group, an estimate such as income elasticity would vary proportionately.

On the practical level therefore, it is clear that most previous workers have chosen to use income, for the simple reason that there was no alternative, and have justified this approach by arguing that 'a household first decides on its total expenditure and then allocates it to the various commodities comprising the budget'. (128a,p.127) Clearly necessity has been made a virtue in many studies.

Nevertheless Prais and Houthakker do attempt a comparison of the difference between estimates derived from income and expenditure data. (129, pp.100-102) Their main analysis is, however, largely invalidated by the fact that the data which they use to represent income, is the income of the head of the household, which omits all information about the income of subsidiary earners. As the results they obtained showed that total expenditure elasticities were for all commodities lower than the equivalent income estimates, they had to recourse to using solely the data for households containly only one earner, so that all earned income was taken into account. Here the results were more satisfactory and indicated that income elasticities may be estimated by diminishing the expenditure elasticities by 10%, a figure which accords with an earlier approximation made by Stone. (151, p.9)

In a further effort to substantiate these findings, Wolfe tried to compare the total expenditure elasticities that he derived from the Family Expenditure Survey with income
elastcities derived from the National Food Survey. (163, pp. 24-27) Systematic differences of definition, coverage and method of computation, precluded confident conclusions, however, although it would seem that making allowances for these factors, the Family Expenditure Survey's total expenditure elasticities for food items are about 26% higher than the income elasticities from the National Food Survey.

The most interesting remarks about which variable to use however, are to be found in the discussion following Forsyth's paper to the Royal Statistical Society in 1960. (52, pp. 393-397) Here Keneley notes that whilst reporting error favours the use of total expenditure, unlike income, it is subject to the effect of unusual and freak values which result from infrequent and expensive purchases. He considers income to be a more stable variable and one which would probably prove a better choice, if available. In the same discussion, Utting also points out that workers often refer to known inaccuracies in some categories of expenditure, notably tobacco and alcoholic drink, and yet at the same time use total expenditure, which depends on these admittedly inaccurate components.

In reply, Forsyth remarks, that for his own analysis the choice between income or expenditure is not of crucial importance, and that the results would probably not have differed whichever one he had used, but that had been concerned with estimating elasticities the situation would have been different. He notes that income is free from the two-way causality which affects expenditure and is probably the better variable to choose if the estimation of population values is the main concern.

As the Family Expenditure Survey provides information about both income and expenditure since 1961, for most of the period covered by this study, a choice between the two variables is possible. The choice is made slightly difficult however, by the fact that although previous demand analyses have nearly always used total expenditure, both Forsyth and Keneley have indicated a preference for using income. It was therefore decided to carry out a preliminary analysis to establish which was the more suitable variable to use.

There are two main sets of relevant data shown in the Family Expenditure Survey, one being average weekly household income and the other total expenditure. Income is recorded as a gross amount, before deductions of income tax, National
Insurance contributions etc., and the many diverse components which comprise the total can be found in the appendices to each survey. Basically it consists of payments securing at regular intervals and omits the more random elements such as withdrawals from savings, maturing insurance policies, legacies and windfalls. Total expenditure unlike income, is not a gross amount, for it does not contain all payments recorded by the household. The appendices to each survey again give a comprehensive description of all the items included, but important omissions to be noted are income tax and National Insurance, mortgage payments, life assurance, savings and betting losses.

Neither of these interpretations of income or expenditure are entirely satisfactory, but the amount of calculation involved in the main analysis would be considerably reduced if either of the set definitions provided by the Family Expenditure Survey could be used. The first analysis therefore examines the results yielded by these two variables, using model (V), where $y$ is firstly gross income and then total expenditure. In order to facilitate the comparison, a logarithmic function is used, because with this form the regression coefficient is equal to the elasticity coefficient. Table 7 (A), gives the resulting elasticity coefficients for the years 1961 to 1967, together with the percentage of the variation explained ($r^2$), and it can be seen that although both income and expenditure give a very high $r^2$ the elasticity coefficients show a discrepancy about three times as high as that estimated by Prais and Houthakker. Much of this discrepancy is no doubt due to the fact that elasticities in Table 7 (A) refer to the income and expenditure of all household types, whilst Prais and Houthakker use only the income and expenditure of households containing one earner; a limitation of which they were well aware. The results in Table 7 (A) give the impression that if one were to use total expenditure as the determining variable then the subsequent elasticities may be over-estimated, for the alternative choice yields elasticities so very much lower. As the real truth would seem to lie somewhere between the two, the definitions of both income and expenditure were re-examined to see if more plausible results could be derived. The aim in rearranging the data was to achieve an approximation to disposable income. The details of how this was carried out are to be found in Appendix (B) but basically it consisted of deducting from income, 'statutory deductions' and
adding to total expenditure, 'other payments recorded'.

Table 7 (B) shows what a considerable improvement the rearrangement of data has made. The correlation coefficients are still very high, and yet the differences between the income and expenditure elasticities have been reduced, to the extent that the discrepancy is now nearer to the 10% estimated by other workers.

Until now, the difference between income and expenditure elasticities has been shown simply by expressing the discrepancy as a percentage of the expenditure elasticity. The relationship can however, also be given by regressing expenditure against income, which will yield a parameter for the marginal propensity to consume. Using a logarithmic function given by

\[ \log Q = a + b \log y + \epsilon \]  

(VI)

the marginal propensity to consume is provided by \( b \). The results from such a regression for both the original data from the Family Expenditure Survey and the amended series is shown in Table 7(A and B) and it can be seen that it supports reasonably well the findings from the previous method. The most interesting feature is that provided by the year 1967, where, for the amended data, the expenditure elasticity is in fact less than that for income. This is no doubt due to an exceptionally high average mortgage payment recorded by the highest income group which gives total expenditure a relatively high sample error.\(^{(37,p.19)}\) Even so the income and expenditure elasticities are found to be within a few percent of each other. Much of this is probably due to the larger sample used in this year, and it may be expected that in future the relationship between income and expenditure will not be so disparate as has previously been the case.

It was decided therefore to use income as the independent variable in this study, even though this effectively reduced the period of analysis to 1961-1967, firstly due to theoretical preferences expressed in the 1960 discussion, and secondly, because adjustment has reduced the difference between income and expenditure to a proportion that accords with earlier estimates of such a discrepancy.
# TABLE 7

A COMPARISON OF THE USE OF INCOME AND EXPENDITURE AS THE DETERMINING VARIABLE

## (A) ORIGINAL DATA

<table>
<thead>
<tr>
<th>YEAR</th>
<th>( R^2 )</th>
<th>Elasticity Coefficient</th>
<th>% by which expenditure elasticities must be reduced to obtain income elasticities</th>
<th>Marginal propensity to consume</th>
<th>% difference between income &amp; expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expenditure</td>
<td>Income</td>
<td>Expenditure</td>
<td></td>
</tr>
<tr>
<td>1961</td>
<td>0.96</td>
<td>0.97</td>
<td>1.23</td>
<td>1.92</td>
<td>35</td>
</tr>
<tr>
<td>1962</td>
<td>0.91</td>
<td>0.94</td>
<td>1.26</td>
<td>1.90</td>
<td>34</td>
</tr>
<tr>
<td>1963</td>
<td>0.97</td>
<td>0.98</td>
<td>1.20</td>
<td>1.69</td>
<td>29</td>
</tr>
<tr>
<td>1964</td>
<td>0.96</td>
<td>0.95</td>
<td>1.17</td>
<td>1.63</td>
<td>28</td>
</tr>
<tr>
<td>1965</td>
<td>0.95</td>
<td>0.97</td>
<td>1.14</td>
<td>1.79</td>
<td>36</td>
</tr>
<tr>
<td>1966</td>
<td>0.97</td>
<td>0.96</td>
<td>1.31</td>
<td>1.86</td>
<td>30</td>
</tr>
<tr>
<td>1967</td>
<td>0.98</td>
<td>0.96</td>
<td>1.21</td>
<td>1.71</td>
<td>29</td>
</tr>
</tbody>
</table>

## (B) AMENDED DATA

<table>
<thead>
<tr>
<th>YEAR</th>
<th>( R^2 )</th>
<th>Elasticity Coefficient</th>
<th>% by which expenditure elasticities must be reduced to obtain income elasticities</th>
<th>Marginal propensity to consume</th>
<th>% difference between income &amp; expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expenditure</td>
<td>Income</td>
<td>Expenditure</td>
<td></td>
</tr>
<tr>
<td>1961</td>
<td>0.97</td>
<td>0.98</td>
<td>1.41</td>
<td>1.73</td>
<td>18</td>
</tr>
<tr>
<td>1962</td>
<td>0.93</td>
<td>0.94</td>
<td>1.49</td>
<td>1.70</td>
<td>12</td>
</tr>
<tr>
<td>1963</td>
<td>0.98</td>
<td>0.97</td>
<td>1.34</td>
<td>1.55</td>
<td>15</td>
</tr>
<tr>
<td>1964</td>
<td>0.97</td>
<td>0.97</td>
<td>1.36</td>
<td>1.59</td>
<td>14</td>
</tr>
<tr>
<td>1965</td>
<td>0.95</td>
<td>0.95</td>
<td>1.26</td>
<td>1.39</td>
<td>8</td>
</tr>
<tr>
<td>1966</td>
<td>0.98</td>
<td>0.96</td>
<td>1.49</td>
<td>1.69</td>
<td>12</td>
</tr>
<tr>
<td>1967</td>
<td>0.98</td>
<td>0.92</td>
<td>1.39</td>
<td>1.32</td>
<td>5</td>
</tr>
</tbody>
</table>
6. The Form of the Demand Function

As was seen in Chapter I, there are eight main types of demand function used in Engel curve analysis, although previous studies mentioning meals bought away from home have usually used either logarithmic or semi-logarithmic forms. In this study only the first six functions shown in Table I are investigated, however, as the last two suffer from the grave disadvantage of requiring a laborious initial graphical estimation, and may be considered generally too sophisticated for use with the not very extensive Family Expenditure Survey information. Nevertheless, whilst this limits the choice, it is not easy to decide which of the remaining six to adopt, especially when the earlier discussion concluded that there are probably only marginal theoretical advantages in the use of one form rather than another.

Commonly the choice relates to the goodness of fit of the regression line as shown by the coefficient of the determination $r^2$ and Table 8 shows this for each of the six demand functions for the seven years 1961-1967. As can be seen they are all extremely high, apart from the slightly lower values for the inverse function and there is in fact, little to choose between them. Clearly a more sensitive measure than $r^2$ must be used if more than an arbitrary choice is to be made.

Essentially one needs a test by which any non-linearity is exposed. Prais and Houthakker propose that this test should be based on a general notion of what is meant by non-linearity in that 'every systematic deviation from randomness in the residuals is taken to be an indication that the form adopted does not 'explain' all the variation in the data, and accordingly requires modification' (129, p.51) They point out that if a line is curved, then 'non-linearity will be seen to consist in the occurrence of adjacent deviations, which tend to be of the same sign. Accordingly, the degree of serial correlation between residuals when arranged by the magnitude of the determining variable may be taken as the measure of non-linearity'. (129, p.52)

Prais and Houthakker in fact use an approximate test to measure serial correlation, although they suggest that the adoption of Durbin and Watson's 'd' would lead to a more rigorous treatment. (129, p.53) The limited extent of the tables of bounds given by Durbin and Watson in their original paper (45, pp.173-176) lead, however, to the adoption in this study of the von Neumann ratio, (62)
## Table 8

**Family Expenditure Survey 1961-1967: $r^2$ for Alternative Regression Forms**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Linear</td>
<td>0.9730</td>
<td>0.9178</td>
<td>0.9939</td>
<td>0.9798</td>
<td>0.9420</td>
<td>0.9911</td>
<td>0.9905</td>
</tr>
<tr>
<td>2. Logarithmic</td>
<td>0.9683</td>
<td>0.9287</td>
<td>0.9805</td>
<td>0.9738</td>
<td>0.9554</td>
<td>0.9811</td>
<td>0.9835</td>
</tr>
<tr>
<td>3. Semi-logarithmic</td>
<td>0.9818</td>
<td>0.9648</td>
<td>0.9848</td>
<td>0.9863</td>
<td>0.9666</td>
<td>0.9942</td>
<td>0.9771</td>
</tr>
<tr>
<td>4. Log-inverse</td>
<td>0.9852</td>
<td>0.9724</td>
<td>0.9955</td>
<td>0.9883</td>
<td>0.9698</td>
<td>0.9985</td>
<td>0.9826</td>
</tr>
<tr>
<td>5. Inverse</td>
<td>0.9221</td>
<td>0.9329</td>
<td>0.9237</td>
<td>0.9507</td>
<td>0.9308</td>
<td>0.9592</td>
<td>0.9106</td>
</tr>
<tr>
<td>6. Log-log-inverse</td>
<td>0.9869</td>
<td>0.9759</td>
<td>0.9969</td>
<td>0.9887</td>
<td>0.9711</td>
<td>0.9985</td>
<td>0.9895</td>
</tr>
</tbody>
</table>
which is equal to Durbin and Watson's 'd' divided by \((n - 1)/n\). A separate table is used to interpret this ratio, but the interpretation is the same as the Durbin Watson coefficient. (118, p.172n)

The von Neumann ratio provides a statistic \(K\), which approaches 2 if there is no serial correlation and ranges from 0, when it signifies perfect positive serial correlation, to about 4, for perfect negative serial correlation. The tables of the von Neumann ratio set out the upper and lower bounds for different 'n' values (the number of items in the regression), and these are given for the 5% and 1% levels of confidence.

For an 'n' of 6 the values of \(K\) are as follows:

**TABLE 9**

**VON NEUMANN RATIO: TABLE OF BOUNDS**

<table>
<thead>
<tr>
<th></th>
<th>POSITIVE</th>
<th></th>
<th>NEGATIVE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(p = 0.01)</td>
<td>(p = 0.05)</td>
<td>(p = 0.05)</td>
<td>(p = 0.01)</td>
<td></td>
</tr>
<tr>
<td>(n = 6)</td>
<td>0.6738</td>
<td>1.0682</td>
<td>3.7318</td>
<td>4.1262</td>
</tr>
</tbody>
</table>

Source: 62, p.446

As can be seen by Table 10, the values of \(K\) yielded by the six functions do not, however, permit a selection on the basis of these levels of confidence, and in the end a much more arbitrary method has to be employed by ranking the values according to how closely they approximate \(K = 2\) (absence of serial correlation). From this rather basic test the logarithmic form emerges as probably the most suitable function to use and consequently is adopted throughout the study. It is given by

\[
\ln \left( \frac{q_{1t}/n_t}{e_{1t}} \right) = a_1 + b_1 \ln \left( \frac{y_t/n_t}{e_{1t}} \right) + e_{1t} \quad (VII)
\]

where \(\ln\) = logarithmic transformations, the other parameters being the same as in equation (IV).

Because the logarithmic function has been used many times in past demand studies, its popularity has often been related to the practical advantage that its regression coefficient is equal to its elasticity coefficient, rather than in any inherent theoretical
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Linear</td>
<td>2.5288</td>
<td>1.7366</td>
<td>1.9470</td>
<td>3.8058*</td>
<td>2.2471</td>
<td>2.4500</td>
<td>2.4695</td>
</tr>
<tr>
<td>2. Logarithmic</td>
<td>2.2773</td>
<td>1.6158</td>
<td>1.6549</td>
<td>3.1331</td>
<td>2.2224</td>
<td>1.7177</td>
<td>2.1966</td>
</tr>
<tr>
<td>5. Inverse</td>
<td>1.9186</td>
<td>2.9050</td>
<td>1.8081</td>
<td>1.5430</td>
<td>1.7023</td>
<td>1.1356</td>
<td>1.0615*</td>
</tr>
</tbody>
</table>

* Exceeds 1% level of confidence
** Exceeds 5% level of confidence
qualities. Whilst modern computing facilities have made this feature less desirable today, the elimination of any unnecessary calculation is nevertheless an added convenience, and in this study, strengthens the case for its selection in the absence of strong theoretical preferences or determination by rigorous statistical techniques.

7. **Computational Methods**

(a) **Deflation**

One of the great difficulties in using the Family Expenditure Survey is the small size of the sample, which for most years effectively restricts the number of groups on which to base regression analysis to six. Wolfe suggests that by combining the data for four years this would extend the number of income groups to twenty four and it would be possible to arrive at lower standard errors compared with the standard errors for separate years. (163,p.12) The main disadvantage with this technique apart from the question of a really suitable price index to use as a deflator, is the problem of temporal change. If the demand for a commodity is changing very rapidly, the nature of this change will be lost when the data is combined. This was originally thought to be the case with the demand for meals bought away from home, when a priori observation stimulates the common belief that such demand undergoes rapid change. As will be seen later, the basically static nature of the demand for meals away from home shown by the present analysis counters this objection and stimulates interest in combining the data. However, whilst Wolfe's analysis shows that generally the 'combined' sample leads to lower standard errors, (163,p.12) in this study, deflation results in negligible improvement. This may be caused by the lack of a good price series and consequently by inadequate deflators, but generally, preliminary deflation tests suggest that little would be gained by extension to all available data.

(b) **Weighting**

As has been noted earlier, households' average expenditure on meals bought away from home, grouped by income level, are the basic data used for deriving the consumption functions. In regression analysis based on sample data, it is common to take into account the sampling error affecting the estimated averages...
by weighting the data. Usually the number of households in each income group is used as a weight, but as Welfe found that the number of people in each income group gives on the average slightly better fits, \(163, p. 13\) this technique was, therefore adopted instead.

(c) The Computer Program

The program used in this analysis is the University of Surrey, Hotel and Catering Management Department's general regression program, translated, developed and extended by R.S. Robertshaw from an original Fortran program given by Smillie.\(145\)

8. Results

The choice of the logarithmic form in fact means that the fundamental results have already been anticipated in Section 5 (b) where a logarithmic function was used in the preliminary selection of the determining variable. The results given there, however, only cover the years 1961-67, and whilst these are the only years covered by the income data, the series can be extended by implication, to cover all the available budget information for the period 1953-54 to 1967. As can be seen by Table 7, the expenditure elasticities have to be reduced by 12% on average to obtain the equivalent income elasticities. This percentage was applied to the expenditure elasticities for the years 1953-54, 1959 and 1960, to complete the series in Table 11, which also provides the relevant standard errors and their coefficients of determination.

9. Extension of the Analysis

Before commenting in more detail on the results so far achieved there are two basic problems which need reconsideration; firstly household composition and secondly economies of scale. As was seen in the earlier part of the analysis, both of these factors provided theoretical and practical difficulties, not all of which were overcome entirely satisfactorily. Working assumptions were made as a first approximation and it is some of these which are now re-examined.

(a) Household Composition

The main trouble with household composition was the approximate nature of its homogeneity. As will be remembered the whole sample was divided into two sub-samples, one of which was omitted because it consisted mostly of old people and the other, which
### TABLE 11

**FAMILY EXPENDITURE SURVEY, 1953-54 to 1967**

**COMPLETE SERIES OF INCOME ELASTICITIES FOR MEALS BOUGHT AWAY FROM HOME USING MODEL IV**

<table>
<thead>
<tr>
<th>Year</th>
<th>$r^2$</th>
<th>Elasticity</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1953-54*</td>
<td>0.9250</td>
<td>1.45</td>
<td>± 0.1937</td>
</tr>
<tr>
<td>1959*</td>
<td>0.9714</td>
<td>1.45</td>
<td>± 0.1409</td>
</tr>
<tr>
<td>1960*</td>
<td>0.9322</td>
<td>1.39</td>
<td>± 0.2130</td>
</tr>
<tr>
<td>1961</td>
<td>0.9683</td>
<td>1.41</td>
<td>± 0.1279</td>
</tr>
<tr>
<td>1962</td>
<td>0.9287</td>
<td>1.49</td>
<td>± 0.2070</td>
</tr>
<tr>
<td>1963</td>
<td>0.9805</td>
<td>1.34</td>
<td>± 0.0948</td>
</tr>
<tr>
<td>1964</td>
<td>0.9738</td>
<td>1.36</td>
<td>± 0.1113</td>
</tr>
<tr>
<td>1965</td>
<td>0.9555</td>
<td>1.26</td>
<td>± 0.1362</td>
</tr>
<tr>
<td>1966</td>
<td>0.9811</td>
<td>1.49</td>
<td>± 0.1031</td>
</tr>
<tr>
<td>1967</td>
<td>0.9835</td>
<td>1.39</td>
<td>± 0.0737</td>
</tr>
</tbody>
</table>

*Estimates: see text*
was the one in fact used, had a typical composition of 30% children under 16, 64% persons of 16 and under 65 and 6% persons of 65 and over. This composition did of course vary from year to year, and in the extended analysis therefore, the effect of changes in age composition is examined by using two additional models, both of which are based on suggestions by Velte (163, p.15) and stem from model (V). In the first, the number of children under 16 is introduced as an additional variable, and in the second, this is replaced by the number of persons 65 and over. Logarithmic functions are again used and are given by,

\[ \ln \left( \frac{q_{it}}{n_t} \right) = a_1 + b_1 \ln \left( \frac{y_t}{n_t} \right) + c_1 \ln x_t + \varepsilon_{1t} \]  

(VIII)

where \( x_t \) is the number of children under 16, and

\[ \ln \left( \frac{q_{it}}{n_t} \right) = a_1 + b_2 \ln \left( \frac{y_t}{n_t} \right) + c_1 \ln s_t + \varepsilon_{1t} \]  

(IX)

where \( s_t \) is the number of persons aged 65 and over.

As Velte points out, a close relationship exists between these additional variables, and that the elasticities with respect to \( x_t \) and \( s_t \) may therefore be biased within the sub-sample considered, although it could be argued in addition, that when household composition is kept stable, the estimates of income elasticity will not be affected by the choice of one of these variables instead of the other. (163, pp.15-16) Velte found, however, that whilst his results did not confirm this last expectation, the differences in the elasticities having specified household composition were generally small and insignificant. (163, p.16)

In the present study the differences observed are slightly larger than those obtained by Velte, but as can be seen by Table 12, they still are within the range of standard errors, and in most cases the assumption made about approximate homogeneity can therefore be retained.

(b) Economies of Scale

The second part of the extended analysis is an examination of the nature of economies of scale, a concept which 'gives expression to the possibility that, with given levels of income per person, a larger household may be able to attain a higher standard of living than a smaller household'. (129, p.146)
# Results from the Extended Models

<table>
<thead>
<tr>
<th>Year Explanatory Variable</th>
<th>$r^2$</th>
<th>Income Elasticity</th>
<th>Elasticities with respect to the no. of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Children under 16</td>
</tr>
<tr>
<td>1961</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.9683</td>
<td>1.415±0.128</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>0.9704</td>
<td>1.395±0.150</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>0.9842</td>
<td>1.096±0.212</td>
<td>-</td>
</tr>
<tr>
<td>1962</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.9287</td>
<td>1.494±0.207</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>0.9315</td>
<td>1.571±0.319</td>
<td>0.20±0.571</td>
</tr>
<tr>
<td>14</td>
<td>0.9325</td>
<td>1.472±0.241</td>
<td>-1.08±0.223</td>
</tr>
<tr>
<td>1963</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.9805</td>
<td>1.344±0.095</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>0.9862</td>
<td>1.400±0.105</td>
<td>0.24±0.224</td>
</tr>
<tr>
<td>14</td>
<td>0.9984</td>
<td>1.228±0.037</td>
<td>-0.29±0.051</td>
</tr>
<tr>
<td>1964</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.9738</td>
<td>1.357±0.111</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>0.9773</td>
<td>1.377±0.314</td>
<td>0.04±0.637</td>
</tr>
<tr>
<td>14</td>
<td>0.9767</td>
<td>1.175±0.121</td>
<td>-0.10±0.148</td>
</tr>
<tr>
<td>1965</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.9554</td>
<td>1.260±0.136</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>0.9390</td>
<td>1.101±0.342</td>
<td>-0.39±0.753</td>
</tr>
<tr>
<td>14</td>
<td>0.9554</td>
<td>1.260±0.157</td>
<td>0.01±0.219</td>
</tr>
<tr>
<td>1966</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.9811</td>
<td>1.487±0.103</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>0.9824</td>
<td>1.532±0.149</td>
<td>0.12±0.271</td>
</tr>
<tr>
<td>14</td>
<td>0.9953</td>
<td>1.411±0.064</td>
<td>-0.02±0.086</td>
</tr>
<tr>
<td>1967</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.9835</td>
<td>1.394±0.074</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>0.9839</td>
<td>1.371±0.103</td>
<td>-0.07±0.199</td>
</tr>
<tr>
<td>14</td>
<td>0.9858</td>
<td>1.364±0.082</td>
<td>-0.09±0.105</td>
</tr>
</tbody>
</table>

* 1 = model 5; 12 = model 8; 13 = model 9; 14 = model 10.
The method used is again one suggested by Wolfs, whereby the average number of all persons per household $n_t$ is introduced as an additional variable. (163, p.16) It is in fact very similar to the logarithmic model used to examine household composition and can be given by

$$\ln \left( \frac{q_{it}}{n_t} \right) = a_i + b_i \ln \left( \frac{y_{it}}{n_t} \right) + c_i \ln n_t + \varepsilon_{it} \quad (x)$$

In this equation the total income elasticity $b_i$ expresses the consumers' response to income per capita, when the household size is held constant and parameter $c_i$ which broadly expresses economies of scale, is the income elasticity with respect to household size.

Table 12 shows the income elasticities derived from this model and whilst they differ from those obtained when using equations (VII), (VIII) and (IX), where household size is not specifically included as a determining variable, as with the other extended models, the differences are, on the whole, insignificant.

Wolfs has suggested that such discrepancies may arise because multi-collinearity is possibly inherent as the determining variable and household size are strongly correlated, and that this is evidenced by the variance of the income elasticity increasing considerably when household size is introduced as an additional variable. (163, p.17) After comparing his results to those obtained by Forsyth (52), he concluded that the results yielded by extending the model to account for economies of scale seemed highly uncertain. (163, p.19) Indeed as far as eating out is concerned, perhaps such doubts about the usefulness of extending the analysis in this way, ought to have been stimulated much earlier, for it may well be that the whole concept of economies of scale is of but tenuous relevance to the demand for a commodity such as meals away from home.

### Economic Interpretation

Having tried to extend the analysis by refining the initial working assumptions, one must conclude that the addition of further independent variables does not improve the results afforded by the model originally used, and that it is therefore upon these that an economic interpretation must be based. Clearly as Brown suggested (19b), the Family Expenditure Survey has real limitations for detailed Engel curve work, and it would seem that as far as meals away from home are concerned, this limit lies at the level of equation (V). Nevertheless the model does provide some quantitative evidence about the nature of the demand for eating out during the recent past, and perhaps more importantly, it does establish a numerical base from which forecasts can be conjectured.
The most unusual feature to emerge from the results, is the nature of the elasticities since 1961. Contrary to a priori conception and the commonly expressed view that over the past seven years people are eating out more and more, the income elasticities have in fact, remained fairly level. Had the demand for meals away from home been increasing at a rapid rate, one would have expected the yearly trend of the elasticities would have been downward as the commodity, in accordance with classic theory, became less and less a luxury.

As Table 11 showed, this clearly has not been the case, although one suspects much of the later variation may be due to an inadequacy of the data rather than any violent fluctuation in the nature of the demand for meals away from home. The sample size is probably at the root of the trouble, which, for most of the analysis, reduces the number of observations on which to base the regressions to six. However, if one places greater emphasis on those surveys which involved larger samples, then the annual movement of the elasticities may be described in a much more satisfactory way.

Figure 2 shows the elasticities for each year plotted against total personal income taken from the National Income and Expenditure Blue Books. The income elasticity of 2.25 for 1938 is an average taken from the work of Stone, Praia and Houthakker, (151 and 129) by combining several of their estimates for expenditure elasticities and then reducing them by 10%. The surveys which involved larger samples took place in 1938, 1953 and 1967 and as can be seen, the elasticities for those years successively decrease. If one therefore places a greater degree of confidence in them, and ignores the rather variable results from the smaller surveys, theoretical requirements are seen to be met.

It might be thought, however, that the elasticities are too diverse to sustain very great credibility, but they can in fact be interpreted extremely cogently. As Bryn-Jones points out (71a), the demand for meals away from home before the Second World War was rather static. The previous main growth period had been the First World War with its far-reaching sociological changes, and whilst many of the trends started then infiltrated the succeeding decades they did not generate more than a moderate growth in the inter-war years, perhaps because they were engendered more by legislation than entrepreneurial zeal. In 1938, a meal away from home for most people was still very much a luxury commodity, a fact
Figure 2
INCOME ELASTICITIES FOR MEALS AWAY FROM HOME
1938 - 1967

NOTE: • LARGER SAMPLE
which reflected in the high income elasticity of 2.25. The Second World War was, however, to prove even more dramatic than the First, for, because of rationing, the habit of eating out became the norm for a vast section of population.

One should not be surprised therefore to find in 1953 that elasticity for meals away from home had been reduced to 1.45. Rationing, although still in force, retained only a vestige of its former power, and was to be discontinued the following year. Eating out was still by no means very high upon the average consumer's list of priorities, but it had lost some of its more esoteric and luxury connotations.

Since 1953 the curve has evened out and there has been only a slight decrease in the elasticity. This is the period in which habits gained during the war have been consolidated, when eating out, lacking the stimulus of rationing controls, has ceded its position as a wartime necessity and yet has not attained instead a very prominent place in the consumption expectations of the consumer. The general constancy of the relationship between income and expenditure on eating out since 1961 can be seen by the regression lines in Figure 3, which have been drawn on a logarithmic scale to arrive at straight line regressions. Generally, the fits of the regression lines are very good and in no case are the relative differences in the slopes significant.

One must conclude, therefore, that contrary to most contemporary commentators, there is no quantitative evidence to support the opinion that in recent years there has been a major increase in average consumer spending on meals away from home. An elasticity of 1.4 does, however, indicate that the market for a commodity such as meals away from home has great potential. This can be seen by considering Aitchison and Brown's graph (3, p. 132) of the relationship between a commodity's income elasticity and its saturation level, i.e. the level to which a consumer's actual expenditure would increase if his income increased without limit. As was noted in Table 1, the logarithmic form is a constant elasticity function, which does not include any estimation of saturation levels. The lognormal function (which was rejected because of its complexity) provides these levels, however, and if one regards our two parameter model as a first approximation of the lognormal distribution then the elasticities can be simply related to the percentage of saturation as given by Aitchison and Brown. Table 13 gives these percentages for the years 1961-67, and it may be seen that expenditure for
FIGURE 3
REGRESSIONS OF EXPENDITURE ON MEALS
AWAY FROM HOME AND DISPOSABLE INCOME
1961-1967

[Graph showing regression lines for expenditure on meals away from home against disposable income per head for different years.]

LEGEND
meals away from home would appear on average to be at only 19% of its potential.

On a slightly more speculative level, one might add to this, that there is some evidence that the elasticities may in fact be decreasing, and hence some of this potential is being met, but if this is so, it is at a very slow rate. The implications of these findings for forecasting purposes will, of course, be examined later, but it would seem relevant to note here that the available statistical budget data shows the main change in the demand for meals away from home to have taken place during or immediately after the war, since which time, such expenditure has retained a relatively constant relationship with income, a fact which leads one to suspect that unless there is major social or economic change on the scale of that which resulted from the last war, then there is little evidence to support the expectation of a reduction in income elasticities over the immediate future.

**TABLE 13**

**THE RELATIONSHIP BETWEEN INCOME ELASTICITIES FOR MEALS AWAY FROM HOME AND THEIR PERCENTAGE OF SATURATION, 1961 to 1967.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elasticity</td>
<td>1.41</td>
<td>1.49</td>
<td>1.34</td>
<td>1.36</td>
<td>1.26</td>
<td>1.49</td>
<td>1.39</td>
</tr>
<tr>
<td>Percentage of saturation</td>
<td>18</td>
<td>15</td>
<td>22</td>
<td>21</td>
<td>25</td>
<td>15</td>
<td>19</td>
</tr>
</tbody>
</table>
Limited by the Family Expenditure Survey's method of grouping its information, the analysis has to adopt a fairly simple model, in which expenditure per person on meals away from home is related solely to income per person. The data used is, however, not quite the same as that published, for expenditure on school meals is omitted, and the income series rearranged to approximate to a concept of disposable income.

A logarithmic equation is found to be the most appropriate way of expressing the relationship between expenditure and income numerically, although in fact, few practical differences between the six functions tested are apparent.

Whilst this model yields income elasticities for meals away from home for the period 1961-1967, there is a possibility that the elasticities may be biased. The model is therefore extended to discount the effects of household composition and economies of scale. It is clear, however, that such refinement does not improve the analysis and that the elasticities derived initially, are as accurate as can be obtained with data of this kind.

Contrary to the commonly expressed opinion that, during the recent past, people have been eating out more and more, the income elasticities over the past six years have remained fairly stable. Had the demand for meals away from home been increasing at a rapid rate, the yearly trend of elasticities would have been downward, as eating out became less and less a luxury. Over a longer period, however, this in fact may well be happening, for in 1939, the income elasticity for meals away from home was 2.25, whilst in 1967 it had fallen to 1.40.

At the present time, expenditure on meals away from home seems to be at about 18%-19% of its potential, and although there is some evidence that a part of this potential is being realised, unless there are social and economic changes on the scale of those which occurred during and immediately after the Second World War, it would appear that this type of expenditure will continue to retain its constant relationship with income in the near future.
Chapter IV

THE ANALYSIS OF TIME SERIES

1. History

The second main source of information commonly utilised in demand studies is time series data, which basically comprises published statistics of quantities purchased and prices paid, together with details about relevant variables such as income and total expenditure. As this type of information can also be obtained areally, the alternative to using household budget statistics is more correctly known as market data. In practice however, spatial information is so rare in this country that time series and market data may be considered synonymous.

Historically, the beginnings of time series analysis can be traced back to the nineteenth century when Ernst Engel looked at the harvests and prices of rye in Prussia between 1846 and 1861, (47a) although the inverse relationship between price and quantity of a commodity had in fact been recognised long before this. (34) Like family budget analysis, the development of demand studies using time series data was given tremendous stimulation by the emergence of modern statistics in the last decades of the nineteenth century, when correlation analysis and curve fitting techniques were developed by such people as Galton, Edgeworth, Pearson and Yule. (149, p.105).

Whilst the earliest modern statistical demand studies have been attributed to Rodolfo Bonini, (11) who, in 1907 used multiple correlation to derive a function for coffee, the first real comprehensive treatment of demand curves was made by Lenoir. (82a) It was left to Henry Moore, however, to popularise statistical demand analysis through his persuasive writings, (115) and by the First World War, one may say that empirical work in this field had just become established. Since then, the amount and the scope of time series studies have developed immensely, although the need for adequate data and certain conceptual problems, have meant a concentration on food or agricultural commodities rather than on industrial products.

One of the most detailed and systematic investigations of time series data is Schulte's study of the demand for sugar, corn, cotton, hay, wheat, potatoes, oats, barley, rye and buckwheat in the United States, (137) although since 1939, when this was written, the tendency has been to analyse a wider range of consumers' expendi-
It is clear that Schultz's influence can still be felt, however, and indeed Stone, in his mammoth investigation of consumers' behaviour between the wars, readily acknowledges such an indebtedness. (152, p. xx1)

Time series analysis differs from family budget studies by being able to examine the direct influence of price on the quantity or value of a commodity consumed. As was seen in Chapter I, in a single household budget enquiry, regional variation in price can generally be neglected and within the data published for one period, prices may be taken as constant. This apparent limitation, in fact helps the analysis by reducing the number of variables which have to be introduced, and the number of parameters to be estimated. It is therefore much easier to derive such quantities as demand elasticities from family budget data.

Income is, however, only one of the major factors which influence demand, and traditionally, economists have been just as eager to determine the effect of price. As was found with family budget data, the main difficulty is separating the influence of the desired variable from the multiplicity of factors which may have an influence on purchases, and to make time series analysis practical, price and quantity variations need to be sufficiently large for the relation to be measurable, whilst fluctuations in income and other disturbing influences should be relatively small. In addition, as Leser has pointed out, there should be little substitution by other products and the goods should be of limited durability, so that speculative influences and stock holding have a minimum effect. (84, p. 84)

Of these requirements, this last factor is the most readily met, for except in extremely unlikely circumstances, a meal bought away from home is generally synonymous with a meal consumed away from home. The other conditions, however, refer more to the adequacy of the data than any theoretical prerequisites, and unlike the family budget analysis, where the existence of suitable data was readily apparent, even a cursory examination of the available information, revealed the possibility that a time series analysis might not be viable. Consequently, the order of this analysis differs from the more rational progression in Chapters II and III, in that a discussion of the merits of the statistics precedes the more usual examination of the theory involved and previous work carried out.
2. Sources of Statistics for Time Series Analysis

Traditionally, time series analysis stipulates the need for two main sets of data, relating to quantities and prices, as the basic minimum requirements for any investigation, and in addition, further variables referring to real income or the price of substitute consumer goods are usually accepted as being necessary. The search for suitable statistics must therefore concern at least the first two of these (although possibly the others as well) and basically has to be made among the three different sources of data which provide information over time, about eating out: the Blue Books of National Income and Expenditure, (26) the Board of Trade, monthly indices of catering turnover (13) and the Family Expenditure Surveys. (37, and 104-111)

(a) Quantity

The concept of quantity has, in recent years, tended to differ slightly from that used in the early studies of time series data, where the abundance of suitable data permitted a closer adherence to the underlying theory; Schultz, for example, could express his functions for the demand for sugar by relating per capita consumption in lbs to the wholesale price in cents per lbs. (137) At a later date, however, with the extension of the analysis to cover a wider range of consumption goods, the continued use of quantity was found to be not always feasible and the associated measure 'value' had to be substituted in its place.

For many types of data especially those referring to non-agricultural products it is very difficult to obtain any information at all about quantities bought, and the adoption of value neatly obviates the need to make difficult conceptual decisions with regard to the type of measurement which should be used. Meals away from home is particularly vulnerable in this respect, for whilst theoretically it is desirable to count the number of meals consumed, definition and delimitation of what should be included might prove insurmountable. Indeed, the Ministry of Agriculture found just this kind of difficulty when assessing the number and types of meal consumed outside the home in their National Food Surveys. (97)

Expressing consumption in terms of value or the market prices paid by the final consumers, does not however, constitute a major realignment of methodology, for it will be appreciated that in the identity \( pq = v \) (price times quantity equals value), it is
only necessary to measure two of the parameters to be able to derive the third element. As most of the available statistical information is of the expenditure type, it is not surprising that in recent years time series studies have tended to use consumption expressed in expenditure terms, (adjusted by the appropriate price series to give a more precise estimate of volume) rather than the traditional concept of physical quantity.

Of the three possible sources of data mentioned earlier all provide some statistics about expenditure on eating out and so a priori each would seem likely to provide suitable statistics.

(i) National Income and Expenditure

The complexity of the catering statistics contained in the National Income and Expenditure Blue Books has already been partly outlined in the reconciliation exercise discussed in Chapter II. The series 'Catering (meals and accommodation)' referred to there, however, is not the only one to be published, for there are in all three series which describe consumers' expenditure on catering services. Nevertheless, it is probably the most useful, having emerged in 1967 following a major reorganization of the Blue Book catering statistics. (25, pp.104-105)

Prior to this time, information about catering had appeared in two separate places, one part in 'Food: other personal expenditure' and the other in 'Other Services: hotel and restaurant services and school meal services'. The first of these contained solely the food element of meals away from home, which was valued at the cost to caterers, that is, at or near wholesale prices, whilst the second included an estimate of the service element (wages, rent, rates, profit etc.). As the hotel and catering service element was never published, being always hidden among such diverse residuals as private education, stamp duties, fines or betting payments, the only series available until 1967 were the estimates of food costs. Nevertheless as these were shown in constant prices (1958) and current prices, it is possible to derive some measure of quantity changes. It is important to know, however, that in 1963, estimates of consumers' expenditure on food were revised and the distribution of consumption between households and caterers, and of the prices paid for their supplies by caterers, reassessed. This revision extended back until 1952 for the current price series and back to 1955 for expenditure at constant prices.

After the 1967 reorganization these two series ceased to be published, although it is still possible to continue them up to date by a simple rearrangement of the subsidiary tables provided in the
notes at the back of each Blue Book. For convenience the two complete series are shown in Table 14.

There is little doubt that the introduction in 1967 of the composite series, 'Catering (meals and accommodation)' corrected the highly illogical sub-division previously in use, and although it did nothing to improve the information about expenditure on eating out, as opposed to expenditure on other catering services, it must be welcomed as a first step towards the formation of more comprehensive and rational catering statistics.

The series comprises meals and accommodation in commercial establishments and meals, but not accommodation, in non-commercial establishments. Personal expenditure on meals and accommodation is therefore included if incurred in hotels, holiday camps, boarding houses, restaurants (including those in retail shops), fish and chip shops, cafes, clubs and canteens, whether operated individually, for example by industrial firms, or by catering contractors. In addition, the category also covers meals and milk in private and maintained schools, university halls and other establishments, as well as accommodation in holiday cottages, caravans and camping sites.

The term communal establishments does not cover, however, expenditure on meals and accommodation by public authorities in such places as hospitals, prisons, borstal institutions, residential schools and homes for the aged, which is included in the public authorities current expenditure on goods and services. The estimates do include on the other hand, a diverse collection of what might be thought to be indirect expenditure, for example the face value of luncheon vouchers, the net cost to employers of meals provided in canteens and the value of food and accommodation provided free to the staff of catering establishments.

The series has been based on a wide field of information, ranging from detailed enquiries to intuitive conjecture. The most stable source is the 1964 Board of Trade Catering Inquiry, which accounts for about two thirds of the expenditure information. The continuing monthly turnover statistics, used to project forward the bench mark figures for that year, are probably the most reliable at present available, although even these have to be adjusted, because a small element of alcoholic drink is still inherent in the data.

"Accommodation in non-commercial establishments is included in the rent paid by or imputed to private non-profit making bodies under 'Rents, rates, and water charges'."
## Table 14

**Consumers' Expenditure on Meals Bought Away from Home: Food Cost Only**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current prices</td>
<td>341</td>
<td>356</td>
<td>380</td>
<td>430</td>
<td>454</td>
<td>486</td>
<td>493</td>
<td>517</td>
<td>524</td>
<td>545</td>
<td>579</td>
<td>601</td>
<td>624</td>
<td>665</td>
<td>693</td>
<td>715</td>
</tr>
<tr>
<td>1958 prices</td>
<td>n.a*</td>
<td>n.a</td>
<td>n.a</td>
<td>465</td>
<td>473</td>
<td>494</td>
<td>493</td>
<td>511</td>
<td>521</td>
<td>534</td>
<td>548</td>
<td>565</td>
<td>578</td>
<td>589</td>
<td>589</td>
<td>600</td>
</tr>
</tbody>
</table>

* n.a: not available

Source: 24a and 26
The rest of the information which makes up the series is unfortunately less secure. Expenditure in unlicensed hotels and boarding houses which is based on a Government Social Survey for 1964 (76a), is assumed to change in line with expenditure in licensed hotels and holiday camps, and expenditure on meals in retail establishments is inferred from the Census of Distribution (15a). The basis for the estimates of the net cost to employers of meals provided in canteens, and of accommodation provided free to staff are not disclosed whilst expenditure in Northern Ireland appears to have been calculated by what must be a fairly arbitrary percentage.

Nevertheless, more reliable information seems to be available for the estimates of expenditure on school meals, milk and meals in other communal establishments, but only 'rough additions' can be made for cottage and caravan type of accommodation. More serious, however, is the question of business expenditure for which even the normally discrete Central Statistical Office admits there is little firm evidence on which to base deductions, (27) a fact which is particularly regrettable when business expenditure must, even at a modest estimate, account for over a tenth of expenditure on meals and accommodation.

Clearly, whilst this series is an improvement on the previous Blue Book breakdown, national catering statistics are not as accurate as could be expected for a category which involves between 6% - 7% of consumers' total expenditure. It is to be hoped, therefore, that in future, the proportion of the estimates derived from accurate measurement rather than imputation will be somewhat increased.

The series has been constituted in this way since 1964 and the estimates before then were based on the two original separate categories discussed earlier, to give a continual series from 1952 (Table 15). Because of uncertainties in revaluing the service element of meals and accommodation they are not published in constant prices however. A more detailed explanation of how this series is constituted, is given in the latest Sources and Methods (90) although its construction will probably be more readily understood if used in conjunction with Table 3, (Chapter II) which gives the breakdown for 1964.

* Quite an assumption for about 10% of consumers expenditure on catering.
### TABLE 15

**CONSUMERS' EXPENDITURE ON CATERING. (MEALS AND ACCOMMODATION)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current prices (a million)</td>
<td>574</td>
<td>599</td>
<td>636</td>
<td>716</td>
<td>771</td>
<td>836</td>
<td>875</td>
<td>929</td>
<td>964</td>
<td>1021</td>
<td>1098</td>
<td>1164</td>
<td>1240</td>
<td>1312</td>
<td>1377</td>
<td>1412</td>
</tr>
</tbody>
</table>

Source: 25
The Second source of time series data about meals away from home is the Board of Trade Journal which publishes a monthly index of turnover in the catering trades. These estimates are based on a large scale Inquiry carried out in 1964 which was instigated both for use in improving data on consumption expenditure in the National Income and Expenditure Blue Books, as well as for specifically providing a benchmark for the monthly turnover series.

The 1964 Inquiry was not, however, responsible for starting a turnover index which had in fact begun four years earlier with a similar survey in 1960. Unfortunately the results from this survey were largely invalidated because of the considerable number of businesses that were not registered, and the more thorough 1964 Inquiry made it quite clear that the earlier survey had substantially underestimated turnover levels. In addition to these census difficulties there were certain changes in definition. For example, the treatment of multiple organizations included in the category 'hotel and holiday camps' was completely restructured in 1964, and so the growth in the number of canteens between the two periods is not a real increase, but largely reflects the fact that the use of census of production material resulted in better identification of units. This means that there is in fact no viable basis for comparing the two Inquiries or their respective indices, and for all intents and purposes the turnover series must be considered as starting in 1964.

As was noted in the last section, the Inquiry and the subsequent indices form a major part of the National Income and Expenditure catering series and as such, is probably one of the most important sources of information about expenditure on catering services. Basically, the scope of the Inquiry was such that it covered the major suppliers of food and accommodation in Great Britain. These could be divided into two classes: (a) those businesses whose main activity was in catering and (b) those whose main activity was in some other field, but which included some establishments engaged in catering, for example, industrial canteens, theatre restaurants and sports club bars. The survey did not include catering establishments in retail shops which were adequately covered by the Census of Distribution, neither did it obtain information about schools, hospitals, hostels or self-catering accommodation, and as might be expected, tips, staff food and accommodation costs, or canteen subsidies. More seriously, a detailed description of the scope of the survey, and an explanation of the sampling and grossing up methods used, are beyond the scope of this section. Further information can be found in Reference.
however, unlicensed hotels, boarding houses and other small establishments offering residential accommodation were also not included, 'because the lack of an adequate register of these establishments made their inclusion impractical.' (15, p.1066)

Reference again to Table 3 (Chapter II) should make it quite clear what categories have to be added to the Inquiry data to complete the Blue Book series.

The prime importance of the Inquiry was to form a base upon which monthly turnover indices could be constructed. Monthly turnover figures are collected from a panel of catering establishments, and the aggregate percentage change from one period to another is related to the 1964 Inquiry. Unfortunately, the method used, whilst no doubt being the most convenient, is far from being the most satisfactory. Being voluntary and therefore relying entirely on the co-operation of the contributors, the selection of the panel is far from random, and clearly may be biased. In particular, the sample will tend to contain too high a proportion of old established businesses and too small a proportion of the newer ones. It may easily leave out therefore, what is probably the most volatile section of the market. It is difficult to discuss the series categorically, however, for no information about the construction of the monthly series has yet been published, and the relevant methodology must be derived by implication from that used for the companion retail sales index. (13a) Nevertheless, it is clear that there are basic differences between the Inquiry itself and the resulting series, which are, for the purposes of this section, of crucial importance.

Basically the series is a simplified version of the Inquiry, where considerations of accuracy have no doubt led to the combination of many sub-groups into broad categories. Total turnover is, in fact, only broken down four ways: (a) licensed hotels and holiday camps, (b) restaurants, cafés, fish and chip shops, (c) public houses, and (d) canteens.

More important than this, however, is the treatment of turnover which is not sub-divided at all, unlike in the 1964 Inquiry, where it was divided according to six types of expenditure incurred in catering establishments, (meals and refreshments; alcoholic drinks, accommodation, cigarettes and tobacco, other services, and other goods). This aggregation, in effect, means that it is quite impossible to trace the annual or even monthly turnover pattern of meals away from home, for a specific change in the total
level of turnover may be completely unrelated to sales of meals and refreshments.

In 1964, for example, the monthly turnover in restaurants and cafes, and in fish and chip shops showed a marked seasonal pattern, (Table 16) and gave a total for the year of £520 million. Now the total turnover for sales of meals alone in 1964 was £411 million and certainly it is feasible that this could have been spread evenly throughout the year with sales of £34 million in each month, whilst the sales of the other items included in the indices fluctuated wildly. It is of course highly unlikely that this is what happened, but it does illustrate the limits of the Board of Trade indices, and underlines the fact that the available information does not permit a complete disregard for the possibility that expenditure on meals away from home may not conform to the overall turnover patterns.

As can be seen from Table 17, this problem is more serious with the hotel and public house group than the other categories, because meal sales take up such a relatively small part of total turnover and have therefore little influence on the overall pattern, but even with restaurants and canteens there is still approximately a quarter of the total turnover not spent on meals and the same conceptual difficulties still apply. Table 17 also shows how the market for meals away from home is divided between the four groups of establishments and therefore how much information would be lost when using any particular series.

Whilst the Board of Trade indices provide, therefore, a relatively short span of yearly data (since 1964), if suitable corollary statistics exist, it might be possible to utilise the monthly information, thus substantially increasing the length of the series. It should be remembered, however, that unlike the National Income and Expenditure Blue Books which cover the United Kingdom, it is restricted to Great Britain, is available only in current prices, and includes not only domestic and personal expenditure but also expenditure by foreigners and by businessmen.

(iii) Family Expenditure Survey

Unlike most budget surveys, the Family Expenditure Survey collects information continually, which is then published annually. It provides therefore, in addition to a collection of annual cross-sections, a time series of average income and expenditure values as well. A full description of the coverage and methodology,
## TABLE 16

MONTHLY TURNOVER IN RESTAURANTS, CAFES AND FISH AND CHIP SHOPS; 1964

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>£'s million</td>
<td>35</td>
<td>38</td>
<td>39</td>
<td>42</td>
<td>43</td>
<td>45</td>
<td>53</td>
<td>54</td>
<td>51</td>
<td>42</td>
<td>39</td>
<td>39</td>
</tr>
</tbody>
</table>

Sources: 15 and 13 (1964)
TABLE 17

SALES OF MEALS AND REFRESHMENTS AS A PERCENTAGE OF TURNOVER
AND AS A PERCENTAGE OF TOTAL MEAL AND REFRESHMENT SALES

<table>
<thead>
<tr>
<th>Category</th>
<th>Sales of Meals and Refreshments as % of turnover</th>
<th>% of Total Meal and Refreshment sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All caterers</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>2. Licensed hotels and holiday camps</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>3. Restaurants, cafes, etc. and fish and chip shops</td>
<td>79</td>
<td>64</td>
</tr>
<tr>
<td>4. Public Houses</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>5. Canteens</td>
<td>74</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: 15.
together with the discussion of the limitations of using such data, have already been given in Chapters II and III and so only the details relevant to its use in time series analysis will be mentioned here.

The Family Expenditure Survey has produced annual estimates of average expenditure on meals away from home since 1957, but because supporting information about income was not shown until 1961, for all practical purposes the series dates from then. In contrast to both the Board of Trade Inquiry and the National Income and Expenditure Blue Books, the Family Expenditure Survey does not have such comprehensive coverage, as it is only concerned with personal expenditure, but it has, nevertheless, the additional advantage of being much more tractable.

As was noted in Chapter III the choice of information in the Family Expenditure Survey is really limited to category 4, expenditure on meals bought away from home. In the residual category, 9, the meal content cannot be separated from hotel and holiday expenses and in addition the information about free meals from employers and meal vouchers is so variable as not to warrant serious consideration. It is also possible to exclude expenditure on school meals, which was thought could only confuse any potential relationships being related to numbers of children rather than income. A reasonably well defined expenditure category, can thus be obtained, for meals away from home, as noted in the Family Expenditure Survey, which contains both tips and alcoholic drink consumed with the meal. It is therefore an extremely comprehensive description of this type of expenditure, although, as with the Board of Trade indices, it is only available in current prices. (b) Prices

The second main set of information needed for time series analysis is data about the price of the commodity analysed. The normal basis of valuation used is, wherever possible, market prices paid by the final consumers, and so in this instance one would hope to employ a series which gave the average price per meal or an equivalent index of prices. Unfortunately, information about prices of meals away from home is even more unstable and incomplete than the far from secure expenditure data, and there are in fact only two sources which provide any material at all.
(i) Index of Retail Prices

Until recently, meals away from home were not included in the Index of Retail Prices as a separate weight, and their effect was instead, allocated mainly to the food group as a whole, with the remainder being spread over all the other groups in the Index. By 1962 however, the Cost of Living Advisory Committee realised that although expenditure on meals bought and consumed outside the home had become an important item of expenditure, no information about changes in prices of such meals was used in compiling the Index. As a result, the Committee recommended that the Ministry of Labour should collect meal prices experimentally, in the hope that it might prove practicable to include among the price indicators, a price series for meals away from home. (102a)

Since 1962, the actual prices charged for lunch, cups of tea and sandwiches have therefore been collected throughout the United Kingdom from about 200 workers' staff canteens, sandwich bars and restaurants of the type patronised by wage earners, or small and medium salary earners. By 1965, however, experience suggested that the sample should be enlarged and so from this time prices have been obtained regularly from some 500 establishments. Quotations for lunch, cover soup, where commonly served, a main dish with two vegetables and a sweet. Unfortunately the Ministry find it impossible to take into account variation in the size of portions, although such changes are felt to be relatively small.* (36) In addition, whilst they also recognise that some variation may be caused by the seasonality of vegetables, the increasing use of frozen products is thought to have diminished this difficulty in recent years.

This series of prices was not however included in the main Index until February 1968, and as the earlier data have never been released, the only comprehensive statistics about the price of meals away from home, are the monthly indices dating from this time.

Without more detailed information how these prices have been collected, it is difficult to appreciate fully either their merits or their limitations, but it would seem likely that a price series for meals away from home must be deficient if it principally includes only lunches bought at a very restricted number of outlets, and leaves out of consideration the great variety of meals consumed at other times of the day.

*Although the Ministry make no reference to it, presumably the same difficulties and consequent assumption apply to quality variation.
There are clearly very real limitations to the narrow range of meal prices measured as well as to the number and type of places where they are collected, and until the Index is extended to cover what is probably the most volatile section of the market, the movements of the prices recorded at the moment will only reflect the reaction of the more traditional elements, where often the lack of profit motives or the presence of subsidies mask the related price changes taking place in the market as a whole. Indeed, the general impression gained from the information available is that the index under estimates the rise in prices of meals away from home.

Some evidence for this can be shown by relating their movements to the corollary indices for food and services, a comparison which is in fact possible, as the series for meals away from home is given with 1962 as 100. Between January 1962 and January 1968 the Index for food moved to 121.1, the Index for services to 128.0 and that for meals away from home to 121.4. As the food element is meals away from home is generally considered to be between 35% and 50% of total costs, (78a) one would have expected the Index to lie approximately halfway between the food and services series, rather than at present, where it seems to be biased towards the less sensitive food Index.

(ii) National Income and Expenditure

The second and alternative set of data about meal prices is obtained from the National Income and Expenditure Blue Books and has already been shown earlier this chapter in Table 14. Here the food cost element of consumers' expenditure on meals bought away from home is given both in constant and current prices for the period 1955-1967 as these are the q and v parameters respectively in the identity p,q = v, it is simple to derive a price index (Table 18).

Whilst this, unlike the Index of Retail prices does afford a long annual series, it still suffers from the same inherent disadvantage as the two series from which it is derived, in that it really only reflects the trends in the price of food to the caterer. As it thus ignores the service content, it can only represent a small part of the actual movement in meal prices and probably the least mobile part at that.
### Table 18

**Price Index for Meals Brought Away from Home: Food Costs Only**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>92</td>
<td>96</td>
<td>98</td>
<td>100</td>
<td>101</td>
<td>101</td>
<td>102</td>
<td>106</td>
<td>106</td>
<td>110</td>
<td>113</td>
<td>118</td>
<td>119</td>
</tr>
</tbody>
</table>

Source: 24a and 26
3. **Critical Appraisal of the Available Time Series Data**

The most obvious point to immediately emerge from the description of those time series relevant to the analysis of the demand for meals away from home, is that there is not one collection of data which readily suggests itself as being ideal. In fact, it is becoming increasingly apparent that this is the reason why there is a complete absence of previous time series work using catering statistics.

To summarise the difficulties briefly, a choice has to be made of a series to represent quantity and one to represent price. With regard to quantity, the early National Income and Expenditure series must be discounted as they only show the food cost of meals away from home and give no indication of the annual trend of the service element. In addition, the subsequent catering series must also be disregarded, for whilst they include the service element they also contain expenditure on accommodation which thus masks any precise trend in expenditure on meals.

A similar argument can also be levelled against the Board of Trade monthly indices, where the sales of meals and refreshments form only part of the index published and a similar difficulty arises of whether to attribute a given movement in the index to eating out expenditure or to one of the other categories making up the index.

Much more satisfactory, however, is the data from the Family Expenditure Survey, where the annual averages of expenditure on meals away from home are not confused by complementary, although, as far as this study is concerned, irrelevant material. The necessary requirements of discrete information more than outweigh the fact that, unlike the Board of Trade or Blue Book series, it covers only the personal domestic expenditure, although the inclusion of additional expenditure by overseas visitors and businessmen may be thought to be more a possible source of confusion than help. Ideally separate series should be used for these two types of expenditure for which, the determinants of demand are probably entirely different. Nevertheless, the Family Expenditure Survey would seem able to provide a suitable though rather short series, to use as one of the obligatory parameters.

To match this, however, a price series is also needed and not being available it is at this point that the whole feasibility...
of carrying out a classical time series analysis of the demand for meals away from home, breaks down. The two price series that exist are both wholly unsuitable, one referring only to catering food prices and the other to a divergent time-scale. The complete absence of the relevant information about price changes in meals away from home is clearly the reason why there have been no previous time series studies in this field, and the question must now be asked whether the available time series data can be used at all. Certainly the accepted traditional methodology cannot be followed and a more ad hoc procedure has to be developed.

4. Empirical Analysis of Time Series Data

It is clear from the preceding discussion that, as far as a quantified analysis of the demand for meals away from home is concerned, the Family Expenditure Survey is really the only collection of market data that describes this expenditure sufficiently accurately to be used at all. Whilst it is to be regretted that the major series of national catering statistics are not able to distinguish eating out as a separate item of consumers' expenditure, the fact that the Family Expenditure Survey is the sole source of information is in many ways a great advantage.

Not only have its theoretical and practical merits and limitations been fully discussed already, but more importantly, exactly the same parameter definitions can be used. For the immediate analysis this is far from being a necessary requirement, but it could become much more crucial at a later stage when income elasticities obtained from cross-sectional data are compared with those from time series. So often, when this type of comparison is made, one wonders to what extent the inevitable discrepancy between the two kinds of elasticity is due to using data drawn from different sources rather than to the more complicated conceptual and statistical explanations often proposed.

(a) The Model

Apart from prices, the most common variable incorporated in traditional time series analysis is income, and indeed, it is usual to derive both price and income elasticities from this type of data. In the present study, however, the non-availability of price information means that expenditure on meals away from home can only be related directly to income. Although inevitably bias must therefore occur through not being able to discount the effect
of price changes, it was thought that the relationship might prove a useful first approximation until more suitable data could be obtained.

The model used is in fact almost identical to that adopted in Chapter III for the analysis of cross-sectional data. The basic difference is that the averages refer to years instead of income groups. The equation is therefore:

\[
\frac{q_{ia}}{n_a} = f_1 \left( \frac{y_a}{n_a} \right) \left( \frac{\bar{E}_{ia}}{n_a} \right)
\]

where \( q_{ia} \) is the average expenditure per household on commodity \( i \) (meals away from home) in year \( a \); \( y_a \) is the average income per household in year \( a \); \( n_a \) is the average household size in year \( a \), and \( \bar{E}_{ia} \) is the variable standing for unspecified determinants of a household's preferences; \( n_a \) allows for any change in household size from year to year and in effect expresses both income and expenditure in crude per capita terms.

(b) The Data

As was noted earlier, the Family Expenditure Survey has only provided information about income since 1961. This means that the time series covers only seven years and compared to those normally used is rather short. The variables introduced into the equation are, however, the same as those adopted in the cross-sectional analysis; namely, expenditure on meals bought away from home (category 43), excluding school meals, and the amended income series developed there. Average income and expenditure are taken for all households in the survey for each year and this is divided by the average number of people in each household. The resulting series is given in Table 19.

(c) The Functions

The basic conclusion of Chapter III, was that the pattern of consumers' expenditure on meals away from home, as shown by income elasticities over the past decade, had changed very little. The relative stability of the elasticities would therefore indicate that in a time series analysis, over the same period, a logarithmic function should be used, as this has the inbuilt assumption of constant elasticity. As might be expected, all six functions tested gave high values for \( r^2 \) and it was left to the von Neumann ratio to indicate the exact degree of fit.
### TABLE 19

**TIME SERIES ANALYSIS: INCOME AND EXPENDITURE DATA USED**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure on meals bought away from home per head (Shillings per week)</td>
<td>3.26</td>
<td>3.46</td>
<td>3.52</td>
<td>3.63</td>
<td>4.10</td>
<td>4.37</td>
<td>4.47</td>
</tr>
<tr>
<td>Disposable income per head (Shillings per week)</td>
<td>113.76</td>
<td>117.72</td>
<td>125.31</td>
<td>131.19</td>
<td>141.57</td>
<td>151.04</td>
<td>156.42</td>
</tr>
</tbody>
</table>

Source: 37 and 106 = 110
As is seen in Table 20, both the semi-logarithmic and log-inverse forms show slightly less evidence of serial correlation and it seemed desirable, therefore, to examine the possibility of using either of these two functions in place of the more tractable logarithmic form. The most relevant criteria was felt to be the ability of the function to describe the trend in elasticities between 1961 and 1967 (as shown by the cross-sectional analysis), and so the elasticities estimated by the different equations were calculated for these years. (Table 21)

It is clear from this simple test, that both the semi-logarithmic and inverse forms are too curvilinear and considerably over estimate the decrease in income elasticity between 1961 and 1967. The assumption of constant elasticity, whilst not strictly describing the trend during this period, in the light of the variation in the elasticities for the individual years, (Chapter III Table 11) it does suggest, however, a much more realistic approach.

Using a logarithmic function time series data gives therefore an income elasticity for meals away from home of 0.9958 ± 0.0648 and income accounts for 97.93% of the variation.

5. Discussion of the Results

Having now derived income elasticity for meals away from home from two different types of data, the immediate question to arise is one of comparability. It would appear from Table 21, that the two elasticities are incommensurable, and that doubts ought to be raised about the adequacy of either or both of the estimates. The disparity between income elasticities obtained from time series information and those from budget data is, however, a long established phenomenon in demand analysis, and interpretation is, in fact, one of extreme importance if the functions are to be used for forecasting. For this reason the main discussion of this problem is therefore reserved until the following chapter, and the remaining part of this section devoted, more specifically, to the difficulties suggested by the time series analysis alone.

(a) Biases

Whilst not wishing to anticipate the following discussion, it would seem clear, nevertheless, that the income elasticities obtained from this particular set of data are biased. This hypothesis is not suggested by the differences between the family budget and time series elasticities, for previous work has
<table>
<thead>
<tr>
<th>Function</th>
<th>$r^2$</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Linear</td>
<td>0.9818</td>
<td>2.5318</td>
</tr>
<tr>
<td>2. Logarithmic</td>
<td>0.9793</td>
<td>2.5268</td>
</tr>
<tr>
<td>3. Semi-logarithmic</td>
<td>0.9761</td>
<td>2.0589</td>
</tr>
<tr>
<td>4. Log-inverse</td>
<td>0.9728</td>
<td>2.0574</td>
</tr>
<tr>
<td>5. Inverse</td>
<td>0.9671</td>
<td>1.6725</td>
</tr>
<tr>
<td>6. Log-log-inverse</td>
<td>0.9728</td>
<td>2.0574</td>
</tr>
</tbody>
</table>
### TABLE 21

**THE TREND IN INCOME ELASTICITY BETWEEN 1961 and 1967 AS DESCRIBED BY THREE SELECTED FUNCTIONS**

<table>
<thead>
<tr>
<th></th>
<th>Income Elasticity</th>
<th>Percentage Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(a) Family Budget Data:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1961</td>
<td>1967</td>
</tr>
<tr>
<td>(i) Family Budget Data</td>
<td>1.41</td>
<td>1.39</td>
</tr>
<tr>
<td><strong>(b) Time Series Data:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td>(ii) semi-log</td>
<td>1.06</td>
<td>0.87</td>
</tr>
<tr>
<td>(iii) log-inverse</td>
<td>1.17</td>
<td>0.85</td>
</tr>
</tbody>
</table>
indicated that such discrepancies should not necessarily be accepted as a sign of error, but rather because it is quite impossible to isolate the specific effect over time of other determining variables. As the resulting income elasticity is only corrected for changing family size, it must therefore be influenced by factors not specifically incorporated in the model. In the light of previous work this, in effect, reduces to the fact that the present study is unable to take into account the importance of price changes in determining demand. In addition, the complete absence of price information means that there is no way of estimating by how much the derived income elasticity is biased.

Some slight indication that the bias may not, in fact, be too great, is given by Fourgeaud's study of demand in which he compared elasticities from a 1956 French family budget inquiry with those from a time series for 1949 to 1959, which was corrected for price changes. (53) The category he used is not so well defined as meals away from home, including all expenditure in hotel, cafes and restaurants, as well as, and perhaps more ominously, 'divers'. Nevertheless the elasticities obtained compare favourably with those in this study being about 1.5 for the family budgets and 0.9 for the time series. The relationship between the two elasticities might suggest therefore that even if the effect of price changes in the British data could be discounted, then the income elasticities may not be drastically altered.

(b) The Confusion of Time

Some of the more unsettling problems to arise when using time series data, are the theoretical and practical difficulties presented by time itself. The more esoteric epistemological debate as pursued by Reichenbach, (133) is not relevant to this study, although any necessary elements are referred to in the discussion of the rationale of forecasting. The practical difficulties which influence the derivation of an income elasticity are, however, particularly apposite and are now reviewed under the headings 'trends' and 'lagging'.

(i) Trends

The existence of a secular trend over time is a common phenomenon in market data and has long been a subject of contention among workers in the field. Basically, the argument has been
concerned with whether to discount the effect of the trend of
time before analysis or to use the recorded variables directly
without its removal.

The traditional argument against trend removal is that as
time itself cannot constitute a causal variable, it should not
be introduced as a regressor, as the trend cannot provide a
causal explanation of the phenomena under analysis. (168, p. 4)
In addition, if there is a trend in price or income, or in any
variable used to explain demand variations, then such trends
should influence the independent variable. If they are removed
before the analysis, one would therefore throw away some of the
statistical information available on the relationships studied.
A substantial trend in the determining variable is clearly a
strong argument in favour of not removing a trend, (56, p. 387)
the salient point being that trends in price, income and other
variables will produce a trend in the demand. (165, p. 240)

Against these considerations there are, however, reasons
for removal. (165, p. 241) Trends often give rise to spurious
correlation and spurious regression. If a trend is present in
demand, it may be due to other factors than those specified as
determining variables. This means, that when using trend
affected variables, the regression provides a tentative explana­
tion of the variations in demand inclusive of trend variation, and
the question arises of whether all the relevant factors have
been included in the regression.

This is, in fact, a problem with any regression, but the
difficulty is compounded when trying to explain the trend. A
trend may be caused by a variety of factors, the most commonly
cited being, changes in tastes or habits but whilst with some
commodities they appear to be capable of exercising a considerable
influence on the market relationships over time, they have, so
far, rarely shown themselves capable of measurement. In Stone's
major study of the inter-war consumers' demand in this country,
many of the commodities he considered had trend factors which
were of crucial importance, and he had to conclude that the main
long-term factors determining market demand are not income and
prices at all, but are influences which it is hard to specify
and still harder to measure. (152, p. 271)

The use of trend values as reflecting changing tastes and
habits has, however, been questioned in recent years by such people
as Modigliani, Duesenberry and Farrell, who have shown how tastes and habits may be reflected in the responses to the economic variables, income and prices. (113, 49 and 48) The demand relationships derived are of the irreversible type, in that changes in income and prices have completely different effects when they move upwards than when they move downwards. For example, 'if a taste is being developed for a particular commodity, it may be hard to return to a previous level of consumption when real income falls back to a former level, while the full opportunity to increase consumption still further, may be taken of an increase in real income' (152, p.271) Stone notes that it seems highly plausible to suppose that some changes in tastes and habits act via income and prices in this way, (152,p.271) and Farrell has shown that the proportion of the variance of consumption unequivocably ascribable to income and prices, is much higher than is the case with the much more usual type of reversible equation. (128)

In the light of these somewhat variable findings, a decision had to be made whether to remove the trend before analysing the data on meals away from home. Experiments using 'first differences' to discount the influence of trend factors, (See Chapter VII section 2d) showed that its removal also removed all correlation between the independent and dependent variables and one had to conclude therefore that a strong trend is present in the data. Logically however, there are no clear reasons for its removal. Certainly, Wold and Juréen feel that if the removal of a trend discards much statistical information, then this is a strong argument in favour of not removing it, (165,p.240) a point strongly vindicated by Frisch and Waugh. (56, p.387)

The view adopted in this study is therefore that 'a primary object of demand analysis is to obtain an explanation of the demand trend in terms of the trends in prices, income and other explanatory variables.' (56, p.241) Perhaps if more detailed data had been available then more sophisticated techniques developed by Stone (152) would warrant more detailed consideration, but without a price series the present analysis is really too crude to justify such an approach. Both evidence from other sections of the analysis and a priori consideration indicate the importance of income in influencing consumers' expenditure on meals away from home, and it was thought far better to try and establish a relationship, however tentative, than to use techniques which are arguable theoretically, intensely complicated practically
and which would seem likely to provide only highly negative results. It is perhaps a point where economic judgment has outweighed statistical argument.

(ii) Lagging

The second problem to emerge from the use of time series data is that of lags. With the possible exception of the irreversible type of equation, the demand relationships discussed until now have been static, in that the amount demanded in any period depends on the incomes and prices of that period and not on those of previous periods. (152, p.272)

In fact, demand may well be influenced by past periods, as a consumer might take time to adjust to change. Income was therefore lagged by varying numbers of years, to see if expenditure on meals away from home could be related to past income. No significant results emerged, however, although as Stone has pointed out, this is perhaps to be expected, for 'the considerable degree of serial correlation frequently observed in economic series makes any attempt to estimate time lags by multiple regression methods extremely inefficient', and that because of this, 'the explicit introduction of past values of the determining variables is often unnecessary, since the effects of past values will to some extent be reflected in the apparent responses to current values'. (152, p.273)

6. Conclusion

Whilst the present time series analysis may be easily criticised, the results obtained are only proposed as a tentative first approximation of a time series income elasticity, and until more suitable information becomes available, it would seem that the elasticity for meals away from home is probably about unity. Since 1961, eating out has therefore increased at the same rate as income, in contrast to the dynamic growth suggested by many commentators. This confirms the conclusions of the cross-sectional analysis, where the absence of declining income elasticities in consecutive family budget surveys, underlines the recent constancy of the relationship between income and expenditure on meals away from home.

7. Summary

Time series analysis differs from family budget analysis by being able to examine the direct influence of price on the quantity or value of a commodity consumed. In the present study, however,
it is apparent that the lack of suitable data precludes an analysis following the established methodology.

Not only is there a complete absence of a price series, but of the three available sources of information, the Family Expenditure Survey is the only one in which a value series is presented without the inclusion of irrelevant data. The analysis cannot be regarded, therefore, as anything more than a first approximation, for whilst expenditure per person on meals away from home is shown to be a function of income per person, it is impossible to discount the effect of price changes.

The logarithmic model used is almost identical to that adopted in the previous Chapter, and yields an income elasticity for meals away from home of about unity. It is difficult to estimate by how much this is biased however, although there is some indication that the elasticity might not in fact be drastically altered even if price changes were taken into account. Certainly the results support the findings of the cross-sectional analysis which propose a constant relationship, over the last few years, between income and expenditure on meals away from home.
The existence of a discrepancy between income elasticities derived from cross-sectional data and those from time series is a well-established phenomenon in demand analysis, but as long as workers used either set of data independently, the need to reconcile the two never developed into an issue of great debate. When models of consumer behaviour became more comprehensive, however, the desirability of using all sources of information was soon recognised, and attention had to be turned towards the problem of combining estimates from the two types of data.

Tobin gives both economic and statistical reasons for basing quantitative demand analysis on a combination of time series and budget data. Economically, aggregate consumption and income are the sums of the consumptions and incomes of families, so that any relationship among these and other aggregates is a reflection of a multitude of family consumption decisions; whilst statistically, widening the scope of the observations on which statistical demand analysis is based, increases the possibility of rejecting hypotheses and improves the estimates of the parameters of demand functions. (160, p.113)

When both types of data are available, the most common technique is to use extraneous estimators whereby income elasticities are derived from budget surveys and the remaining parameters in the demand equation are estimated subject to this additional piece of information. (152, p.303) In this study, the general malaise surrounding the data did not permit consideration of such methods, and so the interest in comparing the income elasticities is not motivated by a possibility of combining them in a comprehensive linear expenditure model, but rather for the more empiric reason that one would have expected them to be reasonably analogous.

As was mentioned earlier, there is a possibility that the estimates are biased, and indeed Stone adopts this attitude when discussing the use of information from alternative sources. (152, pp. More recently, and perhaps more optimistically, the discrepancy between the two elasticities has been interpreted not as indicating any error in one or both of the elasticities, but that elasticities from time series contain effects that are not reflected in those derived from cross-sectional data. For example, Bentzel points
out, that during periods of rising prosperity, the growth in income is, as a rule, accompanied by several other changes influencing consumption, such as the introduction of new goods, the equalisation of the income distribution or changes in price relativities, all of which do not appear in cross-sectional analysis. Theoretically, whilst such factors could be considered by explicitly including them in the relationships, to consider more than a few structural changes is practically impossible. (12, p.178)

It would appear, therefore, that far from being the apparently disquieting occurrence once feared, the difference between the time series and cross-sectional elasticities is, in fact, to be expected. Indeed, Wold and Juréen have suggested that there ought to be two types of elasticity, for theoretically, it can be argued that if a consumer has a change in his income, then it will be some time before he adapts himself to his new situation, and so the immediate reaction in his budget will be subject to considerable revision in the long run. Short-term elasticities would thus represent this immediate reaction, and long-term elasticities, the relationship which might exist at a later date. (165, p.227).

The elasticities yielded by family budget data have usually been distinguished as those describing the long-term effects of income changes. 'For the large majority of consumers, the income level is fairly stable. Hence, if we consider a group of families that is covered by our family budget data, the changes in income that occur in the course of time are on the whole small and infrequent as compared with the existing income differences between families in the group. We may accordingly conclude that the families have usually adapted themselves to the income level at which they have been recorded, so that the budget data primarily reflects the demand pattern in the sense of long run reactions to income changes. In other words, the income elasticities derived from family budget data can most immediately be interpreted as long-term elasticities.' (165, pp.227-228)

It is at this point, however, that the present discussion diverges from Wold and Juréen's later proposals, for having decided that market statistics also yield long-term elasticities, they are at a loss to account for the systematic deviation which clearly exists at a place where no substantial difference is expected. They attempt an explanation based on the introduction of novel goods, and finally conclude that the income elasticities derived from family budget data on the whole tend to be smaller.
than those which refer to market statistics. (165, p.230)

The results of the present study have, however, shown that as far as meals away from home are concerned, the situation is the reverse, and that family budget data elasticities are, in fact, higher than those obtained from time series information. It is clear, from later work, that this is not a unique occurrence, peculiar to meals away from home, and Fourgeaud has demonstrated that the elasticities for several other commodities produce similar results when derived from both types of data. (53, p.31)

He therefore amends the hypothesis, and proposes that for necessities, income elasticities are higher from time series data than from family budget surveys, in contrast to luxuries, when the converse is true. (53, p.32)

Certainly the results of this study supply some evidence that this hypothesis may be adequate, but because the United Kingdom data is collected continuously, Fourgeaud's explanation that this is related to Friedman's theories about the permanent and transitory components of income, (55) is of doubtful validity. It would seem advisable, therefore, to avoid these more conjectural discussions, and instead limit the acceptance of previous work to the fact that family budget income elasticities have been interpreted as representing long-term influences rather than short-term effects.

The discrepancy with regard to the time series elasticities has, nevertheless, yet to be resolved, and as a satisfactory explanation is still wanting, a new interpretation, which differs somewhat from the accepted practice, will be attempted. It should be stressed, however, that it refers solely to expenditure on meals away from home, and is not intended as an example for general application. Basically, and in complete contrast to Wold and Juréen, the time series elasticity is regarded as representing the short-term consequences of a change in income on the expenditure on meals away from home. This approach can be tentatively justified on two counts. Firstly, by an empirical extension of some comments by Friedman, and secondly by considering once more the nature of the data.

Friedman has pointed out that time series elasticities depend critically on the length and character of the period covered (at least, for communities experiencing a secular change in income), and he sees in his results, a tendency for them to be low for short series, and to increase with the length of the period covered. As
the length of series available for this analysis is exceedingly short (n = 7), compared with those normally used in time series studies, one may argue that the elasticities achieved here are lower than those which can be expected to obtain, although in the light of previous work, it would be unrealistic to hope that, had longer series been available, they would have yielded elasticities comparable to those from budget data. It would seem likely, however, that as short-term series can only reflect the trend of a variable for a short period, and as lengthening span of a time series increases the elasticity, so bringing it nearer to budget elasticity (already shown to be a long-term elasticity), then there must be a direct correlation between length of the time series and the 'length' of the elasticity it yields. One may, therefore, that short-term series produce short-term elasticity.

This has in fact been confirmed with the present data, and without anticipating any of the conclusions in the forecasting section, it is possible to comment that the elasticities obtained from the time-series have described the recent trends in consumers' expenditure on meals away from home far more accurately than those from budget data.

The second argument used to support this idea, relates to the nature of the time-series elasticities which, it will be remembered, reflect the effect of other variables (for example price changes), in addition to that of income. The elasticities derived, include therefore much larger trend elements than might otherwise have been the case. As was seen earlier, this trend is quite considerable and so, as Stone suggests, to use elasticities to describe anything more than a short-term situation is unwise, as the dependence is more on time than clearly specified and measurable influences. (152, p.271)

It is for both these reasons that the differences between the elasticities will be interpreted in terms of short-term and long-term influences. It must be remembered, however, that like many of the suggested explanations of consumer demand elasticities, the proposals are only tentative, and are in this case founded very much with their later use in forecasting in mind. Indeed, this comparison of the different types of elasticity really forms a bridge between the two quantitative sections of the thesis, for although the concepts evolved have their roots firmly embedded in the analysis of demand, many are expressed in a way which almost pre-supposes that they will be used in forecasting.

*It is to be noted that Stone regarded his series of n=19 as being short.* (152, p.320)
One will be able to turn therefore to the question of forecasting the demand for meals away from home, safe in the knowledge that, while the analysis is far from accurate, the foundations of what is always a delicate exercise are, in fact, as firm as the available data will permit, and far more robust than any ad hoc intuitive methods could provide.

Summary

The discrepancy which exists between the income elasticities for meals away from home derived from family budget data, and those obtained from time series information is not necessarily indicative of error, for the elasticities from the one probably contain effects not reflected in the other. The family budget elasticities are interpreted as indicating the long-term consequences of a change in income on expenditure on meals away from home, whilst the time series elasticities are regarded as showing similar short-term effects.
PART TWO

EMPIRICAL DEMAND ANALYSIS
Chapter VI

THE SEARCH FOR DETERMINANTS

1. Introduction

The previous chapters have been devoted to following the techniques and methodology of classical demand analysis. Both the family budget and the time series data have, however, shown that this approach has limitations as far as meals bought away from home are concerned for the statistical material available is clearly not robust enough to permit rigorous analysis. Most of the basic difficulties stem from the fact that nearly all the information is in the form of expenditure data and is not about quantities bought. It does not have therefore the advantages afforded by most other commodities in that they can at least be counted, whether they be pounds of rice, numbers of television sets, motorcars or nights away from home. Meals are a much more nebulous item. They are difficult to define and even harder to enumerate and it is for this reason that most statistics refer to eating out deal with expenditure only.

From the point of view of analysis this produces considerable problems. In particular an increase in expenditure on meals bought away from home may be related to several things, more people eating out, people spending more, or just inflation, and it is very difficult to establish which is applicable at any given time. More serious, however, are the implications which arise from the results of both the family budget and time series analysis which show that, apart from establishing the relationship between expenditure on meals away from home and income, there is little else to be achieved. The nature of the data makes it impossible to trace any other determinants of demand, although a priori one would expect income to be just one of a number of factors which influence eating out.

The choice would appear to be therefore between accepting a less rigorous methodology or suspending analysis, until more suitable data become available. On the principle that any analysis, even if highly subjective and non-quantified, is better than no analysis at all, it was decided to extend the study in a much more flexible manner, even though this would mean a reduction in the amount of quantification possible, and a consequent increase later, in the amount of forecasting variability.
Having stepped outside the comforting bounds of established theory, anyone who is researching into the demand for a commodity as emotive as meals bought away from home, is immediately beset by a multitude of preconceived ideas, false stereotypes, a priori assumption and a general folk-lore, all of which purport to establish the main determinants of demand. Surrounded by such a diversity of dogma it is difficult to arrive at an objective assessment of the major factors influencing eating out and as what is essentially opinion, is not the soundest basis for an economic, sociological or any other type of research, it was decided to return to the basic statistical data in order to generate hypotheses concerning the determinants of demand for meals bought away from home.

(a) Pleiades Approach

Haggett has drawn attention to the suggestion by Miller and Kahn (94, pp.315-324) that it is possible to stimulate hypotheses by using what they call the 'shotgun' or 'Pleiades' methods,(59,p.28) This consists basically of intercorrelating a whole series of possible relevant factors and examining the resulting matrix of relationships for significant patterns. The matrix can then be analysed in terms of Olson and Miller's three basic concepts, (1) basic pairs, (2) β-clusters and (3) F-groups, each of which reveal the relationship between the variables at three different levels of complexity. (124, pp.44-55) Haggett, in an unpublished study of the locational characteristics of Portuguese industry, was able to illustrate how well this method can highlight the relationships of greatest importance, and, by eliminating the non-essentials, can clear the way for conventional methods of testing in the classic scientific manner. (58).

As a preliminary exercise, this simple method was therefore adopted as a possible means by which the determinants of demand for meals away from home might be established. Using data from annual national statistics for the period 1955-1966, (24) nine variables were chosen to represent factors of a priori relevance. For example, the number of students aged between 18 and 20 as a percentage of the 18-20 age group, were selected to express educational level, and total passenger mileage, to indicate the volume of travel undertaken. These are shown in Table 22 together with their intercorrelations.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Y1 Expenditure on meals away from home: 1958 prices</th>
<th>X1 Total passenger mileage</th>
<th>X2 Overseas visitors</th>
<th>X3 Students aged 18-20 as % of 18-20 age group</th>
<th>X4 Total working population</th>
<th>X5 Total population</th>
<th>X6 National income: 1958 prices</th>
<th>X7 Total consumers' expenditure: 1958 prices</th>
<th>X8 Married women workers as % of the number of married women</th>
<th>X9 Expenditure on Food: 1958 prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X1</td>
<td>0.98</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X2</td>
<td>0.96</td>
<td>0.98</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X3</td>
<td>0.98</td>
<td>0.99</td>
<td>0.99</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X4</td>
<td>0.98</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X5</td>
<td>0.99</td>
<td>0.99</td>
<td>0.98</td>
<td>0.99</td>
<td>0.99</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X6</td>
<td>0.98</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X7</td>
<td>0.99</td>
<td>0.99</td>
<td>0.98</td>
<td>0.99</td>
<td>0.98</td>
<td>0.99</td>
<td>0.99</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X8</td>
<td>0.97</td>
<td>0.98</td>
<td>0.97</td>
<td>0.97</td>
<td>0.95</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>X9</td>
<td>0.99</td>
<td>0.98</td>
<td>0.95</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>1</td>
</tr>
</tbody>
</table>
As can be seen, they all have extremely high simple correlation coefficients, none of which is under 0.95. This means, that to make any sense of the slight differences between the variables in terms of Olsen and Miller's tests, one would have to accept a probability level of 0.0000001, which is, to say the least, unrealistic.

(b) Designating the Variables

Clearly, the previous data searching process has limited applicability in the present study, for it does not discriminate between the various variables, and indicates that they are almost all equally important. The analysis has therefore to be refined slightly, in that instead of just dredging the data for information in the area of interest, a set of candidate variables are pre-designated and are included in a series of regressions. The aim is to establish how much of the variation in the dependent variable can be accounted for by each independent variable, but in the particular regression programme used, no assumptions are made about the significance of any variable or combination of variables, and all the independent variables are taken one at a time, two at a time, etc., until all possible combinations are included. The programme (79) is designed as a data search procedure to detect and remove redundancy in the data by sequential multiple regression in order to recognise the variables which rank highest in their control of the dependent variable. Variables XI to X9 from the previous test were used as independent variables, with expenditure on meals away from home (1958 prices) as the dependent variable.

As can be seen by the results shown in Tables 23-25, this technique is also unable to distinguish between the determinants of demand. Individually, the independent variables account for such a high percentage of the variation, (Table 23) that subsequent combination with other variables, contributes very little additional explanation. For example in Table 24, variable 9, (total consumers' expenditure) accounts for 98.49% of the variation, which only improved by 1.41% when all the other variables are included, and in fact 0.96% of this is accounted for by the next two variables. However, when total consumers' expenditure is omitted altogether (Table 25) its place is taken by total population which in a similar way explains nearly all the variation, (98.36%) whilst other variables again only contribute 1.36%

(c) Multicollinearity

It is quite apparent from these results and from the matrix
TABLE 23

THE PERCENTAGE OF THE TOTAL SUM OF SQUARES OF Y (EXPENDITURE ON MEALS AWAY FROM HOME: 1958 PRICES) ACCOUNTED FOR BY THE INDEPENDENT VARIABLES TAKEN ONE AT A TIME

<table>
<thead>
<tr>
<th>Percentage Reduction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>98.49%</td>
<td>1. Total consumer expenditure: 1958 prices (X7)</td>
</tr>
<tr>
<td>98.36%</td>
<td>2. Total population (X3)</td>
</tr>
<tr>
<td>98.08%</td>
<td>3. Expenditure on food: 1958 prices (X9)</td>
</tr>
<tr>
<td>96.71%</td>
<td>4. National income: 1958 prices (X6)</td>
</tr>
<tr>
<td>96.14%</td>
<td>5. Total passenger mileage (X1)</td>
</tr>
<tr>
<td>95.97%</td>
<td>6. Students aged 18-20 as % of 18-20 age group (X3)</td>
</tr>
<tr>
<td>95.21%</td>
<td>7. Total working population (X4)</td>
</tr>
<tr>
<td>94.08%</td>
<td>8. Married women workers as % of the number of married women (X8)</td>
</tr>
<tr>
<td>91.81%</td>
<td>9. Overseas visitors (X2)</td>
</tr>
</tbody>
</table>
### The Three Strongest Combinations of Independent Variables

**Table 2a**

<table>
<thead>
<tr>
<th>Combinations of the Independent Variables</th>
<th>Percentage sum of Squares of Y accounted for</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_1$ $X_2$ $X_3$ $X_4$ $X_5$ $X_6$ $X_7$ $X_8$ $X_9$</td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>98.49%</td>
</tr>
<tr>
<td>*</td>
<td>98.36% taken one at a time</td>
</tr>
<tr>
<td>*</td>
<td>98.08%</td>
</tr>
<tr>
<td>*</td>
<td>98.87%</td>
</tr>
<tr>
<td>*</td>
<td>98.82% taken two at a time</td>
</tr>
<tr>
<td>*</td>
<td>98.82%</td>
</tr>
<tr>
<td>*</td>
<td>99.45%</td>
</tr>
<tr>
<td>*</td>
<td>99.32% taken three at a time</td>
</tr>
<tr>
<td>*</td>
<td>99.29%</td>
</tr>
<tr>
<td>*</td>
<td>99.57%</td>
</tr>
<tr>
<td>*</td>
<td>99.48% taken four at a time</td>
</tr>
<tr>
<td>*</td>
<td>99.47%</td>
</tr>
</tbody>
</table>

**Net contribution of ranked variables**

- Consumers' expenditure: 1958 prices $X_7$ 98.49%
- Total passenger mileage $X_1$ 0.38%
- Married women workers $X_8$ 0.58%
- Total population $X_5$ 0.12%

**Total net contribution** 99.57%

**Net contribution of all variables** 99.90%
TABLE 25

THE THREE STRONGEST COMBINATIONS OF INDEPENDENT VARIABLES TAKEN 1, 2, 3 and 4 AT A TIME (EXCLUDING X7)

| Combinations of the Independent Variables | Percentage sums of squares of Y accounted for *%
| X1 X2 X3 X4 X5 X6 X7 X8 X9 | 98.36 |
| | 98.08 | taken one at a time |
| | 96.71 |
| | 99.03 |
| | 98.82 | taken two at a time |
| | 98.87 |
| | 99.29 |
| | 99.20 | taken three at a time |
| | 99.19 |
| | 99.62 |
| | 99.38 | taken four at a time |
| | 99.37 |

Net contribution of ranked variables

| Total population | X5 | 98.36 |
| Overseas visitors | X2 | 0.69 |
| National income: 1958 prices | X6 | 0.25 |
| Married women workers | X8 | 0.32 |

Net contribution of all variables (excluding X7) 99.72%
of simple correlation coefficients that multicollinearity is present in the data. This means that all the variables in the analysis have a significant relationship to each other as well as to the dependent variable, and thus it is very difficult to measure the effect of each of the independent variables separately. When multicollinearity exists, there is, unfortunately, very little that can be done to deal with the problem. Two techniques may, however, be successful in the cases where multicollinearity is not too extreme. The first, is the method of using 'first differences', and the second, consists of deriving partial correlation coefficients, when the effect of $X$ on $Y$ is analysed by simple correlation, while the effect of $Z$ is held constant at its average value.

(d) First Differences

The first differences technique consists of subtracting from the figures for each year, those for the previous year, and then using the results as input in order to ascertain the extent to which the period to period changes of each of the variables move together. Table 26 gives the resulting matrix of simple correlation coefficients, which shows that this technique, in removing the secular trend, has gone to the opposite extreme of eliminating any association at all between the variables.

(e) Partial Correlation

Unfortunately partial correlation does not improve the situation very much, as Table 27 clearly shows, although it does provide a minor clue in that expenditure on food, population and total consumers' expenditure, all maintain relatively high correlations with expenditure on meals away from home, as each of the other variables is, in turn, held constant. This is not, however, sufficient by itself to come to any broad conclusions about the major determinants of demand, and whilst the last two of these, were the variables which were marginally better at explaining the variation in the dependent variable, (Tables 24 and 25) the evidence is not secure enough to suggest that the multicollinearity present in the data has been countered.

(f) Autocorrelation

Much of the problem can be traced to the nature of the data, in that it is a time series and that the variables are autocorrelated. Autocorrelation occurs when one value of a variable
**TABLE 26**

**FIRST DIFFERENCES: MATRIX OF CORRELATION COEFFICIENTS**

<table>
<thead>
<tr>
<th></th>
<th>Y1</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meals away from home: 1958 prices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total passenger mileage</td>
<td></td>
<td>Y1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas visitors</td>
<td></td>
<td></td>
<td>X1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students aged 18–20 as % of 18–20 age group</td>
<td></td>
<td></td>
<td></td>
<td>X2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total working population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National income: 1958 prices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumers' expenditure: 1958 prices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married women workers as % of married women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X7</td>
<td></td>
</tr>
<tr>
<td>Expenditure on food: 1958 prices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X9</td>
</tr>
</tbody>
</table>
### Table 27

**Matrix of First Order Partial Correlation Coefficients**

<table>
<thead>
<tr>
<th>Correlation Between Y (Meals Away from Home: 1958 Prices) and:</th>
<th>Simple Correlation Coefficient</th>
<th>Partial Correlation Coefficients Variables Held Constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total passenger mileage</td>
<td>x1 0.98</td>
<td>x2 0.74 x3 0.37 x4 0.64 x5 -0.20 x6 0.30 x7 -0.30 x8 0.62 x9 0.27</td>
</tr>
<tr>
<td>Overseas visitors</td>
<td>x2 0.96 -0.23</td>
<td>x3 -0.33 x4 0.14 x5 -0.65 x6 -0.40 x7 -0.45 x8 0.33 x9 0.34</td>
</tr>
<tr>
<td>Students aged 18-20 as % of 18-20 age group</td>
<td>x3 0.98 -0.31</td>
<td>x4 0.59 x5 -0.15 x6 0.24 x7 -0.12 x8 0.64 x9 0.60</td>
</tr>
<tr>
<td>Total working population</td>
<td>x4 0.98</td>
<td>x5 0.38 x6 0.19 x7 0.23 x8 0.71 x9 0.45</td>
</tr>
<tr>
<td>Total population</td>
<td>x5 0.99</td>
<td>x6 0.71 x7 0.32 x8 0.85 x9 0.62</td>
</tr>
<tr>
<td>National income: 1958 prices</td>
<td>x6 0.98</td>
<td>x7 0.71 x8 0.32 x9 0.85</td>
</tr>
<tr>
<td>Consumers' expenditure: 1958 prices</td>
<td>x7 0.99</td>
<td>x8 0.71 x9 0.32</td>
</tr>
<tr>
<td>Married women workers as % of number of married women</td>
<td>x8 0.97</td>
<td>x9 0.71</td>
</tr>
<tr>
<td>Food expenditure: 1958 prices</td>
<td>x9 0.99</td>
<td>-</td>
</tr>
</tbody>
</table>
in a time series is related to another value of the same variable at an earlier or later point in time. The fact that this exists at the 1% probability level is shown by the von Neumann coefficient of 3.50 when \( n = 12 \).

The common technique of dealing with this is to eliminate the trend from the time series and use the differences between the observed values and the trend values. The results in the form of simple correlation coefficient matrix are shown in Table 28 and are, in fact, very similar to those obtained by looking at the first differences, in that no significant correlation occurs between expenditure on meals away from home and the independent variables.

3. Conclusion

The rather disheartening conclusion to be drawn from the preceding analysis, is that there would seem to be no satisfactory statistical methods of generating specific hypotheses with regard to the determinants of demand for meals away from home. Many of the difficulties encountered can, however, be traced directly to the nature of the data, and as Tobin points out, 'Economic time series are notoriously poor material for choosing among hypotheses.' (160, pp. 113-114)

It might be thought therefore, that had alternative information been used, (for example regional data, in which the influence of time is discounted) more satisfactory results would have been obtained. In fact, this does not happen for parallel analyses using cross-sectional information from the Family Expenditure Survey yield identical results, and it is clear, that the situation revealed by the time series data, must be regarded as illustrative of the attempts to stimulate hypotheses in this way.

Indeed, even highly specific market information is not able to improve the situation, for it has been found that of the determinants examined, each accounts for about the same amount of variation in the demand for meals away from home, and that there is no evidence to suggest that any one factor is more important than the next. (119)

To finally discourage the hope of deriving hypotheses statistically, even the ability to select possibly relevant determinants by these methods has been doubted by some workers. Both Simon and Ferber draw attention to the spurious nature of correlation, (140 and 50) and Ferber demonstrates that the coefficient is not a reliable measure for the problem of selecting hypotheses for predictive purposes. He suggests that no alternative
### TABLE 28

**RESIDUALS: MATRIX OF CORRELATION COEFFICIENTS**

<table>
<thead>
<tr>
<th></th>
<th>Y1</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meals away from home: 1958 prices</td>
<td>Y1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total passenger mileage</td>
<td>X1</td>
<td>-0.27</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas visitors</td>
<td>X2</td>
<td>-0.29</td>
<td>0.67</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students aged 18-20 as % of 18-20 age group</td>
<td>X3</td>
<td>0.01</td>
<td>0.57</td>
<td>0.76</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total working population</td>
<td>X4</td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total population</td>
<td>X5</td>
<td>0.34</td>
<td>0.37</td>
<td>0.58</td>
<td>0.52</td>
<td>0.87</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National income: 1958 prices</td>
<td>X6</td>
<td>0.36</td>
<td>0.60</td>
<td>0.70</td>
<td>0.67</td>
<td>0.69</td>
<td>0.76</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumers' expenditure: 1958 prices</td>
<td>X7</td>
<td>0.44</td>
<td>0.61</td>
<td>0.38</td>
<td>0.45</td>
<td>0.35</td>
<td>0.60</td>
<td>0.75</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Married women workers as % of number of married women</td>
<td>X8</td>
<td>-0.50</td>
<td>0.00</td>
<td>0.14</td>
<td>-0.05</td>
<td>-0.33</td>
<td>-0.57</td>
<td>-0.26</td>
<td>-0.61</td>
<td>1</td>
</tr>
<tr>
<td>Expenditure on food: 1958 prices</td>
<td>X9</td>
<td>0.32</td>
<td>-0.16</td>
<td>-0.53</td>
<td>-0.65</td>
<td>0.08</td>
<td>-0.05</td>
<td>-0.10</td>
<td>0.19</td>
<td>-0.37</td>
</tr>
</tbody>
</table>
statistic is really adequate in this respect and comes to the unsettling conclusion that there is no apparent statistical substitute for a priori consideration.

It is clear therefore that a valid quantitative argument why certain variables should be associated with the demand for meals away from home, cannot be provided, and that, however regrettable it may appear, the analysis, in the end, must resort to more subjective techniques.

4. Summary

The rigorous techniques of classical demand analysis having been pursued as far as the limited information about eating out will allow, a more flexible method of approach is attempted. The aim is to find what are the determinants of the demand for meals away from home, but satisfactory results do not emerge, and it is soon clear that, as such aims cannot be achieved statistically, more subjective techniques will have to be used.
Introduction

Faced with the knowledge that there are no satisfactory quantitative criteria by which the choice of the relevant determinants of demand for meals away from home might be made, the eventual selection has to be based upon the existence of suitable data and intuitive assessment.

Clearly the type of information available is one of the biggest limitations, and in effect must structure any approach. Many possible psychological determinants have never been fully examined, and consequently, the factors analysed are weighted very much towards a narrow range of traditionally favoured parameters. This bias is regrettable but unavoidable, and will no doubt remain in any analysis of the catering market until data has been collected on a much more specific and comprehensive scale.

The selection of the relevant determinants of demand is not, however, the only part of the analysis affected by the nature of the data, the heterogeneity of which, also, presents grave problems of comparability. Having selected a determinant, differences of approach, sample size, coverage, etc., between the surveys often mask the specific effects of a certain variable and make even simple comparisons unwise. For example in the Kemsley and Ginsberg surveys, (75) a change in expenditure on meals away from home is noted between 1949 and 1951, but it is impossible to determine whether this is due to a change in the total level of expenditure or is the result of seasonality. This kind of problem is made even worse when to temporal and seasonal variation must be added disparities of income and age grouping, changes in social and occupational definitions, or even such things as areal indistinctness and imprecise questioning.

Little can be done to overcome the difficulties presented by so much variability and in the end, the overall nature of the data must be reflected in the type of analysis which results. In this particular case, it is impossible to derive more than general comments from the information available, a fact which would seem to indicate the complete erosion of the quantitative ideals with which the study commenced.
In a subject where academic interest has been notably lacking and where surmise has too often taken the place of established fact, this inability to quantify, is indeed, especially regrettable. It must not, however, act as too great a depressant on the value of a more subjective approach, for clearly whilst quantified relationships are always to be preferred to general suppositions of association, one should also guard against the alternate evil of the 'scientification of non-knowledge'. As Eberenborg points out 'The basic question is: Take away the mathematical language and what generalised factual knowledge of the process in question still remains? If the answer is none, the mathematical symbol for that is very simple'. (46, p.131)

The analysis which follows, attempts therefore to correct the previous tendency to negativity, although still maintaining a scepticism relevant to the data in hand. It examines the extent to which six factors (age, occupation, household composition, social class, location and income) influence eating out, and broadly, each is analysed according to the way the propensity to eat out and the accompanying expenditure are affected. Table 29, attempts to summarise the major differences between the various surveys used in this section, and to avoid the constant repetition of references, is adopted as the source for all the information contained in the analysis.
| Table 29
| Description of Surveys Used |

<table>
<thead>
<tr>
<th>Type of Information</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Household Composition</td>
<td>Expenditure</td>
</tr>
<tr>
<td>2) Non-expenditure</td>
<td>Expenditure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Place of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1966</td>
<td>1.417</td>
</tr>
<tr>
<td>2.499</td>
<td>1962</td>
</tr>
<tr>
<td>3.858</td>
<td>1969</td>
</tr>
<tr>
<td>4.269</td>
<td>1969</td>
</tr>
<tr>
<td>5.140</td>
<td>1969</td>
</tr>
<tr>
<td>6.598</td>
<td>1969</td>
</tr>
<tr>
<td>7.080</td>
<td>1969</td>
</tr>
<tr>
<td>8.145</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of Sample</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.000</td>
<td>1969</td>
</tr>
<tr>
<td>2.499</td>
<td>1962</td>
</tr>
<tr>
<td>3.858</td>
<td>1969</td>
</tr>
<tr>
<td>4.269</td>
<td>1969</td>
</tr>
<tr>
<td>5.140</td>
<td>1969</td>
</tr>
<tr>
<td>6.598</td>
<td>1969</td>
</tr>
<tr>
<td>7.080</td>
<td>1969</td>
</tr>
<tr>
<td>8.145</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>1969</td>
</tr>
<tr>
<td>11-20</td>
<td>1969</td>
</tr>
<tr>
<td>21-30</td>
<td>1969</td>
</tr>
<tr>
<td>31-40</td>
<td>1969</td>
</tr>
<tr>
<td>41-50</td>
<td>1969</td>
</tr>
<tr>
<td>51-60</td>
<td>1969</td>
</tr>
<tr>
<td>61-70</td>
<td>1969</td>
</tr>
<tr>
<td>71-80</td>
<td>1969</td>
</tr>
<tr>
<td>81-90</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>1.417</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex/Marital Status</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>1969</td>
</tr>
<tr>
<td>Single</td>
<td>1969</td>
</tr>
<tr>
<td>Divorced</td>
<td>1969</td>
</tr>
<tr>
<td>Widow</td>
<td>1969</td>
</tr>
<tr>
<td>Widower</td>
<td>1969</td>
</tr>
<tr>
<td>Never Married</td>
<td>1969</td>
</tr>
<tr>
<td>Other</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>1.417</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Interview</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Surveys Used</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Household Composition</td>
<td>Expenditure</td>
</tr>
<tr>
<td>2) Non-expenditure</td>
<td>Expenditure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Place of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1966</td>
<td>1.417</td>
</tr>
<tr>
<td>2.499</td>
<td>1962</td>
</tr>
<tr>
<td>3.858</td>
<td>1969</td>
</tr>
<tr>
<td>4.269</td>
<td>1969</td>
</tr>
<tr>
<td>5.140</td>
<td>1969</td>
</tr>
<tr>
<td>6.598</td>
<td>1969</td>
</tr>
<tr>
<td>7.080</td>
<td>1969</td>
</tr>
<tr>
<td>8.145</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of Sample</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.000</td>
<td>1969</td>
</tr>
<tr>
<td>2.499</td>
<td>1962</td>
</tr>
<tr>
<td>3.858</td>
<td>1969</td>
</tr>
<tr>
<td>4.269</td>
<td>1969</td>
</tr>
<tr>
<td>5.140</td>
<td>1969</td>
</tr>
<tr>
<td>6.598</td>
<td>1969</td>
</tr>
<tr>
<td>7.080</td>
<td>1969</td>
</tr>
<tr>
<td>8.145</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>1969</td>
</tr>
<tr>
<td>11-20</td>
<td>1969</td>
</tr>
<tr>
<td>21-30</td>
<td>1969</td>
</tr>
<tr>
<td>31-40</td>
<td>1969</td>
</tr>
<tr>
<td>41-50</td>
<td>1969</td>
</tr>
<tr>
<td>51-60</td>
<td>1969</td>
</tr>
<tr>
<td>61-70</td>
<td>1969</td>
</tr>
<tr>
<td>71-80</td>
<td>1969</td>
</tr>
<tr>
<td>81-90</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>1.417</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex/Marital Status</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>1969</td>
</tr>
<tr>
<td>Single</td>
<td>1969</td>
</tr>
<tr>
<td>Divorced</td>
<td>1969</td>
</tr>
<tr>
<td>Widow</td>
<td>1969</td>
</tr>
<tr>
<td>Widower</td>
<td>1969</td>
</tr>
<tr>
<td>Never Married</td>
<td>1969</td>
</tr>
<tr>
<td>Other</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>1.417</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
<tr>
<td>1.417</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Interview</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
<tr>
<td>Log Interview</td>
<td>1969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Surveys Used</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Household Composition</td>
<td>Expenditure</td>
</tr>
<tr>
<td>2) Non-expenditure</td>
<td>Expenditure</td>
</tr>
</tbody>
</table>
1. **Propensity**

The main trend as far as propensity is concerned, is clearly the decline in the number of people with expenditure on eating out, as one goes up the age scale. The clearest illustration of this is taken from the 1949 Kemmey and Ginsberg survey and is shown in Figure 4. As can be seen, the main trends are the steep drop in the number of women who eat out after the age of twenty, and a similar steep decline for both men and women after sixty. No doubt these are mainly due to the effect of marriage and retirement.

This pattern is echoed in Kemmey and Ginsberg's later surveys in 1951 and 1956, although in the last of these there is some indication that the decline had become less steep, a fact which the Horticultural Marketing Council, Crawford and Marketing Trends also tended to confirm. The evidence, however, is not sufficiently reliable to draw any positive conclusions, save to say, that it is possible the past twenty years has seen a slight lessening of the tendency not to eat out the older one gets.

One of the difficulties in looking at age, is the time scale to which questions about eating out habits relate. If the enquiry is limited to the previous seven days, then the age-decline factor is particularly noticeable, in that the older people are less likely to have dined out during this period. On the other hand, if the question relates to longer periods, the decline is only apparent in the upper age groups. The Index of Marketing Trends shows that the percentage of people who eat out at all is relatively constant for most age groups, only dropping in the 45-64 age bracket, and what is happening is not so much that the actual number eating out decline with age, but that the older people eat out less often.

The other information about frequency of eating out refers to the time of day at which the meal was eaten. The Horticultural Marketing Council's survey of housewives, shows that about \( \frac{1}{2} \) of their husbands in the 16-24 age group had lunch out but that this drops to \( \frac{1}{3} \) in the 45-55 age group. The youngest age group has also the highest number of housewives themselves who lunch out, a figure which is drastically reduced in the 25-34 age group when the effects of young children are no doubt being felt.
FIGURE 4
AGE:
PERCENTAGE WITH EXPENDITURE ON MEALS AWAY FROM HOME

FIGURE 5
AGE:
EXPENDITURE ON MEALS AWAY FROM HOME PER PERSON EATING OUT SHILLINGS PER WEEK

SOURCE: 75
More comprehensive than this are the Crawford survey and the Index of Marketing Trends. Crawford breaks the meal pattern into five (mid-morning break, mid-day meal, afternoon tea, evening meal, and late supper), the first three of which show the already noted patterns of a decline with age, in numbers eating out. Men account for most of the decline after the age of sixty, and women show the steepest drop after the age of thirty. Evening meal and late supper, in fact, do not demonstrate these features, although the low numbers who were recorded as eating these meals out, is no doubt mainly the cause. The Index of Marketing Trends, on the other hand, is a little more forthcoming and shows that if elder people eat out at all, it is more likely to be at mid-day, whilst the early evening or late night meals are more the prerogative of the young.

2. Expenditure

Expenditure on meals away from home, broken down by age is only found on a personal basis in the Kemeley and Ginsberg surveys of 1949, 1951 and 1956, but additional information can also be obtained from the Family Expenditure Survey for 1965, which provides expenditure data according to the age of the head of the household.

The early Kemeley and Ginsberg surveys show that expenditure by both men and women aged under twenty is well below average, but that expenditure by all other age groups has no specific or readily explainable pattern. (Fig.5) If anything there is a slight drop in expenditure by those over sixty, although, as the 1956 survey demonstrates this drop is certainly not attributable to those men still at work who in fact spend far more than average on meals out.

The Family Expenditure Survey, however, has much more information, although it must be remembered that here the data refers to expenditure by households and not by individuals as has previously been the case. The cross-sectional information by age and income group does not, unfortunately, provide very reliable estimates and the large standard errors make it difficult to reach any positive conclusions. The Engel curves for each of the age groups are too jumbled to attach any meaning to their slope, apart from the households whose head is sixty-five and over the curve for which, in lying well below those for all other households, suggests that age has an inhibiting effect on expenditure.
Figure 6a shows the eating out expenditure profiles grouped by the age of the head of the household and it can be seen that the households which spend most on meals away from home are those in 40-50 age group, followed closely by the 50-60's and the under 30's. This pattern is, however, slightly misleading, because the effects of household size have not been eliminated thus giving greater emphasis to the larger households. Figure 6b has therefore been drawn on a per capita expenditure basis and it can be seen that the reason why expenditure is high in the 40-50 age group is because there are more people in those households. The households whose head is aged between 50 and 60 have the highest expenditure per person, slightly more than the under 30's, the 60-65's and the 40-50's, whilst the 30-40 age group and the over 65's have the lowest.

The expenditure pattern may also be shown by expressing expenditure on eating out as a percentage of total food expenditure and again as a percentage of total expenditure. (Figures 6c and 6d.) The first of these places eating out in relation to total food consumption, and the second, in relation to the total family budget. In both cases the age pattern is very nearly the same; expenditure on meals out forms a considerably higher percentage of both food and total expenditure in the under 30 age group than any other, it falls sharply to the 30-40's, rises in the middle age groups and finally falls again in the over 60's.

As far as households are concerned, it would seem that whilst the young do not spend quite as much per head as the middle aged, eating out accounts for much more of both their total and food budget than any other household. No doubt the presence of young children affects the expenditure of the 30-40 age group, a factor which becomes less important between 40-60. The high per household expenditure in the 40-50 age group may be explained by the presence of children old enough to be taken out to eat, although as has been seen, these households do not spend very much per head. Between 50 and 60 the high per head expenditure is probably due to the presence of subsidiary earners in the household, a point which appears more likely when seen against the drop in the total household expenditure on eating out in the next age group. Nevertheless the 60-65's still manage to maintain a high per head expenditure, although this disappears in the over 65's, where the effects of retirement and infirmity start to be felt.
Figure 6: Age of Head of Household: Expenditure on Meals Away from Home. Shillings per Week.

A. Per Household

B. Per Head

C. As % of Total Food Expenditure

D. As % of Total Expenditure

Source: 110
3. **Summary**

The effect of age on the eating out market is very difficult to isolate, but it would appear that in very general terms, there is a decline in the frequency of eating out with increasing age. On the other hand, the expenditure relationships are much more complex. Individually, the young (under twenty) have a greater propensity than average to eat out, but do not spend very much, whilst young householders devote a larger part of their budget to eating out than any of their elders.
The influence of occupation on the demand for meals away from home involves a fundamental division into whether a person works or not, and if so, whether the type of work and the status of his position has any effect on his eating out behaviour.

1. Presence in the Labour Force

(a) Propensity

Clearly, the presence of a person in the labour force results in major differences in the propensity to eat out, and it can be seen that the percentage with expenditure on meals away from home drops by about \( \frac{1}{3} \) for those working part-time, as opposed to full-time, and by another third for those who are unoccupied, retired or housewives. (Fig. 7) Because of more detailed data, this Figure has been based on Kemsley and Ginsberg's 1949 survey, but the relationship was also found in the 1956 survey as well, when the percentage of workers with expenditure was twice that of the non-workers. There seems to be very little difference between the numbers of men and women eating out, except that men have a slightly higher propensity to eat out when working, than when not employed.

The only other survey to show the effect of presence in the labour force is the Horticultural Marketing Council's survey in 1962. Although this is not so comprehensive as the Kemsley and Ginsberg surveys, being restricted to examining the working status of housewives, it does nevertheless show the same distinct patterns. Of those housewives who work full-time, 49% have lunch out, which drops to 12% for those working part-time, and to only 1% for those who do not work. There is, however, an important subsidiary trend, in that the extent to which a housewife works, will also affect the eating habits of the rest of the family. The survey shows that when the housewife works full-time, some adult member of the household regularly eats his mid-day meal away from home in 78% of the households, whereas this happens in only 56% of the households when the housewife works part-time and in only 52% when she does not work at all.

(b) Expenditure

The second group of information about the effect of presence in the labour force on the demand for meals away from home refers
Figure 7: Presence in the Labour Force: Percentage with Expenditure on Meals Away from Home

- **Legend:**
  - M = MEN
  - W = WOMEN

Source: 78

---

Figure 8: Presence in the Labour Force: Expenditure on Meals Away from Home (Shillings Per Person Per Week)

- **Legend:**
  - M = MEN
  - W = WOMEN

Source: 78
to expenditure. As can be seen from Figure 8 the major differences in the propensity to eat out at various levels of employment are not reflected in the corresponding expenditure patterns. Whereas the percentage with some expenditure on eating out is clearly influenced by whether a person works or not, this is not altogether true for expenditure.

Men who work part-time in fact spend a fraction more than those who have a full-time occupation, although as might be expected the expenditure of those who do not work is about 20% lower. For women on the other hand, whilst the non-working group spends less than those who work full-time, their expenditure is in fact, greater than that of the part-time workers. As a priori one would have expected the non-worker to spend less than those working, this discrepancy, only found amongst women, must be related to the constitution of the non-working group. Although both contain retired people and those unoccupied, the women's group also comprises housewives, whose expenditure is probably not related to her personal income but is more a function of her husband's.

Further information on expenditure can be found in the Ministry of Labour's 1953-54 survey, together with the 1962 and 1967 Family Expenditure Surveys. These in fact will be mainly used when examining the effect on eating out of occupational differences, but as they contain information about non-workers, they can also be employed to confirm the broad patterns found in the Kemsley and Ginsberg surveys. In all years, expenditure on meals away from home is given for a number of income groups, by the occupation of the head of the household, and for those retired or not gainfully employed. This clearly shows that however one looks at expenditure on eating out, whether per household, per capita, as a percentage of total food expenditure or as a function of total expenditure, the Engel curves for those not working always lie well beneath those for other occupational groups. (Fig.10)

One might conclude therefore, that although whether a person works or not clearly influences the propensity to eat out, its effect on the amount spent is not so clear-cut. Whilst it would seem that expenditure by those working is always more than that by those not working, such a distinction cannot be made between part-time and full-time workers.
The effect of occupation, when used as a determinant of demand for meals away from home may be interpreted into two different ways. Firstly, it can show on a purely sectoral basis how the eating out habits of workers change from industry to industry, and secondly how these are influenced by the status of the worker.

(a) Analysis by Industry

The only surveys which give information about eating out according to the industry in which the informant works, are those by Keynes and Ginsberg, and although differences of classification mean that the 1949 and 1951 surveys are not comparable with that for 1956, all show similar patterns. Figure 9 illustrates this for 1949 and it can be seen that there are considerable inter-industry differences, both in the propensity to eat out, and the average expenditure by those who do.

The workers who eat out least of all are those in agriculture and domestic service, not surprising in view of the former's lack of access to facilities, and the latter's 'living in' wage. The major differences are, however, clearly shown by looking at those who eat out regularly, for there is far less variation from industry to industry for workers who have only occasional meals away from home. Workers who eat out more regularly than most, are those in manufacturing, transport and the building trades, but workers in the distributive trades and national or local government service follow very closely when occasional meals are taken into account as well.

The same occupational pattern is not, however, continued in the information about expenditure. For example, the mining industry has about the average percentage of workers eating out, but their expenditure per person is very low, probably due to the greater incidence of snacks and beverages in their outlay. Agriculture does not fare quite so badly, and shows that those who do in fact eat out, spend about average on their meals, whilst workers in domestic service, have by far the highest expenditure of all. Other industries whose workers have a high expenditure, are the distributive trades and government service.

Not too much emphasis should be placed on these results, however, but they probably indicate the broad outlines of inter-industry differences. The blue collar worker's frequency of
eating out is clearly not matched by the amount he spends, whereas
the less regular eating out behaviour of the white collar worker
is more than made up by his expenditure.

(b) Occupational Status

The introduction of the terms blue and white collar serve
to illustrate how easily the effects of the type of work can
merge with connotations of class. Indeed, many surveys base their
social groups on the occupation of the head of the household, with
subsidiary information, such as income and the interviewer's
assessment, as additional checks. This is the method used in the
1962 Reader's Digest Survey which, among other things, looked at
the extent of eating out in Great Britain and compared it to the
six European Common Market countries.

Analysed by such socio-professional groups, occupation
seems to have the same broad effect in all the countries examined.
The administrative-professional group have a higher propensity
to eat out than any other, followed by self-employed artisans,
foremen and skilled workers, and manual workers. The major
difference is to be found in the farming group, which, in most
of Europe, is largely made up of the poor agricultural labourer,
whereas in Britain it includes a larger proportion of more
affluent farmers. The farming group for Europe has proportion­
ately the fewest people eating out, whilst in Britain it has
about the same percentage as the skilled worker group. It is
also interesting to note that in nearly all occupations, the
propensity to eat out is higher in Great Britain than in almost
all the countries in Europe, and that occupational differences
are not nearly so marked.

More comprehensive information about occupational status
is, however, given in the 1953-54 Ministry of Labour survey
and the Family Expenditure Surveys for 1962 and 1967. Unfortunately,
the three surveys are not directly comparable as the 1953-54
survey uses slightly different occupational groups to the later
surveys. They nevertheless indicate the general effect of the
occupation of the head of the household on eating out behaviour,
and this information is summarised in Figure 10 where histograms
for the three years in question show expenditure on meals away
from home as a function of total expenditure, total food expendi­
diture, as well as per household and per head. Four occupational
groups are used in 1962 and 1967 and these comprise, (a) workers
in professional, technical, administrative, managerial and teaching
FIGURE 10

OCCUPATION: EXPENDITURE ON MEALS AWAY FROM HOME PER HEAD, PER HOUSEHOLD, AS A PERCENTAGE OF TOTAL EXPENDITURE AND OF TOTAL FOOD EXPENDITURE

LEGEND: ML. MANUAL OCCUPATIONS

CL. CLERICAL OCCUPATIONS

PR. PROFESSIONAL, TECHNICAL, ADMINISTRATIVE, MANAGERIAL & TEACHING OCCUPATIONS

RT. RETIRED & UNEMPLOYED PERSONS

M. MANAGERIAL & EMPLOYERS

PC. PROFESSIONAL, TEACHING, CLERICAL, EMPLOYERS

SE. SELF EMPLOYED

SOURCE: 87, 107, 104.
occupations, (b) clerical workers, (c) manual workers and (d) those who are retired and unoccupied. In 1953-54, groups (c) and (d) are the same, but the others are divided into three. Clerical workers are combined with the professional occupations, whilst managers are classified separately, and there is an additional group for the self-employed.

Basically the patterns do not vary very much between 1953-54 and 1967. As might be expected the professional group spend more, on average, than any other, both per household and per head. In 1953-54, when this group was sub-divided, however, the managers spent more than the professionals, although of course this result may be biased because of the inclusion of the lower spending clerical workers with the professionals. The latest survey suggests however, that, whilst this is still true analysed per household, clerical workers almost match the professionals in expenditure per head. Manual workers have quite a high expenditure on meals away from home per household, which is in great contrast to the small amount recorded by those who are retired and unoccupied. When family size is taken into account and expenditure expressed on per capita terms, however, the diversity is not so marked.

The histograms which express eating out as a function of total expenditure and total food expenditure show very similar relationships, although in 1967 there is an interesting feature. Expenditure on meals away from home as a percentage of total food expenditure, has almost the same pattern as the histogram for expenditure per head, but eating out expenditure as a percentage of total expenditure, shows a reversal of the trend observed previously that people in professional occupations apportion more of their budget for eating out than other workers. This phenomenon may, perhaps, be best explained by reference to the cross-sectional results based on income groups. (Fig.11) As has been mentioned previously these are too variable to be of very much use. They do, however, suggest a reason why someone in a professional occupation might have been found to spend less than usual on eating out. Whilst in the upper income levels there is a levelling off of expenditure, which could indicate that expenditure on eating out has reached something approaching saturation, the professional classes' expenditure patterns may also be influenced by such unknowns as expense accounts, and clearly this may have biased the results.
FIGURE 11

OCCUPATION : EXPENDITURE ON MEALS AWAY FROM HOME AS PERCENTAGE OF TOTAL EXPENDITURE AND TOTAL FOOD EXPENDITURE, BY DISPOSABLE INCOME.

LEGEND:
- X - Professional Occupations
- O - Clerical Occupations
- □ - Manual Occupations
- ◇ - Retired & Unoccupied Persons

SOURCE: 87
The Engel curves for the other occupational groups tend to bear out the relationships revealed by the histograms, although the slightly wayward results for clerical workers confirm the suspect nature of the income cross-sections. It is possible to conclude nevertheless that occupational status would seem to be positively correlated with expenditure on meals away from home.

3. Summary

Occupation can influence eating out behaviour in several ways. The propensity to eat out is clearly affected by whether a person works or not as is the amount spent. The consequences of part-time or full-time work are not, however, readily apparent. Inter-industry differences show that the blue collar worker's frequency of eating out is not matched by the amount he spends, whereas the less regular eating out behaviour of the white collar worker is more than made up by his expenditure. Finally, as might be expected the status of an occupation within an industry is positively correlated with expenditure on meals away from home.
One of the most important features to emerge from the major family budget studies of the past, is the importance of household composition, which after income, is generally found to account for most of the subsequent residual variation in the dependent variable. As was seen in Chapter III the nature of the data and the variables used in this study did not permit the extension of the analysis to incorporate such concepts, although there is some evidence to suggest, that had the data been suitably robust, similar conclusions might have been drawn. Certainly, variations in household size and composition, often result in marked differences of expenditure on eating out.

The majority of the information about this factor, as might be expected, comes from the Family Expenditure Survey, in which it is the most common type of breakdown. It is, however, supplemented by another household survey (The National Food Survey) produced by the Ministry of Agriculture, Fisheries and Food, and this is examined first.

1. The National Food Survey

The main difficulty in using the National Food Survey lies in the way in which the information about eating out is collected. As was pointed out earlier, the survey is concerned with domestic food consumption and its main purpose is to study the pattern of diet in the home. It does, however, record the numbers and types of meals eaten outside the home and via a simple nutritional weighting scale is able to record the 'not balance' of meals eaten at home.

Unfortunately much of the information is invalidated by the fact that adjustments are made for visitors' meals and this counters the effect of any meal eaten out. So it is, that the average net balance figure often given in the surveys is somewhat insensitive, and it would seem clear, that it probably underestimates the proportion of meals eaten out. Nevertheless, even if it is not a precise measure, it can still give an indication of comparative propensity to eat out, although it should be noted that, unlike the Family Expenditure Survey, school meals are included in the National Food Survey results. The National Food Survey makes three specific references to eating out in connection with household composition. The first and more detailed statement is in the report for 1952 and the other more indirect evidence is to be found in the 1958 report.
In 1952, the survey examined the nutritional effect of eating out, and as part of a sub-analysis it considered the influence of household composition. The groups examined were based on an adult couple alone, and then combined with various permutations of children and adolescents. Contrary to expectations and assumptions about the inhibitory effect of children on their parents' eating out behaviour, the households which in fact ate out least of all, were those containing one man and one woman only. This finding must be tempered, however, by noting that these households contained a high proportion of elderly and retired people on low incomes, and that unlike those households containing children, there was a particularly marked association of income per person and the percentage of meals eaten out.

In addition it must also be remembered that the information refers to school meals which would serve to increase the extent to which households with children, eat out. The prominent effect of school meals in this data is shown by the fact that it is at the modest eating out level (up to 10% meals out), that the influence of those households with children is most noticeable. This influence disappears at the higher eating out levels when those families with adolescents (presumably some of them working) and those without any children at all tend to be more important.

The 1958 survey does not contain such a specific separate analysis of the effect of household composition on eating out as was carried out in 1952, and its findings are expressed in less exact numerical terms. For example, the net balances** for various types of household do not vary very much. A couple living either by themselves or with children and adolescents together has a net balance of 0.9 (6% of their meals out), which increases to 0.93 (5% of their meals out) for couples with one child, three or more children or adolescents alone, and to 0.96 (4% of their meals out) for a couple with two children. This would suggest that family size does not materially affect the number of meals eaten away from home, which for all households accounts for about 4-6% of their food intake.

* It came to the rather happy conclusion that meals out had the same nutritive value as those eaten at home, thus avoiding the need to make anything more than simple adjustments. No similar sub-analyses, however, have been carried out since, and it is probably time to see if the subsequent albeit moderate growth of eating out has altered this apparent nutritive equality.

** The net balance of an individual is the proportion of his meals taken at home during the survey week, weighting each meal in proportion to its importance (97a).
The 1958 Survey did, however, produce one of its tables with a much finer breakdown of household composition than was used in 1952, and consequently it gives really a much more helpful appreciation of the effects of this variable, although unlike the net balance figures, this data refers to expenditure. As part of a section on demand analysis which estimated the income elasticities for domestic food expenditure, some calculations were made giving those elasticities adjusted for the incidence of meals out and all meals served to visitors. Table 30 shows, for 1956 and 1958, the percentage change in the income elasticities when this adjustment is made, and this serves to indicate how much the elasticity would change if all the meals had been taken at home. As can be seen, it increases the values for nearly all household types and the rank order, by degree of change, gives a broad indication of the influence of household composition.

The increase is the greatest for the younger childless couples, 'for whom the association between income and the incidence of meals taken outside the home is most marked', (96,p.27) whilst at the opposite extreme, the elasticities for women living alone actually show a decrease when meals out are taken into account, 'since those with higher incomes received more visitors'. (sic: 96,p.27) The rank order, in fact, makes a logical progression from those without the encumbrance of children, to those with adolescents, then adolescents and children, increasing numbers of children, followed by the more unusual adult household types, with older married couples and households containing only women, coming last of all. Clearly, there are two factors of importance to note. Firstly, the deterrent effect of children which lessens as the children get older and is most noticeable the more there are, and secondly, an income effect, which is no doubt mainly the reason for the small amount of eating out both by women living alone and elderly married couples.

2. The Family Expenditure Survey

The Family Expenditure Survey provides the most detailed information about the effect of household composition on eating out, although unlike the National Food Survey, it only refers to expenditure and gives no indication of the quantities involved. Information about expenditure on meals away from home, broken down by household composition, is given for the years 1953-54, 1958, 1961, 1963 and 1965 to 67. In 1964 only household size was given
### TABLE 30

**PERCENTAGE CHANGE IN THE INCOME ELASTICITY OF DOMESTIC FOOD EXPENDITURE, WHEN ADJUSTED FOR THE INCIDENCE OF MEALS OUT AND MEALS SERVED TO VISITORS**

<table>
<thead>
<tr>
<th>Type of Household</th>
<th>Percentage Change</th>
<th>Rank Order According to highest percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1956</td>
<td>1958</td>
</tr>
<tr>
<td>One man, one woman and:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) no other (both under 55)</td>
<td>108</td>
<td>73</td>
</tr>
<tr>
<td>(b) no other (both 55 or over)</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>(c) 1 child</td>
<td>29</td>
<td>14</td>
</tr>
<tr>
<td>(d) 2 children</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td>(e) 1 children</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>(f) 1 adolescent</td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td>(g) 1 child and 1 adolescent</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>(h) one woman only</td>
<td>-10</td>
<td>-7</td>
</tr>
<tr>
<td>(i) two women</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>(j) 1 man and 2 women</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>(k) 2 men and 1 woman</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>All households (weighted average)</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: 96, p.33
and in addition, expenditure on school meals cannot be distinguished separately for the years 1953-54 and 1958. Breakdowns by income are not provided for 1958 and 1963.

The main findings from these surveys are given in Figures 12-15 which shows how variations in household type affect eating out. Histograms for 1953-54 are included because of the finer breakdowns available for that year, although it should be remembered, that they are not really comparable to the histograms for the other years, because of the inclusion of school meals in the expenditure data.

The most notable feature is, of course, the prominence of those households containing only one adult, who spend considerably more per person, as well as proportionately more of their food and total budgets, than any other type of household. This can be noticed for all the years in question, but is particularly prominent in 1953-54. Here the distinction is made between households containing one man and those containing one woman, and this division shows that single male households are responsible for probably all of the increase. No doubt the low incomes of widows tend to reduce the women's expenditure and the relatively large incomes of young bachelors support the high figure for men, but part of the difference is most likely to be a reflection of the fact that some of the women's expenditure has been paid for by men, although probably variation in aptitudes and inclination for home cooking also play a part.

When the breakdown includes households with three adults, then this is the category which, after single households, spends proportionately the next largest part of their budget on eating out. This contrasts with the two-adult households who, in many cases, spend little more of their budgets than those households containing children. As was seen in the National Food Survey, retired couples are thought to be mainly responsible for reducing this figure, and the fact that an additional adult results in a considerable increase, strengthens the supposition that this may be due to an income effect.

The commonly expected pattern is, however, restored when meals away from home are taken on a per capita basis, although it should be noted, that this may be deceptive when looking at a category such as household composition. Classic family budget analysis has often centred on attempts to evaluate the effect of various members of the household on the family budget and in particular the 'cost of children'. As Forsyth clearly demonstrated, (52) a statistical explanation is usually not possible, and whilst
FIGURE 12

HOUSEHOLD COMPOSITION:
Expenditure on Meals Away from Home
3 SHILLINGS PER HOUSEHOLD PER WEEK

<table>
<thead>
<tr>
<th>Year</th>
<th>1A</th>
<th>1B</th>
<th>1C</th>
<th>1D</th>
<th>1E</th>
<th>1F</th>
<th>1G</th>
<th>1H</th>
<th>1I</th>
<th>1J</th>
<th>1K</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
<td>40</td>
<td>45</td>
<td>50</td>
<td>55</td>
<td>60</td>
</tr>
<tr>
<td>1966</td>
<td>12</td>
<td>18</td>
<td>24</td>
<td>30</td>
<td>36</td>
<td>42</td>
<td>48</td>
<td>54</td>
<td>60</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td>1965</td>
<td>14</td>
<td>20</td>
<td>28</td>
<td>36</td>
<td>44</td>
<td>52</td>
<td>60</td>
<td>68</td>
<td>76</td>
<td>84</td>
<td>92</td>
</tr>
<tr>
<td>1964</td>
<td>16</td>
<td>22</td>
<td>30</td>
<td>38</td>
<td>46</td>
<td>54</td>
<td>62</td>
<td>70</td>
<td>78</td>
<td>86</td>
<td>94</td>
</tr>
</tbody>
</table>

LEGEND:
A = Adult
M = Man
W = Woman
C = Child

NOTE: 1958 NOT SHOWN
1958-59 INCLUDES SCHOOL MEALS

SOURCE: 87, 104, 106-111
FIGURE 13

HOUSEHOLD COMPOSITION:

EXPENDITURE ON MEALS AWAY FROM HOME

SHILLINGS PER HEAD PER WEEK

1967 1966 1965 1964

1A MW MW MW MW 1A MW MW MW MW 1A MW MW MW MW 1A 2A 3A 4A 5A or more
1c 2e 3c or more 1c 2e 3c or more 1c 2e 3c or more

1963 1961 1953-54

1A MW MW MW MW MW 3A 3A WM No C 1A MW MW MW MW 3A
1e 2e 3e 4e 1e 2e 3e

LEGEND: A = ADULT
M = MAN
W = WOMEN
C = CHILD

SOURCE: 37, 104, 106-111

NOTE: 1959 NOT SHOWN
1953-54 INCLUDES SCHOOL MEALS
FIGURE 14

HOUSEHOLD COMPOSITION:

EXPENDITURE ON MEALS AWAY FROM HOME

AS A PERCENTAGE OF TOTAL FOOD EXPENDITURE

LEGEND:
A = Adult
M = Man
W = Woman
C = Child

SOURCE: 87, 104, 106-111

NOTE: 1958 NOT KNOWN
1953-54 INCLUDES SCHOOL MEALS
FIGURE 15

HOUSEHOLD COMPOSITION:
EXPENDITURE ON MEALS AWAY FROM HOME
AS A PERCENTAGE OF TOTAL EXPENDITURE

LEGEND:
A = ADULT
M = MAN
W = WOMAN
C = CHILD

NOTE: 1959 NOT SHOWN
1953-54 INCLUDES SCHOOL MEALS.

SOURCE: 37, 104, 106-111
there have been attempts at producing unit-consumer scales, or scales of equivalence, the changes in consumption pattern of various household combinations are not as simple as had been expected. In taking expenditure on a per capita basis, the relationship is over-simplified, in as much as the assumption is made that an addition of a child is the same as an addition of an adult. This is the basic reason why the histograms in Figure 13 exhibit such a regular stopped pattern.

As was noted in Chapter III, expenditure on eating out per household is generally correlated with increasing household size. This is true, however, only up to the two children level, after which, there is a steep drop in expenditure. The reason for this is probably partly due to income and partly to disincentives, although economies of scale of home cooking with the larger family sizes may also be important. Up to a certain level, if a family is going to eat out at all then this will generally mean an increase in expenditure, which will not in fact start to decrease until there is a reduction in the frequency of eating out.

These relationships are far from definite, however, and they do not become any clearer in the histograms which express expenditure on eating out as a percentage of the food budget and the total budget, (Figs. 14 and 15) although with one or two exceptions it is possible to say that an additional child usually results in successive decreases in the amount spent on meals away from home when related to the food budget. This is most apparent for the larger families where there is no male present, although a broad illustration is given in 1963 when a comparison was made between families with and without children.

The patterns are, however, much more confused when expenditure on meals away from home is related to total expenditure. Many of the relationships already examined reoccur here, but they are more subdued. Clearly very large families spend least of their total budget on eating out, but for other family combinations, there are often few regular and recurrent differences between them.

As well as information about average expenditure, the Family Expenditure Survey also gives further breakdowns according to income groups within certain household categories, and the Engel curves for 1967 are shown in Figures 16 and 17 as an illustration of the kind of results to be obtained from this type of subdivision.
FIGURE 16

HOUSEHOLD COMPOSITION:
EXPENDITURE ON MEALS AWAY FROM HOME
BY DISPOSABLE INCOME
PER HOUSEHOLD

LEGEND:

\[ \begin{align*}
\times & \quad \text{1 ADULT} \\
\circ & \quad \text{MAN, WOMAN} \\
\square & \quad \text{MAN, WOMAN & 1 CHILD} \\
\bullet & \quad \text{MAN, WOMAN & 2 CHILDREN} \\
\ast & \quad \text{MAN, WOMAN & 3 or more CHILDREN} 
\end{align*} \]

SOURCE: 87
Figure 17

Household Composition:
Expenditure on meals away from home by disposable income per head

Legend:
- X: 1 Adult
- O: Man & Woman
- D: Man, Woman & 1 Child
- #: Man, Woman & 2 Children
- #: Man, Woman & 3 or more Children

Source: 37
As was found with other variables such a breakdown does not always help in clarifying the interpretation of a particular factor, and this is most certainly the case with the graphs for expenditure per head and per household. Very little more can be said than just noting that as a commodity meals away from home still exhibits the main features of a luxury expenditure in as much as the Engel curves for the smaller households lie above those for households of a larger size.

More interesting are the graphs which show how expenditure on meals away from home varies as a percentage of the food budget and the total budget. (Figs.18 and 19) Both demonstrate how far apart the households containing one person stand, in relation to the other household types, which have, in fact, broadly similar slopes. This is most noticeable when eating out is expressed as a proportion of the food budget, when for a given increase of income the percentage spent on meals away from home increases very much more quickly for single households than for any other. All the other households types seem to react to income in about the same way, for their 'elasticities' would appear to be of roughly the same order. The curves are, however, at different levels and these coincide with what one might expect the pattern to be, the larger the family, the less of their food expenditure is spent on meals away from home.

In Figure 19, which shows the position of expenditure on eating out in relation to the whole budget, the pattern is not quite so distinct, but it too shows the same basic predominance of the single household, and the secular trend of the curves for the other household types.

3. **Summary**

Household composition has a considerable effect on the amount spent on meals away from home, although what evidence there is, suggests that it may have little influence on the propensity to eat out. Certainly family size does not appear to affect the numbers of meals eaten away from home. The way in which it influences expenditure is, however, not as straightforward, and often differences of interpretation arise according to whether the information is grouped per person or per household size. Nevertheless, two features emerge: Firstly, single person households have a much higher expenditure per person than any other household type and Secondly, on the whole, children have a deterrent effect on expenditure.
FIGURE 18

HOUSEHOLD COMPOSITION: EXPENDITURE ON MEALS AWAY FROM HOME AS A PERCENTAGE OF TOTAL FOOD EXPENDITURE, BY DISPOSABLE INCOME.
Figure 19: Household Composition: Expenditure on Meals Away from Home as Percentage of Total Expenditure by Disposable Income.
As was noted earlier the notion of social grading is often based on occupational groups, which are, in turn, reinforced by corollary factors such as income or education. The ease with which discussion of an occupational variable can be broadened to include elements of class may lead to the view that for all practical intents and purposes there is little difference between the two categories and indeed this is partially confirmed by the similarity of the results.

The social classes most commonly used are, upper middle class and middle class (A.B.), lower middle class (C1), skilled working class (C2) and working class (D), which is usually combined with those at the lowest level of subsistence (E). In the surveys in which the demand for meals away from home is analysed like this, these groups are sometimes reduced to broader categories such as 'upper', 'middle' and 'lower' as in the Crawford survey, or rearranged as in the National Food Survey, where there is only one class C, and class D has been split into 2; one for old age pensioners and the second for other people on low incomes.

There are four surveys which indicate the effect of social class on the demand for meals away from home, The National Food Survey, of 1952, those by Crawford and the Horticultural Marketing Council together with the Index of Marketing Trends. All tend to show very similar results. The unusual feature about this information, however, is that unlike most other data it refers solely to the frequency of eating out and gives no detail about expenditure.

The clearest illustration of the effect of social class is given in Figure 20 which is taken from the Index of Marketing Trends. This shows the percentage of people in four social groups eating out, according to the time of the last occasion. As might be expected, there is a positive correlation between eating out and social class. Of the A.B. group, 94% eat out at some time or another, whereas this drops to only 71% in the D.E. group. Whilst this indicates the general effects of social class, it masks the more subtle underlying pattern, which is revealed when the data is analysed according to the frequency of eating out. It is clear that not only is the propensity to eat out greater in the higher social groups, but that these are also the people who eat out more regularly. This can be seen from Figure 20 (a-e)
FIGURE 20  SOCIAL CLASS: PERCENTAGE EATING OUT
BY TIME OF LAST VISIT

A. TODAY OR YESTERDAY

<table>
<thead>
<tr>
<th>Class</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB, C, C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. 2-7 DAYS

<table>
<thead>
<tr>
<th>Class</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB, C, C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. 1-4 WEEKS

<table>
<thead>
<tr>
<th>Class</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB, C, C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. 1-12 MONTHS

<table>
<thead>
<tr>
<th>Class</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB, C, C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

E. OVER 1 YEAR

<table>
<thead>
<tr>
<th>Class</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB, C, C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F. TOTAL WHO EAT OUT

<table>
<thead>
<tr>
<th>Class</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB, C, C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: 87
which shows how pattern changes from a direct to an inverse relationship with class as the interval since last eating out increases.

Crawford's Survey, although eight years earlier than the Index of Marketing Trends, in fact presents the same overall pattern. Although it does not, however, provide quite such detailed social breakdowns, it adds a further dimension by noting the type of establishment which each class patronises, according to the nature of the meal eaten. This shows that for the main meals of the day, the upper classes are more likely to patronise cafés and restaurants, whilst the lower classes tend to eat in canteens instead. The middle class on the other hand demonstrate no particular allegiance to either type of outlet for these meals, and only come into prominence for the mid-morning break and afternoon tea, both of which they tend to consume in cafés and restaurants more than any other class. These trends may, of course, be mostly an indication of a fact that the lower classes have more access to canteen facilities than the other classes, but some of the variation is no doubt one of choice as well, for the same relative patronage of cafés and restaurants is found for meals in the evening, when canteen usage is negligible.

The other two surveys to discuss class have a slightly different emphasis, in that they are concerned with households rather than individuals. The results from the early National Food Survey are given in Table 31 and it can be seen that this again confirms the marked association of class with the propensity to eat out. This is particularly noticeable with regard to old-age pensioners, of whom only 24% have some meals out, whereas this increases to 68% in class A, almost three times as many. The class gradient in fact becomes steeper as the percentage of meals eaten out increases, until, among those eating out relatively frequently, the highest class is four times as likely to eat out as the lowest class. Not unexpectedly, there is some evidence that even within social class, eating out and income are associated.

In addition this survey also provides social class information in a two-way classification by household composition. The most interesting feature is the fact that class differences are most pronounced in those households containing one man and one woman. Here the range for those taking some meals out is from 70% in class A to only 16% for old-age pensioners. This is even more noticeable in those eating out frequently, when the percentages
TABLE 31

THE PROPENSITY TO EAT OUT BY SOCIAL CLASS

<table>
<thead>
<tr>
<th>Proportion of households taking:</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Excluding O.A.P.</th>
<th>O.A.P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some meals out</td>
<td>68</td>
<td>60</td>
<td>54</td>
<td>44</td>
<td>24</td>
</tr>
<tr>
<td>1-5% meals out</td>
<td>19</td>
<td>22</td>
<td>21</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>6-10% meals out</td>
<td>20</td>
<td>19</td>
<td>16</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>11-15% meals out</td>
<td>13</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>over 15% meals out</td>
<td>16</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

*Old-age Pensioners

Source: 95, p.55.
are 26% and 2% respectively. There are fewer class differences for other household combinations, especially for those containing children. The levelling effect of children is in fact most noticeable, although not too much emphasis should be placed on these results, for they do not isolate the rather special effect of school meals.

The last survey to deal with variation between different social classes was produced by the Horticultural Marketing Council. This asked housewives about their families eating habits and arrived at the same general conclusion that the practice of eating out is most prevalent among upper class households, and appears to become less widespread as one goes down the social scale. The social gradient, however, was not so steep as has been noted previously, the difference in propensity to eat out between the A, B's and the D, E's being only about 10%, but this should not necessarily be related to a possible lessening of social differences with time, because of discrepancies in definition and the nature of the survey.

Summary

In all surveys, the correlation between propensity to eat out and social class is marked. No doubt much of this is due to an economic effect, in that generally speaking the higher classes are earning more money and can therefore afford to eat out more than those lower down the social scale. However, several other less definable factors may also be at work, reflecting differences of taste or habit, about which any opinion must be purely conjectural. No information about the influence of social class on expenditure was available.
Compared with many variables, information about the effect of location on the demand for meals away from home, is reasonably plentiful. In fact, in most surveys it is usual to provide some indication of the regional pattern. The relief of finding comparative superfluity of data must, however, be tempered by a rational assessment of its quality, for in most cases sample sizes are so small and standard errors so high, that even tentative conclusions may be unwise. Few surveys indicate to their users the hazards involved, and place an untoward confidence in results not altogether justified by the methods with which they were obtained. The assurance of these surveys must be compared with the reticence of the Family Expenditure Survey in releasing any detailed regional information at all, despite a generally much more substantial statistical base.

Fortunately, a breakdown by regions is not the only way by which the effect of location can be analysed and the alternative sub-division according to administrative area being less fragmented, is more viable statistically. This does not mean to imply, however, that it is ideal material, for the whole concept of a classification by what is virtually degree of urbanisation may itself be questionable. With increased mobility and especially the trend towards commuting over longer distances, the specific influence of the place where the consumer lives becomes difficult to distinguish, and the differences caused by such previously distinct entities as urban and rural become increasingly blurred.

1. Region

The regional arrangement of data has long been one of the most satisfying methods of organizing geographical information, and indeed the study of regions traditionally holds a central position in geography. There are, however, considerable problems of dealing with regional data, most of which seem to stem from the irregular shapes and sizes of the collecting areas. Although more people are beginning to appreciate the need for grid coordinate techniques or specially controlled sampling methods, too often the inherent difficulties involved in using geographical information are overlooked. The main trouble is that many areal measurements can be altered at will by juggling with the collecting boundaries. As Maggott has pointed out, 'It is an open question whether detailed medical maps in which mortality indices are most carefully standardised for age and sex, should not equally well be standardised for
the size of the collecting areas for which they are computed. Certainly we need to be reassured that some of the apparently 'unhealthy' areas, representing small pockets of disease in Lancashire and Yorkshire, owe nothing to the fragmented system of local government areas' (59.p.203)

Despite these questions, by itself, the geographer's caveat might not have been too crucial. A high proportion of data is only available for territorial units and as long as the implications are fully understood, some attempt at standardisation can be made. However, to these must be added the statistical doubts expressed earlier, where it was made quite clear that the sample sizes of many surveys do not entirely justify confident regional analysis. These factors alone provide two very cogent arguments for doubting the validity of proceeding with this type of examination, and the need for caution must be increased when the comparability of the various surveys is also considered.

There are altogether seven different regional breakdowns used and these range from the I.P.A. National Readership Survey definitions and the Standard Regions of the Index of Marketing Trends and the Family Expenditure Survey respectively, to the more ad hoc use by Smethurst of just towns, and Crawford's rather anonymous South, West, North, etc. Even if reasonable assurance could have been obtained, therefore, on the first two problems, it would only be possible to discuss each survey within its own definitions. The benefits to be derived from this exercise were thought not to justify the effort involved, and the whole question of regional influences will only be examined in the most general terms.

(a) Propensity

The effect of regional location on the propensity to eat out is quite impossible to determine because of the contradictory evidence available. For example the Horticultural Marketing Council's Survey records that in Scotland the propensity to eat out is very much below average, and in the North-West of England it is markedly above, which is in complete contrast to the Index of Marketing Trends where these positions are reversed. On the other hand, the Crawford Survey shows the proportion of people eating out to be generally higher in London.

A priori, one would have thought that as the propensity to eat out must increase with the distance travelled, then because of the degree of commuting to London, this region must reflect a
correspondingly higher proportion of its people eating out. Certainly Smithurst's comparison of seven major towns tends to confirm this, but whilst it would be convenient to advocate the importance of London, taking all available sources into account, there is really little evidence to indicate how regional differences affect the propensity to eat out.

(b) Expenditure

The only comprehensive information about the regional influence of expenditure on eating out comes from the Family Expenditure Survey, although this is not often published, as the Department of Employment and Productivity are reluctant to release such breakdowns due to the high standard errors obtained. To minimize this kind of variation the results are usually given for three yearly periods, and regional data has in fact been published for the periods 1961-63, 1964-66, 1965-67 as well as for the earlier 1953-54 survey. No doubt the increased sample size in 1967 will improve the reliability of this type of data, and in two years, when it will be based entirely on larger samples, the results should permit more detailed analysis.

The most comprehensive information is found in the 1953-54 Survey, which shows the relationship between income and expenditure for seven regions. This is given in Figure 21 and as can be seen the patterns are somewhat erratic, no doubt partly due to the non-availability of average income, and the substitution of income ranges instead. On the whole, the only notable feature to emerge is that if a region has any influence on the expenditure on meals away from home at all, it is to be found in London. In fact, whether one considers eating out in relation to household income, income per head, the food budget or total budget, the curves for London are always distinct and lie above all the others. Clearly on this evidence, the income elasticities in London are much higher than anywhere else in the country, and so for a given increase in income, people living in London would spend proportionally more on eating out than those living elsewhere.

Regional information for the later Family Expenditure Surveys is not as comprehensive as in 1953-54, and only provides details about average expenditure. Not only is the scope for analysis, therefore, much more limited, but in fact, the results throw into relief the fragile nature of the regional data. The relevant histograms for expenditure on meals away from home per household
are shown in Figure 22 together with their standard errors, and it can be seen that the variation is often so great, that differences in average expenditure may be more apparent than real. The only clear feature is the dominance of Greater London which, in distinguishing itself from the other regions, tends to justify the implications drawn earlier.

2. **Administrative Area**

(a) Propensity

Only two surveys give any information about the propensity to eat out according to the size of administrative area and although each distinguishes three main types, the groups chosen are too disparate to be able to compare them accurately. Table 32(a) shows the results from the Horticultural Marketing Council's Survey of 1962, and Table 32 (b) is taken from the Reader's Digest survey.

As can be seen, the results in Table 32 (b) show less variation than those in Table 32 (a) although much of this is probably due to the fact that in the Reader's Digest Survey the questions are not quite so specific, and the survey thus includes a greater proportion of people who eat out only infrequently. More disturbingly, the results exhibit an unevenness which cannot altogether be accounted for. Whilst in both surveys the smaller areas seem to have proportionally fewer people eating out, the Horticultural Marketing Council's Survey shows the percentage eating out in large areas to be more than in rural districts, a fact which contradicts the results from The Reader's Digest survey. Again, this is no doubt due to the definition of the questions, and indeed, when those who eat out more regularly are listed separately the pattern is partially corrected.

With such limited evidence, it is difficult to reach firm conclusions about the effect of administrative area on the propensity to eat out. One possible interpretation of the trends found, is that they reflect the distance between home and the place of work. It is argued that because the rural and city worker have further to travel to work compared to those workers in smaller towns, they are less likely to return home for lunch. However, a greater propensity to eat out in large towns could also be interpreted by relating the differences to supply, rather than to demand factors.
FIGURE 22

REGIONS:
EXPENDITURE ON MEALS AWAY FROM HOME
(SHILLINGS PER HOUSEHOLD PER WEEK)
SHOWING STANDARD ERRORS

LEGEND:
- STANDARD ERROR
- AVERAGE EXPENDITURE

SOURCE: 8T
### PROPENSITY TO EAT OUT BY SIZE OF ADMINISTRATIVE AREA

#### (a) Population size

<table>
<thead>
<tr>
<th>Population size</th>
<th>Households with adults eating out</th>
</tr>
</thead>
<tbody>
<tr>
<td>over 50,000</td>
<td></td>
</tr>
<tr>
<td>50,000 or under</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

#### (b) Population size

<table>
<thead>
<tr>
<th>Population size</th>
<th>Adults eating out in restaurants apart from meals during the working day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sometimes</td>
</tr>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>over 100,000</td>
<td>47</td>
</tr>
<tr>
<td>2,000 to 100,000</td>
<td>42</td>
</tr>
<tr>
<td>2,000 and under</td>
<td>48</td>
</tr>
</tbody>
</table>

Sources: (a) 66; (b) 132
(b) Expenditure

Information about the effect of four sizes of administrative area (Greater London, large conurbations, smaller urban areas, and rural districts) on expenditure on meals away from home comes, as might be expected, mainly from the Family Expenditure Survey where data is provided for 1953-54, 1959, 1961 1964 and 1967. The first survey, however, uses slightly different definitions than those that follow, and as it also does not separate expenditure on school meals, it is omitted from the discussion. Nevertheless, the other four surveys provide a very clear indication how the type of the administrative area influences eating out, and this is shown in Figure 23 which shows average expenditure on eating out as a percentage of total expenditure and total food expenditure.

The most important feature to emerge is the prominence of London, where, out of the four areas distinguished, expenditure on eating out is a much higher part of both the total and the food budget. Contrary to the findings on propensity, this proportion is directly related to the type of the administrative area and the low figure by people living in rural areas contrasts to the much higher percentages obtained for their propensity. The pattern appears to be changing slightly however, and in the last survey, the differences between the three lowest categories seem to have evened out considerably as the proportionate expenditure of people living in small urban and rural areas have increased relative to that of people living in large conurbations.

A more detailed analysis is shown in Figures 24 and 25 which have been taken from the 1967 survey, and provide cross-sectional information by income groups. As can be seen, the curves for the larger administrative areas tend to lie above those of the smaller ones, and this confirms the direct relationship between expenditure on eating out and the size of the administrative area noted when examining the average expenditure for each year. In all diagrams, the effect of living in Greater London is particularly noticeable, and Figure 24 shows the Engel curves for expenditure on meals away from home averaged both per household and per person. In both, the curves for people in London seem to be slightly steeper than those for people in the other areas, indicating that expenditure on eating out would probably increase faster there, than anywhere else, for a given rise in income. Some of the reason for this may be due to the fact that the influence of family size is not so strong in London
Figure 23: Administrative area: expenditure on meals away from home as percentage of total expenditure and total food expenditure.
Figure 24

Administrative Area: Expenditure on Meals Away from Home, by Disposable Income Per Household & Per Head

Legend:
- **X** Greater London
- **O** Urban: Population > 100,000
- **•** Smaller Urban
- **□** Rural

Source: 37
FIGURE 25 ADMINISTRATIVE AREA: EXPENDITURE ON MEALS AWAY FROM HOME AS PERCENTAGE OF TOTAL EXPENDITURE AND TOTAL FOOD EXPENDITURE, BY DISPOSABLE INCOME.
for when household expenditure is averaged per person, the effect on the upper income groups is most marked, perhaps reflecting the influence of the larger number of single, but relatively wealthy households.

The influence of expenditure on the food and total family budgets is seen in Figure 25, and on the whole it does not permit a more comprehensive explanation than was obtained from Figure 24. They do tend to confirm, however, how the expenditure pattern may be changing. When expenditure on eating out is expressed as a proportion of the total budget, the upper parts of the curve seem to behave slightly differently for each of the administrative areas. The rural districts and smaller urban areas have the steepest curves, followed by Greater London and those areas with a population of over 100,000. As earlier, it was found that during the past few years expenditure on eating out has increased in importance in the smaller urban areas relative to the large urban areas, the interpretation can be related to differing degrees of saturation.

People living in rural districts and smaller urban areas are further away from their saturation expenditure on eating out than those living in Greater London, who in turn seem to be marginally further away than those living in areas with a population of over 100,000. This pattern is in fact also reflected when expenditure is related to total food expenditure. Both the cross-section and the trend from survey to survey show that whilst there are only slight signs of the proportion of food expenditure spent on eating out decreasing, this is more noticeable for the larger administrative areas than the smaller ones.

It is clear therefore, that whilst expenditure on meals away from home is directly correlated to the type of the administrative area to interpret this in terms of urbanisation may be unwise, for as was pointed out earlier, the validity of applying such a concept must be questioned.

3. Summary

Locational information is of two types, that referring to regions and that to administrative areas. Whilst regional statistics are comparatively plentiful their quality is often suspect and because of this, their effect on eating out can only be treated in very broad terms. On the whole, the results obtained are very uneven, and the differences in average expenditure on meals away from home, more apparent than real. The influence of
Londen is, however, quite distinct, and it is clear that for a given increase in income, people living in Londen will spend proportionally more on meals away from home than people living elsewhere. The effect of administrative area on eating out is in many ways similar to that shown by regional information, for the position of Londen is extremely prominent. This is because there is a direct correlation between expenditure and size of administrative area, and Londen is the largest of the four areas examined.
The effect of income on the demand for meals away from home has clearly been, hitherto, the factor subject to the most discussion and analysis. Its influence has often been felt underpinning many of the other variables examined, and statistically it was found to be of crucial importance. Its quantitative use is, however, both limited and confined to an examination of its influence on expenditure as noted in the Family Expenditure Survey, and has not therefore, exhausted all the possibilities of less definitive analysis. Consequently, it is now re-examined more subjectively in the light of the additional information afforded by all available surveys.

1. Propensity

There are very few surveys which provide information about the effect of income on the propensity to eat out. In fact, apart from a number of references in the Reader's Digest survey, all the material comes from the early Kemsley and Ginsberg surveys. In the Reader's Digest survey the data about the propensity to eat out in a restaurant, apart from meals during the working day, was collected for four income groups, and the percentage of people eating out in each of these is shown in Table 33.

As can be seen, whilst the income groups do not, perhaps, give a very comprehensive range of income levels, the general trend is clear; there is a marked increase in the propensity to eat out with income. The questions in the survey do not, however, specify how long ago the last meal in a restaurant was eaten and so the results probably refer on the whole to infrequent eating out habits.

More specific than this, are the Kemsley and Ginsberg surveys, which although purposefully keeping the question about eating out as general as possible, do in fact distinguish three degrees of propensity to eat out: regular, occasional or nil. The question was designed to introduce the subject on eating out and was broadly framed so that it implied no rigid definition of meals, nor exact differences between the three possible answers. Because of the larger sample for 1949, the results for this year have been chosen to illustrate the general effect of income on propensity to eat out. These are given in Figure 26, which shows firstly the total effect on all those who eat out, and then the sub-division into those who eat out regularly and those who eat out occasionally. In addition, a further breakdown is available by men, housewives,
TABLE 33

GENERAL PROPENSITY TO EAT OUT BY INCOME GROUPS

<table>
<thead>
<tr>
<th>Income per annum</th>
<th>£</th>
<th>£</th>
<th>£</th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>% eating out</td>
<td>28</td>
<td>38</td>
<td>51</td>
<td>69</td>
</tr>
<tr>
<td>&lt; 475</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>476-610</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>611-870</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>811+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 132
FIGURE 26

INCOME: PERCENTAGE WITH EXPENDITURE ON MEALS AWAY FROM HOME: [a] TOTAL [b] REGULAR [c] OCCASIONAL

(a) PERCENTAGE WITH EXPENDITURE

(b) REGULAR EXPENDITURE

(c) OCCASIONAL EXPENDITURE

LEGEND: X ——— MEN ■ ——— MEN & WOMEN X ——— HOUSEWIVES O ——— OTHER WOMEN

SOURCE: 75
'other women' as well as by men and women combined, and as can be seen, propensity to eat out and income are highly correlated for all these types.

Income has the greatest effect on the male eating out habit, which is present in 22% of the men in the lowest income group but increases rapidly to 87% in the highest. On the other hand, income does not have such a noticeable effect on 'other women' and housewives, the propensity for each of which, increases much less steeply. Both respond, however, almost identically to income, although of course housewives have a much lower initial propensity.

When these results are broken down into those who eat out regularly and those who eat out occasionally, a more interesting picture emerges, and it can be seen that it is the men who eat out regularly and the housewives who eat out occasionally. More specifically, the percentage of men eating out is correlated with income for both regular and occasional eating out, but the rise is very much steeper in the former instance. For housewives, on the other hand, income has little effect on their demand for regular meals, which remains low throughout all the income groups, although it has a noticeable influence on their demand for occasional meals out. It is difficult to decide exactly how income affects the eating habits of 'other women' as the results from income group to income group are so uneven. There is little doubt that on the whole the general trend is upward, but the generally confused pattern makes it impossible to come to any firm conclusion about the effect of income on either their regular or occasional demand.

In addition to these general questions, all the Kemsley and Ginsberg surveys make specific note of the number of people who record expenditure on meals away from home during the week preceding the interview. Framed in a much more rigorous manner it was to be expected that the results would diverge slightly from the preceding and rather unspecific enquiries and detailed comparisons of the two would not be justified. It is clear from Table 34 that the results are slightly lower throughout the range especially in the higher income groups, where on average 43% had some expenditure during the seven days preceding the interview, but 48% said they had meals out either regularly or occasionally. However, any differences are not very great and the results support the overall finding that propensity to eat out is closely associated with income.
## Table 36

### Propensity to Eat Out within the Previous Seven Days, by Income Groups

<table>
<thead>
<tr>
<th>Income per week</th>
<th>£&lt; 3</th>
<th>£3-5</th>
<th>£5-7.5</th>
<th>£7.5-10</th>
<th>£10+</th>
<th>Whole Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men &amp; Women who eat out either regularly or occasionally</strong></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>42</td>
<td>51</td>
<td>64</td>
<td>75</td>
<td>40</td>
</tr>
<tr>
<td><strong>Men &amp; Women with some expenditure on eating out within the previous 7 days</strong></td>
<td>19</td>
<td>40</td>
<td>47</td>
<td>53</td>
<td>60</td>
<td>43</td>
</tr>
</tbody>
</table>

*Source: 75*
The last piece of information about propensity comes from the first Kemsley and Ginsberg survey in 1949 and shows how income influences the choice of place where the meal at work is eaten. The pattern which emerges is very clear and is given in Figure 27. As can be seen, the propensity to eat in a canteen remains relatively constant for all income groups as well as for both men and women. On the other hand, there is a striking positive association between income and the percentage of workers eating in cafés or restaurants, and conversely a negative relationship for those who take food to work. More unusually, whilst the same proportion of men eat in restaurants as take food to work, this does not obtain for women, who are much more likely to eat out.

2. Expenditure

As with all the other variables examined so far, information about propensity to eat out is never as plentiful as details about expenditure. This is particularly true with regard to income, for not only does the Family Expenditure Survey provide a great deal of additional information not revealed in the quantitative analysis, but there is also much of value in the Kemsley and Ginsberg surveys. In some ways Kemsley and Ginsberg are of greater interest, for they provide expenditure averaged on the numbers eating out, as well as on those in the sample, which thus takes into account both increasing expenditure and increasing number with expenditure.

(a) Kemsley and Ginsberg

The general pattern of the influence of income on eating out as obtained from the Kemsley and Ginsberg surveys, is shown in Figure 28. As can be seen, expenditure on meals away from home arises much faster than expenditure on domestic food for a given increase in income, and whilst only 7% of total food expenditure in the lower group is spent on eating out this rises to almost 24% in the highest. The income elasticity for meals away from home would plainly appear to be much greater than that for domestic food. These overall statistics hide major differences however, which are not apparent until expenditure by men and women is

"The income ranges referred to in the surveys are those of the senior wage earner of the family with whom the person questioned lived." By this means all persons in families of the same income level have been brought together and the average expenditure for the different income levels shows...is thus a valid estimate of the position of each income group. If the individuals in the sample had been grouped according to their own individual income, this would not have been possible." (75, p.6).
Figure 27

Income: Percentage with expenditure on meals away from home by place of consumption.

Legend:
- O----- Cafe or restaurant
- X----- Office or works canteen
- _----- Food taken to work

Source: 78
FIGURE 2.8  INCOME: TOTAL FOOD EXPENDITURE, DOMESTIC FOOD EXPENDITURE & EXPENDITURE ON MEALS AWAY FROM HOME.

EXPERIMENT. PER PERSON PER WEEK IN SHILLINGS

LEGEND: • TOTAL FOOD EXPENDITURE
        < TOTAL FOOD EXPENDITURE
        • EXPENDITURE ON MEALS AWAY FROM HOME

SOURCE: 75
examined separately. Figure 29 refines the relationship in this way and shows the difference between expenditure on meals purchased by men and those purchased by women. It is clear from this, that whilst both show a marked association of eating out with income, in fact this is much more marked for men.

In this figure, and probably of greater interest, average expenditure per person actually eating out is shown in addition to the average for the sample. This provides the crucial piece of information that among those eating out there is a positive correlation between income and their expenditure. It may be thought that this is to be expected, but previously it has in fact been impossible to say whether the commonly noted increase in expenditure of eating out with income, is due to people in the higher income brackets spending more, or to simply more people eating out. As Figure 26 shows that the propensity to eat out increases with income, it is clear that the increase in expenditure with income level noted in Figure 28, is partly due to an increase in the percentage with expenditure, and partly to an increase in expenditure in the higher income groups by those who eat out. That is to say, not only is there an increase, with income, in the number of people eating out, but the amount that these people spend, also increases. As might be expected, the income elasticities for the two sets of results would seem to differ, being greater when expenditure is averaged on the number of people in the sample. This is because expenditure averaged on those eating out, discounts the fact that the incidence of eating out is highest in the higher income groups.

The only other additional material about effect of income on eating out comes from the last of the Knessley and Ginsberg surveys. Here the income groups were extended by sub-dividing the highest group into two, and whilst the considerably smaller sample size suggests that perhaps not too great a reliability should be placed on the results, Figure 30 may indicate how much income can influence expenditure in the high income groups. Although the percentage of people eating out increases steadily throughout the whole income range, the expenditure of those in the highest income group makes a startling jump which is completely out of proportion to the previous trend. It might be fair to conclude, therefore, that in the very highest income levels, the effect of income has a far greater effect in increasing expenditure on eating out than it does on increasing the propensity.
FIGURE 29

INCOME : EXPENDITURE ON MEALS AWAY FROM HOME PER PERSON IN THE SAMPLE & PER PERSON EATING OUT

LEGEND

\[ \begin{align*}
\text{Source:} & \quad 75
\end{align*} \]
FIGURE 30  INCOME:

a. WEEKLY EXPENDITURE ON MEALS AWAY FROM HOME
SHILLINGS PER PERSON

b. PERCENTAGE WITH EXPENDITURE ON MEALS
AWAY FROM HOME

Source: 76
The Family Expenditure Survey

The Family Expenditure Survey has published income cross-sections for each year since 1959, as well as for the earlier 1953-54 survey. These provide the most comprehensive collection of information about income and the only one with which it is possible to carry out any sort of quantitative analysis. Expenditure on meals away from home is usually shown for about nine income groups, although in the latest survey because of the larger sample, this has been increased to twelve. For most practical purposes, it is not possible to use the whole range of data about income, as not only have the bounds of the income groups varied considerably during the period, but also, the fact that the top income group has no upper limit, makes any choice of an average purely arbitrary. Analysis has really to start, therefore, in 1961 when average income for each income group is also given.

As was seen in the quantitative analysis, the relationship between meals away from home and income can be rigorously established. The general conclusion reached was that during the past decade the income elasticity for this commodity has remained on the whole fairly stable, and certainly there is no evidence to support the hypothesis that a classical downward trend in the elasticities should obtain. The income elasticity of demand for meals away from home is found to be about 1.4, and whilst it is not possible to compare this to the results obtained by Kemsley and Ginsberg (which do not examine household budgets), it is clear that all the available survey information shows income and eating out are highly associated.

In the Family Expenditure Survey it is possible to examine the data in another way, by comparing it to the total expenditure on all items in the budget and also to the total expenditure on food. As can be seen by Figure 31, the relationship between income and meals away from home as a percentage of total expenditure is far from simple. The unreliability of the data in the lowest income groups is no doubt the main reason for the rather disparate pattern at the lower end of the graph, and certainly the variability of the results does not make it possible to draw any general conclusions about the trend of the curves over time. There is one interesting feature however, which indicates that after a certain income eating out may maintain a steady relationship to expenditure. Whilst the upper part of the curve has shown some instability over the past seven years, it would seem that
FIGURE 31

INCOME: EXPENDITURE ON MEALS AWAY FROM HOME AS PERCENTAGE OF TOTAL EXPENDITURE, 1961-1967

LEGEND:
- 1967
- 1966
- 1965
- 1964
- 1963
- 1962
- 1961

DISPOSABLE INCOME PER HOUSEHOLD (SHILLINGS PER WEEK)
there has been a slight flattening during this period. This suggests that income may have a different effect on meals away from home to that noted earlier.

The quantitative analysis showed that eating out as a function of income has a high elasticity which does not seem to be decreasing, implying static saturation levels. This may, however, be a slight simplification and the statistical treatment, especially the equation used, not sensitive enough to describe the form of the upper part of the curve exactly. It would appear, that recently in the higher income groups, expenditure as a proportion of total expenditure, has tended to remain constant, implying that eating out may in fact have some sort of saturation level. It is not possible to make a more positive statement than this and for all practical purposes, the quantitative assessment is no doubt to be preferred, although future analyses of household budgets may well show that there is a real limit to the amount spent on eating out, as consumer preference is channelled into alternative fields of expenditure.

The second main way of analysing expenditure on meals away from home is by relating it to total expenditure on food. This is shown in Figure 32 and, as was found with Figure 31, the relationship during the past seven years has been far from simple. Again there is one factor of interest which distinguishes it from the pattern found when expenditure on meals away from home was expressed as a percentage of total expenditure. In the upper part of the curve there is no real flattening, and even in the higher income groups expenditure on meals away from home is still increasing in relation to total food expenditure, a fact which has been on the whole true since 1959. (Fig. 33)

As stated so clearly by Engel and as has been found in every budget survey since, the proportion of the budget spent on food becomes progressively smaller with increasing household income. Meals away from home is therefore part of a much larger group of items which is gradually losing importance in the budget, although at the same time, it is itself becoming increasingly prominent. The analogy here is, of course, with macro-economics where meals away from home may be thought of as a commodity which is increasing its share of a declining market.

The only additional information about the effect of income provided by the Family Expenditure Survey is with regard to the income of the head of the household as opposed to the income of
FIGURE 32

INCOME: EXPENDITURE ON MEALS AWAY FROM HOME
AS PERCENTAGE OF TOTAL FOOD EXPENDITURE, 1961-1967

LEGEND

- 1967
- 1966
- 1965
- 1964
- 1963
- 1962
- 1961

SOURCE: 27, 104-111
FIGURE 33

Expenditure on meals away from home as percentage of total food expenditure 1959-1967

Source: 37, 105-111
the household, given in all the other tables. This breakdown was provided in 1964 and is shown compared with the more conventional subdivision for that year in Figure 34. Very little can be determined from this, apart from the fact that on the whole the curves for household income seem to be slightly less open to variation than those for the income of the head of the household. The real effect of this factor can however, be analysed from the previous year's survey in 1963, when the relationship between the expenditure on eating out and the income of the head of the household was given for several groups of household income. That is to say, household income was held constant, so that the effect of the income of the head of the household could be examined.

The results are shown in Figure 35 with meals away from home expressed as a percentage of total expenditure. As can be seen, in most groups the income of the head of the household has little influence on expenditure on eating out, and it must be concluded that as far as meals away from home are concerned, it is the household income which is the major determining factor.

3. Summary

Although the effect of income on eating out has been rigorously analysed in the quantitative section, there is no doubt that this more general analysis is extremely valuable. Apart from adding information about propensity to eat out which has not hitherto been considered, it also widens and tempers the statistical findings about expenditure. The most important factors to emerge are that both the propensity to eat out as well as expenditure increases with income; that at very high levels of income, expenditure might be approaching some sort of saturation; that expenditure on meals away from home is continually strengthening its position in the 'declining market' of total food expenditure, and lastly that it is household income which determines expenditure on eating out, rather than the income of the head of the household.
Figure 34. Income: expenditure on meals away from home as percentage of total expenditure by disposable income per household & per head of household.
CHAPTER VIII

THE EXTENDED GENERAL ANALYSIS

1. Introduction

Initially, it had been anticipated that this study would develop two distinct sections, the first being concerned with analysing the demand for meals away from home, and the second, with tracing the implications the derived determinants may hold for the future. Conceptually, the division was also intended to serve the important purpose of distinguishing the two levels of reality involved; the objectivity of the demand analysis, and the conjecture of the forecasting. By labouring the distinction between the established character of the past and the postulated nature of the future in this way, it was hoped that future research workers would be able to disregard those parts which had been proved ill-conceived by later events, and judge more readily the validity of the less speculative sections.

Unfortunately, as the analysis proceeded, it became increasingly apparent that it would not be possible to retain such niceties of form, and that instead, the study would, by degrees dwindle into surmise. Although the fragile statistical base withstood moderate analysis by classical family budget methods, it eventually started to crumble when confronted by established time series techniques and finally failed completely as the analysis adopted a more ad hoc methodology. The fact that it is not possible to continue to determine econometric relationships between eating out and specific determinants of demand in this more flexible analysis does not imply, however, complete quantitative capitulation, for as has been seen, some degree of murkiness still persists, which thus allows some standard of objectivity to be maintained.

The stage has been reached therefore of having extended the analysis as far as the available data will permit without resorting to the use of pure conjecture. It is clear, however, that by attempting to apply standards of controlled experiment, the supreme tool of the natural sciences, to a discipline which, even with adequate data, has shown itself quite incapable of emulating such levels of rigour and precision, the resulting description of the determinants of demand for eating out facilities in Britain, is far from complete. To limit the analysis to six traditional factors, whilst being theoretically preferable from an objective standpoint, is unsatisfactory on a mere intuitive level, for it leaves the impression, (albeit quite unjustifiable) that in
retrospect, not only have existing a priori assumptions and preconceived ideas been on the whole negated, but that no alternative viable concepts have been substituted in their place. The feeling is very much one of 'not proven'.

To counter this natural suspicion, the concluding sections of the analysis will adopt a more conjectural tone. Without losing all contact with the substantive work of the previous sections, and limited by the unavoidable bounds of personal scepticism towards hypothetical excesses, a description of the determinants of demand for space away from home is attempted in much more subjective terms. The interpretation has leaned heavily on the ideas proposed recently by Pahl and Cullen in their study 'Paradoxes of Mobility'. (126)

2. Mobility and Eating Out

Since Crowe's strictures about preoccupation with 'Home dermiens', (31) recognition of the importance of movement has been growing. Indeed, in Sweden, the Lund School of Geography have put population movements at the centre of their field of study, where human population, 'is regarded not as a static feature,... but as a complex of oscillating particles, with short loops connecting places of sleep, work and recreation, and larger loops connecting old hearths and new areas of migration'. (59, p.32)

It is not surprising that geographers in particular have concerned themselves with the problem of movement, for there is a basic interaction between movement and distance, and geography, as a discipline, is based on the premise that the spatial distribution of human activity affects an ordered adjustment to the factor of distance. The geographers' approach to mobility is one of analysing the effect of distance on movement and deriving the implications this holds for the concepts of 'field' or 'territory'. They have therefore evolved movement minimisation models, based on the principle of least effort, as a fundamental to all understanding of the geometry of settlement patterns and intra-urban location.

* In particular toward such writers as Dichter who propose psychological determinants which are impossible to justify. See, for example, his paper, 'what motivates people to travel'. (39)
The geographers' perception of mobility is, however, not the only way of treating such concepts and it can in addition be considered less rigorously in terms of social mobility. The type of mobility that can be expressed in terms of increasing income, extended education or occupational betterment. This movement is one that has not been structured or analysed to the same extent as physical mobility, and as such, is a much more nebulous entity. The ideas which it provides are, however, of very great interest when trying to interpret more persuasively the influences which affect eating out in Britain today.

When so much stress has been placed on the need for objectivity in the analysis of the determinants of demand for meals away from home, to come suddenly to a discussion of a hitherto unconsidered variable, and indeed assign to it a place of importance, must seem at best hypocritical and at the worst academic gerrymandering. The fact remains however, that whilst substantiation is quite impossible, there are strong a priori reasons for considering mobility to have a crucial influence on eating out. Without belabouring the obvious, by definition, some distance must be travelled in order to be able to eat a meal away from home.

Not only, therefore, do restaurant meals provide for economists a perfect illustration of a commodity which is consumed immediately and cannot be stockpiled, but for geographers, a restaurant or hotel offers an ideal example of a central place activity to which people must come to benefit at all from the service offered.

Distance and consumption of meals away from home must intuitively be connected and ceteris paribus, the further one travels away from home, the more likely one is to eat out. This pattern may, of course, be distorted by eating out with friends or by taking food from home, but an absolute lack of data forces the assumption that any possible influence is of limited penetration.

The effect of distance is nevertheless a common phenomenon, and the difference between the small towns where workers could get home to lunch, and the cities where they had by necessity

"Even the arguably relevant area of 'take home food' usually has to be collected."
to remain, has in fact long been recognised. More objectively, however, some slender support for this hypothesis is to be found, for Kemeny and Ginsberg’s 1956 survey analysed expenditure on meals away from home by the length the person had been living at the address where he was interviewed and the number of calls the interviewer had to make in order to contact him. (75, p. 77) The results show that people who have been living at an address for about one year spend the most on eating out, and that expenditure is distinctly higher amongst those who are difficult to contact. In fact, where contact is not eventually established until after five or more attempts, expenditure is over four times as high as when contact is made straight away.

In addition, whilst accepting the limitations of the statistical procedures of Chapter VI, there is in fact some slight evidence that the early data dredging regressions of budget information show expenditure on transport to be most closely correlated with expenditure on meals away from home.

These two pieces of information support therefore a priori intuition that eating out and mobility are connected, and give some credibility to the proposal that mobility can be viewed as the cohesive influence uniting demand for meals away from home to the determinant factors isolated in the ad hoc analysis.

(a) The Need to be Mobile

In the past, classical economics had to suffer the accusation that it developed its theories within dimensionless space: the production, manufacture and exchange of goods all functioned seemingly at a single point. Whilst economic geographers may also be guilty of teaching a view of economics that has a dwindling acceptance among economists, it is fair to say that they were quick to recognise the importance of spatial relationships.

Daily life clearly necessitates mobility: the husband to work, the wife to the shops, the child to school. The need to be mobile arises because society is not dimensionless; work, school, shops and home are not in the same place and ‘the inevitable concentration of facilities means that some people are going to live closer to the pub, supermarket, church or park than others.’ (126) As opportunity of access varies, whether by choice or accident, so does the need to be mobile. Whilst these basic locational relationships structure the nature of an individual’s mobility, its actual shape will depend more on the pattern of his activities.
At any one time a person will only require a selection of the available facilities and it is patent that the use of such things as ante-natal clinics, nursery schools or dance halls are all related to a person’s age or the stage they have reached in the life cycle. Because the need to be mobile is influenced by differential locational relationships and by the diversity of activity patterns, so through mobility can their effect on eating out be noted.

The subject of the interaction between restaurants and their customers whilst offering immense scope to those interested in seeking out order in locational pattern, has, as yet, stimulated little interest let alone serious research. It is clear, however, that there exists considerable variation in opportunity of access to catering facilities throughout the country. The ability to obtain a cup of tea away from home is not usually too demanding wherever one lives, but in contrast, the opportunity to benefit from the higher standards of French cooking, or even more esoterically, Japanese cooking, is confined to a few places in the country and in particular London. Although it is not the purpose of this study to discuss the special variation in catering facilities, it is of relevance to note that the ‘intensity’ of the demand for this service must be directly related to the amount of mobility required to satisfy it, especially when the demand is caused more by pleasure than by need.

When the demand is functional however, stimulated by necessity, the relationship to mobility is best considered from the opposite viewpoint, in that the further one has travelled away from home the more likely one is to eat out (other things being equal). The commuting office worker will have a higher propensity for meals away from home than a colleague who lives but a five-minute walk away, as will the commercial traveller in comparison to the shop assistant in the village store. The need for catering facilities is reflected in the need to be mobile, which in turn is defined by activity patterns.

(b) The Ability to be Mobile

Whilst it is important to determine the causes influencing the need to be mobile, they do not start to obtain definite force until the need is transformed into ability. The basis for such a transition is usually firmly embedded in economics, for no matter how strong the need, without the essential financial support the mobility will never be achieved. However much it
may offend those who believe in the supremacy of sociological interpretation, unless there is enough money there will be no expenditure on travel and also none on meals away from home. Income is therefore the necessary condition, whether explicitly acknowledged or not, before this expenditure can occur at all.

The fact that it establishes these preconditions does not mean however, that mobility will result, for factors such as age and stage in the life cycle, which were seen to determine the activity pattern demonstrate that it is plainly not a sufficient condition as well. One has to accept therefore the income situation as given, before it is possible to examine the mobility potential as influenced by sociological factors.

The ability to be mobile and, through it the ability to eat out, is strongly related to age, and especially to its more sensitive definition by position in the life cycle, as well as to the distinction between the sexes. As Pahl and Cullen point out, men and women live in different social worlds, particularly when the social relationships of the world of work are some distance from home; 'Women live in a place; men live in two places, home and work'. (126) The man, with a far-reaching ambient derived by merely going to work, is more likely to eat out than his wife, whose life is centred on the home. It should be noted, however, that the mobility of the wife, either going out to work as well or even just shopping, has a much more far-reaching effect than just another person entering the market for meals away from home, for her absence ensures the absence of the other members of the family. As long as the cook is not at home to prepare a meal, then the husband and children will not be home for lunch.

A distinction between the sexes does not, however, provide sufficient information, and it is not until such explanations are incorporated in a wider model which involves age and position in the life cycle can a more complete explanatory picture be built up. Mobility is strongly determined by age: 'no matter how rich or poor the family, the very young and the very old are limited in their mobility simply by their age; they are dependent on someone else to transport them'. (126) It is the young adult, unencumbered by children and the many economic constraints of his parents, who has the greatest mobility, and the differences which arise between say the young man on his motorcycle and the typist who uses a bus, are in fact ones related more to desire or inclination, than to ability. As soon as responsibility
for children occurs, however, then mobility is immediately constrained. The husband can go off to work in the family car, but his wife is tied to the home. It is the children's lack of mobility which restricts the mobility of the parent, and only when they reach an age at which the inclination to travel ceases to be inhibited, will general family mobility increase. Often full mobility is only attained when children become independent of their parents as they initiate their own life cycle.

After the first generation have left home the expected improvement in mobility potential does not always take place, for often this is very near the point at which age has a limiting factor in its own right begins to be felt. As Lansing and Blood have shown, increasing age is a considerable deterrent to travel as infirmity clouds its previous attractions. (80)

Nevertheless, behind these sociological influences, the pervasive effect of income must not be forgotten. There is a tremendous difference between the mobility of the rich and of the poor, and the dividing line is usually the possession of personal transport. The mother with a car has freedom of a completely different order compared with that of the mother dependent upon the local bus service, where the prohibition of prams on the buses may restrict her ambient to an immediate walking distance. At the other end of the life cycle, the same effect is again found, in that there is an immense contrast between those able to defer the restrictions of age by affording private transport driven by others, and those imprisoned in their homes by the expense of taxis and an inadequate public transport.

As the need to be mobile can be translated into the need for catering facilities, so the ability to be mobile implies at least the ability to eat out, and the constraints, whether economic or sociological, which limit that mobility, are also those which restrict the demand for meals away from home. The mother tied to a child has nothing like the same opportunity to eat out as her working husband, nor has the old-age pensioner compared with the teenager. Gainsaying income, clearly the stage in a life cycle is of great importance. There is little doubt that the young have an extremely high propensity to eat out, although limited prosperity clearly prohibits a large expenditure. This is the age at which eating away from home is most appealing, and such attraction continues into the early stages of married life,
especially if the wife continues to work, for not only is the household relatively affluent, but there is some disinclination on the wife's part to spend too much time cooking after a day's work. In addition, even if the wife does not work, increasing education makes the wife less tolerant of being tied to the house in comparison to her more mobile husband.

The onset of children, however, changes the picture considerably, for not only is the household's income sharply reduced, but in addition the children act as a major deterrent to movement. Difficulties in finding someone to mind the children, the dislike of devoting money to a luxury when so often, under the burden of a mortgage, durables have much higher priorities, also act as further deterrents. Nevertheless some expenditure may in fact be necessary, the husband's mid-day's meal at work for example, but the attempt is usually made to trim such costs to a minimum.

When the children grow-up and reach the age when some mobility is permitted once more, then per household expenditure on meals away from home may again rise, but this does not mean to indicate a higher per capita expenditure, for when there is one person paying for perhaps four meals, costs are still kept within strict limits. It is not until the children become earners in their own right, or the wife returns to work, that there is any resurgence at all to eating out, for not only does income increase but as was noted earlier, the wife who goes back to work compounds the effect, and forces the other members of the family to remain out for some meals.

The departure of the children in the years of relative affluence just prior to retirement means a brief return to comparative freedom and fairly high eating out expenditure, but disincentives to travel soon set in and combined with later financial penalties, eating out eventually descends to a low ebb.

Throughout the life cycle, mobility is the key to the demand for catering facilities, for unless the ability to be mobile is latent, eating out can never attain a high potential.

(c) The Desire to be Mobile

Until now, the factors discussed have structured the need and ability to be mobile. It is clear, however, that whilst the potential has been provided, it will not be turned into actuality unless the inclination to travel is considered. People at the same income levels do not all act alike, for cultural differences which can be directly related to education, occupation and social
systems lead to quite distinctive and often highly disparate styles of life.

At the top end of the social scale one has the people with the most far reaching mobility. These are the upper class families whose members, with the relevant forms of private transport have the means to attend the national or even international activities they want to. Here expenditure on meals out could be stunted by the presence of domestic servants, but is more likely to be a reflection of their very high mobility and the high leisure content of their activity pattern.

Below this come the upper middle class households where again mobility is high, due, perhaps, to the existence of more than one car, but in any case the access of both husband and wife to it. Often university educated, they are the professional and managerial class who have to be mobile in order to maintain a network of widely scattered friends and colleagues met at college or work. 'These are cosmopolitans preferring to live in a region rather than a place', (126) and it is this outlook which gives them both a high propensity and expenditure on eating out. Some in this group will, however, have more local connections; perhaps lacking the education or occupation to be cosmopolitan, they tend to live a life centred on a place and the family.

'Generally in business and commerce, their economic roots are local and their network of friends does not draw them out into regional mobility'. (126) The limitation of their ambient to the locality reduces their propensity to eat out, although it should not be forgotten that more than adequate financial resources still exist, so that on the occasions when they do go out for a meal, their expenditure might be quite substantial.

Once into the lower middle class the restrictions on mobility and eating out begin to close in. Although earning little if any more than the skilled manual workers, they draw themselves apart, intent on home-ownership, the burden of which inhibits their existence. Their mobility may be provided by a car, but as its use is usually confined to the week-end Sunday drive, it is of limited extent, and gives rise to little expenditure on eating out. Apart from perhaps subsidized patronage of the office canteen, expenditure on the whole is dasultory.

Finally, the restrictions are most felt in the various sub-groups of the working class, where reliance on public transport determines an erratic mobility and an eating out pattern that is a rarity confined to an occasional snack.
3. **Conclusion**

As social networks change so does mobility, and with it, the demand for catering facilities. Different social groups have different needs to be mobile, different abilities to be mobile and different desires to be mobile, and it is those differences in mobility which in the end determine the variation in eating out behaviour. "Where men and women have grown up in the same place, gone to school together, married each other, sent their children to the same school and worked in the same field, mine or factory, they feel little desire to move away from the immediate locality for satisfying social relationships.... However, where men and women marry after meeting in college or office, having been brought up in quite different parts of the country, their friends and relations are likely to be scattered. As the man's career takes him from one area to another, so his network of social relationships become more loose-knit or stretched. Such people need mobility in order to maintain their pattern of social relationships". (126)

Social and physical mobility may be cogently proposed as the solution to the eating out enigma. Certainly more evidence specifically aligned to this hypothesis would be able to show how valid it is, but until then mobility can only be accepted as a connecting thread drawing together the fragmentary information of present statistics. To illustrate how the various factors combine to influence mobility and eating out, Figure 36, adapted from Pahl and Cullen's geometric plant of a commuter village, shows the way mobility rests on an economic and social framework. As far as eating out is concerned it is levels four and five that are crucial.

4. **The Pragmatic Attitude**

Having indulged in a flight of sociological fancy, before proceeding to a conjecture of the future, a return to more pragmatic considerations is clearly needed. Whilst it may be useful from an illustrative viewpoint to explain the demand for meals away from home in terms of mobility or stage in the family cycle, until these variables can be defined somewhat more tangibly and an exact relationship between them and eating out derived, a causal interpretation of eating out will have to rest content with establishing far more basic connections. This is particularly true when attempting to forecast, for it is difficult enough to project well defined parameters such as Gross National Product, or
This diagram of the village's social structure grows out of its base map like a geometric plant and, in that sense, it might best be understood by starting at the roots and reading upwards.

5 The external social networks:
- Work network in nearby town. Loose-knit personal network often confined to near relations who may be anywhere from next village to New Zealand.
- Probably loose-knit due to wide-ranging professional or business contacts but having maximum transport facilities.
- Loose-knit networks spreading over the region arising from employment, the social calendar and available range of amenities.
- Hard core local network otherwise restricted to children who may, however, live locally.
- As group "d" but having more contacts in surrounding villages due to local employment and antecedents.

4 The internal social networks.
- Restricted and isolated. Cases of real poverty due to burden of house/car purchase. Nervous of spending money at pub or home entertaining.
- Social contacts only restricted by "protocol." Contacts with council house tenants through servants, gardeners, etc. Church, parishes and amenities contacts as well as group "e".
- Support of football and cricket club in a honorary capacity.
- Pub, club and home entertaining gives maximum social contacts. Wives have coffee mornings. Cricket, tennis but "spirits" on the ladder.
- Remnants of traditional village life. Contacts with children in council houses, Church, pub but usually just parish politics.
- Family centred. Men frequent pub, support football and cricket. Local employment.

The degrees of mobility on the diagram:
- Footbicycles.
- Public transport.
- Limited personal transport.
- Full personal transport.

These five groups can now be seen in their typical family-building cycle.
- Mainly retired or 45 plus. Children away from home at higher education. Two cars and possible chauffeur.
- Late 30's, children at private schools, may have two cars and wife drives.
- Old retired people, no children, public transport.
- Late 40's and 50's with teenage children. Some second generation children under 5. Used car or public transport.

2 The first breakdown defines social groups, their wealth and type of dwelling.
- The white collar worker commuting to the nearby town. He finds cheaper housing out of the town and is buying his house on mortgage. It is not new, built about '60 or '62 and costs between £3,500 and £5,500.
- Company director, retired professional or civil service or private income families. They live in the "heritage" houses of the village costing £9,000 to £15,000 or more.
- Rising executive in business or public corporation. Commutes to metropolis or "decentralised" offices. Lives in architect-designed house which is new and pays on mortgage between £7,500 and £12,000.
- Old age pensioners, shopkeepers or labourers mostly local to the village living in or off the High Street. Pictoresque village housing, often condemned property, but some taken over by group "e". Some owner-occupied and some rented.
- Agricultural workers, skilled and unskilled industrial workers, employed fairly locally, living in council housing, predominantly rented by the week.

The village as seen by the surveyor.
Physically all is there. The Church, Manor Farm, High Street and Grange. The new housing exists and the pylons are there. But we know little from the map as to the people who live there except what we can deduce from the size of the houses, their location and layout.

The Effect of Mobility on...
population, without trying to do the same for highly tenuous concepts.

To align the interpretation both with respect to the available data and to its use in forecasting, the hypothesis is proposed therefore, that of all the determinants of eating out hitherto examined, only income really warrants attention. It is argued that it is sufficient to analyse only the relationship between income and eating out, for within this one variable are the effects of all other influences contained. This does not debate the validity of proposing the importance of occupation or social class as major determinants, but because the nature of the available information makes it impossible to separate out their specific effect from the corollary influence of income, it does suggest that it may be unwise to pursue the analysis in these terms.

As Chapter VI showed, statistically there can be no purely objective choice of determinants, and the use of income cannot be substantiated in this way. There is however strong traditional and a priori reasons for accepting the strength of income and, slightly more rigorously, some quantitative support can be obtained by regressing average expenditure per head on eating out against average income per head (both deflated) for each of the various sub-groups used in the Family Expenditure Survey since 1962. As can be seen by Figure 37 the average expenditure for the sub-groups, whether they be occupation, household composition, age or location, all tend to lie on the same line in relation to income. If a particular factor such as occupation had been of greater influence than income, then a systematic deviation from the regression line would have been found. In fact the general fit was good, and an $r^2$ of 0.80 suggests that there is some justification for adopting income as the major determinant for meals away from home.

Figure 37 does however provide evidence that income may not always be so important, for the scatter of points is much wider at higher income levels than lower in the income scale where the pattern is more regular. This would indicate that, whilst income may be the dominant influence shaping eating out behaviour in the lower income groups, this ceases to be so higher in the scale as other factors take over its function. These factors are, of course, in operation throughout the whole income range, but until a certain level is reached, their effect on
eating out will be masked by those produced by income. The difference in expenditure on eating out between the young highly mobile and social graduate now in junior management and that of recent graduate trainees is because there is a substantial discrepancy in their salaries, but the difference between the manager and a highly skilled artisan also in the same moderately high income bracket is rather one of social background and habits. Income must provide an adequate background before the effect of social factors can even start to be felt, and until this situation has been reached, any attempt to disentangle their separate influences will probably not be very fruitful.

Income is seen therefore as a variable which structures the demand for meals away from home. As Figure 36 clearly shows, the whole social framework and mobility pattern rests on a base of income; it underpins all the other relevant factors and without it, no expenditure would be possible. It is the prime necessary condition. Equally clearly however, there may also be a point at which income ceases to be the main determinant and where social variables become more important. Within a small section of the population this is no doubt true at the moment, but for the population as a whole, the primary base is not yet complete and until average prosperity reaches the point when this will occur, income will continue to dictate the overall trend in eating out behaviour in the United Kingdom.

5. Summary

Having until now, achieved only a limited degree of interpretation of eating out behaviour, a more speculative approach is adopted, in which mobility is proposed as the cohesive influence uniting the demand for meals away from home to the determinant factors in the ad hoc analysis. Different social groups have different needs to be mobile, different abilities to be mobile and different desires to be mobile, and it is these differences in mobility which are suggested as determining the variation in eating out behaviour. Such an interpretation is however, of little use in forecasting, and as it is to this end that the analysis must be finally aligned, a more practical solution is sought. It is argued that income is the only factor of importance to determine the demand for meals away from home, for within it are the effects of all the other variables contained.
PART THREE

FORECASTING
Despite the warnings by such people as Karl Popper that 'there can be no prediction of the course of human history by scientific or any other rational methods', forecasts in some shape or form continue to pour out from every imaginable discipline. Psephologists try to determine the vagaries of the electoral mind, town planners the shape of the urban environment and demographers the fecundity of future generations.

The fact that Popper is far from alone in regarding the amount of skill that can be brought to bear in forecasting as a relatively negligible quantity, does not seem to deter its many proponents from practising their faith, although unfortunately in many cases, faith only too often appears to be the sole justification for their predictions. The whole history of forecasting is paved with unfulfilled expectations, and yet the conjecture still goes on. The inaccuracy which obtains is, however, not always forgotten, for as Treasure points out, 'everyone who has ever written about forecasting has begun by saying that it is essential but impossible,' and indeed, it would seem that a realisation of the limitations of the exercise, together with a certain amount of optimism, about its validity, are two of the attributes most commonly cultivated by forecasters.

It is rather strange that, although organised forecasting has always suffered from extreme scepticism, practical men tend to think in terms of future time rather than of time past. He wants to know what time a train will leave, or whether a person will be in his office tomorrow; and neither the train's departure time on the previous day, nor the fact that the person in his office yesterday, are of little interest to him. He is only concerned with past facts in so far as he uses them for presuming the future. If a train has left consistently on time then he sees in this a guarantee of the future in which he is interested.

De Jouvenal sees in this increasing transformation of facts into futura by summary processes of the mind to be part of our daily life, and the undertaking of conscious and systematic forecasting as simply an attempt to effect improvements in a natural activity of the mind.
As Director of 'Futuribles' or as it is officially known 'Société d’Études et Documentation Économiques, Industrielles et Sociales', he represents contemporary methodological interest in forecasting, which, having discovered retrospectively one opinion of the future to be better founded than another, is trying to discover how it was derived, for 'it is the practice of forecasting that leads to its analysis, whence its theory may arise'. (76, p. viii) In discussing the mechanism and philosophy underlying conjecture, De Jouvenal has brought some order into a subject where hitherto, anarchy has been rife, and this particular study has greatly benefited from the discipline thus introduced.

To trace the future of eating out over the next decade, the determinants of which have been seen to rest on an exceptionally fragile base, is clearly a delicate task. It is crucial therefore to ensure that an assumption about the future is supported by an intellectual scaffolding; the conjecture should, in fact, be well reasoned. Unfortunately any forecasting must necessarily be uncertain, but the present trend towards developing systematic conjectural processes has shown that it may be possible to contain the worst speculative excesses.

### 2. Terminology

Until now, a variety of terms have been used to describe the basic idea of looking into the future. If employed correctly, they are all indeed synonymous, but some unfortunately have gained an emphasis which belies their original meaning. A forecast is no more than an opinion about the future and forecasting is but the intellectual activity of forming such opinions. These opinions, whilst being carefully formed, have therefore uncertain verification. The term 'prediction' as commonly used in economic forecasting, has however, achieved unjustified strength, implying a completely certain verdict, and it is for this reason that a word such as 'conjecture', which conveys some speculative tenor, is perhaps to be preferred. Nevertheless common usage must prevail, if only so that style may not succumb to pedantry.

Having therefore noted the essentially speculative connotations of the vocabulary, the distinctions need not continue to be laboured.

### 3. Conceptual Structure

Having stressed the speculative nature of the whole forecasting exercise, and without leading the discussion into a philosophical cul-de-sac, some mention of the conceptual structure needs
to be made in order to place the present approach into perspective.

(a) Structural Certainties

According to the subject considered, man's attitude towards the future can take many forms. Fortunately not all of these are relevant to forecasting demands for meals away from home in the United Kingdom, and can safely be ignored. For example, in his calculations, man often bases his predictions on assurances which he has about the future. Some of these are structural, being features inherent in an order in which he has confidence, whilst others may be dependent on people undertaking to do something. One expects winter to be followed by spring, or that on the death of Elizabeth II the throne will be occupied by an heir - whether it be Prince Charles or not - as dictated by the rule of succession. These are factors which extend from an established order to trap the future and reduce to some extent uncertainty.

Unfortunately very few structural certainties seem applicable in this study. Apart from assuming that 1980 will eventually come, really the only possible relevant feature is that during the following decade there will be at least two general elections. The first must take place by 1971, and the second no more than five years later. This is important, in as much as a government will be a strong force behind the economic climate during their term of office, although it should be noted that whilst a change of government seems at the moment to be eminently possible, no such assumption can be contained within the remit of structural certainties.

That one is unable to make any real use of structural certainties here should not be surprising, for unlike the ancient Chinese civilisation, whose rigid society once held them on a relatively invariable course, society has been in a state of change for some considerable time. As De Jouvenal points out, 'The great problem of our age is that we want things to change more rapidly, but at the same time we want to have a better knowledge of things to come. I do not say a reconciliation of these desires is impossible, but it does raise a problem'. (72, p.45).

It is clear therefore that structural certainties play an almost negligible part in our forecasting, and that attention must be focussed on more intangible factors. The future believed dependable is of little interest compared with the huge enigmatic void with which forecasters are more usually concerned.
(b) The Nature of the Future

Unlike the relatively simple future of structural certainties, the future to which we must look is one of complex indeterminacy. The future of Laplace and his fellow determinists, (81) in which the difference between the past and the future is merely a difference between knowing and not knowing, has no place in our philosophy, concerned as it is with man's role as both an active agent, to whom the future is a field of liberty and power, and as a cognizant being to whom the future is a field of uncertainty. The future is no longer determined, merely awaiting discovery, but instead adopts the seemingly paradoxical position of being at the same time both masterable yet dominating.

This apparent contradiction is, however, not as immutable as it might appear, and can be resolved by permitting a divisible future, the two parts of which refer to different scales. As McCarty once pointed out, 'Every change in scale will bring about the statement of a new problem, and there is no basis for presuming associations existing on one scale will also exist at another'. (91, p.16)

In this case, the masterable future is the one which an individual can alter, whereas a dominating future is one over which he has no control. For example he foresees that he will be soaked by rain but can contradict the prediction by putting on a raincoat. The fact that it will rain is something, however, that he is not able to control. Less trivially, the crucial point of relevance to economic forecasting is that the future is usually dominating as far as the individual is concerned, but it may be masterable by a more powerful agent on a different level. A forecast recession would be a dominating future for a restaurateur who could do little, apart from ensuring that the effect on his business was minimised, whereas for a government, on the other hand, the power is there to prevent it. Although not a timely remark to make with regard to the United Kingdom at the moment, a government controls the necessary fiscal policy and is able, therefore, to master the individual's dominating future.

The distinction, which this interpretation of the future's duality provides, is of extreme importance when trying to indicate the conceptual background to forecasting the future demand for a commodity such as meals away from home. Consumer demand is a process, the evolution of which 'is not a goal chosen by a human will, but the effect of a complex concurrence of actions not
not consciously aimed at the effect'. The same distinction between dominating and waterable can, however, still be made, for clearly, whilst a single consumer, or a business, has no control over total demand, the national authorities can, by such methods as taxation, manipulate and dictate its course to their normative ends. In what is usually called, 'free market economy', this facility for controlling demand is not usually brought to bear with a force that would traumatically alter the existing patterns, but there is little doubt that the pressure which is applied, does not have an altogether negligible effect.

To date, meals away from home have not been subject to direct taxation, but the various disincentives placed on the service industries in the recent past, would make it inadvisable to assume that the catering industry is not being manipulated, however indirectly.

As this forecast is being conceived on a level somewhat beneath the scale where direct intervention can be included positively in the terms of reference, the future with which it deals is almost entirely dominating. One is not in a privileged position to benefit from the beliefs and desires of the decision-makers, who have to some extent the power to either vitiate or fulfill a prediction. The future to which one is to look is therefore almost total uncertainty.

(c) A Classification of Forecasts

Having established that there is nothing certain about the future with which we are concerned, it is necessary to examine briefly the different ways in which it can be described. Basically, there are three main types of forecasts, all of which, though being equally valid, are liable to suffer misuse unless their true character is made quite clear.

The primary forecast is a challenge. It presents a picture of the future, conditional upon the absence of any corrective actions. For example it is the type of forecast that would predict the future increase of noise in the vicinity of an airport in, say fifteen years, without considering the highly likely palliative effects of governmental intervention. Of more immediate interest, this is the type of forecast used by Sir George Young in his study of the future demand for accommodation in the United Kingdom where he forecasts the likely number of bed-nights that will be spent away from home in the next decade. (166a)
That this forecast is unlikely to be realised, due to factors such as supply constraints, is fully appreciated, and its main function is to present a future eminently possible from an analysis of the determinants of demand. In this instance, it is easy to see why a primary forecast is a challenge.

Secondary forecasts, like primary forecasts, are also conditional, but this time they are conditional upon a certain definite action being taken. They suggest a fan of possibilities each showing the future consequent upon adoption of a specific corrective measure; in the first example, the various noise levels of the next fifteen years which could be attained if the appropriate steps were taken.

The third type of forecast (tertiary forecast) is even more hazardous than the first two, for it conjectures the actual course of the future. It implies a tacit knowledge of the primary and secondary forecasts (the noise levels possible and the levels that might be attained if action was taken), and goes on to speculate what the actual future noise level will be. In short, it involves guessing what decisions will, in fact, be made.

For the present study, however, only the first of these types of prediction is really relevant. The thing which distinguishes it from the other two is the fact that the forecasts do not involve any element of intervention and therefore do not specify possible or likely effects of a certain action. This characteristic is most important from the viewpoint of this study, for the concept of intervention is of arguable value here. Not only is the nature and scale of any conceivable intervention of a completely different order to the process, but if the forecast is to be used for decision making, it is not logical to adjust the prediction to take account of suppositional decisions, when the prediction is itself going to be used as a basis for those decisions.

For example, it would not be particularly helpful to forecast a low rate of growth of expenditure on eating-out, if the only factor restricting this growth was the lack of facilities and the continued lack of facilities was foreseen. A forecast of a low rate of growth would deter entrepreneurs from investing in new restaurants and would so perpetuate the status quo. The circularity of the argument is clear; what is needed is an assessment of the growth of the process unencumbered by hypothetical contrary arguments. Consequently the forecasts used
in this study are based on the concept that the prediction is conditional on the absence of corrective action. They are therefore primary forecasts.

4. The Methodology of Forecasting

Having decided that the future in which one is interested is totally uncertain, and that the forecasts used to describe it will be of the primary type, one is able to turn more practically to a discussion of the methodology which should be best employed.

The forecasting methodology to be applied in any given situation is strongly influenced by the length of the period to which the forecasts refer, and, as might be expected, reliability is a fast diminishing function of the time span envisaged. 'It is only in relation to a very near horizon that we can "predict" entirely on the basis of economic statistics, while if we wish to stretch our view further ahead, we must look for phenomena in the realms of technology, politics and psychological attitudes that will impinge upon the economic system. Thus economic forecasting has, as to speak, a "short range of autonomy" beyond which an association with social and even political forecasting becomes indispensable'. (72, p. 216)

Clearly, therefore, the approach must differ according to whether the forecast is short-term or long-term. The difficulty with this study however, is to try to decide into which of these categories a ten-year period can be classified, for normally, short-term refers to periods up to about five years, and long-term, those over fifteen years. In the end, as is so often the case, the methodology eventually chosen is a compromise between the econometric excesses of the short-term forecasters, and the literary excesses which pervade long-term forecasting although sympathy with the quantitative ideals of the former leads the emphasis more in that direction.

Whilst the initial approach follows therefore the basic ideals set out in the demand analysis, in that it attempts numerical prediction, as will be seen later, it eventually declines into qualitative speculation. It does, however, try to contain this conjecture within a systematic framework, for there is a great danger of assigning a role to a process, and

*Confusion should not arise in mistaking this for the conditional upon which all forecasts are based, (i.e. taking certain assumptions as given) for here it deals solely with the ability to interfere with the validity of the prediction.
in particular a psychological process, that cannot be discussed. As De Jouvenal points out, 'Because of its hidden nature, this psychological process can have no place in a field of activity that is to be systematic, disciplined, justifiable and discussable'.

It should be noted however, that only the more obviously applicable methodologies are discussed, and the fact that neither the self predicting techniques such as developed by Katona (74) nor the use of leading indicators are mentioned, does not reflect their validity, but suggests rather that there was not sufficient evidence to permit even a consideration of their adoption in this particular instance.

(a) Naive Forecasting

Complexity produces a bewildering array of possibilities, and it is common to permit simplifying assumptions in order that these may be reduced to manageable proportions. In forecasting this has been found to be especially apposite, and however intricate final relationships may appear they can usually be traced back to much more humble origins.

De Jouvenal notes three such simplifications by which the future can be estimated. (72, pp.183-184) The first concerns the postulate of constancy, whereby the future value is the same as at present; the second, that of unchanging change, which implies that the rate of movement of the phenomenon moves in the same direction and at the same pace as during a past period; and lastly, that of periodic variations, when the value will fluctuate according to the pattern observed in the past. Of these, it is the second that has the most relevance for this study. The available data do not span a sufficiently long time period for cycles or periodicities to be apparent, and the fact that there has been an upward movement in the expenditure on eating out during the recent past would suggest that a postulate of constancy is not tenable. This last factor will, however, be reconsidered later for this concept might indeed be applicable when considering elasticities.

One is left, therefore, with the suggestion that the forecast should be based on a trend observed in the past. This is in fact the simplest version of Wold's illustrative Janus, who with one face looks back on to the past to discover regularities and with the other looks forward into the future and attempts to make forecasts on the basis of the regularities he has discovered in the past. (164, p.146). It is, however, a method without any
explanatory content, for the utilization of the material is confined solely to seeing how data behaves as a function of time. From this there follows the fundamental implication that its behaviour in the future will be the same as in the past, although the only guarantee that the growth rate will hold in the future is the not wholly logical one that it has been seen to hold in the past.

Whilst it is clear that this procedure involves minimum intellectual effort, it forms the foundation of most forecasting studies, and as Néraud points out, although it is called naive, everyone who makes forecasts starts by using extrapolation to a greater or lesser extent, even if he thinks he is using more subtle methods. (93, p.7) The main point is that extrapolation is nothing more than a point of departure and must only be regarded as such. 'As a first step, it is not absurd to assume, for want of sufficient reason, that a known movement will continue provided one then looks for the sufficient reasons'. (72, p.184)

Before, however, considering more systematic forms of forecasting there is one other naive method which must be mentioned. Forecasting by analogy, whilst not being quite so elementary as extrapolation, is still a fairly basic procedure for it presupposes that 'the mind has sufficiently delineated the present situation to find some analogues for it, judging the resemblance to be fundamental enough in the same sort of events to follow as in the reference-situation'. (72, p.65) Nevertheless, it is clear that in such a situation, resemblance is not always sufficient, for unless a comparison of the causal factors is valid, the same effects are unlikely to follow. In fact, De Jouvenal tends to be rather disparaging about this method of forecasting, accusing it of having little foundation in reason, although it would seem that his more scathing remarks are directed towards the analogical extravagances of those historians who find their subject repetitive (e.g.147) or those economists who note a set pattern of progress for the developing nations. (134) In the end, he recognises that probably a more catholic attitude is required, which, whilst acknowledging the fact that practical conclusions may remain uncertain owing to the complexity of the situation, also sees in the method at least a stepping stone in the right direction. (72, p.65.)
It is clear, therefore, that neither forecasting by extrapolation nor analogy is sufficient, and that conjecture should instead be seated in a more substantial framework. As any rational forecast must eventually rest on the understanding of processes, it is towards this end that the methodology must now strive.

(b) The Start of a More Systematic Approach

Understandably, once out of the realm of naïve procedures, forecasting becomes more complicated. In place of simply extrapolating an observed trend, the present and the past are searched for stable relationships which it is assumed may remain tenable in the future. This argument is, in fact, the one stressed by Tholl when he maintains that, 'predictions - at least expectations which fall under the scientific category - are generated by means of the assumption that something remains constant; the constancy of this 'something' is the theory used in the formulation of the prediction'. (158, p.18) The search for this 'something constant' is, of course, the main concern of the demand analysis which must necessarily precede any quantitative forecasting exercise, and the numerical formulation of such a relationship is the factor required to form the basis for more sophisticated projection. The resulting mathematical statement must not, however, be regarded as a recipe, in that compliance with the directions will perforce lead to a suitable outcome. It is never more than a precise statement to compel one to be conscious of what one is assuming. (72, p.173)

The fact that a viable equation has been evolved is, unfortunately, not the end to complexity, for its application raises some disturbing problems. This type of forecasting can only really be valid when the determining variable is easier to forecast than the dependent variable itself, and as Orson has pointed out, forecasting the demand for a product has in effect been transposed to one of forecasting the behaviour of the independent variables. (125) If one is forecasting the course of a phenomenon (B) by relating it to the behaviour of variable (A), the course of which is looked on as being relatively assured, then not only will the forecasts reflect any mistake in the assumptions about (A), but will also depend on the validity of the connection between (A) and (B).

It has been suggested therefore, that it is only worthwhile using this method if the chance of error in estimating (A) is sufficiently smaller than in directly estimating (B) to more than
compensate for the chance of error inherent in the formula, and although clearly a lead lag situation would make the operation very much less hazardous, the possibilities for error are nevertheless considerable.

The great advantage, however, that this method holds over the simple extrapolation techniques, is that at least an attempt is being made to structure the forecast on a more logical framework based on an understanding of process, rather than resting content with less rational procedures. These are in fact the primary steps in building econometric models towards which all serious quantitative attempts at analysis and prediction usually strive. As the minimum requirements for achieving such aims are arrays of detailed interlocking data, together with considerable physical resources, it is easy to understand why this study has fallen far short of these ultimate goals. Failure can, however, be tempered by the knowledge that even if it had been possible to pursue these quantitative ideals to their rightful conclusions, the final result would not have been a panacea. It is a fallacy to suppose that the unknown can be calculated instead of being conjectured, for 'we cannot calculate without inserting data which are future at the time and therefore have to be guessed'.

As De Jouvenal goes on to point out 'even the finest model does not free us from the obligation of guessing'.

5. Predictive Accuracy

The desire to compare accuracy of their predictions with actual results has never been very prominent among forecasters, and for them, it is very convenient that a forecast has only a very short life, to be discarded long before the events to which it refers in fact take place. The distasteful task of citing economic forecasters is, fortunately, not within the remit of this thesis, although in choosing a methodology, it is important to gain some indication of how a particular procedure will act and of the implications involved in its use compared with an alternative. It is with these intentions therefore that some comments about predictive accuracy are required rather than less charitable motives.

The most remarkable fact to emerge, and one which is vital for the purposes of this study, is that often simple prediction has proved just as accurate as the more complex methods. In a study which examined the use of predictive equations for wage rates, Ball found that the highly complicated models developed by Klein and himself four years earlier, did not produce as
acceptable results as would have been obtained by using naive predictors. This confirmed work in the United States by Christ (28) whose Tinbergen-type model only gave better results than a naive model for three of the fourteen variables he analysed.

These conclusions do not bode particularly well for those building econometric predictive models, for they indicate that as far as forecasting is concerned, the adoption of simple procedures not only will conserve effort, but in the end may achieve equally valid results. Economists should perhaps have learnt the moral from Dietl's medical experiments which, it will be remembered, led in 1849 to the simple but dramatic discovery that the cures of that day were far more deadly than the diseases themselves. (40)

To temper the impression of having sounded the death knell for sophisticated quantitative forecasting, reference must be made to Theil's work in the Netherlands, who has analysed the econometric affinity for error and has exposed the reasons why it occurs. (159) It would appear that basically, a wrong prediction may be due to either faults in the structure of the system of equations or alternatively, to the substitution of incorrect 'given' values. At the time of making a forecast, the number of unknowns is usually reduced by assuming the values of some variables, but as these exogenous variables will in time be known, the correct value can eventually be substituted. If in making an 'ex post' prediction in this way, the error disappears, then the faults were due to spurious insertions. If, however, they do not disappear there is nothing structurally amiss.

Unfortunately Thiel showed that as far as the Dutch forecasts were concerned, most error can be discounted in 'ex post' prediction, which proves that the faults treated as being 'given' are the real reason for most predictive shortcomings. Had structural miscalculations been the source of error, there would have been hope for improvement, but unfortunately, it is clear that the results achieved are fit to discourage the placing of exaggerated hopes on prediction by means of models. (72, p. 194)

As was pointed out earlier, the future cannot be calculated there is always something to be guessed.

6. Summary

Any forecasting must necessarily be uncertain, but the present trend towards developing systematic conjectural processes, may contain some of the worst speculative excesses. The forecasts
with which this study is concerned, are known as primary forecasts, in that they are conditional upon the absence of corrective action and present the future as a possible challenge, not as a probable eventuality. Whilst simple methods, like extrapolation which involve little intellectual effort often form the basis of much forecasting methodology, such procedures are usually only adopted as a point of departure, and their place is generally taken by more rational model-building techniques based on an understanding of process. Unfortunately, both the lack of suitable data and the necessary resources precludes the widespread adoption of this more sophisticated approach in the present study, but even if such considerations had been overcome, it is a fallacy to suppose that the future can be calculated, for there is always something to guess, and indeed some small comfort may be drawn from the fact that a comparison of the predictive accuracy of various forecasting methods, suggests that often naive procedures may be just as accurate as more complex techniques.
Chapter X

THE FORECAST

1. Introduction

Throughout the analysis of the determinants of demand for meals away from home, the capabilities of the data utilised have always been kept to the forefront of the discussion. In a field where the lack of suitable information has led to the only too ready condonation of minimal standards, there is a great temptation to use statistics which, whilst retaining widespread acceptance, are in fact, of negligible value for more specific academic purposes. As the quality of research is to a large extent tempered by an assessment of the data available, no apologia is made for adopting such a critical attitude which results in virtually limiting the analysis to the information provided by the Family Expenditure Survey.

That this source of information is also far from ideal has been readily acknowledged, but, as has been seen, for most of the analysis it has provided relevant tractable data. In considering its continued use for forecasting, some of its weaker characteristics become more apparent however, especially with regard to the lack of information in constant prices. Reference to both Chapter II and Chapter IV makes it quite clear nevertheless, that for all intents and purposes this is the only reliable source of data about meals away from home and it most certainly is the only one that can be used for forecasting.

Although the forecasts must therefore necessarily be in expenditure terms and concern only domestic, personal consumption, to deal with the wider issues superficially covered by fringe data, would be to act like the drunk in Franks' story, who knew he had lost his watch up the dark alley, but searched for it under the street lamp because there he had lots of light. (Quoted by Emery: 47, p. 54).

2. Naive Forecasts

(a) Extrapolation

As was noted in the previous chapter, the first step in any forecast is that of extrapolating trends observed in past data, on the assumption that a similar growth rate will be attained. For this purpose, the Family Expenditure Survey provide a continuous series from 1957 to 1967, which gives the expenditure per head on meals away from home in shillings per week (Table 35), and an extrapolation based on this data contains therefore the
basic assumption that the same relationship must be maintained
between expenditure and population growth during the forecast
period as has obtained during the past. A regression against
time yields the following equation, which has an \( r^2 \) of 0.9883,
\[
y = 379.86648 + 0.195372x
\]
where \( y \) = expenditure on meals away from home in shillings per
head per week and \( x \) = years.

As this equation accounts for a high percentage (97.668\%) of
the observed variation in expenditure on meals away from home,
it can be used with some confidence for forecasting and, in as
much as that confidence is justified by the technique of extrap-
olation itself, it is relatively simple to derive expenditure
figures for the years up to 1980. Expenditure on eating out per
head for these years is given in Table 36.

Expenditure per head in shillings per week on eating out
between 1957 and 1967 has grown by about 0.2 shillings every year
- a compound growth rate of 6.02\% in current prices. If it is
assumed that it will continue to increase by the same amount each
year (as extrapolation implies), then the compound growth rate
for 1967 to 1980 will be 3.7\% and the compound rate for the whole
period 1957 to 1980 will be 4.78\%.

Whilst it is desirable to base an extrapolation on as long
a series of data as is possible, so that any stochastic movements from
the general trend are minimised, there is an argument for an
extrapolation based only on data since 1961. From this year,
information is available for income as well as expenditure, and as
much of the later forecasting uses 1961 as its base, reasons
of comparability suggest that it would be interesting to see if
using this shortened series results in very different forecasts.

The relevant regression against time for this period yields the
equation:
\[
y = -416.86875 + 0.214205x
\]
with an \( r^2 \) of 0.9797, and where \( y \) and \( x \) are defined in equation (12).

This regression accounts for slightly less variation (95.987\%)
than in equation (12) but it is not sufficient to invalidate its
use, and is in fact, of minor importance. The estimates it
provides are given in Table 35 and the corresponding forecasts
in Table 36.

As can be seen, it presents a slightly higher forecast
throughout the period, the annual increase in expenditure on
meals away from home per head in shillings per week being on
average about 0.21 shillings every year. This is a compound
TABLE 35

PER CAPITA EXPENDITURE ON MEALS AWAY FROM HOME: 1957 - 1967

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure on meals away from home per head in shillings per week</td>
<td>2.61</td>
<td>3.14</td>
<td>3.08</td>
<td>3.04</td>
<td>3.26</td>
<td>3.46</td>
<td>3.52</td>
<td>3.63</td>
<td>4.10</td>
<td>4.37</td>
<td>4.47</td>
</tr>
<tr>
<td>Expenditure as estimated by equation (12)</td>
<td>2.48</td>
<td>2.67</td>
<td>2.87</td>
<td>3.06</td>
<td>3.26</td>
<td>3.45</td>
<td>3.63</td>
<td>3.84</td>
<td>4.04</td>
<td>4.23</td>
<td>4.43</td>
</tr>
<tr>
<td>Expenditure as estimated by equation (13)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.19</td>
<td>3.40</td>
<td>3.62</td>
<td>3.83</td>
<td>4.04</td>
<td>4.26</td>
</tr>
</tbody>
</table>

Note: Current prices

Source: 37 and 105 - 111
### TABLE 36

**PER CAPITA EXPENDITURE ON MEALS AWAY FROM HOME: 1967-1980.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Equation (12)</td>
<td>4.43</td>
<td>4.63</td>
<td>4.82</td>
<td>5.02</td>
<td>5.21</td>
<td>5.41</td>
<td>5.60</td>
<td>5.80</td>
<td>5.99</td>
<td>6.19</td>
<td>6.38</td>
<td>6.58</td>
<td>6.77</td>
<td>6.97</td>
</tr>
<tr>
<td>Equation (13)</td>
<td>4.47</td>
<td>4.69</td>
<td>4.90</td>
<td>5.12</td>
<td>5.33</td>
<td>5.54</td>
<td>5.76</td>
<td>5.97</td>
<td>6.19</td>
<td>6.40</td>
<td>6.61</td>
<td>6.83</td>
<td>7.04</td>
<td>7.26</td>
</tr>
</tbody>
</table>

**Note:** Current prices
growth rate of 5.70% between 1961 to 1967, 3.80% between 1967 to 1980 and 4.40% over the whole period. Comparing the growth rates for the forecast period as determined by each equation, the first yields a rate of 3.70% as opposed to 3.80% for the second, and as can be seen from Table 36 this means an expenditure in 1980 of 6.97 shillings per head per week as against 7.26. Clearly the question must be asked if the difference in growth rates and discrepancy in expenditure of forecasts is of any statistical significance.

Except in textbook examples, the fit of a regression line is rarely perfect and normally the estimate of the dependent variable deviates from the observed values. The general amount of variation accounted for by the regression is described by the multiple correlation coefficient, but more specifically, a measure known as the standard error of estimate is used to describe the accuracy of the estimates.

The standard error estimate, which assumes that unexplained residuals are normally distributed, is the square root of the mean of the squares of unexplained deviation (adjusted for degrees of freedom). It carries a two out of three probability that the error will fall within the range of plus or minus the standard error, and a 95% probability that the actual item will fall within the range of double the standard error on either side of the estimate. (118, p.155)

The estimated points of the regression line have therefore a certain error, and when using an equation to extrapolate, one must consider this. It is, however, not valid to apply the standard error of estimate to the forecast figures, for it is only an average value within the range of the independent variable used in establishing the estimating equation, and unless one is willing to assume homoscedasticity, the errors of the estimate near the mean will be lower than the standard error of estimate, whilst those far from the mean will be much higher. This implies that the error of estimate increases the further one moves outside the range of the original variable, and the standard error of estimate must therefore be corrected to allow for this.

In this case the error is known as the standard error of forecast and is based on the recognition that often the arithmetic mean of the values and the regression line itself may be subject to error. The further the extrapolation, clearly the more serious the errors become. The standard error of forecast is given by:
\[ \sigma_f = \sqrt{\sigma_y^2 + \sigma_u^2 + (\sigma_b x)^2} \] (14)

Where:
- \( \sigma_f \) = standard error of forecast
- \( \sigma_y \) = standard error of arithmetic mean of the dependent variable
- \( \sigma_u \) = standard error of estimate
- \( \sigma_b \) = standard error of regression coefficient
- \( x \) = difference between the arithmetic mean of the \( x \) values and the \( x \) values being used for the forecast of a \( y \) value. (118, pp.157-158)

For the two equations used for extrapolation here, the standard error of forecast has been calculated for the three years 1970, 1975 and 1980, and these are given in Table 37a. In Table 37b these have been translated into a range of forecasts, and as can be seen, the forecasts for all three years from both equations, fall within each other's standard errors. Whilst equation (13) does not rest upon such a firm foundation as does equation (12) the discrepancy between them is in fact not statistically significant.

In a similar way it can be demonstrated that the difference between the growth rates is also not significant, as errors occurring both in the original data and the estimation of the regression line give a range of rates within which, those derived from the two equations, easily fall. A more militant caveat concerning the use of growth rates is reserved for later discussion, but it should be noted that grave doubts may be voiced about the validity of expressing such rates to more than the first digit any way.

By reason of the longer time series on which it is based, equation (12), and the forecasts derived from it, are chosen to represent future expenditure in current prices as predicted by extrapolation. The likelihood of error must not however be forgotten and the forecast is probably best considered as a broad range rather than three specific points. (Table 37b) A fan of possibilities is not so conducive to understanding as a unique prediction, for to imagine a series of futures is to be dispossessed of a certainty. (72, p.103) To provide only one future, is however, to act like Don Quixote who having shattered a helmet with a sword while testing its strength, did not test it again when it was reassembled for fear of losing what was possibly a worthless helmet. (23, pp.6-7)
### Table 37

**Standard Error and Range of Forecast**

<table>
<thead>
<tr>
<th>(a)</th>
<th>1970</th>
<th>1975</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Error of Forecast</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equation (12)</td>
<td>± 0.25</td>
<td>± 0.29</td>
<td>± 0.32</td>
</tr>
<tr>
<td>Equation (13)</td>
<td>± 0.26</td>
<td>± 0.31</td>
<td>± 0.38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(b)</th>
<th>1970</th>
<th>1975</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forecast (from Table 36)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equation (12)</td>
<td>5.02</td>
<td>5.99</td>
<td>6.97</td>
</tr>
<tr>
<td>Equation (13)</td>
<td>5.12</td>
<td>6.19</td>
<td>7.26</td>
</tr>
</tbody>
</table>

| **Range of Forecast** |      |      |      |
| Equation (12) | 4.77 → 5.27 | 5.70 → 6.28 | 6.65 → 7.29 |
| Equation (13) | 4.86 → 5.38 | 5.88 → 6.80 | 6.88 → 7.64 |

*Note: Expenditure per head in shillings per week, current prices.*
(b) Prices

Having circumscribed the statistical significance of the forecasts and sounded preliminary warnings about the use of growth rates, there is nevertheless one important factor still to be discussed. Until now all the forecasts have been conjectured in terms of current prices, and whilst this is inevitable due to the absence of a suitable price series, the fact that an accurate forecast in real terms cannot be produced is a grave disadvantage, for it is impossible to tell how much of the 2.54 shillings increase in expenditure per head per week by 1980 is caused by a growth in spending on meals away from home, and how much is attributable to increased prices.

Implicit in the use of current prices is the assumption that prices will rise at the same rate as in the past, and whilst it will be argued in the next section that the procedure of predicting demand without considering the likely trend of prices may be of questionable validity when the two are inextricably linked, the fact that a projection in real terms may often be preferred to adopting this assumption, is also appreciated.

To derive any approximation at all for growth in constant prices, the assumption has to be made that prices for meals away from home move in line with general price trends. Certainly from the evidence available in the Index of Retail Prices, this would not appear unreasonable, but unfortunately, the serious doubts expressed in Chapter IV that the price index for meals away from home should in fact differ markedly from the general index, lead one to conclude, that in making this assumption, the growth in real terms of expenditure on meals away from home will be overestimated.

Between 1957 and 1967, the Index of Retail Prices for all items has grown at 2.98% per annum (Table 38) which would suggest that during this period the compound growth for expenditure on meals away from home in real terms has been 2.64%. The highly speculative series which can be constructed from this information is shown in Table 39, and the even more suppositional predictions for 1968-1980 which extrapolation provides, in Table 40. As can be seen, expenditure in 1980 is 4.21s, which represents an overall compound growth since 1967 of 2.08% and of 2.32% since 1957. When however the standard error of forecast is also taken into account, the future is probably more realistically shown as a range. (Table 41)
### TABLE 38

**INDEX OF RETAIL PRICES (ALL ITEMS): 1957 - 1967**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>105.8</td>
<td>109.0</td>
<td>109.6</td>
<td>110.7</td>
<td>114.5</td>
<td>119.3</td>
<td>121.6</td>
<td>125.6</td>
<td>131.6</td>
<td>136.8</td>
<td>140.2</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** In 1962 a new benchmark was established. For continuity this series has therefore been recalculated using the previous base which in 1956 = 100.

**Source:** 63
TABLE 39

EXPERIMENT, IN CONSTANT PRICES, ON MEALS AWAY FROM HOME: 1957-1967

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure per head on meals away from home in shillings per week.</td>
<td>2.47</td>
<td>2.50</td>
<td>2.63</td>
<td>2.66</td>
<td>2.85</td>
<td>2.90</td>
<td>2.89</td>
<td>2.89</td>
<td>3.12</td>
<td>3.19</td>
<td>3.19</td>
</tr>
</tbody>
</table>

Note: Constant (1956) prices.
### TABLE 40

**Expenditure on Meals Away From Home, 1967 - 1980**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.22</td>
<td>3.30</td>
<td>3.38</td>
<td>3.45</td>
<td>3.53</td>
<td>3.60</td>
<td>3.68</td>
<td>3.75</td>
<td>3.83</td>
<td>3.91</td>
<td>3.98</td>
<td>4.06</td>
<td>4.13</td>
<td>4.21</td>
</tr>
</tbody>
</table>

Note: Constant (1956) prices.
### TABLE 41

**RANGE OF FORECAST**
**CONSTANT PRICES**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Error of Forecast</td>
<td>±0.11</td>
<td>±0.12</td>
<td>±0.14</td>
</tr>
<tr>
<td>(b)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forecast (from Table 40)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>3.45</td>
<td>3.83</td>
<td>4.21</td>
</tr>
<tr>
<td>1975</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Range of Forecast: 3.34 - 3.56, 3.71 - 3.95, 4.07 - 4.35

**Note:** Expenditure per head in shillings per week, Constant (1956) Prices.
As the basis for estimating the recent growth of expenditure of meals away from home in real terms and the consequent extrapolation is no extremely unsatisfactory, detailed comment and interpretation would not be justified. It is true to say, nevertheless, that even these modest forecasts may be over optimistic, for growth will most certainly have been over-estimated if prices of meals have in fact risen faster than average. Combined with the possibility that a small amount of error is inherent in the original data, this is enough to suggest that the eating out market may be involved in much smaller upward movements.

3. Systematic Forecasts

As was noted in the methodology, extrapolation involves little intellectual effort and contains no explanatory element. It is merely a point of departure, and whilst it often produces forecasts as accurate as more complex methods, it is more satisfying to attempt a logical solution based on an understanding of the processes involved.

The main part of the demand analysis has been concerned with establishing a relationship between eating out and its determinants; an analysis which followed the classic form of deriving a numerical expression of the relationship between expenditure on meals away from home and income. The constancy of the derived connection then forms the basic assumption of the forecast, and the future is predicted by tracing the course of expenditure on meals away from home in relation to income changes.

The estimation of this relationship has been the main concern of the quantitative demand analysis, and eventually there emerged two formulations which were interpreted as indicating the long and the short-term effects of a change in income. (Chapter V) It will be remembered, that the cross-sectional data from the yearly Family Expenditure Surveys gave an income elasticity for meals away from home of 1.4, whilst the whole series of these surveys from 1961 yielded the much lower elasticity of 0.99. One part of the forecasting problem concerns therefore the application of these elasticities and their use in predicting expenditure in 1980, but just as important and probably more so in view of the conclusions of the Dutch forecasters, (see Chapter IX, Section 5) is the value to be adopted for income.

(a) The Future Growth of Income

The transfer of interest from the dependent to the determining variable has always been one of the most disturbing parts
of the more systematic methods of forecasting, for it assumes that income can be directly forecast more accurately than can expenditure on meals away from home and that in addition, the margin of error is less than that involved in the estimation of the relationship between the two. As there have been no quantitative examinations of the future of the eating out market, it is quite impossible to compare the relative accuracy of the two methods. It would appear however, a priori, that to forecast expenditure on meals away from home in complete isolation might be a somewhat hazardous procedure in view of the lack of statistical experience about its behaviour, and compared with the multitude of income forecasts, it seemed more logical to assume that the error involved in connecting eating out to income would be less than embarking on a statistical 'Gary Owen' for meals away from home alone.

Although the decision to relate expenditure on eating out to income was in fact largely predetermined by the efforts of the demand analysis and the traditions of classical economic forecasting, it nevertheless also provided a welcome division of responsibility, for some of the onus could be delegated to those bodies such as the National Economic Development Office, the Department of Economic Affairs or the National Institute of Economic and Social Research, who produce regular and authoritative estimates of the future growth of income in the United Kingdom.

The prospect of relying on expert forecasters for a part of one's conjecture, as a kind of crude Delphi method (33), was however, soon tempered by a rational assessment of the validity of their results. After a detailed consideration of the relevant factors, such as population, the active labour force, working hours and holidays, within each of which there are a multitude of sub-assumptions and sub-forecasts as to immigration, education, married working women, etc., the discussions eventually reduces to a choice between growth rates which are not markedly different.

Whilst not wishing to berate the value of detailed calculations of this kind, some doubts must nevertheless be voiced about the precision with which growth can be estimated. 'A reliable growth rate of two significant digits is impossible to establish. Even the first digit is in grave doubt, yet the emphasis of the public discussion is on the second digit, usually the first decimal, and it is carried on in all seriousness as if a distinction between say 3.2% or 3.3% were really possible.' (118, p.53) Nenmers and Meyers proceed to argue that the errors that surround the basic
data on which the growth rates are calculated are often enough to completely invalidate any attempt to derive precise estimates, and they show how a 1% error in the recorded figures can lead to a crucial difference in rates of growth. (118, pp. 53-55) In this country, a 1% error in the estimates of national income for 1965 and 1966 could mean a movement between those years of between -1.1% and +2.93% according to the direction of error, and in the light of recent Board of Trade disclosures (16) a 1% error is not altogether untoward.

As some dissension would appear to exist among experts as to the rate of growth of the United Kingdom economy during the next decade, it was thought desirable to maintain a less dogmatic and more cautious attitude by examining the effects on expenditure on meals away from home of a range of different growth rates. In the place of one forecast there is again a fan of possibilities, and whilst the experts' mean of 3% is assigned the central position, the choice that this might be 1%, 2% 4% or 5% is also proffered. The view of the future is left therefore to the users' predilection, and whilst a movement in growth rates will in fact be speculated, the value of the exercise is seen rather to be one of demonstrating the implications for expenditure on eating out, of five different growth rates.

Until now the discussion has not specified the exact nature of the determining variable, but the inevitable restriction to the Family Expenditure Survey for information suitable for analysis makes it quite clear that the forecasts are concerned with per capita disposable income as defined in Chapter III. It could be argued, however, that the forecasts might be more suitably presented as national amounts, and indeed this is an argument that could be equally cogently proposed for the dependent variable, expenditure on meals away from home.

Unfortunately, several difficulties arise when predicting both income and expenditure in national terms. All stem from the unavoidably tentative methods of grossing up the household estimates, (see Chapter II, Section 2b.i.) which although adequate for general purposes such as attempts at comparing data from disparate sources, might easily compound any error if used for forecasting. Far more intractable however, is the fact that a forecast of gross income or expenditure would demand considerable discretion when incorporating population growth into the projection, and as the use of per capita information happily obviates
difficulties of this kind, all forecasts are therefore made in these terms. Some additional ways of expressing the same estimates nevertheless are also provided, in the hope that they will be found more useful by those to whom the per capita calculations are not particularly explicit.

Although per capita disposable income has grown since 1961 at just under 2% per annum, this is not the rate commonly predicted for the next decade. Because a faster growth will never be forecast by merely extrapolating past trends, persistent optimism, or perhaps even normative desire, has led to the suggestion that 3% might be more applicable. These rates are, however, only two out of the five possibilities considered in this study, and in Table 42, forecasts for even faster and slower growth are also provided.

(b) The Application of Demand Elasticities

The second part of the forecasting problem is the application of the demand elasticities, and although it might be thought that having forecast per capita disposable income, the equivalent forecasts of expenditure on meals away from home could be straightforwardly derived by multiplying the percentage rise in income by the elasticity coefficient, this method has in fact been criticised by Goreux. He points out that simply multiplying by the elasticity assumes that the consumption function is linear and that the elasticity coefficient tends towards unity as income grows to infinity. (57, p.12) Although this simplification is satisfactory for small increases in income (less than 10%), it is no longer adequate for increases of the size postulated in this study, and as in addition, a logarithmic demand function is used throughout, a much more specific formulation has to be employed. This is given by:

\[
\log \frac{y^1}{y} = \eta \log \frac{x^1}{x}
\]

(15)

where \(x\) and \(y\) are per capita income and expenditure on meals away from home respectively; \(x^1\) and \(y^1\) are the levels achieved at the end of the projection; \(\eta\) is the elasticity coefficient and decimal logarithms are used.

A far greater difficulty is however involved in the choice of income elasticity, for although the hypothesis has been proposed that the elasticities derived from cross-sectional data reflect long-term influences and those from time series information short-term effects, the exact time scale to which they refer has never been specified. Short and long are nevertheless, relative not absolute points on the time scale, and clearly the use of
<table>
<thead>
<tr>
<th>Rate of Growth (compound: % per annum)</th>
<th>Shillings per week per capita: 1967 = 156.42</th>
<th>£'s per annum per capita: 1967 = 406.69</th>
<th>Index 1967 = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>161.16</td>
<td>169.38</td>
<td>178.02</td>
</tr>
<tr>
<td>2%</td>
<td>165.99</td>
<td>183.26</td>
<td>202.34</td>
</tr>
<tr>
<td>3%</td>
<td>170.92</td>
<td>198.14</td>
<td>229.70</td>
</tr>
<tr>
<td>4%</td>
<td>175.96</td>
<td>214.08</td>
<td>260.46</td>
</tr>
<tr>
<td>5%</td>
<td>181.07</td>
<td>231.09</td>
<td>294.93</td>
</tr>
</tbody>
</table>
a particular elasticity demands an appreciation of the implications
its adoption entails, rather than a mechanical application to a
specific period of time.

As was noted in Chapter V, the main reason for the discrepancy
between the two elasticities is that they are derived from basically
different types of data, and because cross-sectional informa-
tion involves no time dimension, doubts have been raised whether
an elasticity derived from such data is any use at all in for-
casting changes over time. (176, p. 7) and it has been suggested,
that perhaps time series elasticities, which include some of the
dynamic elements of the growth process, would be more suitable.
(12, p. 178) Whilst this would seem too harsh an indictment of
cross-sectional elasticities, their use certainly involves the
acceptance of postulates that may be of questionable validity in
the time scale of the present study. Not only does it accept
that families in the lower income groups will adopt the expendi-
ture patterns of those higher in the scale when they eventually reach
that income level, but it combines assumptions about increasing
real income with assumptions about unchanged price relativities.

It would appear however that to expect a transformation to
new expenditure patterns with increasing income may not be entirely
realistic, for the constancy of the cross-sectional elasticities
over the past six years indicates that tastes and habits are
perhaps not changing as fast as contemporary commentators would
lead one to expect. This may, of course, be attributable to the
inevitable lag in the adoption of unaccustomed habits as a result
of differences in social background, but it may also be that the
ability or desire to change is not being adequately stimulated,
for unless increases in average income are accompanied by a general
equalization of the income distribution, more radical changes in
spending behaviour are unlikely to occur. It must certainly be
doubted whether there has been a reduction in the equality of
incomes in the recent past, and whilst many of the conflicting
views on this subject can be related to differences in definition
and terminology (see for example 86 and 157), it is clear that
the distribution of disposable income, as defined in this study,
has remained almost unchanged between 1961 and 1967.

More important, but unfortunately more obscure, is the
future trend of prices, for clearly, if the growth of prices for
meals away from home is faster than the growth in the general
level of prices, especially those for competing commodities, a
cross-sectional elasticity will not supply a correct forecast, for it assumes constant price relativities. Rowe in his forecasts of private consumption in Britain in 1975 makes this point when he notes that it 'would not be reasonable to suppose that all prices would change in the same proportion', but whilst he appreciates that some 'uneasy but expedient compromise' is necessary, in true Nelson tradition he forgets his previous strictures and announces that 'it is assumed that relative prices remain unchanged. (135,p.178) Without a price index for meals away from home it is however impossible to accurately trace the trend of prices during the recent past, let alone envisage their future trend, but in the light of the considerable taxes placed on the service industries recently, and because experience shows us that it is industrial goods... that become cheaper, while personal services tend to become more expensive' (12,p.180), it would not be too implausible to propose that in the future, the prices for meals away from home may well rise faster than prices in general. If this happens, then a cross-sectional elasticity will clearly over-estimate the expenditure on meals away from home during the next decade, thus confirming the general impression gained earlier, that the long-term influences to which this elasticity refers will take effect in a future far beyond the remit of the present study.

This mild proscription of cross-sectional elasticities indicates that the present forecasts would be more accurately served by using those obtained from time series information. Time series elasticities are however not altogether ideal. They are not as pure as those derived from cross-sectional data and because they include some elements of the growth process they are considered to be hybrid. Nevertheless, Bentzel sees this as an advantage for, 'As long as there is no reason to believe that the interaction between growth in income and its accompanying consequences shall be broken this is beyond doubt just the sort of relationship we need for a forecast.' (12,p.178)

The time series elasticities derived in this study are, unfortunately, far more hybrid than those usually obtained, for they do not discount the influence of prices and must therefore be considered biased to some extent. Despite this however, because they include some of the essential characteristics of the growth process and especially the effects of changes in price relativities, the short-term consequences of a movement in income which they reflect, would seem to be far more applicable to the time scale of the next decade, than the longer-term influences
indicated by the elasticities from cross-sectional data. Certainly if the cross-sectional elasticity for 1961 had been used to predict expenditure in 1967, assuming that the level of income had been estimated exactly, the resulting forecast would have been an over-estimate in the light of the amount eventually achieved.

With the possibility of being thought pessimistic, the present study feels that neither a dramatic equalization of the income distribution nor a widespread adoption of new habits is likely to occur before 1980. It suggests therefore that it is more realistic to employ the time series elasticity for the whole period than to use more optimistic forms, which perhaps reflect hope rather than reality. No doubt in time, a large increase in expenditure on eating out as indicated by the cross-sectional elasticity will occur, but such an eventuality must be assigned to a future not within the remit of this study.

Consequently the main forecasts are based on the time series elasticity and are shown for five different growth rates for income (Table 43). If a specific rather than a general forecast has to be made however, the level of expenditure on meals away from home in 1967 prices which is considered likely to obtain in the next decade is 4.74 shillings per head per week for 1970, 5.23 shillings for 1975 and 5.78 shillings for 1980. Whilst this involves the assumption of a 2% growth rate in income which may be thought too low, the historic trend of the past is nevertheless preferred to the faith of dissident forecasters. Perhaps knowledge of the inadequacy of the forecasting process makes one cautious of accepting the conjecture of others.

4. Naive v. Systematic Forecasts

Having produced two types of forecast, one founded in naivety, the other in partial econometric sophistication, it is interesting to compare their relative performance. Before this can be achieved, however, some adjustment is necessary for the naive forecast extrapolates in 1956 prices, whilst the model just used, predicts in 1967 prices.

*For those who deprecate the scepticism with which the future is regarded, alternative forecasts using the cross-sectional elasticity are provided in Appendix (C)
# Table 43

**Forecasts of Expenditure on Meals Away from Home: 1970 - 1980**

Expenditure on Meals Away from Home
As derived by using an Income Elasticity of 0.9958

<table>
<thead>
<tr>
<th>Rate of Growth of Income (compound; % per annum)</th>
<th>Shillings per week per capita</th>
<th>£'s per annum per capita</th>
<th>Index 1967 = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>1970 4.60</td>
<td>1970 11.96</td>
<td>102.90</td>
</tr>
<tr>
<td></td>
<td>1975 4.34</td>
<td>1975 12.58</td>
<td>106.03</td>
</tr>
<tr>
<td></td>
<td>1980 5.09</td>
<td>1980 13.23</td>
<td>109.17</td>
</tr>
<tr>
<td>2%</td>
<td>1970 4.74</td>
<td>1970 12.32</td>
<td>109.17</td>
</tr>
<tr>
<td></td>
<td>1975 5.23</td>
<td>1975 13.60</td>
<td>112.52</td>
</tr>
<tr>
<td></td>
<td>1980 5.78</td>
<td>1980 15.03</td>
<td>115.65</td>
</tr>
<tr>
<td>3%</td>
<td>1970 4.88</td>
<td>1970 12.69</td>
<td>109.17</td>
</tr>
<tr>
<td></td>
<td>1975 5.66</td>
<td>1975 14.72</td>
<td>112.52</td>
</tr>
<tr>
<td></td>
<td>1980 6.55</td>
<td>1980 17.03</td>
<td>115.65</td>
</tr>
<tr>
<td>4%</td>
<td>1970 5.03</td>
<td>1970 13.08</td>
<td>112.52</td>
</tr>
<tr>
<td></td>
<td>1975 6.11</td>
<td>1975 15.89</td>
<td>115.65</td>
</tr>
<tr>
<td></td>
<td>1980 7.43</td>
<td>1980 21.87</td>
<td>115.65</td>
</tr>
<tr>
<td>5%</td>
<td>1970 5.17</td>
<td>1970 13.44</td>
<td>115.65</td>
</tr>
<tr>
<td></td>
<td>1975 6.59</td>
<td>1975 17.13</td>
<td>115.65</td>
</tr>
<tr>
<td></td>
<td>1980 8.41</td>
<td>1980 21.87</td>
<td>115.65</td>
</tr>
</tbody>
</table>
Using the very crude price index derived earlier as a deflator, the forecast of per capita expenditure on meals away from home in 1967 prices (Table 43) is reduced to 3.38 shillings per week for 1970, 3.73 for 1975 and 4.12 for 1980 in 1956 prices. Comparing these to the results of the extrapolation (Table 40) it can be seen that they fall well within the ranges given there and are in fact very close to the actual forecast.

One might ask therefore if the later econometric work has been of any validity for forecasting, if in the end the forecasts are almost identical. This is a particularly important question in the light of the dissent expressed by Schupack who criticises the usefulness of empirical demand studies, which he feels must only be judged by the predictive accuracy of the demand equation they produce and not by any connection with demand theory. (138) The existence of a complete lack of quantitative assessment, however fragile, of the relationship between expenditure on meals away from home and its determinants invalidates this argument however, dictated as it is by the inadequacies of highly accurate studies, but these results do suggest that as far as the present forecasts alone are concerned, parsimony of effort may best be served by basing the predictions on extrapolation alone. It is clear nevertheless that extrapolation will only continue to be satisfactory if a 2% growth in income is continued during the next decade. A change to a lower or faster rate would, needless to say, dictate the use of the demand model.

It is the expenditure figure eventually achieved that will be the final judge however, and not until 1980 can the predictive accuracy of either the naive or sophisticated methods be compared. Nevertheless, if it is found that extrapolation is not adequate, then whilst the way to more rigorous prediction will be by using demand models, albeit improved by eliminating structural faults by ex post prediction, in the end, as the Dutch forecasters showed, the accuracy will depend on the ability to guess the factors which are accepted as 'given'. (159) As De Jouvenal repeatedly stresses, the future cannot be calculated, there is always something to guess. (72, p.195)

5. Summary

As all the forecasts are based on Family Expenditure Survey data, they concern personal domestic expenditure. Two methods of forecasting are used, one based on extrapolation, the other on equations derived from the demand analysis. Because the errors which arise when extrapolating, increase with the length of the
period predicted, the forecasts are more suitably considered as a range rather than a specific estimate and although these are given for the years 1970, 1975 and 1980 in both constant and current prices, (Tables 37 and 41), the absence of a reliable price index means that the forecasts in constant prices are extremely tentative.

Extrapolation involves little intellectual effort however, and contains no explanatory element. A more sophisticated forecast is therefore attempted based on an understanding of the processes involved, by tracing the future course of expenditure on meals away from home in relation to income changes, the relationship between the two being given by the demand elasticities derived in the demand analysis. As the future growth of income is subject to widespread discussion and some doubts may be cast about the precision with which it can be estimated, five growth rates are provided, and the implication of each for expenditure on eating out examined.

A more difficult problem concerns the application of the demand elasticities and a choice has to be made between those derived from the time series analysis and those obtained from cross-sectional data, but whilst the former have been interpreted as indicating the short-term effects of a change in income, and the latter the long-term influences, the exact period of time to which they refer has never been specified. It is soon clear, however, that the cross-sectional elasticity applies to a future well beyond the remit of the study, and that the present forecasts will be more accurately served by using the elasticity derived from series data.

The forecasts which this elasticity yields are given in Table 41, and in conclusion they are compared with those obtained from the extrapolation. The fact that they both present similar estimates, suggests that as far as forecasting alone is concerned, parsimony of effort may be best served by basing the prediction on extrapolation alone, but as this contains the assumption that the future growth of income will be at 2%, a change to a slower or faster rate of growth would clearly dictate the use of the demand model.
1. Implications

Whilst forecasting may be branded as intellectual adventurism - 'the business of charlatans, into whose company the sober-minded scholar should not venture' (72, p.7) and more often than not has been shown to be of dubious accuracy, its continued promotion can nevertheless be vindicated. As De Jouvenel points out, forecasts are a tool for decision making not only to assist in making decisions whose necessity is readily apparent, but also to suggest areas where decisions will need to be faced. 'Our need to take decisions and our ability to make them are the chief practical justification of forecasting.....We treat forecasting as an art tied to practical needs.' (72, p.128)

When delimiting the area of study for the Charles Forte Research Fellowship, this political objective had clearly been kept in mind, for in addition to requiring an analysis of the factors influencing the demand for eating out in the United Kingdom and forecasting their influence for the decade 1970-1980, it was also stipulated that the consequent implications for the catering industry should be distinguished. Unfortunately ideals founded in the euphoria of intention often prove untenable in the sober light of eventualities, and as can no doubt be appreciated, neither the conclusions of the demand analysis nor the results of the forecasting bode well for an attempt to translate these into relevant exhortations for the catering industry.

The generality of the argument, based as it is on the generality of the information available, only permits consumer demand for eating out to be considered as a whole and as any variation from the average pattern is therefore concealed, its use for decision making is impaired. The fact that it is quite impossible to tell if a particular type of demand will conform to the mean predicted, suggests that, for the individual entrepreneur with little interest in the future except as it directly relates to himself personally, these forecasts may have but passing relevance. A decision maker has need of a specific implication unhedged by conditions. He does not want to know all the possible states of the future and their respective probabilities, but requires the forecaster to commit himself so firmly that he is able to base a decision on it. 'The decision maker is possessed of several of the factors entering into his decision; these are his data. But he
is short of one datum because he is in doubt about a futurum, yet he wants to make his decision as though he were possessed of a datum on this point too. And so he decides to use the anticipation supplied to him by the forecaster as a pseudo datum and asks for it to be formulated as precisely as an accomplished fact.‘ (72, p. 145)

Clearly any implication drawn from this study cannot be used in this way, and as Modigliani and Cohen have remarked, for a given agent at a given time, a forecast is relevant only if approaching decisions will differ depending on whether or not he believes it; if his actions are unaffected, the forecast is irrelevant. When this happens they advocate an even more subversive approach by saying, ‘Don’t devote resources to estimate particular aspects of the future if, no matter what you find out (with due consideration to what you might conceivably find out), you would not be led to act differently from the way you would act without finding out.’ (114, p. 22)

Whilst this is a good maxim of economy in that it stresses the need in decision making to consider only those factors capable of affecting the result, as De Jouvenel points out, it must not be held to deny the utility of being able to illuminate future decision problems and suggest new ones. (72, p. 153) The forecast should give the future a structure rather than yielding specific implications, for one cannot know in advance to which and to whose decisions it will be relevant. Generality of information and generality of argument can only lead therefore to generality of implication.

If the overall demand for eating out is going to grow as circumspectly as the forecasts suggest, then the most important implication to be accepted is that the future will not automatically be as auspicious as the confidence of contemporary commentators would lead one to believe. The buoyant optimism which generates the assumption that a rising standard of living will inexorably provide a greatly expanded potential for eating out, must be dispelled. From the evidence available, it would seem that on the whole the possibilities of the next decade will be very similar to those of the last. The carrot of expectancy, that the demand for eating out will at sometime undergo extremely rapid growth, cannot be dangled until after 1980, and the meat that can be said is that there is some evidence these aspirations may be achieved before the end of the century.
The caterer when he formulates his plans for the next ten years must be prepared to conceive them within a framework comparable to the one which has structured the recent past. He will probably have the same need to make himself more efficient in the fact of increasing taxation, rather than reflecting such encroachments upon his profits in increased prices, for one of the main reasons for the modest growth of eating out in the United Kingdom may well be the fact that prices always seem to parallel any increases in income. He must realise that the part of any increase in consumers' income which may accrue to him is entirely discretionary, and that eating out is only one of a range of attractions in competition for consumers' attention. A cavalier attitude towards price levels could so easily lead to the self-provision of food when eating out is a necessity, or a transference of allegiance when a leisure activity. According to classic economic principles, the consumer wants to maximise his utility, but although unappreciated by the catering industry, it must be the consumer who is the judge of that utility, for however much the caterer may feel his services are undervalued, unless the consumer believes that he is receiving value for money, he will not eat out.

The sounding of such platitudes as these are, however, commonplace in today's management consultant and marketing oriented approach to the selling of catering services, and the specific implications to be derived from the future delimited here for a particular entrepreneur would be best left to their interpretations, because as has already been noted, in a given situation the implications will differ. To a large company such as Fortes or Lyons an inauspicious future might indicate that their previous commitment to the provision of eating out facilities, should be reduced and that diversification to other more dynamic or less fickle areas would be in order, whereas to a small individual café owner, whose interest in the industry is perhaps not so profit motivated as might be supposed, cushioned as it is by the perquisites of free food, rent, rates, heating etc. the implications...
may be negligible, and certainly not sufficient to alter any decision he would conceivably take.

The future demand for eating out is such that it argues caution. Notwithstanding this however, there will always be opportunity for the brilliant innovator to contradict any implication drawn. The performance of a company such as Berni Inns is enough to indicate that whatever the future of the market as a whole, prosperity is always attainable to those who can compete successfully for the consumer's discretion. After the disillusionment and depression hitherto only too painfully noticeable, it is perhaps right and proper that one should end on a note of hope. The demand for eating out is at least not a declining part of consumers' expenditure, and whilst the future may not be as bright as previously assumed, the carrot that a faster growth may occur before the millennium is enough to transfer the hopes of the 1970's to the 1980's. Perhaps it is not the prevailing optimism which should be criticised but merely the somewhat myopic nature of the time horizon.

2. Suggestions

As was noted in the Introduction, the learning process is essentially circular and so with due deference to Stone's exhortations that an analysis, having added a little to knowledge, should feed back new problems, some attempt is made to examine the improvements which will need to be made before progress in the general field of eating out studies can continue. Such an inquisition would indeed appear to be necessary, for the findings of this study have, in many cases, contradicted commonly accepted views about the catering industry and the question must be asked whether these findings are of sufficient irreproachability for them to gain credence in place of the existing beliefs.

In as much as they are based in objective quantification, the present results must have more claim to validity than views formed in a priori indeterminacy, but like many examples of academic denigration or journalistic exposure, differences are often exaggerated and disclosures more tenuous, than warranted by their protagonists. Whilst not wishing to detract from the force of the argument hitherto adopted, it is apparent nevertheless, that its conclusions have been influenced by the data used, and that a certain amount of the disparity has arisen because the premises employed are not analogous to those less rigorously presumed in general discussion.
Clearly the conceptual attitude is extremely inadequate at the moment, for the utilization of a definition provided by the data available is no more than an expedient, and it is one that frames the approach too uneasily for ready acceptance. Conceptually, eating out has need of a Linnaeus, and one of the first problems to be attempted must be concerned with evolving a rigorous definition.

A priori, one would expect eating out to fall into two main sections, concerned respectively with necessity situations, such as is found at work and leisure pursuits, either as end in themselves or as an accompaniment to other activities. In addition one would also foresee that income elasticities for both types of demand may well vary and that by deriving an elasticity which subsumes the two, average behaviour has been described in place of the division its more practical use would require. Indeed, one suspects that much of the general discussion about the rapid growth of eating out probably refers to its leisure aspects, and that most of the confusion has arisen through an absence of specification.

A definition will involve however, immensely complex considerations, for it could be argued that every meal out is a luxury, in that it could be provided cheaper from the domestic larder, or alternatively, that every meal out has a necessity content. Clearly the contrasting extremes of lunch in the works-canteen and dinner at the Mirabelle may be relatively easy to distinguish, but the large area of uncertainty between the two might be insoluble, for at any particular level a meal may be a luxury for one person and a necessity for another.

In addition to this, the corollary problem of delimiting the area with which eating out is concerned will have to be solved. Should considerations such as fish and chips or ice cream eaten in the street, a Chinese meal brought home to eat, drinks with the meal, all come within its scope, or should it be restricted to a certain idealised format? Conceptually, no doubt these questions can be answered and a suitable framework provided, but in practice, the problems of data collection are innumerable, and unless information is collected strictly in accordance with the conceptual stipulations, it will have no practical meaning. It would not be surprising to find that classification of this type is impossible, and that conceptual ideals and eventual practical requirements are all quite irreconcilable.
There are, however, several immediate areas to which attention needs to be devoted. Six of these concern the shades, where information is entirely lacking and complementary to this, there are four ways in which the present body of statistics could be improved.

As is noted in Appendix D, there is, at the moment, almost no information about expenditure on eating out by businessmen and by overseas visitors, and whilst these at present retain a relatively small share of the market, the forecasts of future arrivals are enough to demonstrate the need for immediate consideration at least to the latter of the two. Similarly, whilst Chapter VIII hypothesizes the important effects of mobility on eating out, no information aligned to these proposals is available. Expenditure or propensity information collected by the distance travelled from home, would therefore not only enable one to test their validity, but would also allow more interesting models, such as those involving distance decline functions, to be applied. There is also some evidence from America that both level of education and married women working are of considerable importance in determining eating out behaviour, (116a and 116b) and although the Horticultural Marketing Council's survey provides a little information about the effect of married women working (See Chapter VII) the proposals ought to be thoroughly examined and tested to see whether American experience is valid for this country.

The last area where there is need for information is far more arguable, and is based to some extent on the proposals of the conceptual discussion. It has been suggested that competing forms of consumer's expenditure ought to be considered, and indeed the substitution effect has traditionally played a large part in consumer demand theory. As far as eating out is concerned, it is difficult to see what could be regarded as its competitors. For a necessity expenditure, this would no doubt be sandwiches and other such food taken from home or even by soliciting meals from friends and relations, but for luxury expenditure, this would probably be a whole range of leisure pursuits - bingo, theatre, sporting events and home entertaining.

Of more immediate relevance however, are the improvements which could be made to the existing statistics. Firstly the Board of Trade Monthly Indices need to be separated into their constituent parts so that expenditure on eating out is not confounded with other diverse items of expenditure in hotels and catering establishments.
Secondly, the Catering (meals and accommodation) series of the National Income and Expenditure Blue Books could be broken down in a similar way, or failing this, the service element added to the Food (Other personal Expenditure) category. Thirdly, the newly instituted price index needs to be made more comprehensive so that it includes a wider cross-section of the prices obtaining for meals out, thus allowing the relevant weights from the Family Expenditure Survey to be applied more logically. Lastly, the National Food Survey, with some slight modification, could be made to accurately record the number of meals eaten out. Not only would this be crucial information for eating out studies, but the fact that expenditure on meals away from home has been found to be increasing its share of total food expenditure suggests that it is of increasing relevance for any survey which purports to record domestic food consumption and its dietary implications.

In the end, however, the desirability of providing additional information about eating out must be related to the cost of collection, and placed within the context of the need to devote resources to other projects and other fields. Nevertheless, the proportion of consumers' total expenditure devoted to eating out would certainly suggest that more attention ought to be devoted to it than has existed until now, and with the mooted reorganisation of government statistics, it is to be hoped that it will not be too long before the reforming zeal reaches catering statistics.

3. Summary

(1) Implications

The justification of forecasting can be found in the need to make decisions, but because the generality of the available information can only lead to generality of argument, and because it is impossible to know in advance to which and to whose decisions it will be relevant, few specific implications for the catering industry can be derived from the present study. The forecasts suggest, however, that the demand for eating out is going to grow circumspectly and the decision maker must therefore be prepared to conceive his plans within a framework comparable to the one which has structured the recent past. The assumption that a rising standard of living will inexorably provide a greatly expanded potential for eating out must be dispelled, and a warning is given that a cavalier attitude towards price levels might lead to a modification of expenditure patterns. Whilst the future may not be as bright as had been previously assumed, the hopes of the 1970's
may perhaps be legitimately transferred to the 1980's, and it is probably not the prevailing optimism which should be criticised, but the somewhat myopic nature of the time horizon.

(2) Suggestions

Many of the a priori assumptions about the growth of the demand for meals away from home may be due to the fact that definitions presumed in general discussion are not the same as those employed in this study, based as they are on the available data. Conceptually, eating out needs to be rigorously defined, and data collected accordingly. There are nevertheless six areas in which information is critically required; the extent and nature of expenditure by businessmen and overseas visitors, and the effect on eating out of mobility, education, married women working and competing forms of expenditure. Of more immediate relevance however is the fact that several existing sources of statistics could be radically improved by separating expenditure on meals away from home from sundry other items of expenditure with which it is confounded.
APPENDICES
The following seven notes explain the adjustments made to National Income and Expenditure data in Chapter II. They show how the items deducted from Table 4, but not specifically extracted from Table 3 or mentioned in the text, have been calculated.

**Note I: Estimated Expenditure on Meals included under 'hotel and holiday expenses' in the FES.**

In Table 4 total expenditure on meals given by the National Income and Expenditure tabulations, allowing for the initial specific extraction of items not covered by the Family Expenditure Survey is shown as £764 million. This figure is not, however, comparable to the Family Expenditure Survey category, meals bought away from home, as it includes expenditure on meals in hotels (licenses and unlicensed), boarding houses, holiday camps, etc., which in the survey usually comes under the category 'hotel expenses' or more rarely 'holiday expenses'.

The two types of expenditure are very difficult to incorporate entirely satisfactorily in any family budget survey, the choice being between having one huge category which contains all spending in the holiday period, or putting such expenditure into their relevant categories as in a non-holiday period. The latter method is the one used by the Family Expenditure Survey, and so such items as bus fares to the beach will be included in total bus fares and sun tan lotion in toilet requisites, cosmetics etc.

A problem arises, however, with meals and accommodation. Here there are three possibilities. If the informant can distinguish his expenditure on meals out then the expenditure will appear in meals bought away from home but if, as is more likely, there is a total hotel or boarding house bill, where it is impossible to say how much of it is for meals and how much for accommodation, then this expenditure is put in 'hotel expenses'. The third possible method of treatment is when there has been expenditure on an item such as a coach tour when there is a meal content, an accommodation content and also a travel content. In this case, expenditure is counted as 'holiday expenditure' - a category which normally includes residual holiday expenditure which cannot for some reason or another be placed in any other category.
In Table 4, £50 million has therefore been subtracted to allow for this expenditure which is calculated as follows. Total expenditure on meals in all types of accommodation is £115.94 million, which comprises £50 million in unlicensed hotels and boarding houses etc. (Table 3, item 5) and £65.94 million in licensed hotels, holiday camps etc. (15) The problem is, of this £115.94 million what proportion can one assume to be covered by the Family Expenditure Survey categories 'hotel and holiday expenses' and what proportion by 'meals bought away from home'. It is highly unlikely that the survey's informants would be able to distinguish the meal content of their expenditure in boarding houses or guest houses, although this might be possible if they stayed in an hotel. Kemsley has shown that about 52% of expenditure on accommodation and meals away from home together is spent in hotels, (76a, p.2) which would seem to indicate that of the £115.94 million about £60 million might be spent in hotels and £55 million in boarding houses, holiday camps etc. Allowing for some discrimination in the latter group, it would seem therefore, that £50 million is not an unreasonable approximation of the expenditure on meals probably included under 'hotel and holiday expenses'.

Note 2: Expenditure on fish and chips consumed at home

The 1964 Catering Inquiry included in its total of £664 million some £95 million for sales of fish and chips. The Family Expenditure Survey treats this category in two ways. Part of it comes under the food category 'fish and chips' and the rest in 'meals bought away from home', grossing up the former (0.81 shillings per household per week) gives total expenditure on fish and chips for home consumption as £37 million. This figure has therefore to be deducted.

Note 3: Business expenditure on alcoholic drink

Unlike the Table 3 where £15 million has been deducted for expenditure on alcoholic drink thought to be contained in the Catering Inquiry tabulations, most of this must still be included in Table 4 for 'meals bought away from home' usually includes some alcohol consumed with the meal. However, some of the £15 million will probably be for business expenditure, which must therefore be deducted, as the Family Expenditure Survey does not include any type of business expenditure. Business expenditure on meals and accommodation is £122 million (item 9, Table 3) and this is 12.51% of total expenditure on meals and accommodation (items 1, 3, 4, 5, 6, 7, 8, less part fish and chips). It was decided therefore to deduct 12.51% of £15 million (£2 million) to allow for business expenditure on alcoholic drink, although this is probably an under-estimate.
A similar exercise has been carried out for business expenditure on meals out, in order to separate it from expenditure on accommodation. Faute de mieux, business expenditure on meals was taken to be in the same proportion as expenditure on meals is to total catering expenditure. Accommodation accounts for 24.06% (£231 million, items 3, 4 and 6) and meals and refreshments 75.94% (£729 million, items 5, 7, 8, less item 2 and part fish and chips). Business expenditure was therefore estimated to be £93 million.

Note 5: Luncheon Vouchers

In the Family Expenditure Survey all imputed values of free and concessionary goods are excluded from the definitions of income and expenditure. The survey does however collect information on meal vouchers and the Department of Employment and Productivity have kindly provided these figures. In 1964, the value of such vouchers amounted to 0.33 shillings per household per week which when grossed up comes to £15 million. As the definition of turnover used by the Catering Inquiry includes the face value of luncheon vouchers, this amount is contained in item 1 Table 3, and has therefore to be deducted.

Note 6: Tips

The total amount on which tips may be proffered is taken as £838 million which is the total expenditure on meals and accommodation less business expenditure, the assumption being that business tips have been included in total business expenditure. Total tips are £49 million (item 10 Table 3) which is £0.58 million on every million pounds or 5.8%. As tips are included in the Family Expenditure Survey this percentage has to be added.

Note 7: Expenditure on Meals by Tourists

The amount spent by tourists on meals is very difficult to calculate. The only recent estimate of the magnitude of this category is that suggested by the British Travel Association who feel that accommodation and meals accounted for 50% of tourist expenditure. As tourist expenditure in 1964 was £190.3 million million this would indicate the figure to be £95.15 million. There is no guide however, how to apportion this, and in order to achieve something more than an arbitrary division, one has to refer back to the 1930's.

Norval quotes two authors who have calculated the amount spent by tourists on meals. The first is an estimate of 20% by Rane and the second one of 20.5% by an H.M. Senior Trade Commissioner for Canada. (122, p.140)
Assuming a 20% expenditure level would suggest that £38.06 million ought to be deducted. However some of this has already been deducted in item 7, although how much is not easy to tell as there is no indication of how to apportion expenditure between permanent residents and foreign visitors in unlicensed hotels, which together amounts to £17 million. The Catering Inquiry stated that it 'seemed unlikely that the amount of expenditure by foreign visitors in unlicensed hotels and boarding houses would be very large', (15, p.1069) and so to take half as their share of the £17 million would seem to be over sufficient and would leave the expenditure on meals by tourists to be deducted here as £30 million.
APPENDIX B

THE APPROXIMATION TO DISPOSABLE INCOME

In Chapter III, the Family Expenditure Survey information about income and expenditure was rearranged to approximate to disposable income. Basically, this consisted of deducting from income, 'statutory deductions' and adding to total expenditure 'other payments recorded'. The following two notes explain specifically the alterations that were made.

Note 1: Income

The items deducted from income were item groups 95 and 96 (income tax and surtax payments less refunds) and item group 6 (National Insurance contributions), together with a strange category which appears under item group 9 (income from sub letting and/or owner occupation), which, in the case of owner occupied dwellings, consists of the rateable value of the dwelling occupied. The argument for including in the definition of income something that is at best only an approximate value is to be found in the 1953-54 survey, (104, p.22) but essentially it purports to measure the loss of income which results from capital being tied up in the purchase of a house.

In this study, it was felt that such notional values ought to be excluded from data which is otherwise factual, and indeed this is substantiated by the fact that in 1963, the introduction of new valuations quite arbitrarily doubled this item. It was therefore deducted from total income. It should be noted, however, that whilst rateable values are given under item group 4, they are only shown averaged over those households living in their own dwelling. Before being subtracted they must of course be averaged over all households in the sample.

Note 2: Expenditure

Total expenditure as shown in the Family Expenditure Survey does not include all payments recorded by a household and so there is some additional expenditure which has to be included to approximate to total disposable income. The group items added are those numbered 97-102 inclusive which are essentially such expenditures as mortgage repayments, life assurance, savings and betting payments less winnings. These are expenditures over which a consumer can exercise some discretion and consequently ought to be included in any concept of total disposable income.
The other adjustment which has to be made is the deduction of notional values which are, as was the case with income, rateable values.

**Note 3: Adjustment to 1967 Information**

These adjustments to income and expenditure data were made for all the surveys. Two further adjustments had to be made, however, to the information from 1967 in order to make it comparable to the preceding years. In this year the value of meal vouchers was included in the definitions of both income and expenditure and so this had to be deducted.
APPENDIX C

TABLE 44

FORECASTS OF EXPENDITURE ON MEALS AWAY FROM HOME: 1970 - 1980
DERIVED BY USING AN INCOME ELASTICITY OF 1.40

<table>
<thead>
<tr>
<th>Rate of Growth of Income (Compound, % per annum)</th>
<th>Shillings per week per Capita; 1967 = 4.47</th>
<th>£'s per annum per capita; 1967 = 11.62</th>
<th>Index 1967 = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>4.66</td>
<td>5.00</td>
<td>5.36</td>
</tr>
<tr>
<td>2%</td>
<td>4.85</td>
<td>5.39</td>
<td>6.41</td>
</tr>
<tr>
<td>3%</td>
<td>5.06</td>
<td>6.23</td>
<td>7.65</td>
</tr>
<tr>
<td>4%</td>
<td>5.28</td>
<td>6.94</td>
<td>9.13</td>
</tr>
<tr>
<td>5%</td>
<td>5.49</td>
<td>7.72</td>
<td>10.86</td>
</tr>
</tbody>
</table>

Note: 1967 prices
APPENDIX D

THE DEMAND FOR MEALS AWAY FROM HOME BY BUSINESSMEN AND OVERSEAS VISITORS.

1. Introduction

As was pointed out in the Introduction, one of the most regrettable lapses in the information which is available for a study such as this, is the complete absence of any accurate data about the demand for meals away from home in the United Kingdom by businessmen on expense accounts and by overseas visitors. It was this fact that led eventually to the realisation that an objective analysis would require limiting the scope of the study to a consideration of personal domestic consumption alone.

Contrary to a priori conceptions however, this impediment is not as serious as might have been expected, for as has been seen, in Chapter II these two sections of the market only account for approximately 15% of the total demand for eating out facilities. Nevertheless this is well over £100 million, and an expenditure of this size warrants more attention than is begrudgingly given at the moment. There is a critical need for information, and until accurate and quantified estimates both of the size and nature of the market are produced, assessments must be pure speculation.

The only year for which any information is available about the relative size of this market is for 1964, and as no doubt by now the relationships must have changed, bringing the figure up to date would be a too dangerous procedure. It would appear nevertheless from the calculations of Chapter II, that business expenditure in that year accounted for about 12% (£93 million) of total expenditure, and expenditure by overseas visitors for 3 1/2% (£30 million). Both of these figures are however tentative in the extreme, as will readily be appreciated by the 'faute de mieux' methods used to derive them, and it is not even possible to say on which side any likely error would err.

Because the two types of demand would appear radically different separate discussion is indicated. The argument is nevertheless pure conjecture, and the relevant caveat must once more be stressed before these findings are written into the folk-lore of catering statistics.
2. **Business Expenditure**

Business expenditure on meals away from home is the type of expenditure incurred by an individual in the course of his work, and reimbursed by his employer. It has traditionally been one of the thorns in the flesh of the more socially minded, carrying as it does an aura of extravagance and privilege. By the less radical on the other hand, it is seen as being essential to economic existence.

The tax reforms of the 1965 budget recognised the abuse of the system however, and endeavoured to limit its development by disallowing the facility of setting expenditure on entertainment against profits for tax purposes. Nevertheless, with an eye to the condition of the Balance of Payments, expenditure could still be charged if entertaining overseas buyers. Previously, when business expenditure had been tax free, it had been said that the taxpayer paid ten shillings or more in the pound of the cost. (21)

With the overall determinants of demand for eating out in the United Kingdom being shrouded in the restrictions of the available data, it is clearly highly dangerous to postulate determinants for business expenditure, when the relevant information is completely non-existent. A priori, however, one would expect mobility and the amount of client contact of the occupation concerned to be the main factors, such as is found in marketing or advertising, with the status of the occupation probably dictating the extent of the expenditure.

All of these factors are however, no doubt contained within the dominant influence of the general prosperity of the particular business, just as the many sub-determinants of personal expenditure on meals away from home are felt to be masked by income effects. The director of a company with a depressing profit record is hardly likely to spend as much as a partner in a thriving advertising agency, for financial healthiness must normally obtain before expenditure is permitted.

This would explain why the effect of disallowing business expenditure on meals away from home for tax purposes in 1965 caused firms to examine the justification for incurring such an expense; the net result being the same as increasing the price of eating out, or alternatively a decrease in relative prosperity. In the light of the expected total revenue of £35 - £45 million to be achieved from these reforms, (21) it would be plausible to suggest that the £93 million recorded for business expenditure in 1964, may have
undergone considerable adjustment, a fact borne out by the cries of anguish from the more specialised restaurateurs at the time. Whilst this £35-45 million includes expectations from sundry other reforms as well, the estimate is large enough to suggest that even if a decrease did not materialise, one would at least expect the further growth of business expenditure on eating out to be substantially curtailed.

No attempt at quantitative prediction is attempted, for to base forecasts on such fragile material would clearly be irresponsible. It is true to say however, that whilst the future demand by this sector of the market does not seem particularly inspiring at the moment, a sentiment with which this study is already familiar, nevertheless, some general support may be gained from Young's study on the future business demand for accommodation in the United Kingdom, which conjectures almost negligible growth in the next decade. (166a)

To counter this comparative stagnation, Young proposes a considerable increase in the demand for domestic conferences. As many are of a commercial nature they will be attended by businessmen, and one would expect therefore the contribution to business expenditure on meals away from home by this type of demand to grow faster than overall expenditure. A more precise estimate of the size of this growth is however not possible.

Accepting the danger of becoming tedious, the fact that an analysis of demand by businessmen for meals away from home and forecasting the relevant trends cannot be carried out owing to the lack of suitable data, must be stressed once again. The studies that have been published only relate to the breakfast habits of commercial travellers (misleadingly called 'The British Eating Out at Breakfast' 143), or are only of use to those companies who wish to compare the extent to which their salesmen's expenses match those provided by similar companies. (154) The latest study sponsored by the Hotel and Catering Economic Development Committee (70) augured more satisfactory information however, for a supplementary question was included on businessmen's expenditure, but in the event, a series of average meal prices were published, of little more use than the Tack Survey, which was cast in a similar vein.

Until more accurate and relevant information is provided, this section of the market will remain an enigma. Although the future certainly does not appear promising, it is a sufficiently important area of demand for meals away from home to stimulate more interest than has been apparent until now.
3. **The Demand by Overseas Visitors**

Tourism has become today one of the most important growth areas of economic activity and one that is fostered by almost every country in the world. The marked apathy of past British governments to the needs of this industry is, however, in sharp contrast to those countries where its welfare is fostered. It is nevertheless not a recent attitude but is steeped in tradition. Indeed this was noted as long ago as 1936 by Nerval who commented 'That the tourist industry has not been developed to the same extent in the United Kingdom as it has been developed in several of the continental countries must, in the main, be attributed to the laissez faire policy which still dominates the economic life of Great Britain, and in the extreme British conservatism. While most of the governments of the countries of the continents on both sides of the Atlantic are actively engaged in the development and promotion of their tourist traffic from other countries, the attitude of the responsible authorities in Great Britain appears to be one of extreme indifference.' (12, p.75) Even the remarkably farsighted recommendations of the 1943 report to the Minister of Labour and National Service on the Rehabilitation of the Catering Industry went unheeded, and it was not until this year that their proposal that a statutory organisation should be established to 'collect and maintain statistical information about tourist traffic, including existing and potential demands and the facilities available to meet them,' (99, p.35) has eventually been realised.

The government's attitude may however be explained if not justified by a consideration of the size of the expenditure involved. Expenditure by tourists on meals and accommodation together accounted for about £95 million in 1964, which is approximately 12% of total spending on meals and accommodation in the United Kingdom. The dilemma is clear; to give assistance solely to the minor section of the market who cater for tourists alone would not be possible, and yet to provide help to the whole catering industry is seen to be undesirable in view of their policy of limiting consumer spending on services, and their attempts to move the economy away from the service sector. Perhaps the blatant profitability, despite governmental insouciance, of those establishments which are used mostly by tourists is taken as an excuse not to provide apparently unneeded assistance.

Without indulging in a detailed polemic against this attitude, it should be noted that the establishment of a statutory tourist
authority heralds a change of emphasis, and there is little doubt that the importance of the tourist industry to the United Kingdom economy, and to the Balance of Payments is now appreciated, and that investment in a growth industry in which this country is extremely competitive, is seen as highly desirable. One must now hope that the lag between acceptance and innovation does not last as long as that between discernment and acceptance.

It is with respect to this background therefore, that the demand by overseas visitors for eating out facilities must be related. Clearly from the tentative assessment made earlier, this type of expenditure is but a very small part of total market for meals away from home, and like business demand, because of the complete absence of information it is neither possible to trace its movements during the recent past nor to derive its relevant determinants. It is however feasible to examine the factors which determine the visits to this country by tourists, and indeed this has been done in a recent study which has also forecast these arrivals during the next decade. (166a)

The distinction must be made however between mere increases in numbers and their propensity and expenditure on eating out, for to determine only this increase would have been the equivalent earlier, of estimating the growth in eating out from the future trends in population. Whilst the vulnerability of such a procedure can be readily appreciated the potential of a market whose size may well increase from about 4 million in 1967 to 21 million in 1980, (166a) cannot be ignored. Nevertheless, although clearly these visitors must eat when they are in the United Kingdom, until information is available as to their inclination to cater for themselves or to their tendency to eat with friends or relatives, it would be irresponsible to assume that the growth in demand for eating out will be directly proportional to the numbers of visitors, and because it is impossible to tell what proportion of the total expenditure on meals away from home is being maintained by overseas visitors, any calculations based on the 1964 estimates made in Appendix (A) must be of doubtful validity.

It had been hoped that the latest Smethurst's survey 'The Visitor Eating Out in Britain' (144) would fill a number of the vital gaps in the available information, but unfortunately like its predecessors it was concerned with more general topics such as the quality of service, the nature of complaints, the level of prices compared with their own country, the difficulty of finding suitable places to eat or the specific dishes enjoyed. It is
difficult however to derive determinants of demand or to forecast future trends on this basis, and as with business expenditure, until more accurate and relevant information is provided this section of the market will remain one of ignorance. Nevertheless, unlike business demand, the prospects for growth here, must suggest that concern will be more than adequately rewarded, and it must be hoped that it will not be long before this conjectured potential is disclosed.
REFERENCES


34. Davies, D. The Case of Labourers in Husbandry: Stated and considered in three parts.... with an appendix containing a collection of accounts, shewing the earnings and expenses of labouring families in different parts of the Kingdom, London, C.G. & J. Robinson, 1793.


56b. General Register Office, Sample Census 1966, London and Edinburgh, HMSO.


117a. Netherlands Centraal Bureau voor de Statistiek, Houshoudrekningen van 528 Gesinnen uit Verschillende Deelen van Nederland, 1937.


