The Fiscal Impact of New Housing Development in Massachusetts

A Critical Analysis

Prepared for Citizens' Housing and Planning Association

by

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EXECUTIVE SUMMARY

- Growth in housing and population in Massachusetts has been unevenly distributed since 1990. Growth in population and in household formation has also been uneven. While the population of Massachusetts grew 5.5 percent between 1990 and 2000, the number of households grew almost 9 percent.
- Despite this 9 percent increase in households, there was only a 6 percent increase in housing units. The slower growth in the number of housing units decreased the state's supply of vacant housing by more than 70,000 units.
- The economic development implications of recent growth patterns in Massachusetts are significant. Migration patterns suggest that people are moving out of Massachusetts to places that are less expensive to live, including places that have cheaper and more plentiful housing.
- The fiscal landscape for Massachusetts is difficult to decipher, as the Massachusetts Education Reform Act and Proposition 2½ make growth-driven outcomes hard to distinguish from policy-driven outcomes. Even so, it is hard to make the argument that growth automatically costs towns more money. Our analysis seems to show that it is easier to claim that growth saves money by slowing down per capita increases in costs.
- A number of methods are used by communities to estimate the fiscal impacts of housing development. The most common method is the Per Capita Multiplier Method, which uses average costs per person as a basis for estimates of the fiscal costs of development to communities. A test of this method using actual municipal expenditure data over time reveals that the predicted fiscal impacts generated by this model do not match what occurs in reality for most Massachusetts cities and towns. It is evident that, for many municipalities in Massachusetts, the predictive validity of the per capita model is quite limited.
- In addition, the standard population forecasting model consistently over-estimated the number of people and school-age children living in single-family and mobile home units, while under-estimating the number of people living in attached and multi-family units. While identifying the reasons for this difference are beyond the scope of this study, it is clear that there is a difference in the way that housing units are used by households in Massachusetts than in other parts of the Northeast.
- We also examined the Fiscal Impact Tool (FIT), a custom software program from the Massachusetts Executive Office of Environmental Affairs. As it allows users to perform

analyses based on the per capita method, we found that it may create inaccurate analyses. However, the tool can correct for this by allowing users to input actual data instead of using average data.

- Our analysis indicates that, for many Massachusetts communities, population growth associated with new housing is not inevitably followed by increased demand for services and higher municipal costs. While overall costs will increase with growth, per capita costs often increase less or decrease. Many of our fastest-growing communities experienced the slowest growth in per capita tax burden during the 1990s. In fact, there seems to be little correlation between increases in per capita costs and increases in population, and it seems that municipal services are generally increasing in cost regardless of the rate of population growth.
- This finding suggests that the standard models relied upon by cities and towns to estimate the fiscal impact of development may be systematically overestimating these costs in many communities. Given the shortage of affordable housing throughout Massachusetts and that these estimates are frequently used as the basis for decision making by local development agencies, it is clear that the methods communities use to estimate the costs of development must be reconsidered.
- A much more accurate method for forecasting the fiscal impact of housing development is the marginal cost method, although this method is more difficult to use and requires much more information than the per capita method. Even so, because all municipalities have different priorities, histories, population mixes, and expenses, the only reliable way to forecast the effect of growth on a city or town is to analyze the specific data available for that specific town. Given the critical social need for and economic importance of housing development in Massachusetts, it is clear that a more accurate understanding of the true fiscal impact of housing development is well worth the extra effort.

INTRODUCTION

Virtually all new housing construction in Massachusetts is controlled and regulated at the local level. Within the confines of state law, municipalities have the right to adopt zoning and subdivision regulations as they see fit, and to issue or deny building permits and subdivision certifications. Recently, there have been some criticisms of the process used by many municipalities in Massachusetts to make these decisions, as they are seen by many as supporting efforts to curb development instead of regulating it more effectively. This report critically examines some of the primary ways in which communities estimate the fiscal impact of housing development and the trends in municipal finance that may be affecting local decision making.

Local fiscal impacts of new development are important considerations for municipalities as they evaluate potential housing development projects. Estimates of increased municipal services costs (e.g., public schools) based on these models can influence the decisionmaking process affecting new housing construction. For this reason, a critical analysis of these models' major assumptions is warranted.

Our analysis of the fiscal impacts of housing development in Massachusetts begins with a brief review of trends in population growth and housing units and of some of the major economic development implications of these trends. We then turn to an examination of historical trends in municipal revenues and expenditures in an effort to clarify the relationship between population growth and municipal finance in Massachusetts. We critically examine the assumptions underlying the standard fiscal impact models commonly used in Massachusetts and evaluate the degree to which the fiscal impacts predicted by these models were consistent with the actual experiences of Massachusetts cities and towns during the 1990s.

RECENT GROWTH TRENDS IN MASSACHUSETTS

According to the U.S. Bureau of the Census, the population of the Commonwealth grew 5.5 percent between 1990 and 2000, a far lower rate than the 13 percent growth seen by the nation as a whole.[1] However, during this same period, the number of households in Massachusetts increased almost 9 percent versus 15 percent nationally,

[1] http://quickfacts.census.gov/qfd/states/25000.html

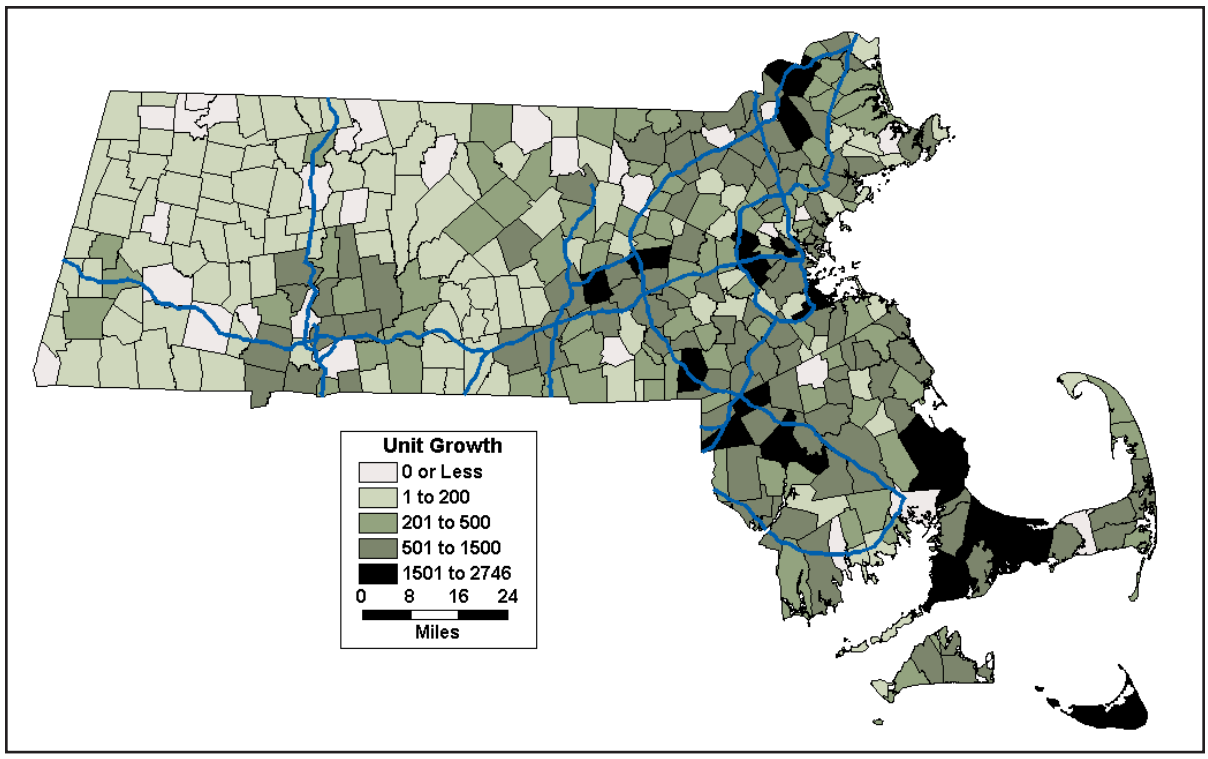

Figure 1. Growth in the Total Number of Housing Units By Town, 1990 to 2000.
Source: Decennial Census, 1990 and 2000, U.S. Census Bureau

This growth in households would be expected to create a similar growth in housing units, but it did not. The number of housing units in Massachusetts increased only 6 percent between 1990 and 2000, while the nation saw an increase of slightly over 13 percent, roughly equal to the national household growth rate. If housing unit growth had matched new household growth from 1990 to 2000, Massachusetts would have added over 70,000 more housing units in that time.

HOUSING DEVELOPMENT: A SOCIAL AND ECONOMIC IMPERATIVE

These patterns of population and housing-unit growth have significant regional and statewide economic development implications. In the past decade, the Commonwealth's labor force has grown very slowly and has been aging steadily. During this period the Commonwealth created significant numbers of high quality jobs but continued to have difficulty attracting and retaining younger high-skilled workers. It is clear that the cost of living—particularly the cost of housing—in many areas of Massachusetts exacerbates this problem.

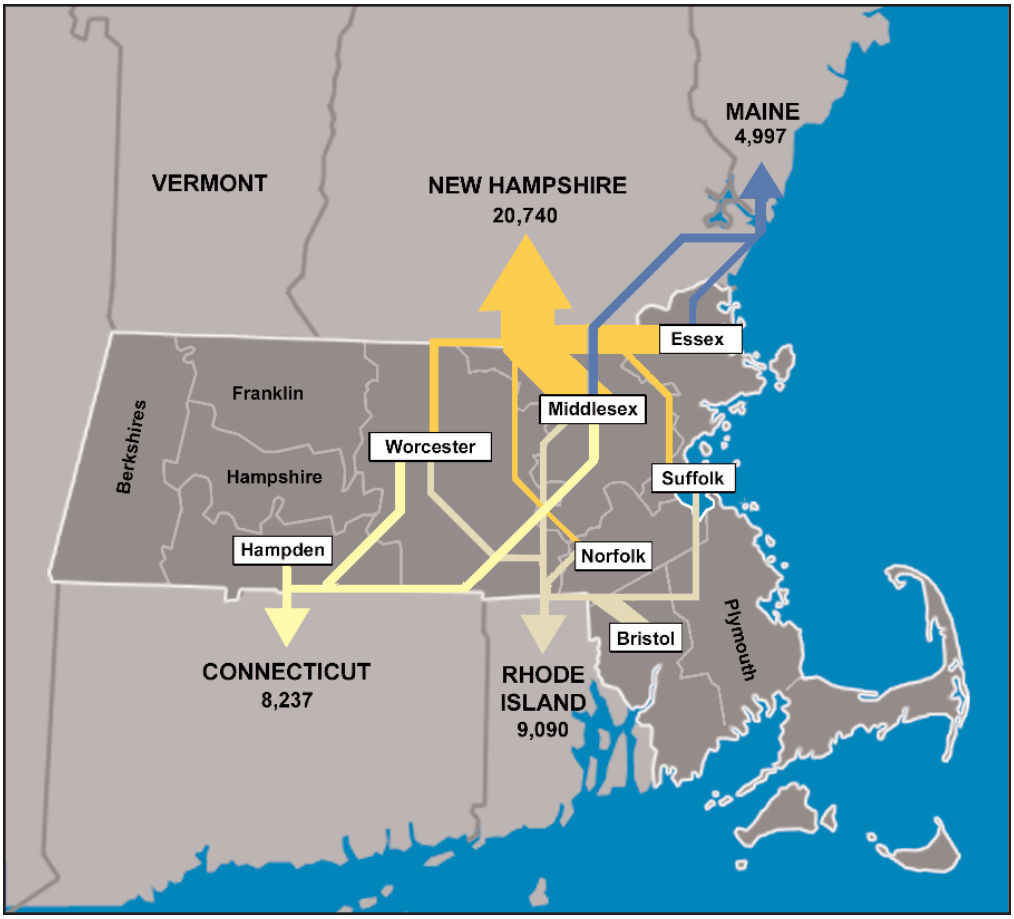

Figure 2. Major Migration Patterns of Massachusetts Residents, Counties Where 1,000 Persons or More Moved From 2000-01.
Source Internal Revenue Service, 2000-2001 County Migration Data

One of the trends observed during the 1990s is the out-migration of people from Massachusetts to other states, most notably to other New England states. While definitive data on the reasons for this movement are hard to obtain, many researchers believe that people are moving partly because of the high cost of housing in Massachusetts.

A June 2002 article in *Massachusetts Benchmarks* analyzed migration patterns from 2000 through 2001 using data from the Internal Revenue Service (IRS). These data, based on tax returns, show that almost 184,000 people left the Commonwealth in 2000, including 45,000 to neighboring New England states (see Figure 2). Nearly 139,000 moved out of New England entirely.[2]

[2]During the same period, 166,000 people moved into the state.

As the Massachusetts workforce ages, the ability of regions to accommodate younger workers and their families becomes an increasingly critical economic issue. Throughout Massachusetts, high-tech and manufacturing businesses rely on younger workers to fill the job ranks. Other fields, including teaching, nursing, and public safety all rely on young workers to balance attrition due to retirements. Regions across the state already experiencing serious shortages of teachers have, increasingly, become a concern.[3] Without a steady influx of new talent, all of these industries face a declining labor force. But in spite of the need to encourage young workers to stay and work in Massachusetts, housing in many parts of the state is unaffordable to younger workers and their families.

The ongoing challenge of workforce retention in Massachusetts and the critical role affordable housing plays in meeting this challenge underscores the importance of accurately estimating the costs and the benefits of housing development. Developing accurate estimates, however, requires an understanding of the fiscal environment in which Massachusetts cities and towns operate. In the pages that follow we examine historical trends in municipal revenues and expenditures in an effort to better understand the fiscal context in which municipalities make their development decisions.

MUNICIPAL REVENUE TRENDS

There were some significant changes in municipal finance trends between 1990 and 2000. The Massachusetts Education Reform Act (MERA) took effect in 1994 and changed the way schools are funded; many cities and towns saw significant growth in population and tax base; and Proposition 2½, which became effective in 1982, continued to have a significant effect on municipal revenues. Because of MERA and Proposition 2½, the Commonwealth stepped up the amount of aid to cities and towns, in part using funds from the successful state lottery.[4]

Between 1981 (the year before Proposition 2½ was effective) and 2001, the mix of revenue sources for municipalities shifted many times. Revenues are divided into four different sources by the Division of Local Services: Tax levies (collected from property taxes), state aid, local revenues (such as vehicle excise taxes), and all other sources. In

[3]A statement by David P. Driscoll, Massachusetts Commissioner of Education, "On Teacher Shortages," August 15, 2001. Massachusetts Department of Education, 2001 News Archive. www.doe.mass.edu/news/archive01.

[4]This topic is explored in detail in chapters 8 and 9 of the full report, available on the CHAPA Web site (www.chapa.org).

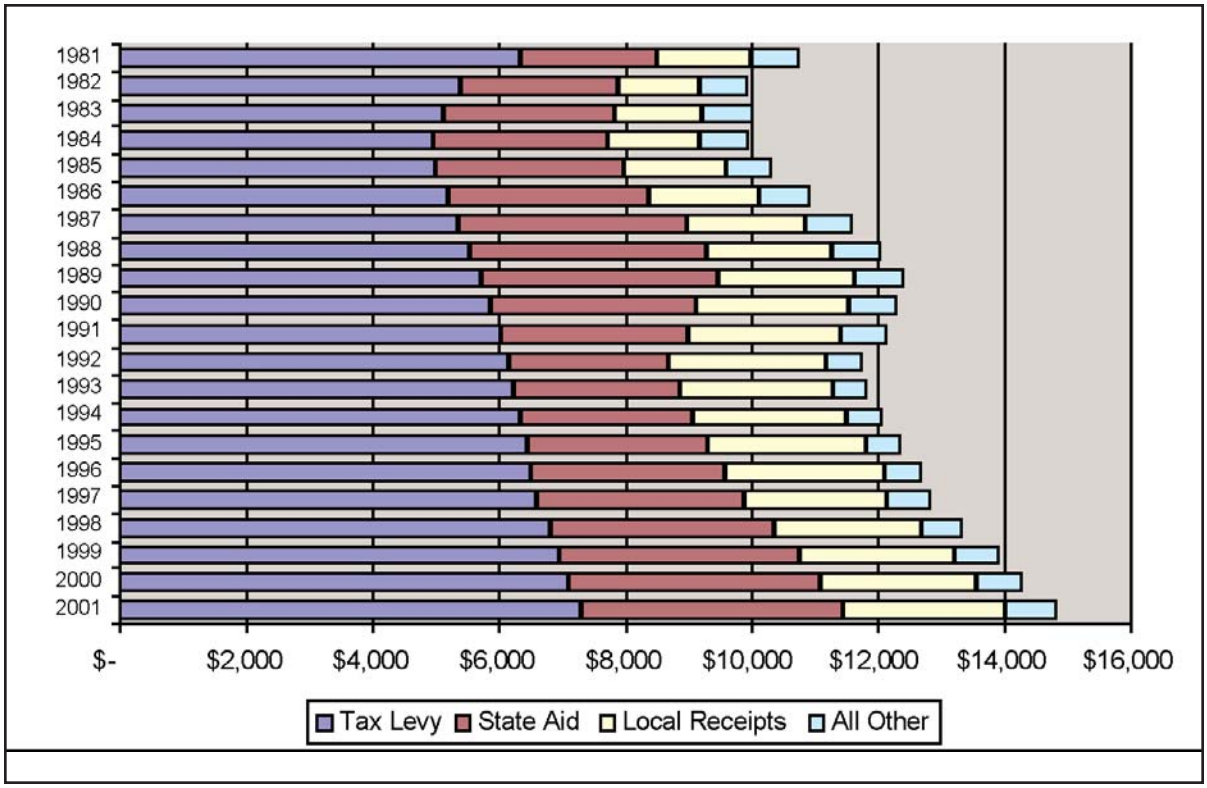

Figure 3. Revenue by Type, 1981–2001 (in millions). Inflation adjusted for Year 2000.
Source: Division of Local Services, Massachusetts Department of Revenue, 1981–2002

1981, the average percentage of tax levy revenues as compared to total revenues was 59 percent. By 1988, this percentage had dropped to 46 percent, due mostly to an increase in state aid from 20 percent in 1981 to 31 percent in 1998. By 1993, reliance on property taxes had risen again to 53 percent of total revenues, and state aid had decreased to 22 percent. By 2001, state aid had increased to 28 percent and the tax levy had decreased again to 49 percent. This pattern is presented in Figure 3.

GEOGRAPHIC PATTERNS OF MUNICIPAL REVENUES

The geographic patterns of change in municipal revenue track population changes somewhat, but there are some notable differences. An examination of the change in total revenue in real dollars by municipality (see Figure 4) reveals many of the same trends seen in total housing unit change (see Figure 1). Most revenue growth has occurred in the Greater Boston region, especially around I-495, with a smaller but definite pattern of growth in the Springfield metro area. A closer look at the two maps indicates that, while

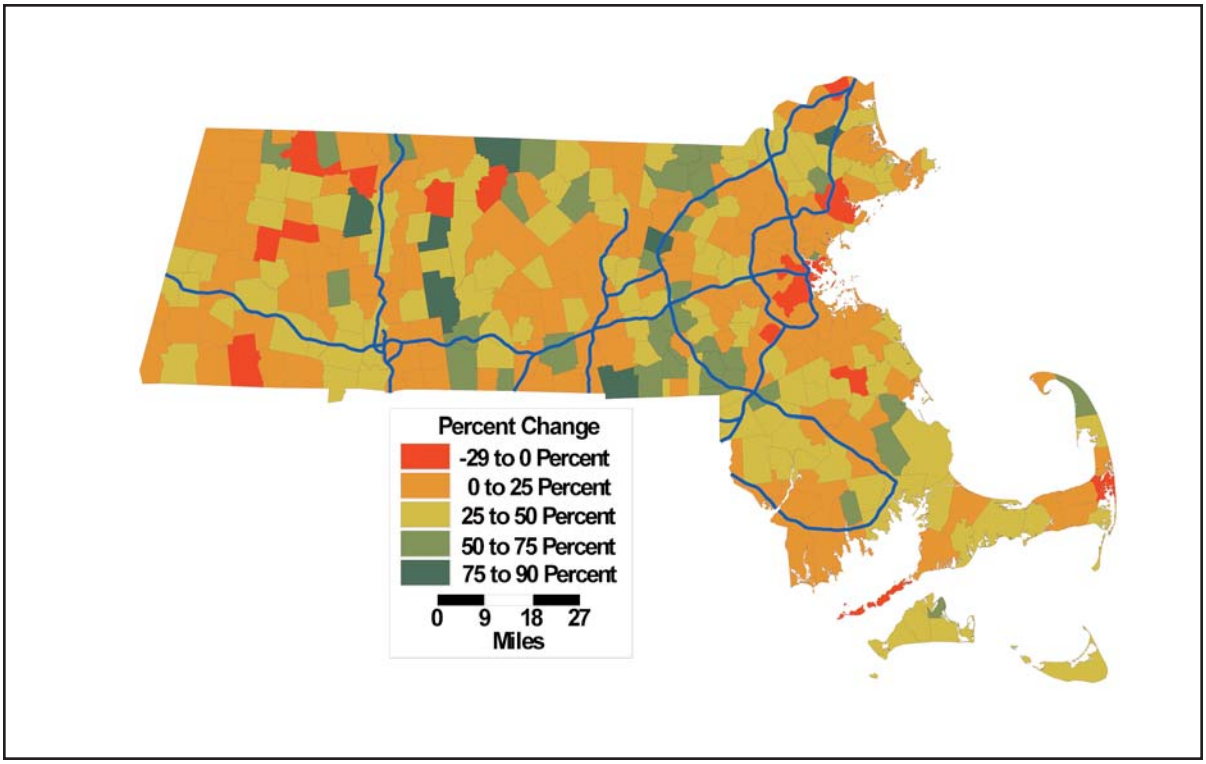

Figure 4. Percentage Growth in Total Revenues in Adjusted Dollars By Town, 1990 to 2000
Source: Division of Local Services, Dept. of Revenue

some towns demonstrate similar trends in population and revenue growth, the experience of other towns varied widely. One example is North Adams, which posted negative population growth from 1990 to 2000 but added revenues at a high rate during the 1990s. Other communities experienced population growth without much revenue growth.

MUNICIPAL EXPENDITURES AND STATE AID

Analyzing municipal expenditures is a difficult task. While there are general rules about which types of expenditures fall under each category, there can be variation among municipalities in their exact categorization. For example, costs for playing field maintenance are categorized as educational expenditures in one town while other towns may classify the same cost as a recreational expense. Therefore, analyzing these data may only give an approximate picture of municipal fiscal realities.

Table 1: Total Massachusetts Municipal Expenditures by Type, 1990–2000

Massachusetts	1990	Rank 1990	2000	Rank 2000	Change 1990–2000	Rank 90-00
Population	6,016,425		6,349,097		5.5%	
Population 5–17	940,711		1,102,796		17.2%	
Education	$4,575,975,992	1	$5,852,557,097	1	27.9%	1
Fixed Costs	$1,311,831,981	2	$1,336,861,696	2	1.9%	7
Police	$825,661,636	3	$962,392,976	3	16.6%	3
Debt Service	$695,236,789	4	$819,181,584	4	17.8%	2
Fire	$687,021,548	5	$724,011,117	5	5.4%	6
General Government	$607,580,273	6	$618,006,690	6	1.7%	8
Other Public Works	$567,853,174	7	$451,986,887	7	-20.4%	11
Public Works Highways	$444,004,014	9	$397,226,053	8	-10.5%	10
Inter- Governmental	$305,021,637	10	$332,775,214	9	9.1%	5
Culture & Recreation	$262,091,095	11	$294,393,297	10	12.3%	4
Health & Welfare	$464,113,310	8	$204,215,954	11	-56.0%	13
Other Public Safety	$189,788,929	12	$173,810,090	12	-8.4%	9
Other Expenditures	$84,946,445	13	$48,983,257	13	-42.3%	12
General Fund Total	$11,021,126,842		$12,216,401,912		10.8%	

Source: U.S. Census Bureau, Decennial Census 1990 and 2000. Division of Local Services, Mass. Dept. of Revenue, 1990–2000

While the population of Massachusetts increased 5.5 percent from 1990 to 2000, total municipal expenditures increased twice as much, or almost 11 percent. Between 1990 and 2000, the largest single municipal expense was education, which increased almost 28 percent, rising from 41.5 to 47.9 percent of all reported municipal expenditures. The second largest line item was fixed costs, which increased only 2 percent. The major expenditure decline from 1990 to 2000 was in health and welfare expenditures, which decreased 56 percent and fell from eighth place in expenditures in 1990 to eleventh in 2000. Table 1 shows total municipal expenditures from 1990 and 2000 in the 13 categories tracked by the Division of Local Services of the Massachusetts Department of Revenue, along with population growth.

When looking at cities and towns organized by their growth rate, the data show that higher-growth municipalities received both a higher percentage and dollar amount of median per capita state aid for education than lower-growth towns. However, the lack of change, and even negative change, of the medium- and low-growth towns is somewhat surprising.

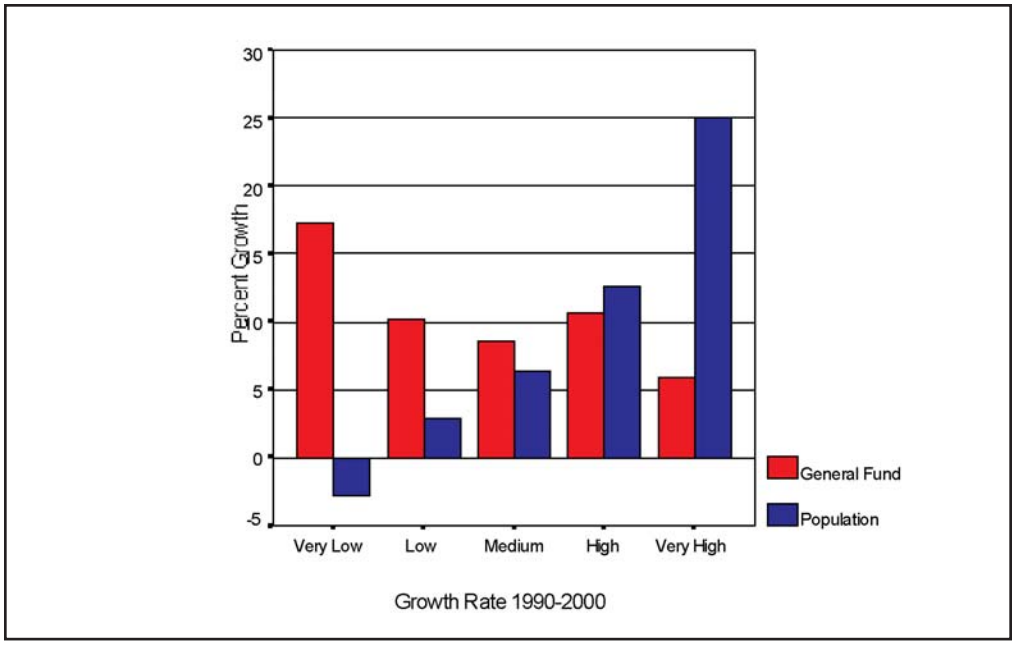

Figure 5. Median General Fund Expenditure Growth Per Capita by Median Population Growth
Source: Division of Local Services, Mass. Dept. of Revenue. Decennial Census (SF3), U.S. Bureau of the Census

THE RELATIONSHIP BETWEEN PER CAPITA MUNICIPAL EXPENDITURES AND POPULATION GROWTH

Looking at the raw data, it is difficult to discern a pattern that could be used to explain the relationship between population change and municipal expenditure change. Some municipalities had high population growth with negative per capita expenditure growth, some had negative population growth with a high per capita expenditure growth, and most others were in between. In an effort to be sensitive to this, we assigned each of the 351 cities and towns a rank from one (very low growth) to five (very high growth) based on their percentage population growth rate.[5] We used these rankings to examine per capita growth rates of general fund expenditures to find overall trends for each type of town.

As Figure 5 shows, when the median growth rate for each category is charted, there is a negative correlation between median population growth and median per capita general fund expenditure increases (which represents all expenditures except capital outlays).

[5]A more complete explanation of this process is presented in chapter 6 of the full report, available on the CHAPA Web site (www.chapa.org).

Except for "high-growth" towns, the trend seems quite linear. While there is a great deal of variation between the highest and lowest per capita expenditure growth rate for each category, the general trend implies that growth helps to keep per capita costs under control. Of course, there are other issues that affect increases in municipal expenditures for slower-growing municipalities, besides a lack of growth, such as their type of community or the demographic mix of their populations.[6]

AN EXAMINATION OF FISCAL IMPACT ANALYSIS TOOLS

All of the above trends in expenditures and revenues directly affect how well the fiscal impacts of development on municipal finances can be predicted. Using the wrong model can create incorrect forecasts that could negatively impact the efficacy/effectiveness of local decision-making. There are many different models for predicting fiscal impacts, and the most commonly used are laid out in the book *The New Practitioner's Guide to Fiscal Impact Analysis.*[7]

The book identifies six methods for conducting fiscal impact analyses. As shown in Table 2, there are two basic approaches to municipal cost analysis: average costing and marginal costing. Average costs are simply per-unit costs, whether the unit is a person, a household, or some other measure. In fiscal impact analysis, the new number of units (often people) is multiplied by the average cost per unit for a particular service and added to the existing budget. This is one of the most common methods for estimating fiscal impacts.[8] Marginal cost analysis uses an analysis of the current capacity and infrastructure of a community to discover whether certain types of new development will rely on existing capacities or will "push" certain services over a "threshold" that will require new, expensive capital investments (see Table 2).[9]

In 2002, the Executive Office of Environmental Affairs (EOEA) created a computer model for forecasting growth impacts that is based partly on Burchell's work and partly on past work, from the Division of Municipal Development of the Department of Housing and Community Development.[10] The Massachusetts Fiscal Impact Tool

[6]This topic is explored in detail in chapters 8 and 9 of the full report, available on the CHAPA Web site (www.chapa.org).

[7]Burchell, R., Listokin, D., and Dolphin, R. *The New Practitioner's Guide to Fiscal Impact Analysis.* New Brunswick, NJ, Center for Urban Policy Research 1985.

[8]Ibid., p. 6.

[9]Ibid., p. 6.

[10]http://commpres.env.state.ma.us/content/tfit.asp

Table 2: Comparison of Average Costing vs. Marginal Costing Methods

	Advantages	Disadvantages
Average Costing	• Easier data gathering; • In the long term, estimates of growth impact similar to Marginal Costing	• Does not consider existing excess or deficient capacity that might exist for particular services or the possibility that a new development might fall at the threshold level, calling for major new capital construction to accommodate increased growth
Marginal Costing	• Takes potential deficiencies into account; • Careful analysis of existing demand/supply relationships for local governmental and school services; • In the long term, estimates of growth impact similar to Average Costing	• Getting the data takes more time and effort • Analysis can be more complex and require more input from different departments or people

Source: Burchell, R., Listokin, D., and Dolphin, R. The New Practitioner's Guide to Fiscal Impact Analysis. *New Brunswick, NJ, Center for Urban Policy Research 1985, p 6.*

(MA-FIT) is a custom computer program that contains a great deal of information used to perform fiscal impact analyses. Analyses can be generated for residential or commercial development. The concept is that, after going through all of the screens and inputting all of the relevant information, a realistic estimate of the direct fiscal impact will be created and exported as a Microsoft Excel spreadsheet. The MA-FIT program allows the user to perform per capita analyses, marginal cost analyses, or a combination of both. It also uses past data on state aid disbursements to predict new aid on a per capita basis.

TESTING THE PER CAPITA METHOD

The simplest test of the per capita model is to choose reliable data from two points in time and compare the earlier data to the later data. We have chosen to compare 1990 and 2000, as accurate Census data is available for these years. We calculated the per capita expenditures in 1990 for non-education budget categories as reported by each municipality to the Division of Local Services of the Dept. of Revenue (DLS), calculated the population difference between 1990 and 2000, multiplied the per capita 1990 calculation by the population change, and adjusted the 1990 dollar figures for inflation to create an estimated 2000 budget figure. We then compared the actual 2000 budget figures to the estimated figure and measured the difference. The results of this analysis can be seen in Figure 6, which shows that fiscal impacts in practically all Massachusetts cities and towns are either over- or underestimated by this model. Since many of the default values contained in the MA-FIT tool distributed to cities and towns by the Executive Office of Environmental Affairs are calculated using the per capita multiplier

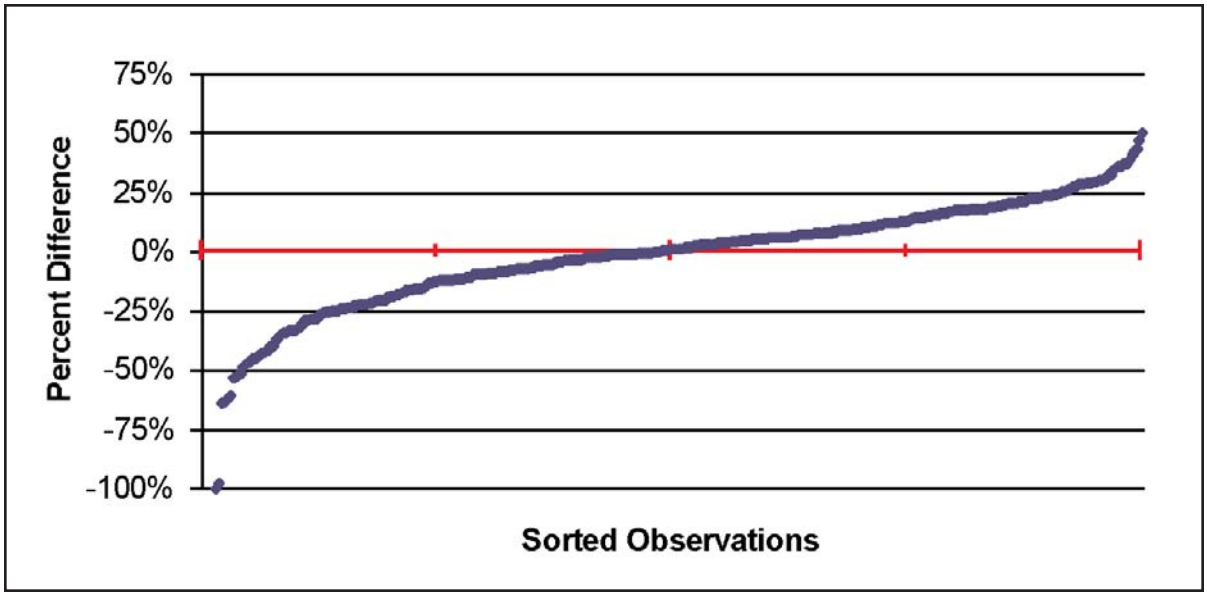

Figure 6. Percent Difference between Actual and Predicted Per-Capita General Fund Expenditures Minus Educational Expenditures, 1990–2000
Source: U.S. Census Bureau, 1990 and 2000 Decennial Census ; Division of Local Services, Mass. Dept. of Revenue, 1990–2000

method, it is possible that the results of fiscal impact analyses using this tool or similar models produce estimates that either over- or underestimate the future impacts of residential development.

ANALYZING POPULATION FORECASTING FOR MASSACHUSETTS

One of the criticisms of fiscal impact forecasting tools relates to population projection techniques. Many models, including the EOEA's FIT tool, rely on regional data tables created by Burchell et. al. from 1980 Census data and published in The New Practitioner's Guide to Fiscal Impact Analysis. Unfortunately, these population projection data are now out of date and are not specific to Massachusetts, which may mean that they are affected by different population patterns in other states in the New England region.

There are three problems with Burchell's model today. First, the data used to create the model are now 22 years old. Second, the larger geographic region that it covers means that Massachusetts-specific trends may be missed. Third, the lack of detail on the number of bedrooms in certain housing types may mask the population differences seen

in practice in larger units. As the proper type of Census 2000 data is not yet available, we used data from the 1990 Decennial Census of Population and Housing for Massachusetts to create a more localized and up-to-date estimate.[11]

This estimate was developed by first calculating the average total population and the average population of school-age children (defined as children between the ages of 5 and 17) of each census-defined type of housing. Categories of housing types were pre-defined by the Census data set as being single-family detached, single-family attached, various sized multifamily buildings (from 2 to "50 or more" units), mobile homes, and "other." The number of bedrooms recorded ranges from none to "5 or more." For the purpose of this analysis, the various multifamily building sizes were broken out somewhat differently than in the Burchell model We separated apartments using Census categories into 2- to 4-unit buildings, 5- to 9-unit buildings, 10- to 19-unit buildings, 20- to 49-unit buildings, and 50-or-more–unit buildings, instead of combining apartments into "garden" and "high-rise" categories.[12]

DIFFERENCES BETWEEN THE MODELS

A comparison between the New Practitioner's Guide tables and those for newly constructed housing units in Massachusetts reveals some important findings. For example, the 1980 New England PUMS data predict that there will be 2.417 persons and 0.243 school-age persons in each 2-bedroom, single-family, detached house,[13] while the 1990 Massachusetts PUMS data predicts 2.325 persons and 0.248 school-age persons in this type of house.[14] The relative accuracy of this estimate did not hold up, however, when larger houses were examined.

For a four-bedroom, single family, detached home, the New Practitioner's model predicts 4.141 persons and 1.470 school-age children, while the Census data for Massachusetts predicts 3.578 persons and 0.817 school-age children For a development

[11]The Bureau of the Census creates the Public Use Microdata Sample, or PUMS, from census questionnaires. A percentage of answered "long form" questionnaires (either 1 or 5 percent) are selected from the total for a state and aggregated by Public Use Microdata Areas (PUMAs). A PUMA must contain at least a certain amount of people (either 400,000 for one percent or 100,000 for five percent sample) as a way of protecting the confidentiality. Approximate sample sizes for Massachusetts are 122,000 households for the 5 percent sample and 25,000 for the 1 percent sample. (http://www.census.gov/geo/puma/puma2000.html)

[12]The complete tables are in Appendix A of the full report, available from the CHAPA Web site (www.chapa.org).

[13]See Table A.1, Appendix A of the full report, available from the CHAPA Web site (www.chapa.org).

[14]See Table A.4, Appendix A of the full report, available from the CHAPA Web site (www.chapa.org).

of 100 four-bedroom homes, the New Practitioner's model would overestimate the new population by 56 persons, a relevant number when using per capita fiscal impact forecasting methods. For school-age children, the model overestimates 65 children. For 100 three-bedroom homes, the overestimation would be 41 persons and 28 school-age children, while for 100 2-bedroom homes there would only be a six-person overestimation and a one-child underestimation.[15]

In addition, an analysis of regional Census data indicates that the New Practitioner's model overestimates the number of new residents and school-age children that accompany new residential development even more in certain regions of the Commonwealth. For example, in the Berkshires region, a 100-unit, three-bedroom, single-family detached development would have, on average, 196 persons per unit, or a predicted difference of 59 persons.[16] However, more recent and accurate Census data imply that, for units in multi-unit buildings, the Rutgers model somewhat underestimates both total population and the number of school-aged children.

INDIRECT COSTS AND BENEFITS OF HOUSING DEVELOPMENT

While this report focuses primarily on evaluating models that estimate *direct* costs and benefits incurred by municipalities, we should consider the limitations of any fiscal impact model—that is, the inability to estimate the *indirect* costs and benefits of a proposed project. Cost-benefit analysis models only incorporate direct, quantifiable impacts, those that can be measured in economic and financial terms, in the analysis. However, communities experience a variety of indirect and long-term economic costs and benefits created by new households. In addition, they may enjoy many qualitative or immeasurable impacts as a result of a proposed project, but cost-benefit analyses typically do not include these factors.

[15]See Table A.4, Appendix A of the full report, available from the CHAPA Web site (www.chapa.org).

[16]See Table A.2, Appendix A of the full report, available from the CHAPA Web site (www.chapa.org).

QUALITY OF LIFE

Evaluations of potential development projects should consider the changes in quality of life that may result from a proposed project. Those considering quality-of-life issues may have to address environmental effects (such as a increases in air or noise pollution), traffic congestion, historical preservation, aesthetics, social environment, and public safety, to name a few. These indirect costs and benefits tend to be economically non-quantifiable because of their inherent subjectivity. What one may consider invigorating and exciting, another may find hectic and stressful. As a result, it is difficult to place a value on indirect benefits and costs for the community at large.

The best way to get a sense of the quality of life within a community is to ask local residents what they like and dislike and what they want to see in their community 20 years from now. Only by going to the people can planners and other development decision-makers ascertain a community's priorities.

ECONOMIC IMPACT

The most commonly employed techniques of fiscal impact analysis often fail to consider the secondary or indirect economic benefits of residential development. When a proposed development is particularly costly or large-scale, municipalities have been known to hire consultants to conduct regional economic impact analyses to estimate the multiplier effect—how much a project will promote the infusion of money into the local economy, creating more businesses and jobs and thus generating more tax revenue. For example, cities considering the construction of a new sports stadium have often relied on economic impact studies to assess how the team and the local economy will benefit. Such studies tend to be done for large-scale commercial or industrial projects. But the systematic failure to consider the indirect or secondary economic benefits of housing growth is a major limitation of conventional approaches to the analysis of the fiscal impact of housing.

SECONDARY BENEFITS OF HOUSING DEVELOPMENT

According to development literature, there are several beneficial, indirect impacts of new housing development within a community and region: research has clearly demonstrated that in most regions housing has the potential to become an engine of economic growth

because of its high yield on invested resources, a high multiplier effect, and a host of beneficial forward and backward linkages in the economy.[17] Some of the most important economic benefits are discussed in the sections below.

POPULATION STABILITY

It is increasingly clear that a limited supply of affordable housing is limiting population growth in many of the Commonwealth's communities. Due to the high cost of housing, households are being forced in increasing numbers to look outside of the Boston metropolitan region for housing opportunities. A large number of the households that left Massachusetts were from counties in the metropolitan areas (Middlesex, Suffolk, and Essex Counties), and many relocated to New Hampshire where housing is more affordable. Impacts are being felt at the state level: in 2001, total outmigration of households exceeded total inmigration of households.[18]

THE HOUSEHOLD AS AN ECONOMIC ENGINE

Although it is common for communities to focus on the costs of supporting households with children, it is important to note that these households have the most purchasing power with which to contribute to local and regional commerce. According to the most recent consumer expenditure survey by the Bureau of Labor Statistics,[19] the highest annual household expenditures are made by husband-and-wife households with children through the age of 17. These households spend 30 percent annually than husband-and-wife households without children ($57,178 versus $43,946) and 107 percent more than single persons and other consumer units. The majority of purchases for this household type are for housing (32 percent), transportation (20 percent), and food (13 percent). All of these have the potential to significantly enrich the local and regional economies.

[17] Nordberg, Rainer. *Alleviating Poverty Through Housing Development.* In Global Overview, 2000, Vol. 6, No. 4. The United Nations Centre for Human Settlements (Habitat). (http://www.unhabitat.org)

[18] *Street Signs. Massachusetts Benchmarks.* Summer 2002, Volume five, issue three, p. 21.

[19] *The Consumer Expenditure Survey (CEX).* Bureau of Labor Statistics. (http://www.bls.gov/cex/home.htm)

THE HOUSEHOLD AS A CIVIC AND SOCIAL RESOURCE

Another important contribution made by households comes through public service and other volunteer activities. Recent studies illustrate that households of different ages volunteer in different ways. In fact, younger households of childbearing and childrearing ages (particularly between the ages of 31 and 41) contribute very significantly.

A poll done by the American Association of Retired Persons (AARP) shows that the 31- to 41-year-old age-group is the primary force behind PTA, PTO, and other school organizations. Thirty-five percent of the members of this group are active in school-related activities, versus 8.4 percent of adults between 50 and 70 and 2.4 percent for adults over 70.[20] Respondents between the ages of 31 and 49 are also more likely to be active in professional and trade organizations (34 percent as compared to 25 percent or less for other age groups). The poll also shows that this age group is one of the most likely to be active in environmental causes and neighborhood groups.

LOCAL COSTS AND STATEWIDE BENEFITS

While the majority of housing-development costs seem to fall on municipal budgets in the form of services and education expenditures, the benefits of development are more diffuse. Income taxes and sales taxes are collected directly by the Commonwealth, as are gas taxes and many fees. Municipalities only get to collect property taxes and excise fees, and perhaps some one-time impact fees for new development. Even though the monetary benefits of even the most inexpensive housing are likely to be overwhelmingly positive, most of these benefits do not directly find their way into municipal budgets.

CONCLUSIONS

Our analysis indicates that, for many Massachusetts communities, population growth associated with new housing is not inevitably followed by increased demand for services and higher municipal costs. Many of our fastest-growing communities experienced the slowest growth in per capita tax burden during the 1990s. In fact, there seems to be little

[20]"America's Social Fabric—Joining the club(s)." AARP Research Center. December 1997. (http://research.aarp.org/general/civic_inv_toc.html)

correlation between increases in per capita costs and increases in population, and it seems that municipal services are generally increasing in cost regardless of growth. This strongly suggests that the standard models relied upon by cities and towns to estimate the fiscal impact of development may be systematically overestimating these costs in many communities.

Given the shortage of affordable housing throughout Massachusetts and the fact that these estimates are frequently used as the basis for decision making by local development agencies, it is clear that the methods communities use to estimate the costs of development must be reconsidered. Specifically, it is evident that the population forecasting model commonly relied on by many people to calculate the population impact of new housing does not fit well with the current reality of Massachusetts. It regularly overestimates the population of single-family detached housing, the most common type of new housing in Massachusetts, and underestimates other housing types. Consequently, development decision makers and other users of fiscal impact models that rely on these population estimates, including the EOEA's Fiscal Impact Tool, may be making decisions based on outdated assumptions about the size of households and the numbers of school-age children that follow the development of housing in Massachusetts.

The fiscal landscape for Massachusetts is difficult to decipher, as the Massachusetts Education Reform Act and Proposition 2½ make growth-driven outcomes hard to distinguish from policy-driven outcomes. Even so, it seems that it is hard to argue that growth automatically costs towns more money. Our analysis seems to show that it is easier to claim that growth saves money by slowing down per capita increases in costs. However, our data may also suggest that growth squeezes municipal budgets and makes certain mandated expenditure areas, such as education, take precedence over others, such as public works.

Ultimately, we feel that the best way to capture these issues when forecasting the fiscal impact of housing development is to use the marginal-cost method, although this method is more difficult to use and requires much more information than the per capita method. Even so, because all municipalities have different priorities, histories, population mixes, and expenses, the only reliable way to forecast the effect of growth on a city or town is to analyze the specific data available for that town. Given the critical social need for and economic importance of housing development in Massachusetts, it is clear that a more accurate understanding of the true fiscal impacts of housing development is well worth the extra effort.


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