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The Determinants of Growth in Multiple Retailing in Britain

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The development of multiple retailing has been widely recognised as providing a series of revolutionising influences on consumer behaviour.² The development of self-service in the 1950s, supermarket retailing in the 1960s, hypermarket one-stop shopping in out-of-town retailing formats and e-retailing in the 1970s, 1980s and 1990s have all been external demonstrations of these revolutions. Multiple retailing firms have at the same time revolutionised internal functions of consumer industries from the breaking of Resale Price Maintenance in the 1950s to the development of Efficient Consumer Response, a combination of Just-in-Time techniques in the areas of logistics and distribution and utilisation of Electronic Point of Sale (EPoS) computer network technology for stock handling, in the 1990s. The impact from the diffusion of many of these innovatory developments during the 1980s and into the 1990s has also led to the suggestion, within food retailing, that a ‘golden age’ for British large-scale multiple retailing existed.³ While food retailing is taken to be the most dynamic sector within the retailing industry the changes taking place within retailing were general trends and as will be seen below the ‘golden age’ is equally applicable to the large multiple retailing sector as a general term.

The three largest food retailers alone saw their market share increase from under 20% in 1980 to over 43% by 1990.⁴ Less starkly concentration amongst all large-scale multiple retailers, defined

¹ In writing this paper I have been grateful to Huiching Cheng for her research assistance and the University of Dundee for its financial support. All errors are my responsibility.

² B. Fine and E. Leopold (ed.s), *World of Consumption*, (1993) and C. Shepherd and J. Gardner, *Consuming Passions*, (1989).

³ N. Wrigley, Retail concentration and internationalisation of British grocery retailing, in R.D.F. Bromley and C.J. Thomas (ed.s), *Retail Change: Contemporary Issues*, (London 1993), pp. 41-68.

⁴ Wrigley, ‘retail concentration’, table 3.1, pp.43-4.

as firms with over 10 stores, rose from 12% of stores accounting for 32% of retail turnover in 1976 to 16% of stores accounting for 55% of turnover by 1994.⁵ This ‘golden age’ was not simply a process of concentration through increasing sales in existing market segments but was linked to an increase in both scale and scope of the largest retailers.

Two distinct, but related, consequences were identified in these changes that became the focus for potential government intervention. First was the welfare effects and social implications from the changing spatial geography of a retailing environment increasingly dominated by out-of-town development. Social stratification between car-owning and non car-owning consumers or alternatively between inner city and suburban consumers was identified as increasing polarisation both within and between communities.⁶ Government, at both national and local level, became more concerned with planning as a result.⁷ The second area of concern arose from the competition implications of these changes. The largest multiple retailers were capable of abusing their oligopsonistic market power when following business strategies to either maximise market share or profits.⁸

The ‘golden-age’ became associated with a shift in the balance of power within the supply chain between farmers, manufacturers, distributors and retailers.⁹ This shift in the balance of power it should be stressed was however a continuation of longer-term trends within the industry and as a result had been the focus of previous anti-monopoly investigations.¹⁰ Thus government investigation into the industry took place under the Monopolies and Mergers Commission in

⁵ HMSO, *Business Monitor*, SDA25, 1976, table 4 & 1994, table 3.

⁶ P. Langston, G.P. Clarke and D.B. Clarke, ‘Retail Saturation: the debate in the mid-1990s’, *Environment and Planning A*, Vol.30, 1998, pp.49-66.

⁷ N. Wrigley, ‘Understanding store development programmes in the post-property-crisis UK food retailing’ *Environment and Planning A*, vol.30, 1998, pp.15-35.

⁸ P.W. Dobson and M. Waterson, ‘Countervailing Power and Consumer Prices’, *The Economic Journal*, 107, 1997, pp.418-30 and M. Harrison, A. Flynn & T. Marsden, ‘Contested regulatory practice and the implementation of food policy: exploring the local and national interface’, *Transactions of British Geographers*, 22, 1997, pp.473-87.

⁹ J. Fernie, ‘Distribution strategies of European retailers’, *European Journal of Marketing*, Vol.26, No.8/9, 1992, pp.35-47.

1981, the Office of Fair Trading in 1985. Nevertheless a further investigation by the Competition Commission in 2000 looked again at these issues.¹¹

Explanations for the rapid rise in importance of multiple retailers has thus been the focus of a significant amount of academic study, yet surprisingly little quantitative analysis has been published on these important changes. Most specifically no quantitative studies have been undertaken to examine the determinants of this growth among large-scale retailers in the golden age. The academic literature has concentrated on geographies of store distribution, strategies of individual firms and the impact upon competition of these structural changes within the industry.¹² This study aims to shed some light, using quantitative data, on the determinants of the growth in large-scale multiple retailing during this golden age. Using real growth in turnover in large-scale multiple retailing as the dependant variable the paper examines the determinants of this growth against a variety of supply and demand variables. In the section that follows the paper examines current explanations for the rise and dominance of multiple retailing while section three examines the extent and limitations of the data available. Section four outlines the data sources and approach undertaken in this study, while section five produces the results of our quantitative study. Finally in conclusion we examine the implications of our findings in relation to some of the hypotheses within the existing literature.

¹⁰ C. Moir, 'Competition in the UK grocery trades', in C. Moir and J. Dawson (ed.s), *Competition and Markets: Essays in Honour of Margaret Hall*, (1990).

¹¹ Monopolies and Mergers Commission, *Discount to Retailers*, (1981), Office of Fair Trading, *Competition and Retailing*, (1985) and Competition Commission, *Supermarkets: A report on the supply of groceries from multiple stores in the United Kingdom*, Vol.1, (2000).

¹² P. Langston, et. al., 'Retail saturation, retail location, and retail competition: an analysis of British grocery retailing', *Environment and Planning A*, 29, 1997, pp.77-104, K. Davies and L. Sparks, 'The development of superstore retailing in Great Britain 1960-86: results from a new database' *Transactions of the Institute of British Geographers*, 14, 1989, pp.74-89, A.G. Hallsworth, 'Rethinking retail theory: circuits of power as an integrative paradigm', *Geographical Analysis*, Vol.29, No.4, 1997, pp. 329-338, and G. Akehurst and N. Alexander (ed.s), *Retail Structure*, (1995).

Section Two

The earliest, and still one of the few, quantitative studies of multiple retailing was undertaken by Hall, Knapp and Winsten in 1961 and examined distribution in Great Britain, the United States and Canada.¹³ This pioneering study's findings suggested that for the United States all of the dependant variables: number of stores, total sales per person engaged or total sales (standardised for the size of store) were explicable through a combination of the variables mean per capita income and the rate of growth of population and/or urban density. Their general regression equation took the form of:

$$Z = a + bI + cI^2 + dI^3 + eR + fR^2 + hD$$

Where Z was the dependant variable, I the mean per capita income, R the rate of growth of population and D the proportion of population living in towns.¹⁴ The study therefore located the development of multiple retailing within what may be described as a demand-side explanation deriving from general growth in the economy, the rise of consumer expenditure and urbanisation. This demand-side explanation has been a predominant theme within much of the literature that has focused upon long-term trends.¹⁵ The rise of multiple retailing is therefore widely suggested to be the evolutionary result of a maturing of the domestic economy and the growth of consumer society. As consumer society became more diverse and differentiated so too has the retailing environment. Thus at the same time as large-scale retailing organisations were growing so were the smallest of retailing forms with the developments of car boot sales.¹⁶ Further a rapid increase

¹³ M. Hall, J. Knapp and C. Winsten, *Distribution in Great Britain and North America*, (Oxford 1961). The study only undertook a quantitative analysis of the United States.

¹⁴ Hall et.al., *Distribution*, p.226-7.

¹⁵ See J.B. Jeffreys, *Retail Trading in Britain 1850-1950*, (Cambridge 1954), p.119, P. Mathias, *Retail Revolution*, (1967).

¹⁶ See T. Burke and J.R. Shackleton, *Trouble in Store?: retailing in the 1990s*, (London 1996), pp.14-33.

in foreign direct investment into British retailing became one of the new trends identified during the 'golden age'.¹⁷

Individual firms' responses to increases in demand and the expansion of market opportunities have also encouraged an organisational approach to the study of retailing. In case studies of particular firms and sectors there is an emphasis upon more supply-side and institutional change, human capital and entrepreneurship.¹⁸

At a quantitative level supply-side change has been examined in relation to increases in concentration and the growth of conglomerate power in the U.S. food retailing industry. Marion et. al. examined changes in four-firm concentration during the period 1967-75 using disaggregated data for 86 distinct geographical markets. Concentration ratios were positively correlated, and significant, with the number of horizontal mergers in the market, the number of large food retailers operating at the beginning of the period and the entry of new large retailers into existing markets either through expansion or merger activity.¹⁹ Their results indicated that although initial market size was positively correlated to concentration market growth itself did not play a significant part in the development of concentration. Thus the growth of large-scale retailing was a phenomenon linked to supply-side rather than demand side explanations.

Surprisingly their study also suggested that the more dominated a market was by large food retailers the greater the growth of concentration occurred over time. Thus the authors concluded that 'the findings ... are disturbing. They strongly suggest that the growing presence of large chains in markets tends to accelerate market concentration'²⁰ and that in the absence of vigorous enforcement of anti-trust legislation the rise in concentration could be expected to lead to a reduction in competition within the retailing industry. Large-scale retailing was, in this view,

¹⁷ A. Godley, and S. Fletcher, 'Foreign entry into British retailing, 1850-1994', *International Marketing Review*, 17, 2000, pp. 392-400.

¹⁸ See B. Williamson, *The Best Butter in the World*, (1994) and J. Birchall, *Co-op: the peoples' business*, (Manchester 1994).

¹⁹ B.W. Marion, W.F. Mueller, R.W. Cotterill F.E. Geithman and J.R. Schmelzer., *The Food Retailing Industry: market structure, profits and prices*, (New York 1979), pp.35-55.

capable of successfully using the development of an oligopolistic market structure to extract monopoly rent.

Finally the only other quantitative study of UK retailing was undertaken in 1968 by K.D. George and examined the linkages between multiple retailing, capital investment and productivity growth over the period 1957 to 1966. Using survey techniques to obtain data and regression techniques for analysis George initially demonstrated that labour productivity growth, measured as the growth of sales per person engaged, was positively correlated to both an increase in sales and an increase in sales per shop.²¹ To further explain this labour productivity growth George used a growth accounting approach based upon a traditional Cobb-Douglas production model with technical change as the exogenous residual. Total factor productivity growth in the years 1961-66 was estimated to account for 24% of the increase in output across retailing as a whole. The supply-side conclusion suggested that those firms whom successfully adopted new technical and organisational methods gained increased output 'via cost and price reductions' and subsequently used increased capital inputs to embed the benefits of these changes into their organisational structure. Hence the causation between output growth and increases in capital employed, technical change and labour productivity growth George suggested was such that 'the successful innovator and the efficiently managed firms will be able to expand output relative to its competitors and this will lead to an above average increase in capital employed.'²²

In summary the quantitative literature suggests, unsurprisingly, that both demand and supply factors proved important to the development of multiple retailing. However the limited nature of

²⁰ *Ibid.*, p.53

²¹ K.D. George, *Productivity & Capital Expenditure in Retailing*, (Cambridge 1968)., p.12. Only 35 firms responded to the full survey and 84 to the reduced survey with at best only 30% of the industry's capital expenditure covered by the analysis.

these studies and lack of quantitative work on developments within contemporary retailing means that little can be said quantitatively on some of the most important changes to have taken place in the industry.

Beyond these few quantitative studies much of the existing qualitative literature focuses upon two areas of retailing: the emergence of oligopsonistic buyer power derived from the increasing complexity and changing structure of the supply chain and the emergence of retailers' oligopolistic market power derived from concentration in the retailing function itself.

Traditionally retailers' internalisation of warehousing and delivery logistics led to high levels of stock holding in their supply chains. Retailers engaged in forward buying from manufacturers in advance of store promotions in order to ensure adequate stocks were available with warehouses emptied on the basis of replenishment orders from stores. While this provided retailers with guaranteed stock availability it simultaneously ensured retailers incurred high fixed costs in warehousing, high variable costs in stock handling and also bore the risks involved from wastage and leakage. The development of the system of 'Efficient Consumer Response' (ECR) in the 1990s revolutionised these supply networks. ECR involved retailers outsourcing warehousing and logistics to specialist logistics organisations, to run new large Regional Distribution Centres, and the development of Electronic Point of Sales technology linked to centralised computing systems to provide retailers with detailed sales data. The exchange of this data between the retailer, logistics companies and product manufacturers was then used to drastically reduce stock holdings in the supply chain. Fernie's study demonstrates the extent and success of this process achieved by British retailers in the supply chain for dry packaged groceries. British dry grocery supply chains between manufacturer and consumer are estimated to be on average 29

²² Ibid., p.32..

days compared to 104 days in the United States. The implementation of ECR in the United States, it is suggested, could reduce stock holding to 61 days.²³

ECR also included the development of vertical disintegration and the replacement of unified contracting with relational contracting relationships in the supply chain.²⁴ Vertical disintegration provided retailers and logistics firms with the opportunities to specialise in their respective core competences, while allowing retailers to avoid incurring the increasing levels of capital investment required in these operations. Importantly it simultaneously allowed for a shift of the risks involved in stock holding to be pushed further down the supply chain. Thus Foord et.al. suggests that retailers were successful in the 1980s in ‘imposing ... extra costs on manufacturers without any significant loss to themselves.’²⁵ Through these processes large-scale retailers have been increasingly successful in shifting the balance of power within the supply chain and have derived oligopsonistic power through their dominance and management of the supply chain.²⁶ Much of the debate over regulation thus concentrates on two issues derived from the emergence of this oligopsonistic power. First has this power been used to capture economic rent from the supply chain? In doing so has it encouraged the development of a system production which lead to crisis such as occurred over the Bovine Spongiform Encephalopathy (BSE) and foot and mouth epidemics in food retailing or the criticism of use of child labour in leisurewear production.²⁷ Second to what extent has oligopsonistic power derived from retailers’ Schumpeterian type innovation allowing retailers to promote higher standards within the

²³ J. Fernie, ‘International Comparisons of Supply Chain Management in Grocery Retailing’, in G. Akehurst and N. Alexander (ed.s), *The Internationalisation of Retailing*, (1996), 134-47.

²⁴ C. J. Morelli, ‘Information costs and information asymmetry in British food retailing’, *Service Industry Journal*, 19, 1999, pp.175-86.

²⁵ J. Foord, S. Bowlby and C. Tillsley, ‘The changing place of retailer-supplier relations in British retailing’, in N. Wrigley and M. Lowe (ed.s), *Retailing, Consumption and Capital: towards the new retail geography*, (Harlow, 1996), p.87.

²⁶ A. Hughes, ‘Constructing competitive spaces: on the corporate practice of British retailer-supplier relationships’, *Environment and Planning A*, 31, (1999), pp.819-39.

²⁷ See H. Raven and T. Lang ‘Off our trolleys? Food retailing and the hypermarket economy’, *London Institute for Public Policy Research*, (1995), G. Monbiot, *Captive State*, (1999) and N. Klien, *No Logo*, (2000).

production process and supply chain itself? In so doing have large retailers become quasi government bodies for the implementation of food policy?²⁸

The degree to which large-scale retailing has been viewed as exhibiting oligopolistic market power, again deriving from the growing levels of concentration in the industry, has also been subject of discussion. It is not automatic that concentration will lead to a reduction in competition. Growing retailer concentration may lead to lower consumer prices if retailers are able to act as a countervailing power to manufacturers. In bargaining successfully with suppliers retailers may be able to maintain margins yet still pass on cost savings to consumers. Equally even if oligopolists attempt to achieve monopoly profits through price setting, as in a Bertrand duopoly, the equilibrium effect will still be expected to result in perfect competition.²⁹

Conversely however retailers achieving oligopolistic power may well ensure higher final prices predominate. Within a Cournot type duopoly, whereby firms co-operate to reduce output, or through a dominant firm environment oligopolistic firms may set output levels such that quantities are reduced as if a single monopolistic firm operated within the market and monopoly rents are achieved. Figure 1 below illustrates an industry in which two or more firms co-operate as one firm, with a marginal cost and marginal revenue curve being the average for the firms colluding, to maximise profits. At point Q_m output is reduced below the level for perfect competition Q_c and consequently prices rise from P_c to P_m allowing the successful oligopolistic firms to share the monopoly profit at the expense of consumers. It should be noted that collusion may not have to be explicit in this framework but could emerge implicitly through a series of repeated games.

²⁸ M. Harrison, A. Flynn and T. Marsden, 'Contested regulatory practice and the implementation of food policy: exploring the local and national interface', *Transactions of the Institute of British Geographers*, 22, (1997), pp.473-87.

²⁹ R.H. Frank, *Microeconomics and behaviour*, (2nd edition, New York 1994), P.524

Insert Figure 1 here

Dobson and Waterson maintain that this result may well occur if a lack of substitutability exists in product markets.³⁰ The development of out-of-town superstores and the promotion of one-stop shopping in the 1980s reduced the cross price elasticity of demand for substitute goods as price comparison became more difficult with the ending of consumers ability to move from store to store along a high street. Under these circumstances opportunities for large-scale retailers to act as dominant firms in oligopolistic markets and achieve monopoly prices emerge. The increase in capital investment in retailing in the 1980s and the changing geography of the retailing sector are two aspects of this process that are understood to have contributed to a reduction of the substitution effect. The growth in concentration, particularly among the largest food retailers, coincided with an increase in capital investment on exactly these retail formats. The largest three food retailers alone saw investment rise to £2b per annum by 1992 in new stores.³¹ With this increased investment came an increase in size of stores. In the sixteen years prior to 1976 there were 93 superstores, defined as stores of over 25,000 sq.ft, opened in Great Britain, whereas within ten years, by 1986, this total had risen to 470. Davies and Sparks characterised the years 1972-80 as a period of resistance by planning authorities to new superstore development and the period 1981-86 as one of renewed development following government direction that local planning authorities should cease basing their decisions on questions of competition.³² This deregulation not only continued to the end of the 'golden age' but also reflected the wider delegation of regulatory power to retailers by government.³³

³⁰ P.W. Dobson and M. Waterson, 'Countervailing Power', pp.418-30.

³¹ N. Wrigley, 'Retail concentration', table 3.1, p.44 and N. Wrigley, 'Sunk costs and corporate restructuring: British food retailing and the property crisis', in Wrigley and Lowe, *Retailing*, p.118.

³² K. Davies and L. Sparks, 'Development of superstore retailing', p.81.

Studies on the impact of the changes in retailing over the past thirty years has been almost exclusively conducted at a theoretical and abstract level with little systematic quantitative evidence provided. No quantitative studies have been undertaken into British retailing since George's 1968 survey and the quantitative evidence provided within the burgeoning literature is limited to case studies of individual firms or sectors. We simply have not been able to answer the question 'what factors determined the rise of large scale retailing?' on a quantitative basis. The explanation for the paucity of quantitative studies in retailing lies primarily with a problem of data. At precisely the time when fundamental changes were taking place in retailing government abolished the systematic collection of data. The decennial *Census of Distribution* begun in 1951 was discontinued after the 1971 edition and was instead replaced by the much more limited *Business Monitor*, SDA25, series. While the *Census of Distribution* was based upon a full census of the 352,000 businesses operating in Britain, *Business Monitor* was based upon sampling data of some 30,000 stores, approximately one tenth of those registered in 1976.³⁴ Equally importantly *Business Monitor* used much higher levels of aggregation with little spatial disaggregation provided. As a result it has been suggested that a 'black hole' exists of evidence for research into the changing structure of retailing over the past thirty years.³⁵

Fortunately, the 'black hole' may not be as impossible to examine as originally feared. While the *Business Monitor* series suffers a number of important deficiencies it nevertheless provides us with data on retailing for the period 1976-1994. Specifically *Business Monitor* provides data for large multiples, defined as businesses with ten or more outlets, on turnover, gross margins, number of businesses and outlets, number of persons engaged, net stock changes and net capital expenditure. This can be combined with data derived from the official government publication

³³ T. Marsden and N. Wrigley, 'Regulation, retailing and consumption' *Environment and Planning A*, 27, (1995), pp. 1899-1912 and A. G. Hallsworth, 'Rethinking'.

³⁴ HMSO, *Some Characteristic Differences between the Retailing Inquiry 1976 and the Census of Distribution 1971*, (1979).

Annual Abstract of Statistics, for the growth in total population, female population, total labour force, female labour force, household expenditure on goods and services, durable goods and food and the International Monetary Fund's *International Financial Statistics Yearbook* for data on the growth of GDP, changes in interest rates, changes in UK average earnings within the distributive trades and the GDP deflator for calculating all prices at real 1990 levels. As a result a quantitative examination of the determinants of large-scale retailing can be undertaken covering retailing in Great Britain.³⁶

The analysis that follows examines the relationship between a variety of measures for changes in demand factors including GDP, household expenditure, population and workforce size along with supply factors of capital investment, labour costs, retail employment and interest rates over the years 1976 to 1994. This study uses the real growth in the turnover of large multiple retailers, as defined earlier, businesses with ten or more stores, as the dependant variable.

The dates used in the study cover the period described as the 'golden era' for multiple retailing. While the starting date for the 'golden age' is generally not specified in the literature, in this study we have taken the start as 1976. This date is earlier than is typically indicated in the characterisation of the 'golden age', which usually refers to the early 1980s as the beginning of the period, but has been chosen for two reasons. First it marks the date when the rapid expansion in superstore retailing began. 1976 saw a steep rise in the number of applications for new superstore developments approved by planning authorities from 19 to 45.³⁷ Second 1976 is the first year of comparable data following the publication of the *Business Monitor Series SDA25* and is therefore the earliest date we can use and as such maximises the number of observations available in the following regression analysis. The period covers the recession of 1979-1982 and

³⁵ L. Sparks, 'The Census of Distribution: 25 years in the dark', *Area*, 28, 1, 1996, pp. 89-95.

the peaks of activity 1979 and 1994. *Business Monitor* provides annual data except for the years 1980-86 when it was published every second year. The data for 1981, 1983 and 1985 are therefore extrapolated. This does create one difficulty due to 1982 being a turning point for the data series. It may be that the recession was steeper in 1980-82 than the recovery in 1982-84 in which case the turning point may not be 1982. The end of the period, 1994, coincides more closely with that adopted by the periodisation of the 'golden age' which has been suggested to have come to a sudden and dramatic end in 1993-4 when retailers were engulfed by a crisis linked to the industry's over investment in property and wider sunk costs.³⁸

The period overall saw significant growth in real turnover and real gross margins for the retailing sector as a whole at the same time as a decline in the number of both retail businesses and outlets occurred. While in 1976 there were 391,000 stores by 1994 the number had fallen to 290,000, a decline of 25.9%. Figure 2 demonstrates these changes and also highlights that these changes were not continuous. The recession of 1979-1982 saw a sharp fall in both real turnover and real gross margins, which was followed in the years 1982 – 1988 by a rapid rise in both turnover and margins. This was followed between 1988 –1994 by lower rates of growth and even temporary falls in turnover and margins. Within the retailing sector as a whole there were more marked differences of experience between the single outlet and small multiple businesses (multiples with between two and nine outlets) when compared to that of the large multiple businesses. Figure 3 demonstrates this on a per outlet basis. Both the single outlet retailing business and the small multiple business sectors failed to return to their 1979 levels of profitability until the second half of the 1980s. The 1979 levels of real turnover and real margins for single outlet businesses were not attained until 1993 and 1987 respectively. For small multiples 1979 levels of real turnover and margins per outlet were not attained until 1986. If we compare this with the experience of

³⁶ Namely England, Scotland and Wales and excluding Northern Ireland, the Channel Islands and the Isle of Man.

the large multiple retailer where real turnover per outlet did not decline at all in the recession and real margins per outlet fell only in 1980, and recovered by 1981, we can see how distinctive the experience of the large multiple retailers was. This suggests that the term the 'golden age' is indeed applicable to multiple retailers generally rather than more narrowly to food retailing as has hitherto been the case.

INSERT FIGURES 2 & 3 HERE

As described above, George's study suggested that a process of causation linked changes in employment to the development of changes in profitability. Certainly the data for the golden age demonstrates that the numbers of full-time equivalent employees within the industry has undergone important changes. Along with the decline in the number of outlets and businesses came an expected decline in the numbers employed in the industry. However this decline was not commensurable with the decline in the numbers of outlets over the period. Whereas in 1976 2.5 million were employed in retailing by 1994 this had fallen to 2.4 million, a reduction of just 4.0%. As Figure 4 demonstrates this led to a significant increase in the numbers employed per outlet. Again it is among the large multiple retailers that the explanation for these changes in employment is to be found. Figure 5 shows that while employment per outlet in the single outlet and small multiple sectors has remained largely unchanged among large multiple retailers significant increases took place. Both in terms of total employment and employment per store we see significant increases associated with the growing dominance of the multiple retailing sector.³⁹

³⁷ Davies and Sparks, 'Development of superstore retailing', table 2.

³⁸ N. Wrigley, *Understanding*, pp.15-35.

³⁹ The index for employment by business type is based upon 1977 data as the Retail Enquiry 1976 does not provide employment data by business type.

INSERT FIGURES 4 & 5 HERE

It is clear from examining either the data for turnover, margins or employment that the most important changes within the retailing industry over the period were occurring within the large multiple retailing sector. Large multiple retailing was undergoing a significant increase in both its scale and scope of operations over the period of the 'golden age' and it was these changes which proved crucial in changing the pattern of retailing. It is here that we now turn our attention to examine the determinants of these changes.

In the discussion below we examine the impact demand and supply variables have on the growth of real turnover.⁴⁰ Our priors are that demand factors, those variables which give rise to opportunities for large-scale retailing operations, should in general be positively correlated with the growth of real turnover. We expect as the market expands so the opportunity for multiple retailers to establish themselves and expand should increase. Therefore our expectations are that factors such as growth of GDP and growth of population which act as a proxy for the growth of the market should be positively correlated with growth of real turnover. Consumer expenditure however, measured variously by the change in total expenditure, expenditure on consumer durables and expenditure on food, although a demand variable, may well contradict this pattern. With the development of consumer society has come a dispersion of consumer expenditure much of which will not be spent within the retailing sector. So for example household expenditure on food, traditionally the single most important component of consumer expenditure, has declined significantly over time. Whereas expenditure on food accounted for 30.5% of all household expenditure in 1960 by 1996 this had fallen to 18.2%. Simultaneously expenditure on housing

⁴⁰ All prices referred to in the text that follows refers to real 1990 prices.

rose from 9.3% to 16.6%.⁴¹ The long-term decline in the proportion of consumer expenditure spent on food has also coincided with a growth in areas of consumer expenditure independent of retailing, including motoring and transport, foreign travel, pensions and health. These changing patterns of consumption may, we expect contribute to a negative correlation between changes in consumer expenditure and growth in turnover.

We also expect to find a positive correlation between growth in turnover amongst multiple retailers and investment in supply side factors of production such as capital and labour. As George's study found increases in capital and labour employed lead to increases in turnover. The interest rate, a proxy for the opportunity cost of capital investment, would we expect be negatively correlated. Similarly, changes in the labour force provides us with a measure of the opportunities for labour to substitute one form of employment for another. As employment increases so opportunities for labour to abandon retailing increase suggesting that employment levels may act as a pull factor being negatively correlated with growth in real turnover. However as the wage rate increases employment within the retailing sector may become more attractive and therefore changes in wage levels may be positively correlated with changes in real turnover.

The basic model we adopt suggests the dependent variable, real change in turnover for large multiple retailers is a function of a variety of the demand variables including the change in the size of the economy, growth of population and growth of consumer expenditure along with the supply factors of increases in the supply of labour in the market, capital expenditure, interest rates, growth of the retail workforce and growth of wages. A series of regression equations were estimated to include a variety of measures for each of the variables.

⁴¹ONS, *Family Spending: A report on the 1995-6 Family Expenditure Survey*, (1996), p.101.

We may write it in the general form of :

$$\Delta \text{Turnover} = C + \alpha \text{GDP} + \beta \text{Population} + \gamma \text{Consumer Expenditure} + \\ \delta \text{Capital} + \epsilon \text{Interest Rate} + \eta \text{Labourforce} + \\ \theta \text{Retail Employment} + \pi \text{Wages}$$

Table 1 reports a range of regression results achieved from the variety of variables included in our modelling. Equations 1-9 show the growth of GDP is positively correlated and significant at the 5% level with the growth of real turnover. The change in GDP alone accounts for 57% of the change in real turnover. The growth of the total population (equations 1 and 5-9), or alternatively the female population (equations 2-4), is also as expected positively correlated and significant in all of the equations at the 5% level supporting the view that multiple retailing originates in the increased opportunities for firms to develop as markets expands. It should be noted here that, unlike Hall, et.al., we have not tested for spatial and urbanisation effects. Nevertheless the high levels of urbanisation in Britain by the late 20th century suggests that these effects, where they exist, may be less significant than for the earlier study.

Measures of consumer expenditure give less satisfactory results. All measures for changes in consumer expenditure, including changes in expenditure on food (equation 3), changes in expenditure on durable goods (equations 1-2 and 5-9) and changes in expenditure on all goods and services as a proportion of GDP (equation 4), are negatively correlated with the change in real turnover which conforms to our expectations. However only changes in consumer expenditure on durable goods and expenditure on food provide a correlation which is significant at the 5% level.

The negative correlation between turnover and consumer expenditure is important in explanations for the change in scope of large retailers over time. Pressures on multiple retailers to achieve efficiency gains and increases in the range of products sold by larger retailers are suggested to derive from the reduction in the proportion of consumer expenditure spent in retailing.⁴²

The impact of supply variables was examined through changes in capital and labour employed. The impact of changes in capital was assessed through the change in real stock levels (equation 5) and real net capital expenditure (equations 1-4 & 7-9). Changes in stock levels were positively correlated and significant at the 5% level as would be expected. The growth of large-scale retailing tends to necessitate an increase in absolute levels of stock holding, even with efficiency within the supply chain.

Real net capital investment was both negatively correlated and significant at the 5% level. That capital investment appears both negatively correlated and significant is surprising. Before discussing the implications of this finding we first tested the robustness of the finding by modifying the variable. Regressions using a lagged variable for real net capital expenditure had little effect. Redefining the variable as the change in real net capital expenditure (equation 6) again saw a negative correlation but in this case was not significant. A further attempt to examine the cost of capital investment through the inclusion of an interest rate variable also failed to alter the results (equation 7). Using either the absolute real interest rate or the change in the real interest rate as an additional variable while positively correlated proved insignificant. We therefore believe that the result to be robust but as it appears counter intuitive it requires further explanation.

⁴² J. Benson *The Rise of Consumer Society in Britain 1880-1980*, (1994), pp.62-4

The explanation for a negative and significant correlation between changes in real turnover and real net capital investment may be due to a number of factors. First and foremost there may be significant measurement errors in accounting for capital investment in retailing during the period. Small-scale retailing had historically been a sector which required little, even no, capital investment. Stores could be leased from property companies, resulting in low fixed capital costs. This combined with stock provided on credit by wholesalers and manufacturers and sales being on a cash basis resulted in retailers also having low variable capital costs. The 1980s saw two new developments in the use of capital investment which extended these earlier relationships into the large-scale retailing sector. First, large shopping malls were developed by independent property developers allowing large-scale retailers opportunities to expand while avoiding the capital investment that had hitherto been required by the larger multiples establishing themselves in prime site high street locations. Indeed the largest multiple retailers, known as 'anchor stores', were widely recognised as essential to the success of any new shopping mall development.

Second the retailing sector itself developed the widespread use of sale and lease-back arrangements for the construction of new retailing outlets and the management of warehousing and distribution centres. Larger multiple retailers were changing the structure of their fixed costs with the development of new infrastructure through the leasing of stores and warehousing from third parties. The effect was to reduce the capital investment which would otherwise have been required to increase their market share and hence provided a mechanism for the rapid expansion of large stores associated with the 'golden age'. This period also saw capital investment in areas of retail management rather than simply retail outlets, specifically in the areas of EPoS technology and networks for supply chain management. This investment did not lead to changes in real turnover but played an important role in changes in margins and costs. Thus it may be in the relationship between margins and costs rather than turnover that the impact of capital

investment can be ascertained. Finally, multiple-retailers growth of turnover, as described above, was continuous throughout the golden age whereas capital investment fluctuated markedly over time suggesting that a linear relationship, examined through OLS regression analysis, may fail to capture the true extent to which capital investment influences the growth of turnover in large-scale multiple retailing.

The relationship between growth of real turnover and labour inputs was also a supply factor examined by the regression analysis. As shown in Figure 5 above large-scale multiple retailing became more labour intensive as the number of employees per store rose through the period. We therefore expect a positive correlation between retail employment and real turnover. However we also examine the extent to which alternative employment opportunities exist by modelling the relationship between turnover and change in total employment. We expect as total employment increases workers find alternative areas of employment and therefore expect a negative relationship to exist. Finally we examine changes in average earnings within the distributive trades. Changes in wage rates within the industry would we expect be negatively correlated with changes in turnover as retailers substitute reduce employment, and hence store expansion, as wage rates increase.

Our regression results confirm our expectations. The growth of the workforce, measured either by total employment (equations 2-4 & 7) or more narrowly as female employment (equations 1, 5-6 & 8-9), is negatively correlated and significant at the 5% level while changes in retail employment (equations 1-9) is positively correlated and significant at the 5% level. This again confirms George's earlier study that the growth of turnover is dependant upon growth of retail employment. Finally, contrary to our a priori assumptions, changes in average earnings are positively correlated with changes in turnover, significantly so in the case of the food sector (equation 8) but insignificantly in the case of the wider distributive trades (equation 9). However

introducing a variable for average earnings in the food sector gives rise to a worsening of the Durbin-Watson statistic suggesting that autocorrelation may be introduced.

Table 1 Regression Results for Change in Real Turnover for Large Multiple Retailers

	Eq(1)	Eq(2)	Eq(3)	Eq(4)	Eq(5)	Eq(6)	Eq(7)	Eq(8)	Eq(9)
C	18.28 (7.168)	14.70 (7.40)	15.90 (5.996)	18.32 (7.011)	-8.66 (6.096)	4.32 (4.500)	13.446 (19.925)	6.595 (6.445)	14.43 (11.44)
Δ GDP	1.5266** (0.322)	1.670** (0.295)	1.949** (0.398)	1.248** (0.281)	1.601** (0.390)	1.540** (0.427)	1.615** (0.535)	2.431** (0.3875)	1.669** (0.478)
Δ Population Total	0.093** (0.030)				0.082** (0.032)	0.036 (0.032)	0.096** (0.040)	0.085** (0.026)	0.102** (0.046)
Δ Population Female		0.227** (0.055)	0.125** (0.050)	0.196** (0.061)					
Δ Expenditure Durables	-0.006** (0.003)	-0.008** (0.003)			-0.009** (0.003)	-0.007* (0.004)	-0.006* (0.003)	-0.005* (0.003)	-0.006** (0.003)
Δ Expenditure Food			-0.004** (0.001)						
Δ Expenditure as %GDP				-0.288 (0.201)					
Real Capital Investment	-0.790** (0.269)	-0.849** (0.241)	-0.758** (0.244)	-0.859** (0.309)			-0.779** (0.258)	-1.833** (0.347)	-0.893** (0.3666)
Δ in Stock Levels					2.268** (0.846)				
Δ in Capital Investment						-0.260 (0.658)			
Interest Rate							0.0357 (1.216)		
Δ Workforce Total		-0.015** (0.004)	-0.015** (0.003)	-0.012** (0.005)			-0.042** (0.019)		
Δ Workforce Female	-0.038** (0.009)				-0.056** (0.014)	-0.039** (0.010)		-0.052** (0.010)	-0.044** (0.018)
Δ Retail Employment	0.273** (0.059)	0.278** (0.050)	0.295** (0.040)	0.287** (0.059)	0.177** (0.090)	0.262** (0.077)	0.278** (0.054)	0.286** (0.041)	0.268** (0.056)
Δ Wages in Food Sector								1.283** (0.384)	
Δ Wages in Distribution									0.234 (0.462)
DW	2.03	1.94	2.61	2.37	1.96	1.61	2.02	2.63	1.96
Adj R ²	0.87	0.89	0.90	0.86	0.89	0.82	0.86	0.92	0.86

Standard errors in parenthesis

* significant at 5% level

** significant at 10% level

Conclusions

The results from a variety of regression models suggests that a dichotomy between demand and supply in explaining the development and growth of large-scale multiple retailing is too simplistic. Instead it is the combination of and interaction between demand and supply factors that a fuller understanding of the growth of multiple retailing may be understood.

Unlike Marion et.al., this study suggests that demand factors of population growth and general growth in the economy are both important determinants of the growth of real turnover. Figure 3 above indicated that large multiple retailers were able, in the first half of the 1980s and again in the early 1990s, to increase both margins and turnover at times when opportunities were unavailable to smaller multiples and single outlet businesses. Yet smaller firms were able to increase their turnover and margins, at the height of the business cycle in the late 1980s created by the Lawson Boom, at exactly the time when the growth rates for the multiples were faltering. The 'golden age' thus does not appear to be one continuous period but one in which sub-division are evident. Further research is required to ascertain the patterns of growth during these sub-periods and provide an answer to the question of why larger multiple retailers demonstrate an ability, in recovering from recession earlier than smaller firms, to be more responsive to changes in the business cycle?

Changes in consumer expenditure, with their negative correlation, is a consistent finding of much of the research. The highly volatile nature of real consumer expenditure encourages larger firms to expand the scope of their retailing capabilities

as they attempt to gain further increases in turnover within a consumer market characterised by increasing diversity of demand.

In the area of supply factors a much more variable picture emerges. The supply of labour and the level of employment in retailing are both important factors in the growth of real turnover confirming George's earlier study. As Figure 6 demonstrates labour productivity growth was more rapid in the early 1980s than in the later years. Indeed changes in labour productivity among multiple retailers may be as important as changes in demand and market expansion in explaining the cyclical element of growth in turnover through the golden age. While Smith & Hitchen suggested that 'high output growth trades tend to display above average productivity improvements and vice versa'⁴³, our results suggest that the causation effect lead from productivity improvements to output growth rather than vice versa. Indeed the positive relationship between wage growth and turnover also suggests that productivity improvements were high enough to offset rising labour costs.

INSERT FIGURE 6

Finally, and most surprisingly, capital expenditure seems to have been less important to the growth of turnover than the literature hitherto suggests. Unlike George the results demonstrate that not only was capital investment negatively correlated to turnover but that the results are consistent across a variety of regression models. This is indeed a surprising result and contradicts much of the existing literature. While we have put forward suggestions of why this might be so it suggests that more work will

⁴³ A.D. Smith and D.M.W.N. Hitchen, *Productivity in the Distributive Trades*, (Cambridge 1985), p.70.

be required before assigning the growth of the golden age to the high levels of capital investment in the sector.

Figure 1: Monopoly profit from cooperation

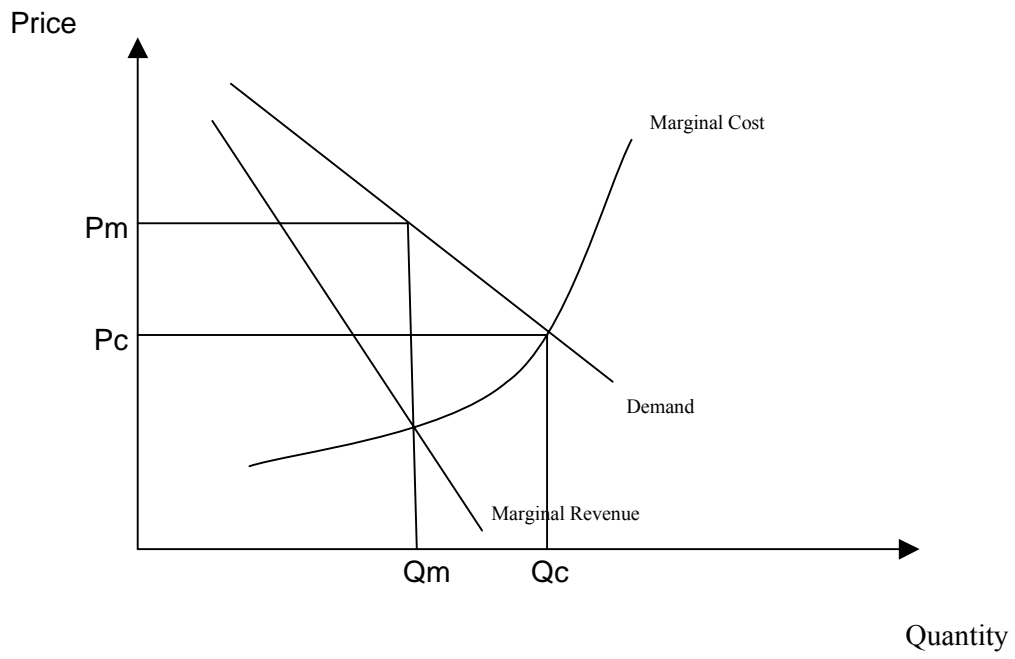


Figure 2: Total Retail Businesses, Outlets, Turnover and Margins. 1976=100

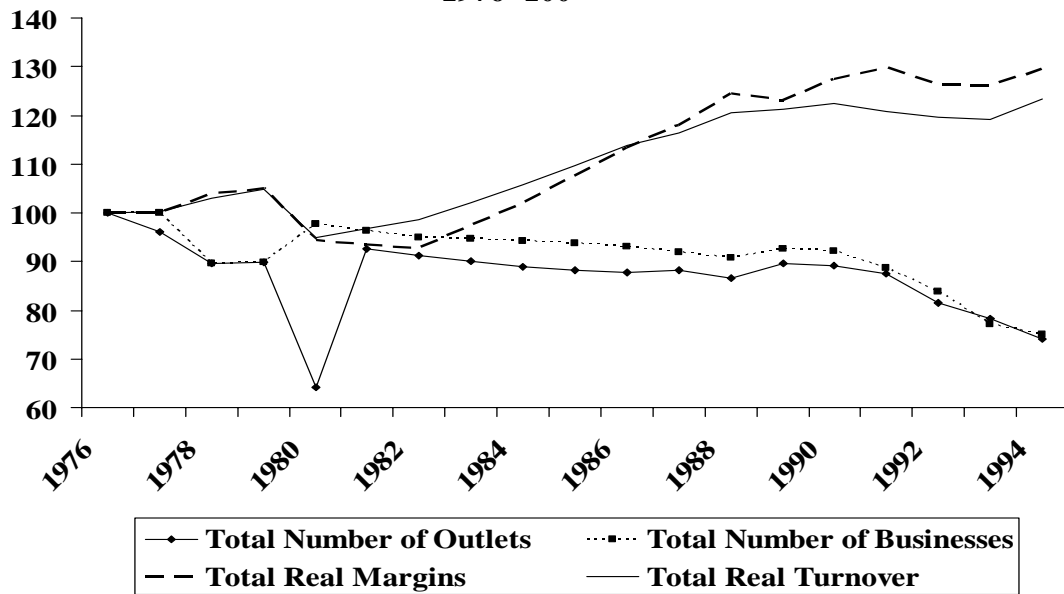


Figure 3: Retail Margins and Turnover per outlet. 1976=100

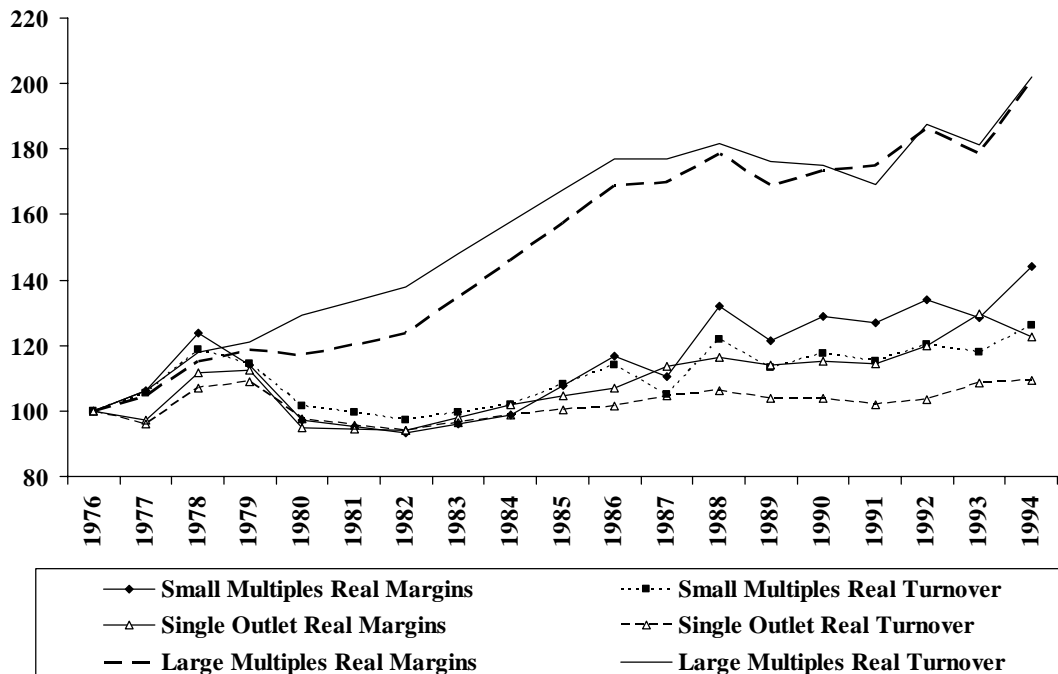
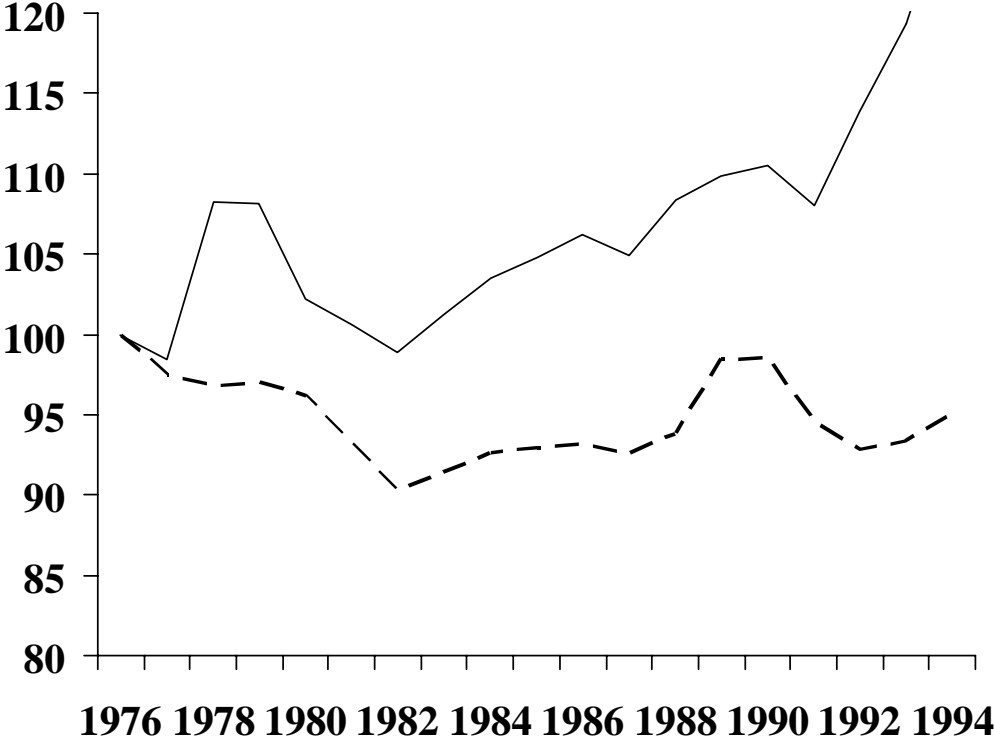
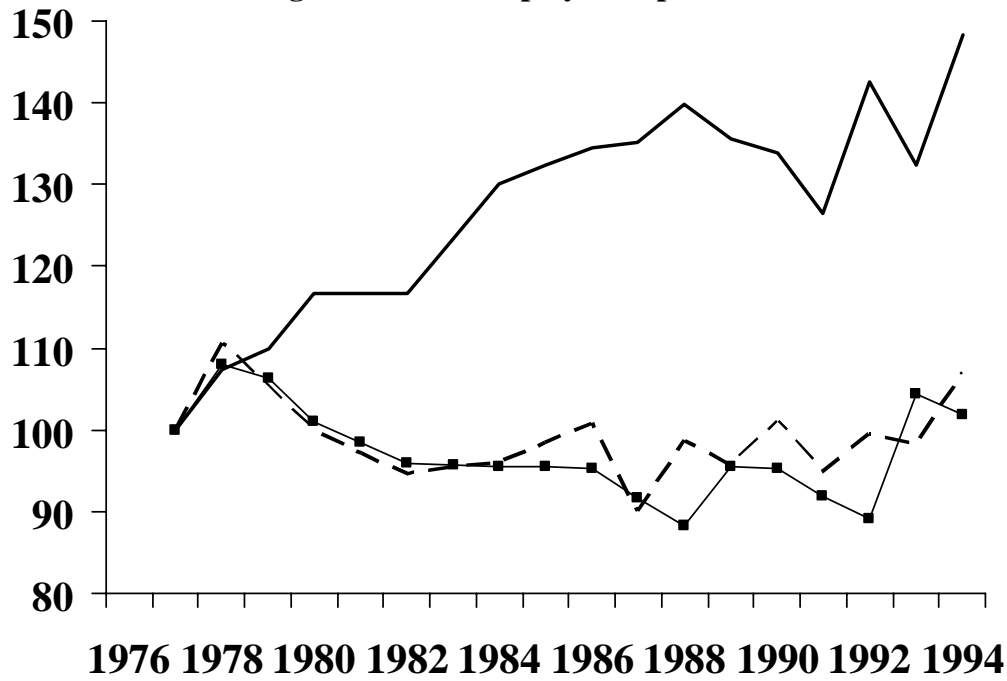


Figure 4 Retail Employment



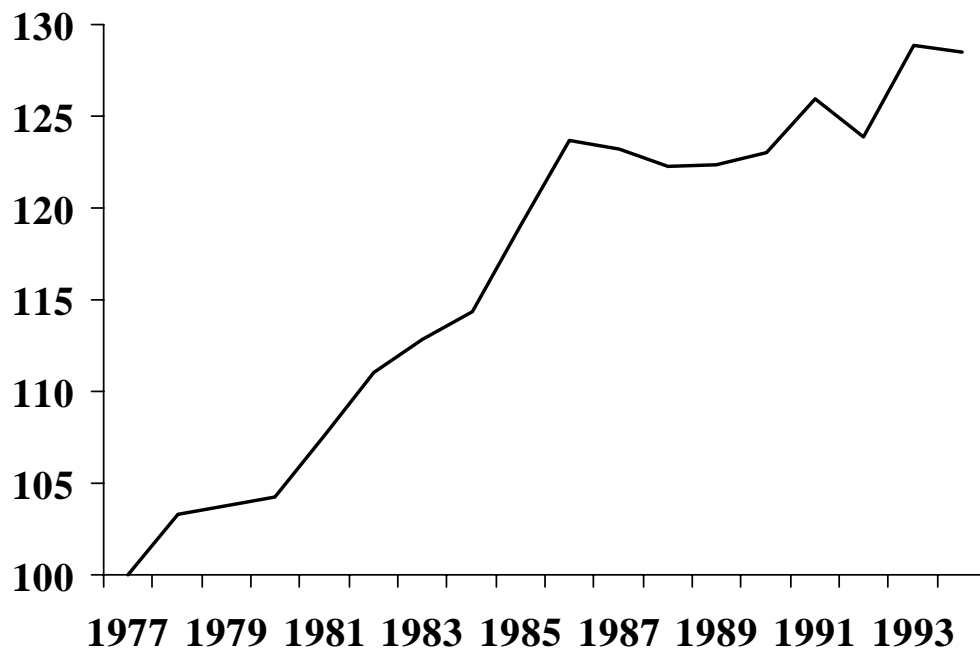
-- Total Persons Engaged
— Total Persons Engaged per Outlet

Figure 5 Retail Employment per Outlet



— Large Multiples Total Persons Engaged per Outlet
-- Small Multiples Total Persons Engaged per Outlet
—■ Single Outlets Total Persons Engaged per Outlet

**Figure 6 Labour Productivity for Large Multiples
(1977=100)**



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