THE MULTI-FAMILY MYTH: EXPLORING THE FISCAL IMPACTS OF APARTMENTS IN THE SUBURBS

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ABSTRACT: *In Pennsylvania, there are conflicting responses in the planning community to the development of multi-family housing. Residents in suburban areas often oppose multi-family housing development citing concerns over congestion, loss of community character and rising taxes. Yet smart growth advocates support higher density residential development as a way to economize on infrastructure and preserve open space. Shifting demographics nationwide are creating increasing demand for new types of homes. Single-parent households, single-person households, empty nesters and couples without children make up the new majority of American households, and they have quite different real estate needs. These groups are more likely to choose higher-density housing in mixed-use communities that offer vibrant neighborhoods over single-family houses far from the community core. This paper presents an empirical estimate of the fiscal impacts of apartments on local municipalities in two suburban counties surrounding Philadelphia. The findings provide a basis in determining if restrictive local land use regulations towards apartments are justified due to a concern over fiscal effects. The findings have implications for local planning and land use policy in suburban communities.*

Keywords: Planning, Fiscal impact, Affordable housing, Apartments, Suburbs

INTRODUCTION

There are conflicting voices in suburban communities in Pennsylvania over multi-family housing.[1] On the one hand, there seems to be broad opposition to apartments and condominium development from residents and local officials in suburban areas. Often residents cite concerns over loss of "community character," increased congestion, and rising taxes as bases for their opposition (Pratt and Allen, 2004). On the other hand, smart growth advocates encourage higher density residential development, both rental and owner-occupied, as a way to meet the housing needs of a diverse and growing population while economizing on infrastructure and preserving open space. Developers declare that contemporary forms of apartments and condominiums, which have greater attention to site design, architectural detail, and community amenities, are fundamentally different from those of the past. With our fast-paced, transient lifestyles, they claim more and more singles, dual income (no kids) couples, single-headed households and active adults are opting for the maintenance-free lifestyle of an owner-occupied condominium or "renter-by-choice." The Urban Land Institute (ULI) finds that these same groups are more likely to choose higher-density housing in mixed-use communities that offer vibrant neighborhoods over single-family houses far from the community core (Haughey, 2005).

The question "Who pays?" (for public services generated from new development) is common in local planning debates in Pennsylvania over proposed development projects and their required zoning changes. A broad range of taxes and fees are levied by municipalities on homes and other types of real estate. Property taxes are typically the largest portion of annual revenues in local municipalities in Pennsylvania. Locally, tax revenues are used to fund a range of local government services including: police service, fire and emergency services, local government administration, street maintenance and snow plowing, libraries, and neighborhood parks. Typically developers and home builders pay a large share of the capital improvements needed to support new subdivisions. They pay for most of the costs of installing streets, sewer, water and drainage improvements. Yet, by increasing an area's population, new apartments generally increase the total cost of providing local government services and supporting a municipal staff. The cost of educating new school children often is the greatest source of concern about the fiscal impacts of growth.

Elementary and secondary education (grades K-12) typically is the largest single component of local government expenditures (Dotzour, 1998). Suburban communities often cite disproportionate fiscal impacts, in large part from the influx of school children, as a reason to resist apartments and condominiums. Opponents of higher density forms of housing often point to the negative financial consequences for municipal services and public schools. These notions persist despite overwhelming evidence of demographic shifts that have changed the composition of multi-family households. Concern over negative fiscal impacts from multi-family development is unfounded if based on a misunderstanding of demographic conditions.

The purpose of this study is to empirically explore the fiscal impacts of apartments in suburban areas. Looking at recent land use patterns, the local tax burden and public spending, a model is presented that estimates the impact of apartment uses on local municipal tax obligations. The findings can help to determine whether restrictive local land use regulations are justified in restricting apartments on a basis of concern over fiscal effects. The paper begins with some background information on trends in multi-family housing development and the role of multi-family housing in providing a range of housing options and as a smart growth strategy. In the next section of the paper zoning barriers to the provision of multi-family housing are discussed. A model is then presented to test for the fiscal impacts of apartments in suburban areas. The results are reported, followed by a discussion of the implications of the findings for suburban development planning policy.

MULTI-FAMILY HOUSING, AFFORDABILITY AND SMART GROWTH

The U.S. Census projects that America will add approximately 43 million new residents between now and 2020 (U.S. Census, 2004). Census data further indicate that household compositions are shifting. The traditional two-parent household with children now accounts for one-quarter of the population, and is growing proportionally smaller. Single-person households, single-parent households, childless couples and empty-nesters now make up a majority of American households. Their housing needs are different from that of traditional households. The ULI (Haughey, 2005) reports that, as a result, demand is emerging for real estate that offers a more convenient lifestyle than is offered by many low-density sprawling communities.

Advocates of smart growth encourage the development of higher density housing, both owner-occupied and rental.[2] As an antidote to sprawl, smart growth is a development form that encourages mixed uses, provides for a choice or housing types, preserves open space and environmentally sensitive areas, and encourages a variety of transportation modes. Denser development is typically proposed, not as density for its own sake, but as part of a more comprehensive strategy of mixed-use neighborhoods and alternative development choices that can better support a system of trains, buses, bicycles and walking than low density development. The positive outcomes of a smart growth strategy that incorporate higher density housing include a more walkable, less polluted environment, less reliance on the car, and easy access to shopping and employment. Transit oriented development strategies that are promoted by planners aim to increase transit usage and reduce automobile dependence by providing high density mixed-use development within walking distance of a transit station. It has also been suggested that multi-family structures tend to be more "green," that is, less energy consumptive than single-family dwellings, duplexes or townhouses, "They produce fewer household carbon dioxide emissions due to lower vehicle miles traveled, and they conserve heat by sharing walls." (Frank et al., 2007, p. 22).

Multi-family housing development is also a low-cost method of delivering affordable housing to many low- and moderate-income households. Evidence from a number of sources suggests that there is an affordability problem for moderate and low-income households in Pennsylvania. The Housing Alliance of Pennsylvania (Apgar et al., 2002) reported that Pennsylvania, in 2000, had the same number of rental units as it did in 1940, 60 years earlier. The lack of multi-family housing construction has resulted in a substantial drop in the percentage of multi-family units in recent years from 26% in 1990 to 21% a decade later. This drop in Pennsylvania parallels a national drop in annual housing starts for multi-family units from 25% of all housing units in 1989 to 22% of all units in 1999. The drop in new rental housing construction is in large part due to the fact that local governments commonly view multi-family housing as a cost that their communities can not afford because it requires a greater expansion of public services, particularly public water, public sewer, and schools, than the municipality will recoup in taxes.

ZONING BARRIERS TO MULTI-FAMILY HOUSING

Local government regulation, particularly zoning, has been shown to be a major factor in restricting the amount of multi-family housing in suburban areas. Baar (1992) documents the history of public policy to discourage apartment development in the United States. In 1991, Secretary Jack Kemp of the U.S. Department of Housing and Urban Development chaired the President's Advisory Commission on Regulatory Barriers to Affordable Housing. Among others, the "Kemp Commission" found that regulatory barriers can both prevent the development of affordable housing in suburban areas, thereby forcing lower-income households to live in locations far from job opportunities, and restrict the range of affordable housing options such as higher density housing and multi-family rental housing. Although homeownership is touted as a goal for all Americans, rental units remain an important housing option for residents who cannot afford to buy, who seek to live near their jobs where homes are unaffordable, young people seeking mobility, or are in later stages of their life and do not want to take on the responsibility of homeownership.

Zoning policies and other restrictive land use regulations have a number of impacts on local housing provision. There is an extensive literature on the motivations and effects of restrictive zoning. Fischel (1990; 2004) provides a comprehensive economic history of zoning as well as a comprehensive review of the literature on land use regulations and other growth controls. Based on his general survey of the literature, he concludes that growth controls and exclusionary land use regulations increase both the price of housing and decrease the supply of new housing units. Ihlanfeldt (2004) provides a review of the empirical literature that looks at the exclusionary effects of land use regulations in suburban areas. He concurs with Fischel, finding strong evidence in empirical studies that zoning and growth controls increase the cost of housing in suburban municipalities and reduces the housing supply. Using 1970 data on 360 communities in northern New Jersey, Rolleston (1987) studied the determinants of restrictive zoning and found three possible motivations on the part of local governments behind the adoption of restrictive regulations. The three motivations include "externality", "exclusionary", and "fiscal" motivations. The "externality" motive reflects the desire to mitigate negative effects such as traffic and noise that rise from incompatible land uses. The "exclusionary" motive stems from a deliberate desire to exclude lower-income and/or minority households from the jurisdiction. The "fiscal" motive stems from the desire of existing residents to maximize the net benefit they receive from the public services/taxes package provided by their local government.

Growth regulations limit the supply of multi-family housing. Levine (1999) surveyed 490 cites and counties in California and found that local growth controls significantly displaced rental housing, with the greatest impacts to low-income and minority households. Knapp and Rhodes (2007) used Geography Information Systems to characterize the pattern of residential zoning in six U.S. metropolitan areas in order to evaluate the impact of zoning as a barrier to high-density, multi-family housing. They found compelling evidence that regulatory barriers exist and can impede the development of multi-family housing.

The positive fiscal benefit of business and industrial uses is well established. Fischel (1975) looked at the relationship between fiscal variables, zoning and business location. Using data from 54 municipalities in Bergen County, New Jersey, Fischel determined that commercial and industrial property taxes benefited residents by lowering household tax payments or by increasing local spending. Erickson and Wollover (1987) looked at the fiscal impacts of commercial and industrial land uses in the Philadelphia region and found that these uses generated fiscal surpluses.

While studies have found that local regulations can impede the development of apartments and multi-family housing, and other findings indicate that fiscal considerations frequently motivate restrictive land use regulations, few have tried to empirically estimate the fiscal impacts of multi-family housing. This study was developed to fill in this gap in the literature by estimating the fiscal impact of existing apartment uses in suburban areas. The analysis explicitly tests the notion that apartment development creates additional fiscal burdens on local communities and provides empirical evidence on the fiscal impact of apartments. The findings help determine whether local communities are justified for fiscal purposes in enacting local land use regulations that discourage apartment uses.

FISCAL IMPACT MODEL SPECIFICATION AND VARIABLES

A model was developed to test whether net fiscal deficits accrue to suburban communities from

apartment uses in the municipality. The unit of analysis for the study is the local municipality. Pennsylvania is a particularly instructive area in which to study the local fiscal impacts of land uses since most land use control, including zoning, is vested in local municipalities. Local municipalities impose their own local municipal taxes, including property taxes, transfer taxes, earned income taxes, a business privilege tax and a business tax on gross receipts. Property taxes are also imposed by the school district. While there are some municipal boundaries that coincide with school district boundaries, it is more often the case that two or more municipalities belong to one school district.

The model tests whether net fiscal burdens accrue to communities from apartment uses. The specification for the model is adapted from Erickson and Wollover (1987) who explored the effects of the local household tax on the supply of business sites in the Philadelphia suburbs. The model is specified as follows:

$$TAXHHLD = f(APTHH, NRHH, INC, POPDEN)$$

The dependent variable in this equation, TAXHHLD, is the total local tax burden per household. The independent variables include: apartment valuation per household for the municipality (APTHH); non-residential property valuation per household (NRHH); median household income (INC) and; the population density of the municipality (POPDEN).

The dependent variable is determined by adding together the residential shares of the county tax burden, the local real estate tax burden, and the school tax burden and dividing the result by the number of households.

$$TAXHHLD = (COUNTY + MUNI + SCHDST) / HH$$

The county tax burden (COUNTY) was determined for each municipality by first adding the total residential assessed valuation (RESVAL) to the apartment valuation (APTVAL). The result of this equation represents the total taxable property value attributable to households. This sum is then multiplied by the county millage rate (CNTYMIL). The product represents the total county tax burden attributable to residential uses for the municipality.

$$COUNTY = (RESVAL + APTVAL) * CNTYMIL$$

The local government tax burden (MUNI) was determined by adding all the municipally based taxes, not including school taxes (MUNTAX). The taxes generally include the local earned income tax,

per capita taxes, transfer taxes, emergency and municipal services taxes and real estate taxes, although not every municipality imposed all the tax sources. The total local tax sum was multiplied by the sum of the residential assessment and the apartment assessment divided by the total municipal assessed value to determine the residential share of municipal tax revenues.

$$MUNI = MUNTAX * (RESVAL + APTVAL) / TTLVAL$$

The school district tax burden (SCHDST) was determined by multiplying the per capita school district tax (total school district taxes (SDTAX) divided by the school district population (SDPOP)) by the local population (MUNPOP) to get the total school district tax burden in the local municipality. The result was multiplied by the residential share of the total assessed value of property.

$$SCHDST = (SDTAX / SDPOP * MUNPOP) * (RESVAL + APTVAL) / TTLVAL$$

Looking at the regression equation, the value of local tax burden per household in relation to the value of apartment uses (APTHH) provides an index of the extent to which apartment uses increase or decrease the tax bill of a typical resident household in the municipality. Similarly, the value of the local tax burden in relation to the amount of non-residential uses (NRHH) provides an index of the extent to which non-residential land uses increase or decrease the tax bill of a typical resident household in the community. Respectively, APTHH and NRHH represent the equalized assessed valuation per household for apartments and nonresidential property. Drawing on the recent ULI reports, the expected sign for APTHH is negative in this model. A negative sign would indicate that greater value of apartment activity per household results in a lower tax burden. Based on the findings of empirical research that has demonstrated that non-residential uses tend to fiscally benefit residential property-owners (Erickson and Wollover, 1987; Fischel, 1975), the expected sign for NRHH is also negative in this model. In similar fashion, a negative sign indicates that greater value of non-residential activity per household results in a lower tax burden.

The variable INC represents median household income. In the model, the expected sign for this variable is positive, indicating that as median household income increases, the local tax burden per household increases. This largely reflects the relationship between median household income and house prices. With higher house prices, the property

tax burden will increase since property taxes are derived directly from the assessed value of residential property.

The population density (POPDEN) variable represents the population density over the entire township. It was determined by dividing the municipal population in 2005 by the area of the township in miles. The expected sign for this variable is negative, reflecting the greater economies of scale in the provision of public services that can be achieved by higher population densities.

An additional variable that was initially considered for the model was public school age children per household. Since the greatest fiscal impact to a community comes from the cost of educating children, it was theorized that the higher per household share of school age children, the greater the household tax burden. However, there was no reliable data available to properly operationalize and test this variable.

DATA

Data were collected for municipalities located in Chester and Bucks Counties in the Philadelphia region. These locations were selected because they have been facing suburbanization pressures over the past thirty years, with significant population growth over the past fifteen years. U.S. Census data indicates that population grew by 10.4% and 15.2% respectively in Bucks County and Chester County between 1990 and 2000. Much of the growth was concentrated in areas closest to Philadelphia. Presumably the growth pressures would cause the local communities to consider alternative forms of development to accommodate the increasing population.

Most of the data were obtained from published sources including the Census Bureau and county tax assessment data for Bucks and Chester Counties. The property data used was the most current real estate assessment data available, in this case, for the year 2006 (Buck County 2006; Chester County 2006). Residential property assessment data distinguish between owner-occupied residential uses and apartment uses. Median household income and household count data for 2005 were obtained from Claritas Inc., a private data provider (Claritas, Inc., San Diego, CA: http://www.claritas.com). Income and household count projections for 2005 are based on 2000 Census data updated with a number of post-census data sources including U.S. Postal Service deliverable address counts and Equifax consumer database information. Tax revenue data were compiled by a review of municipal budgets. Budget data for the year 2006 was collected from each of the municipalities.

Together, Bucks and Chester Counties contain a total of 127 municipalities with 54 in Bucks County and 73 in Chester County. A number of municipalities were excluded from the study for various reasons. Since the research focus is on fiscal impacts in suburban areas, any urbanized municipality such as a borough or a city was not included in the study. Likewise, a number of the more distant and undeveloped rural municipalities were also excluded. A number of municipalities also had to be excluded since budget information was not available. After the exclusions, a total of 51 municipalities remained, 34 in Chester County and 17 in Bucks County.

ESTIMATION RESULTS

Ordinary least squares (OLS) multiple regression was used to estimate the model. The analysis is cross-sectional over the municipalities. A one-tailed test was used to test the statistical significance. The POPDEN variable had to be removed after it was determined that it was highly correlated with APTHH, another independent variable.

Table I shows the results of an OLS regression to test for the presence of fiscal impacts

Table I. Fiscal Impacts from Apartment Uses

Dependent variable: TAXHHLD (Municipal tax burden per household)			
Independent Variable	Coefficient	t-value	p-value
Constant	2799.408		
APTHH	-0.0119	-1.766	.084
NRHH	-6.872 E-3	-1.822	.075
INC	0.0383	3.764	.000

$R^2 = 0.36$

n = 51

associated with apartment uses. The estimated equation explains 36% of the variation in average household tax. The estimated coefficients support the hypothesis that positive fiscal deficits are incurred by communities that have proportionally more apartment activities. The negative coefficient for per household apartment valuation indicates that as the value of apartments increases in a municipality, the tax burden per household decreases. The estimation indicates that a $1,000 increase in assessed apartment valuation will lower the tax burden by $11.90. The negative coefficient is statistically significant at the 0.084 level for the apartment assessed valuation variable. The results indicate that non-residential uses also have a positive fiscal impact, although not as great as apartment uses.

The negative coefficient which is statistically significant at the 0.075 level for the non-residential assessed valuation variable indicates that $1,000 more in assessed valuation for non-residential uses, holding all else equal, results in $6.87 less in the household tax burden. The income variable has the expected sign. The estimated coefficient for INC indicates that, for every $1,000 increase in median household income, the local tax burden will increase by $38. This finding is statistically significant at the 0.0001 level.

Figure 1 shows the spatial pattern of assessed apartment valuation per household over the study area. The map indicates that the townships with the highest assessed valuation for apartments are the inner suburbs generally located closer to Philadelphia. While accessibility factors are not analyzed in this study, the map suggests that there is also a relationship between major transportation arteries and communities with higher apartment valuation. Future research in this area could investigate these locational factors.

CONCLUSIONS

This research study was designed to empirically estimate the fiscal impacts of apartment uses in suburban communities. While suburban communities commonly cite concerns over fiscal impacts as a primary reason to resist apartments and other types of multi-family development, there has been little effort to empirically test the fiscal impacts of apartments. Evidence from two rapidly growing suburban communities suggests that, indeed, positive fiscal impacts accrue from apartment uses, contrary to common beliefs that apartment uses generate disproportionately negative fiscal impacts. The empirical findings of the model question the rationality of fiscal motives in opposing or severely
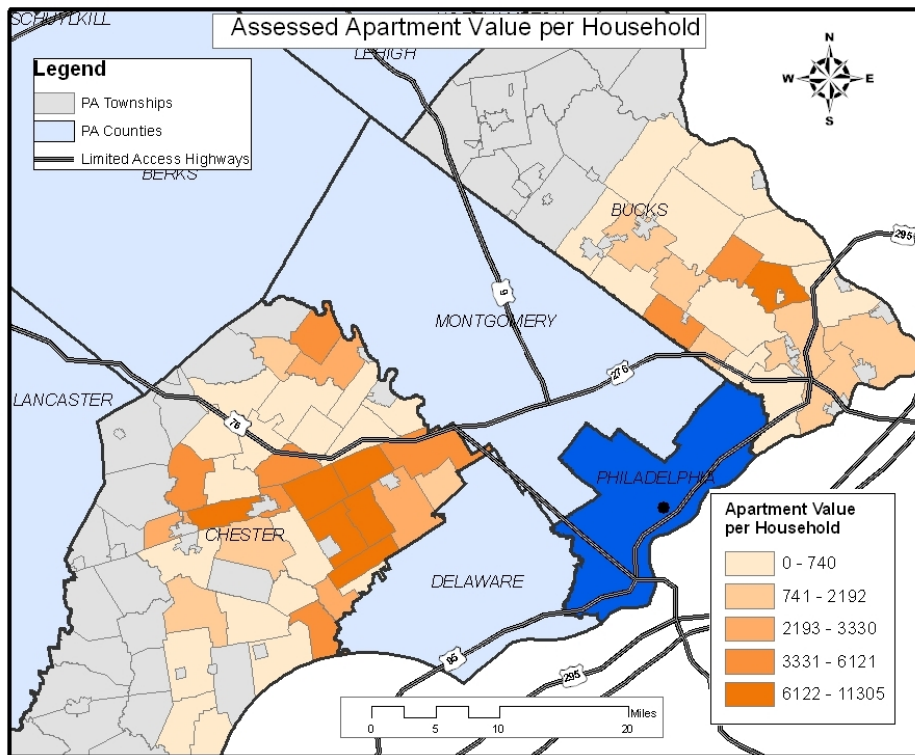

Figure 1. Assessed apartment valuation per household over the study area.

limiting multi-family uses in a community. The empirical results provide evidence that apartment uses in a community can have a positive fiscal impact on a suburban municipality. The test for fiscal benefits from the local presence of apartment uses indicates (albeit with somewhat weak statistical reliability) that municipalities in the sample receive positive fiscal results.

These findings are consistent with recent studies that look at changing demographics and household composition in different types of housing units. Citing Census data, the ULI claimed that the notion that higher density development overburdens public schools and other public services is a myth (Haughey, 2005), "The nature of who lives in higher-density housing – fewer families with children – puts less demand on schools and other public services than low-density housing." The myth is based on an outdated notion of demographic conditions. The new demographic reality reflects smaller household sizes generally and fewer school age children per household. The number of school-age children varies with the characteristics of the housing unit and the type of tenure (owner v. renter) and mobility. Low density suburbs and exurban areas generally attract families with more school-age children. The U.S. Census reports that single-family developments average 64 children for every 100 units, compared to only 21 children for every 100 units of garden apartments (U.S. Census, 1999). Multi-family housing attracts predominantly childless couples, singles and empty nesters. A 2006 study by Rutgers University researchers (Listokin et al., 2006) investigates changing demographics of households over different types housing units statewide in New Jersey. The findings reveal that the number of children living in high density multi-family is about one-third lower than it was ten years ago and that the average number of school age children living in two-bedroom apartments has fallen since 1990 to 13 per 100 units in 2000. The study further reports that, statewide, large, single-family detached homes generate the largest number of school children with 87 children per 100 four- and five-bedroom single-family units. The authors point out that housing affordable to low- and moderate-income families was determined to add fewer school age children than actually thought.

These findings raise important land planning policy considerations in suburban communities. In assessing the fiscal burdens of various forms of land development, local officials need to be careful in not overreacting negatively to multi-family development over a concern about fiscal considerations. Properly located and designed apartments and other multi-family housing development can be an important part of a land use strategy to support smart growth objectives, provide an affordable source of housing, serve a changing demographic, and preserve the fiscal soundness of a community.

While the study answers some questions, it raises others. The results of the analysis provide evidence that the fiscal impacts of apartment uses in the suburban communities studied was positive, however, the findings do not indicate whether fiscal motivations were evident in land use and zoning decisions for apartments. The large body of literature related to exclusionary zoning suggests that fiscal motivations drive zoning decisions that restrict multi-family housing, yet there is relatively little conclusive empirical evidence of these effects. This area of research could be expanded to investigate patterns of zoning for apartment and multi-family uses and thereby empirically test for fiscal motivations evident in zoning decisions.

ENDNOTES

[1] The term multi-family housing as it's used in this study refers to apartments and condominiums. Apartments are rental units and condominiums are owner-occupied.

[2] Density is a relative measure. What might be regarded as a dense development in one neighborhood may be an average or low-density development in another. In suburban communities, residents living in places that have only one or two houses per acre will strongly resist development densities of 5 to 10 dwelling units per acre. The Lincoln Institute of Land Policy (Campoli and McLean, 2007) indicates that transit-friendly densities start at 6 dwelling units per acre and extend into the hundreds. The ULI (Haughey, 2005) indicates that appropriate density can only be determined by considering the local context of the development.

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