FXM Associates
Economic Planning & Research 53 County Road, Box 660 Mattapoisett MA 02739 508-758-2238

Assessment of the Direct, Indirect, and Induced Economic Effects of Chain Stores on the Regional Economy of Cape Cod

Prepared for

Smart Planning & Growth Coalition

Prepared by

FXM Associates
Mattapoisett, Massachusetts

June 2005

Executive Summary

The Smart Planning & Growth Coalition retained FXM Associates to prepare an independent assessment of the effects of chain retailers on the economy of Cape Cod. The impact that chain retailers have on direct and indirect household income, employment, business sales, and local taxes has been the subject of numerous case studies in other communities. Using relevant analogies from this work, as well as new research specific to Cape Cod, FXM sought to compare future conditions in the regional economy assuming that the current mix of retailers on Cape Cod is not sustained and that big box and other chain stores capture a significant share of forecast growth in demand for retail purchases. This has been the trend, both locally and nationally. FXM used R/Econ (formerly PCIO), a county-specific and multi-regional Input-Output Model that has been widely used throughout the US over the past thirty years to estimate total direct, indirect, and induced effects on business output, jobs, income, and taxes within the Cape Cod regional economy. As part of the exercise, FXM also prepared an independent forecast of population, employment, and income growth for Cape Cod to year 2014. Assumptions, data sources, and methods used in the analysis are discussed in the full report. Key findings include ($2005):

- Large chain retailers (big box and other chain stores) generate greater sales per employee than their smaller and/or locally-owned counterparts. This means that for whatever level of consumer demand chain retailers located on Cape Cod may capture, there will be fewer jobs than those provided by smaller establishments capturing that same demand. *Assuming chain retailers capture 50% of forecast growth in retail demand, and counting indirect and induced effects, there will be an estimated 9,400 fewer jobs on Cape Cod (all sectors) by 2014.*

- By contrast, sales per square foot are about the same for national chains and local stores, meaning they use roughly equivalent amounts of building area by volume of sales. In other words, chain stores will not consume less land than traditional retailers would. *Because many chains (such as big boxes) develop warehouse-type structures that are valued less per square foot than most conventional retail building types (especially those in village centers), they will pay less in property taxes than traditional retailers capturing the same consumer demand.* We were unable to take this relative property value effect fully into account in this analysis, meaning that the report's estimate of $10,500,000 in foregone local taxes attributable to chain retailers annually by 2014 is likely to be significantly understated.

- Large national retailers pay substantially less on an annual basis in wages per employee than establishments with fewer aggregate sales and numbers of employees. In 2002, for example, data reported in US County Business Patterns for the nation overall show retail firms with 500 or fewer employees paying 32% more, or $6,000 per year, in average payroll per employee ($25,000 per year) than firms with over 10,000 employees (less than $19,000 per year). Not only are lower wages problematic for employees of the chain stores, but for whatever number of jobs are generated by the sales captured by chain stores, induced effects (employee spending for local goods and services) within the regional economy are less than for equivalent sales captured by local stores.

Counting the total direct, indirect, and induced effects of fewer jobs and lower wages attributable to chain stores capturing growth in retail demand, by 2014 there would be an estimated $287,000,000 in foregone annual household income on Cape Cod. This amounts to an average of over $2,500 in foregone income per household each year by 2014.

- Chain retailers purchase fewer of their operating supplies and services from the local economy than do local establishments. This means that indirect effects – including the business sales, jobs, and income generated within other sectors of the regional economy to support retail store operations – will be less for chain stores than for locally-based establishments. All of the case studies we reviewed in which surveys were conducted of the spending done by locally-based firms compared to chain stores to support store operations showed that local firms spent a significantly higher proportion of their operating budgets within the local economy.

  Including the total direct, indirect, and induced effects of fewer jobs, lower wages, and decreased purchases from local suppliers attributable to chain stores capturing growth in retail demand, by 2014 there would be an estimated $603,000,000 (all sectors) in foregone business output per year on Cape Cod. Foregone state taxes of $23,000,000 per year and foregone federal taxes of $69,000,000 per year are estimated by 2014.

The literature reports that another significant effect of chain retailers, and especially big box stores, is that they have displaced smaller and locally-owned businesses already established in a community. In a number of well-documented cases the net effect of this displacement is fewer overall jobs, household income, and taxes within the affected community or region within a few years following the initial boost in jobs and retail sales provided by the new chain retailer. This is not surprising given the historical success of chains in communities with little or no growth – they beat the competition on price, breadth of product offerings in a single location, and superior marketing clout. In the case of this regional assessment for Cape Cod, the methodology we used focuses on quantifying *foregone* jobs, income, output, and taxes in the scenario that chain stores capture the bulk of *growth* in retail demand and does not explicitly account for displacement effects. Our assessment may therefore be conservative.

Because of data limitations we were also unable to compare the social welfare benefits (health care, support of local charities, and so forth) of locally-owned establishments compared to the chain retailers, though the literature reports that the major national chain retailers impose unintended social welfare costs compared to other business types by virtue of lower average wages and limited health coverage and may result in higher state taxes to cover households dependent on the income and benefits provided by the chain retailers.

Introduction and Overview

Cape Cod is a special place. There are few regions more recognizable by geography. Most people one encounters in travel have an image of Cape Cod, whether or not they have actually spent time there. By and large the images are positive ones and typically include pristine sand dunes and wind-swept beaches, short growth gnarly pines, quaint coastal communities, and a place of more leisure and vacation time than found elsewhere in northern US latitudes. The Cape has a history that dates to the first European settlers. Within the past fifty years, the legacy includes the romance of Camelot and a major National Park that preserves potentially developable waterfront land in its natural state on a scale unprecedented on the east coast. There are few regions in the United States where so many people have labored for so many years to try to manage growth, much of it brought by social and economic forces larger than those under the control of local inhabitants. Opinions on what is good and not good for Cape Cod are strongly held because people care about the future of this special place.

Today, Cape Cod has over 200,000 year-round residents, which qualifies the region as a "Metropolitan Statistical Area" by US government standards. In summer, the population doubles. Even with this dramatic increase in human habitation - tenfold over the past fifty years - and the diverse interests encompassed, the something "special" about Cape Cod has not gone away. There may be 400,000 individual opinions on what needs to be preserved and what needs to change as a consequence of growth, but few want to lose the qualities that have endured for so many generations.

This brings us to the subject at hand. When first approached by the Smart Planning & Growth Coalition we were skeptical that a small research budget, or even a large one, could answer the question of whether and to what extent "local versus off-Cape-owned businesses" contributed differently to the regional economy. We understood the importance of the question – there is a finite amount of land that remains to be developed, and given the scarcity of this resource and the need to use it wisely, the people of Cape Cod ought to know the consequences of development. Our skepticism from a research standpoint, however, was well-founded. After many failed attempts to find appropriate, reliable data that would even enable us to identify locally and non-locally-owned businesses, and limited empirical data in prior studies to distinguish the economic effects of businesses overall based on the location of their owners, we were obliged to narrow and redefine the scope of the investigation. The focus became the retail sector and the direct, indirect, and induced economic effects of chain store compared to non-chain store retailers on future jobs, household income, business sales, and taxes within the regional economy. The real question, from review of the literature, was not the location of the owner's residence or corporate headquarters, but rather the size and orientation of the firm.

There is a vast body of work on the effects of chain retailers, and particularly big-box retailers, that has been accumulated over the past decade or more as a consequence of community concerns that the promise of new jobs and tax receipts heralded by such establishments might be unfounded, or might be outweighed by the costs of supporting them. But even with the evidence in case study after case study that chain stores and particularly big-box retailers contribute less on a per square foot or other sales unit basis than locally-oriented firms in jobs, household income, and taxes - especially in areas like Cape Cod where retailing is diverse and well-established - we were unsatisfied by the scope of the investigations which often included only a small number of anecdotal examples. Application to a region as large as Cape Cod is therefore problematic. Further, using only the most objective and rigorous work of others we would still be unable to apply the lessons learned in other communities to a snapshot of what is now taking place on Cape Cod. We could not obtain from others or develop independently reliable data on existing establishments categorized by ownership, so we decided to use prior case studies sparingly, to adopt our own methodology for assessing direct and indirect effects, and to look forward, not backward or in the present tense, to see whether and to what extent the regional economy might be affected by chain store retailers capturing future growth in retail sales on Cape Cod.

There are many important questions this report does not answer, or even attempt to address. Chain retailers have succeeded, and continue to succeed over smaller stores, because they can offer more products and often lower prices (at least on some items, and the perception of lower prices overall) in a single store, or in a few clustered closely together. They locate where accessibility by auto is especially convenient, and they provide ample parking. They have enormous advertising clout and daily bombard prospective customers in all media, while the largest, like Wal*Mart, also dominate suppliers. Will consumers be willing to forego the apparent direct and immediate advantages of chain stores in favor of the more abstract (difficult to see or measure in the short run) goals of preserving and enhancing broader community quality of life? Will they see through the limited definition of "consumer utility" promulgated by the big retailers and spend a little more at local establishments? Even if persuaded that their enlightened self interest might better be served by denying chain stores further access to retail demand, will Cape Codders want to or be able to staunch individual property owners' quest for "highest and best" uses and return on land assets? Some communities, but not yet whole regions to the best of our knowledge, have chosen to forego the immediate advantages of convenience and price and have mounted concerted opposition to big-box retailers and other chain stores. Some have even succeeded by adopting regulations on allowable store size, requiring social and economic impact assessments that enable local officials to deny permits if the greater public good is not served, and other measures. We are not aware of efforts in other communities to try to convince local property owners, developers, and financial institutions to forego developments of chain retailing in favor of projects targeted to local business establishments. Needless to say, the need for regulatory controls would be diminished if property owners and developers could be convinced that the longer term value of their assets might better be served by such an approach.

Within the limited scope for this assignment we have not attempted to cover this perceptual and regulatory ground, even locally where the Cape Cod Commission and localities provide examples, nor shall we indulge in arguments about the pros and cons of unfettered capitalism and individual property rights. If this report succeeds in any measure it will be to encourage residents of Cape Cod to undertake their own initiatives to examine the facts and evidence and to critically judge for themselves a proper course of action. The development review processes of the Cape Cod Commission and individual localities enable residents to weigh in, case by case. There is no substitute for careful review of individual development applications and an assessment of each on its merits. On the basis of this research and that reported overwhelmingly in the literature, the burden of proof would now appear, however, to have shifted from opponents of chain stores to the proponents themselves to show that additional chain retailers on Cape Cod will provide the level of jobs, household income, indirect business sales, and taxes already contributed by locally-based establishments and the traditional smaller stores.

We wish to acknowledge the tireless efforts in support of this work and extraordinary patience shown to us by Felicia Penn, Executive Director of the Smart Planning & Growth Coalition. This has been an extremely difficult assignment, and we made many wrong turns before settling on a methodology that we believe is defensible for the task at hand. Even though there are many case studies of the community-scale impacts of particular big box and other specific chain stores, there were no precedents to guide an assessment of direct, indirect, and induced effects on a regional economy of all chain stores compared to traditional retailers, and no studies looked at projected demand rather than historical or existing conditions If we have failed in any way, Felicia Penn and the Smart Planning & Growth Coalition are not to blame. The issues we were asked to examine are serious ones for the people of Cape Cod.

Problem Statement and Approach to the Research

The Smart Planning & Growth Coalition asked FXM Associates to address a straightforward question: How do locally-owned establishments differ in their effect on the Cape Cod regional economy from "foreign-owned" businesses? The issue was spurred by the Coalition's concern that new business developments on Cape Cod should provide benefits commensurate with their utilization of scarce land resources, and by a logical inference that locally-owned establishments would be more likely to purchase supplies and services from other local businesses than from ones based outside the region and having supplies and services drawn from a much larger area than Cape Cod. Their concerns were also influenced by an extensive and growing body of literature documenting case studies in other communities and regions that showed, at least in the retail sector, that big-box and other chain stores were not only buying less from local suppliers, but that they were also providing lower wage jobs than those typical of local firms. With a limited budget for research, the Coalition also understood that statistically meaningful surveys of businesses on Cape Cod would not be possible and that the analysis would therefore have to rely on available secondary source data. Finally, the Coalition charged FXM with producing a reasonably brief final report that could be understood by a broad audience.

FXM initially approached the research on two parallel fronts: 1) to obtain reliable information that would identify local and non-local businesses on Cape Cod, and 2) to critically review the relevant literature in order to establish an empirical basis from which analogies could be applied to the Cape Cod context. As noted in the Introduction, we were unable to obtain reliable information that would characterize Cape Cod businesses by ownership and found the literature of limited application for the desired quantitative assessment of effects on the regional economy of all sectors differentiated by business ownership. Subsequently, and with permission of the client, we narrowed the scope of investigation to the retail sector and to differences between chain and non-chain businesses because these had been extensively studied in prior research. In addition, while not dismissing the quality research done in other communities, we determined to use generally accepted secondary source data more than case study analogies to establish a basis for comparison between types of retailers on Cape Cod. Finally, and again with permission of the client, we decided to look forward in time rather than take a snapshot of the current situation. The technical rationale for these choices is documented in prior memoranda.

From the outset of the study, FXM proposed using the R/Econ Input Output (IO) Model (previously known as PCIO and originally developed by the Regional Science Research Institute) to measure the indirect and induced effects on the regional economy of possible differences in output, jobs, income, and taxes directly attributable to different business types. The advantage of R/Econ is that it is a long established, extensively documented, and widely used tool for such purposes. It has been calibrated and updated regularly for each county and region in the US. The disadvantage is that it presents a short range view of the buying and selling relationships between industries and industry sectors. In order to apply the IO model to future conditions, an independent forecast of the regional economy is required, and assumptions about changes in productivity and growth filtering down from the national economy as well as those occurring locally need to be incorporated. Unfortunately, forecasts of the Cape Cod economy have not been done by others, or, if they have, are not publicly available to the best of our knowledge. Accordingly, we developed a regression model to forecast changes in regional production, income, and jobs. The parameters, assumptions, data sources used, and statistical tests of the model forecasts are discussed subsequently in the report and fully documented in a technical memorandum to the client. As a stand-alone piece of work, the model forecasts may be useful beyond the immediate purposes of this study.

There are dozens of relevant reports to consider, we have reviewed many of them, and encourage others to do the same. They are readily accessible online via the Smart Planning & Growth Coalition's www.gotcommunity.org and other web sites. We have selectively used data developed in prior studies and reference these sources as warranted.

Summary Findings of the Secondary Source Data and Case Study Analyses

The essential findings that emerge from the analysis of secondary source data and prior case studies and their application to the assessment for Cape Cod are as follows:

- *Large retailers (big box and other chain stores) generate greater sales per employee than their smaller counterparts. This means that for whatever level of consumer demand chain retailers located on Cape Cod may capture, there will be fewer jobs generated than by smaller establishments capturing that same demand. By contrast, sales per square foot are about the same for national chains and local stores, meaning they use roughly equivalent amounts of building area by volume of sales.*[1]

[1] See for example *The Andersonville Study of Retail Economics*, October, 2004; Civic Economics, Chicago, Illinois. That study also noted that while national chains ($234 in revenue per square foot) and local businesses ($246 in revenue per square foot) had equivalent sales per square foot, when compared by spending retained in the local

We used data from the US economic census to derive per employee sales for national chains and Claritas Site Reports to derive per employee sales for the existing mix of retailers on Cape Cod. Warehouse clubs and superstores, the most productive retailers on a per employee sales basis, generate on average nearly $200,000 in sales per employee. By contrast, the current mix of retailers on Cape Cod (which includes supermarket chains and some other chain stores) generates just over $100,000 in sales per employee. The Cape's average is low compared to all retailing nationwide ($175,000 in sales per employee) and reflects a mix of seasonal and year-round establishments, a higher proportion of eating and drinking establishments (where per employee sales are under $50,000), and many small specialty businesses. Of the nearly 4,000 retail establishments on Cape Cod only about 400 (10%) have 20 or more employees. Current retail employment on Cape Cod is approximately 34,000.[2]

Differences in sales per employee have been largely overlooked in prior studies of the impact that big box retailers and other chain stores may have on local economies, partly perhaps because of difficulties interpolating from national data that do not explicitly differentiate chain stores from other retailers. The data are, however, based on comprehensive surveys and other records maintained by US government sources, and are therefore more reliable than spot local surveys. In assessing the possible impact that chain stores could have on the Cape Cod regional economy based on sales per employee, we have excluded employment and sales at automotive dealers and eating and drinking establishments (48% of retail jobs and 41% of retail sales) because big box and other superstores do not (yet) compete in these retail categories and because we have no reliable data to compare per employee sales at chain restaurants compared to local ones. Remaining establishments on Cape Cod generate about $120,000 in sales per employee. If current retail sales on Cape Cod, excluding automotive and eating and drinking sales, were captured by big box and other chain stores, based on differences in sales per employee there would now be about 7,000 fewer direct jobs in the retail sector.

- *Large, national retailers pay less on an annual basis in wages per employee than establishments with fewer aggregate sales. This means that for whatever number of jobs are generated by the sales captured by chain stores, induced effects (employee spending for local goods and services) within the regional economy are less than for equivalent sales captured by local stores.*

---

economy the impact per square foot was 70% greater for the local businesses ($179 per square foot compared to $105 per square foot).

[2] Source: FXM extrapolation for 2005 from 2002 Regional Economic Information System (REIS), US Department of Commerce, Bureau of Economic Analysis. We should note that both overall employment and employment by sector estimates differ by source. For 2003, for example, Claritas estimated retail employment at 36,362, while the REIS estimate was 32,114. By contrast, REIS estimated total employment for Barnstable County in 2003 at 141,595, while Claritas' estimate for total employment was 138,058. We used REIS data in our forecasting model.

In 2002, full-time equivalent payroll per employee for all retailers nationally averaged $21,640 annually[3]. The text table below shows differences in average annual payroll per employee by firm size and provides indexes comparing payroll per employee by firm size to the average for all retailers and to the largest firms. Classification of firms is based on the number of employees nationally, not by size of individual store.

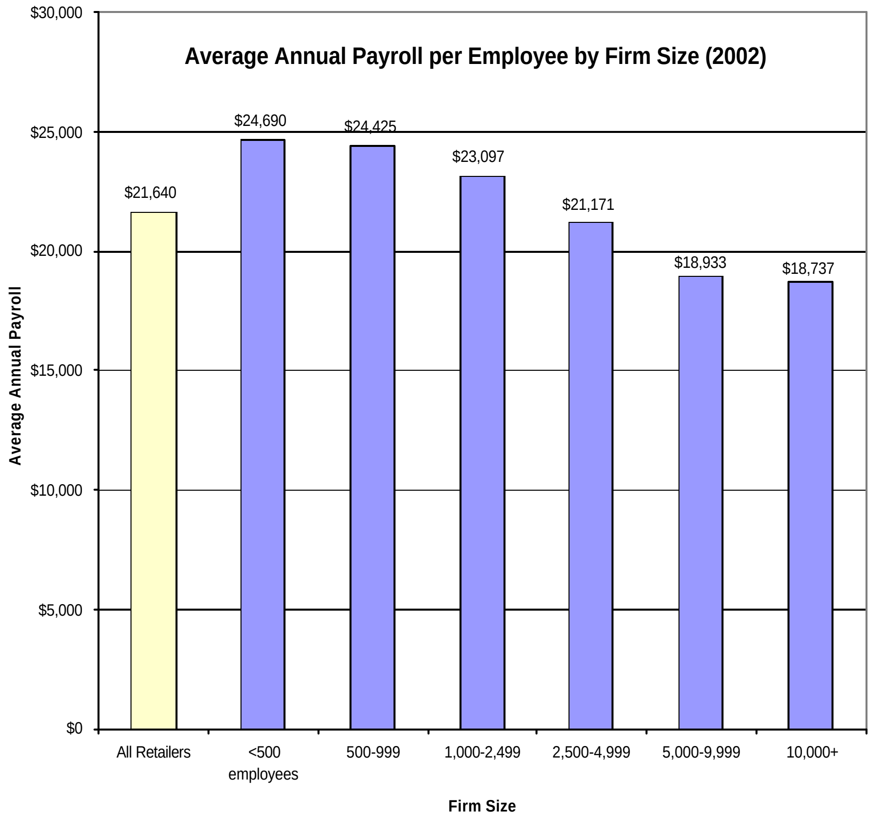
FIRM SIZE	PAYROLL PER EMPLOYEE	INDEX COMPARED TO AVERAGE	INDEX COMPARED TO 10,000+
All Retailers	$21,640	1.00	1.15
<500 employees	$24,690	1.14	1.32
500-999	$24,425	1.13	1.30
1,000-2,499	$23,097	1.07	1.23
2,500-4,999	$21,171	0.98	1.13
5,000-9,999	$18,933	0.87	1.01
10,000+	$18,737	0.87	1.00

Source: 2002 U.S. County Business Patterns and FXM Associates

As the data show, as retail firms get larger, they pay lower average annual wages to their employees. Retailers with fewer than 500 employees pay, on average, 32% more, or nearly $6,000 per year, than firms with over 10,000 employees.

Application of wage differences between large and small firms to the Cape Cod case is tricky business. For one, much of the retail demand on Cape Cod is seasonal and many jobs are part-time. Full-time equivalencies are, therefore, difficult to measure. Also, eating & drinking establishments hold a significant proportion of all retail jobs on Cape Cod (41%), where tips are not included in the payroll data. While we made some adjustment in earnings per job in our IO model assessment of the impact that chain stores could have on the regional economy, we have likely understated this effect. The data on earnings per employee by firm size may be useful, however, in review of particular developments that propose chain retailers.

[3] Source: 2002 U.S. County Business Patterns, *Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise*, (available online at www.census.gov).



- *Chain retailers purchase fewer of their operating supplies and services from the local economy than do local establishments. This means that indirect effects – including the business sales, jobs, and income generated within other sectors of the regional economy to support retail store operations – will be less for chain stores than for locally-based establishments.*

All of the case studies we reviewed in which surveys were conducted of the spending done by locally-based firms compared to chain stores to support store operations showed that local firms spent a significantly higher proportion of their operating budgets within the local economy[4]. While the amounts spent locally per unit of operating expense varied in these reports[5], virtually all the case studies showed that local retailers spent 2 to 3 times more in the local economy than chain stores on a per dollar of operating expense basis.

---

[4] See, for example: *Santa Fe Independent Business Report,* Santa Fe Independent Business & Community Alliance, Angelou Economics, November 2003; *Economic Impact Analysis: A Case Study, Local Merchants vs. Chain Retailers,* Austin Independent Business Alliance, Civic Economics, December 2002; *The Economic Impact of Locally-owned Businesses vs Chains, A Case Study in Mid-Coast Maine,* Institute for Local Self-Reliance, September 2003; *Toledo-Lucas County Merchant Study,* Dr. Gbenga Ajilore, Urban Affairs Center, Ohio Urban University; *The Andersonville Study* (Chicago), *op. cit.*

[5] In the reports cited in the prior footnote, for example, local spending per $100 of operating expense varied from $30 to $80 for locally-based firms and $9 to $40 for chain stores.

> Our adjustment of the R/Econ IO model's indirect coefficients for retailers on Cape Cod to reflect the chain store case are consistent with the findings of proportional effects in the case studies reviewed, while our indirect multipliers for all retail types are on the low end reported in the case studies. In other words, we do not believe we have overstated the differences in indirect effects between chain and non-chain retailers.

The literature reports that another significant effect of chain retailers, and especially big box stores, is that they have displaced smaller and locally-owned businesses already established in a community. In a number of documented cases the net effect of this displacement is fewer jobs, decreased household income and taxes within the affected community or region within a few years following the initial boost in jobs and retail sales provided by the new chain retailer.[6] This is not surprising, given the findings cited above that chain stores have higher sales per employee, lower average wages, and fewer purchases from other local businesses per unit of retail demand captured and per square foot of space occupied. The effect has been most noticeable where big box retailers have located in communities and regions with little population and income growth, but it also applies in growing regions where the presence of chain stores effectively blocks opportunities for other retail types to develop, in addition to their capturing market share from existing establishments. Our own work assessing the economic and fiscal effects of specific projects has yielded similar findings. In the case of this regional assessment for Cape Cod, the methodology we used focuses on quantifying *foregone* jobs, wages, and income in the scenario that chain stores capture the bulk of *growth* in retail demand and does not explicitly account for displacement effects. We may have again erred on the conservative side when comparing the economic effects of chain stores to smaller and/or local retailers.

Partly because a number of big box and other chain retailers have received property and other tax breaks to locate in communities in need of economic revitalization, the issue of whether or not they pay their way in personal and business income and other non-property taxes has received considerable attention recently. Studies point to health care and welfare costs being borne by states because the large retail chain stores do not pay enough in wages, do not cover health costs for part-time employees, or do not adequately cover health care costs even for full-time employees. A recent report, for example, by the Massachusetts Executive Office of Health and Human Services[7] showed that major chain merchandise and restaurant retailers paid on average substantially less of the health care premiums of their employees than the average of all employers providing coverage.

---

[6] Seminal work on this issue was done by Dr. Kenneth Stone, Iowa State University, who reported in "Competing with the Discount Mass Merchandisers" (1995) the loss of over 7,300 Iowa businesses between 1983 and 1993 directly attributable to new big box retailers, particularly Wal-Mart. See also by Stone and Georgeanne Artz of Iowa State "The Impact of Big Box Building Materials Stores on Host Towns and Surrounding Counties in a Midwestern State," 2001; "What Happened When Wal-Mart Came to Town? A Report on Three Iowa Communities with a Statistical Analysis of Seven Iowa Counties," Thomas Muller and Elizabeth Humstone, National Trust for Historic Preservation, 1996; "The Impact of Big Box Grocers on Southern California: Jobs, Wages, and Municipal Finances," Drs. Marlon Boarnet and Randall Crane, Orange County Business Council, 1999"; Job Creation or Destruction? Labor Market Effects of Wal-Mart Expansion," Dr. Emek Basker, University of Missouri, *Review of Economics & Statistics*, February, 2005. These studies are each available online.

[7] *Employers Who Have 50 or More Employees Using Public Health Assistance*, Massachusetts Executive Office of Health and Human Services, Division of Health Care Finance and Policy, February 1, 2005.

The report also notes, however, that the rate of uninsured workers among all firms (including non-retailers) with 50 or fewer employees is higher (20.8%) than the uninsured rate among larger firms (4.6%) in Massachusetts. We simply have no data to compare the health coverage afforded by non-chain retailers on Cape Cod, or elsewhere, to that provided by the chain stores. Suffice to say that health care costs are a very large problem for most people and businesses in the US and that chain retailers lag other large companies and many smaller establishments in providing employee benefits.

Retail chains have argued (as they did in the recent BJ's case in Barnstable, for example) that their stores on Cape Cod will simply capture sales now made by local residents at off-Cape locations, and that allowing them to develop locally will therefore add jobs, income, and taxes that are now foregone to other communities. For Cape Cod overall there is evidence of sales leakage in certain retail categories based on year-round resident spending potential, but the data also show a significant influx of sales that exceed resident market potential (seasonal resident and visitor spending) in categories targeted by certain chain retailers, such as home furnishings and equipment and building supplies .[8] The "leakage" argument, however, begs the question of whether it is desirable for chain stores to capture unmet local retail demand, rather than development of locally-oriented establishments.[9] The overwhelming evidence of case studies in other communities and our research in this study says that returns to the regional economy will be far greater if locally-oriented firms expand or newly develop to capture unmet demand. Further, we find that arguments that chain stores will "only" capture unmet local demand and not displace sales at existing establishments are specious, again based on a vast body of evidence in case studies of other communities and, indeed, the stated business model of the chain stores themselves which is to compete with existing retailers on price.[10]

[8] FXM Associates analyzed Claritas Site Reports data on retail spending potential of the year-round resident market and actual store sales in 2003. Even allowing for the purchases made by seasonal residents and visitors, the Claritas data indicated that store sales on Cape Cod were below resident market potential by $86 million in general merchandise, $510 million in food and drug stores (Claritas data for this category is sharply at odds with store sale estimates made by Sales & Marketing Managements Annual Survey of Buying Power for the same year), $178 million in apparel and accessories, and $596 million in other retail. By contrast, Claritas data indicated that store sales on Cape Cod ***exceeded*** resident market potential (owing to purchases made by seasonal residents and visitors) in building materials and garden supplies by $198 million, auto dealers and gas stations by $225 million, eating & drinking establishments by $155 million, and home furnishings and equipment by $162 million.

[9] One might also question, given already congested roadways and the large number of auto trips induced by retail establishments per employee compared to other business types (10 or more times those of office and industrial jobs according to typical traffic surveys), generally lower wages in retail than many other business types, and fewer local indirect effects per unit of sales or square footage occupied (the product inputs to retailers are almost entirely manufactured outside Cape Cod), whether retailing of any type is the desired end use of scarce commercially developable land on Cape Cod. On the other hand, retail jobs are especially important on Cape Cod for younger and older persons. The broader issues of economic development on Cape Cod are beyond the scope of this report.

[10] In the aforementioned BJ's case in Barnstable, the proponents argued (supported by their consultant's report) that only current BJ's members on Cape Cod (who previously shopped at the Dartmouth store) and new residents or visitors to the Cape would buy at BJ's, implying that current Cape residents and visitors buying at other local stores would not change their shopping habits. They also argued that the new BJ's stores would impose *zero* additional municipal service costs. Neither of these assertions was supported by documented evidence or analysis in the consultant report and we know of no case study or other evidence that would support such findings.

Regional Growth Forecasts

As previously noted, we were unable to find independent forecasts of growth in population, employment, personal income, and earnings for the Cape Cod region, and therefore were obliged to develop our own for the purposes of this study. In general terms, the methodology employs an econometric time series approach,[11] incorporates forecasts of the national economy done by others,[12] uses historical US government data for the local region,[13] and includes sensitivity tests of key variables done by the authors. Technical documentation of the model, including the results of statistical tests of each forecast variable and complete time series data has been provided to the client in a separate memorandum.

Neither the population nor employment forecasts we have done are constrained by land availability or other potential build-out assumptions. To have attempted to do so would have vastly complicated our task for the purposes of this study. Nevertheless, the population increase we estimated through 2014 is less than that projected in the last MISER forecast[14]. As data in the subsequent table show, year-round population on Cape Cod is forecast to grow by approximately 27,000 persons to 258,000 by 2014, a 12% increase over the 231,000 persons estimated for 2004. Overall full- and part-time employment, which in REIS data includes self-employed persons (who are not included in state Department of Labor or US County Business Patterns data), is projected to grow by 44,000 to 191,000 jobs, a 30% increase over the 147,000 jobs estimated for 2004. Total personal income on Cape Cod in constant dollars (2005) is forecast to grow by \$3.5 billion to \$13.5 billion between 2004 and 2014, a 35% increase above real personal income in 2004. Total real earnings (from full- and part-time jobs and self employment) are forecast to grow by \$1.5 billion between 2004 and 2014, a 30% increase over that period.

---

[11] Using EViews, software produced by Quantitative Micro Software Inc. for econometric time series modeling.
[12] The December 2004 forecast of the national economy produced by Global Insights Inc., Waltham, MA.
[13] Historical data from 1969 through 2002 for Barnstable County provided by the Regional Economic Information System (REIS), US Department of Commerce, Bureau of Economic Analysis.
[14] MISER, formerly based at the University of Massachusetts, had been the "official" population forecast source for communities and regions in the state. Their last forecast was produced in 1999 and projected 274,000 persons on Cape Cod by 2014. It may be instructive to note data in a subsequent table and graph (page 15) that show increasing population during periods of employment declines (e.g. 1987-1993) but that the rate of employment growth has historically and in forecast years exceeded the rate of population growth. When compared to the rates of growth in total personal income and real earnings (exceeding the population growth rate) this suggests that increased job opportunities have given the resident population increased earning potential, rather than job growth inducing significant new population. Since the employment data count full- and part-time jobs, increases in wage earners per household and in persons holding more than one job (national trends), as well as some increases in real wages, are explanatory factors.

Cape Cod Region Economic Forecast
(Selected Sectors)

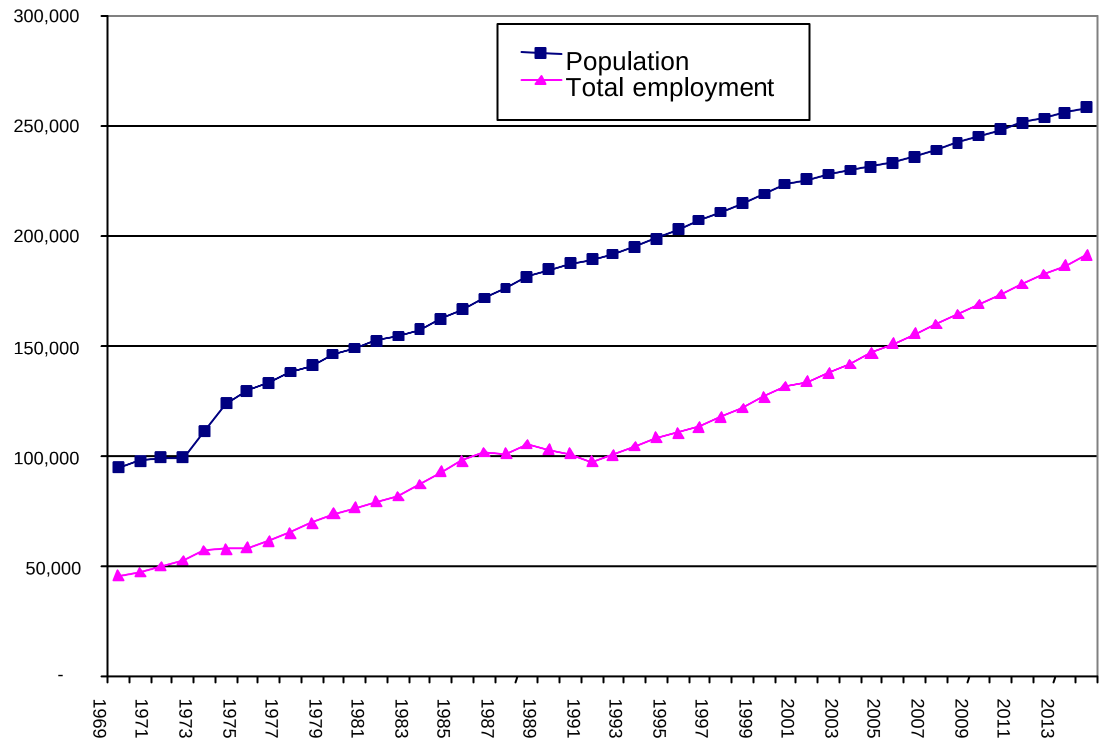
	2004	2014	CHANGE 2004-2014	% CHANGE
Total employment	146,882	191,319	44,437	0.30
Manufacturing	3,902	3,372	(529)	(0.14)
Non-farm proprietors	44,317	65,909	21,592	0.49
Government	15,215	18,276	3,061	0.21
Retail	33,092	40,063	6,971	0.21
Population	231,203	258,079	26,876	0.12
Real income per capita (2005)	$22,436	$27,082	$4,646	0.21
CPI (1972 base)	1.89	2.35	0.46	0.24
Total real personal income (2005)	$10,011 mil	$13,489 mil	$3,478 mil	0.35
Total real earnings (2005)	$5,018 mil	$6,550 mil	$1,532 mil	0.31

Source: FXM Associates (data and methodology noted in text)

With respect to employment in the retail sector shown in the table above, it is instructive to note that because our forecast methodology assumes productivity gains projected at the national level (about 2% per year on average for retailers) we have essentially represented the case where chain stores – and their increasingly dominant influence on national retail sales and employment – capture a significant portion of future growth in demand for retail sales on Cape Cod. If we net out these productivity gains, which in retailing would be primarily attributable to increased sales per employee, the forecast employment in retail for Cape Cod in 2014 would be about 49,000 jobs, about 16,000 more than in 2004. This was a surprising outcome of the forecast and served to verify our estimates of direct effects derived by a combination of sensitivity tests on the sales and wages variables differentiating chain and non-chain retailers discussed earlier in the report. In any case, the forecast of retail employment shown is based on regressions of nationally forecast variables adjusted to historical data specific to the Cape Cod economy and does not assume any growth based on the additional capturing of resident market retail sales that are now leaking out of the regional economy. Were we to have accounted by such possibilities, the foregone jobs and income would be greater than shown. It is also instructive to note in the above table the large number of non-farm proprietors (self employed) on Cape Cod. Approximately 12% of sole proprietors, or about 5,300 persons in 2004, fall within the retail employment category[15]; it would be reasonable to assume that they are especially vulnerable to competition from big box and other chain retailers.

[15] Source: "Characteristics of Small Business Employees and Owners, 1997", Office of Advocacy, US Small Business Administration.

Historical and Forecast Population and Employment 1969-2014



Historical and Forecast Average Annual Growth Rates

	1969-1980	1981-1989	1990-2000	2001-2004	2005-2014
Employment Growth	4.8%	3.4%	2.7%	3.1%	2.7%
Manufacturing Growth	8.3%	2.2%	0.2%	-0.3%	-1.4%
Growth in Non-farm Proprietors	6.7%	1.7%	4.2%	5.7%	4.1%
Government Employment Growth	-0.1%	2.4%	1.8%	0.4%	1.9%
Retail Job Growth	6.7%	3.9%	1.4%	2.3%	1.9%
Population Growth	4.2%	2.4%	1.8%	0.8%	1.1%
Real Income Growth per capita	1.3%	3.4%	1.6%	0.9%	2.0%
CPI growth	7.5%	3.9%	2.8%	2.2%	2.2%
Total real personal income	5.5%	6.0%	3.4%	1.8%	3.1%
Total real adjustment	-228.5%	5.7%	7.1%	0.1%	1.9%
Total real earnings	3.3%	7.2%	3.1%	1.7%	2.8%

Source: Varied sources (see text) and FXM Associates

Final Analysis: Potential Direct, Indirect, and Induced Effects of Chain Retailers on the Cape Cod Economy in 2014

Our estimates of differing economic and tax effects on the Cape Cod regional economy are based on a future scenario in which chain stores capture at least 50% of the increased demand for retail sales attributable to projected population and income growth. The R/Econ Input Output model was used to produce estimates of total direct, indirect, and induced effects based on a variety of scenarios tested in which differences in retail employment, wages, and purchases from other local businesses could be attributable to chain stores compared to non-chain stores, as discussed in previous sections of the report. The data shown are for our moderate impact estimate. They do not assume that the "hypothetical" newly developed chain stores on Cape Cod displace existing store sales, but only that they capture future growth in demand. Clearly this is an extremely limiting assumption, but we are constrained by an inability to reasonably measure potential displacement effects on a regional scale, rather than on a case by case basis. As noted throughout the report, when applying the findings of secondary source data analysis and case studies reported in other communities, we have erred on the conservative side so as not to overstate differences between chain stores and local establishments. We have also not attempted to adjust the current mix of retailers on Cape Cod, which includes regional supermarkets and other chain stores, so that the baseline comparative case is a projection of the existing mix to 2014.

As data in the subsequent tables indicate, our assessment estimates that if chain stores capture growth in demand forecast by 2014, the Cape Cod regional economy would annually lose $603,000,000 in business output and $219,000,000 each year in household earned income compared to projected effects based on the current mix of retailers. There would be about 9,400 fewer jobs. Profits, dividends, interest, and rent to Cape households and businesses would be $67,000,000 less each year, and Cape Cod municipalities would lose more than $10,000,000 each year in tax receipts. The Commonwealth of Massachusetts and US Government would also realize fewer taxes each year, by $23,000,000 and $69,000,000 respectively.

Summary Effects in 2014

Business Output	**($603,000,000)**
Employment	**(9,400)**
Earned Income	**($219,000,000)**
Profits, Dividends, Rent, Other	**($67,000,000)**
Municipal Taxes	**($10,500,000)**
State Taxes	**($23,000,000)**
Federal Taxes	**($68,500,000)**

Estimated *Annual Losses* in Business Output, Employment, Household Income, and Taxes within the Cape Cod Regional Economy if Chain Stores Capture Growth in Demand Forecast by 2014[16]

(*Total Direct, Indirect, and Induced Effects; 2005 Dollars*)

MAJOR SECTOR	OUTPUT	EMPLOYMENT	INCOME
Agriculture	$185,900	4	$31,300
Agric Services., Forestry & Fishing	$473,800	15	$215,100
Mining	$17,900	1	$5,000
Construction	$6,826,700	30	$927,200
Manufacturing	$7,495,500	66	$2,177,000
Transport & Public Utilities	$21,475,100	139	$5,487,000
Wholesale	$10,067,200	103	$4,089,800
Retail Trade	$475,906,200	8,100	$179,483,700
Finance, Insurance & Real Estate	$37,798,300	399	$9,289,900
Services	$39,913,800	578	$16,656,000
Government	$2,755,900	21	$828,000
TOTAL	**$602,906,200**	**9,356**	**$219,190,000**

PROFITS, DIVIDENDS, RENT AND OTHER	LOCAL TAXES	STATE TAXES	FEDERAL TAXES
$67,378,400	$10,532,400	$22,880,400	$68,541,800

Source: R/Econ Input Output Model and FXM Associates

[16] Summary note on methodology: While the authors' sensitivity tests of the quantitative estimates used a range of probable values for each variable, derived from the case study research, the basic linked equations used to quantify potential direct effects are fairly straightforward: 1. Reduce the unconstrained (holding 2004 productivity constant) forecast retail jobs to account for differences in sales per employee [e.g. 16,000 X 0.5 (sales per employee for traditional retailers are roughly half those of chains)= 8,000]; 2. Reduce direct wages [e.g. $24,000 (average retail wages) X 0.7 (30% reduction) X 8,000= $134,400,000]; Reduce output for indirect effects not occurring in local economy [e.g. 8,000 jobs X average sales per job ($200,000 for chains) X retail operating expenditures as % of sales (0.3) X reduced first round multiplier (0.7)= $336,000,000]; and 4. Reduce other potentially affected jobs [e.g. 32,000 existing jobs X potentially affected jobs (0.6, excluding restaurants, etc.) X estimated jobs displaced (0.10) = 1,920]. These estimated changes in direct effects are input to the R/Econ Input-Output model, which calculates indirect (purchases from other local businesses) and induced effects (employee spending locally) on total output, jobs, income, and taxes using inter-industry and regional production coefficients for the Cape Cod region (Barnstable County) adjusted to account for imports from and exports to all regions in the US. The R/Econ I-O model also has an internal set of translators for estimating local, state, and federal taxes based on overall changes in output and income. Our estimate of local tax effects does not include differences in assessments by building types (big box retailers, for example, are typically warehouse type structures which are assessed at a lower value per square foot than many traditional retail buildings in village centers or strip centers along primary roadways).