

THE PRIVATIZATION OF COLLEGE HOUSING

ABSTRACT: In a context of growing enrollments and state retrenchment, public universities in the U.S. are facing increased difficulties housing their undergraduate populations. I examine the relationship between off-campus populations, poverty rates, and housing affordability metrics, concentrating on the twenty largest public university towns in the U.S. Using a first-difference model of census tract-level data from 2000-2008, I find robust, positive associations between the change in off-campus populations and poverty rates, and more modest but still visible relationships with housing affordability metrics. The results suggest that demographers and policymakers pay attention to the presence of students in quantitative analyses, and call for a unified and coherent housing strategy among public universities to address the needs of students and host communities.

Keywords: Housing, Poverty, Community Development Block Grants, College Towns, Public Universities, Studentification

1 Introduction

For as long as there have been universities, there have been the often uneasy and complicated relationships with the communities they inhabit. Colleges and their students contribute much to the local economies they are embedded in (Steinacker, 2005), and are often the linchpin that spares postindustrial university towns from the ravages of deindustrialization. The darker side of the ‘town and gown’ dynamic, at least contemporarily, is perhaps best illustrated by physical redevelopment, housing affordability and demographic turnover, and the localized pressures wrought by the presence of the university as tax-exempt landowner and consumer of municipal services. In a broader context of state retrenchment, burgeoning enrollments, and the stark increases of tuition in real terms that accompany such trends, public universities face pronounced challenges in balancing the needs of both their students and host communities.

Housing undergraduates in particular is a growing concern for public universities, which in addition to decreasing state appropriations must cope with longstanding challenges of smaller endowments and a historical focus on broad access. For these and other reasons, public universities house a far lesser proportion of their students than their private counterparts, and are increasingly less able to do so relative to overall enrollment.¹ Here, I begin by reviewing the existing literature on the relationships between off-campus student populations and host communities, but particularly the research on ‘studentification,’ a concept emerging from the U.K. which has several parallels to phenomena in the U.S. I then examine how off-campus student populations are associated with poverty demography and affordability outcomes in the U.S., which chiefly have implications for grant provisioning and housing market trends. Far from

¹ Though exact numbers are difficult to obtain for the total universe of higher education institutions in the U.S., any cursory glance at estimates for on and off-campus populations among large private and public colleges would bolster this notion. But see also Abramson, 2003, for a non-representative sample which supports this contention.

the ‘mom and pop’ landlord administered ‘student ghettos’ of yesteryear, college housing—either on or off-campus—is becoming enveloped in the institutionalized private housing market, with potentially important implications for cities, colleges, and their students. I conclude by making tentative connections between the specific results here and these larger trends, with the common locus being the growth in off-campus populations in a context of state retrenchment.

Unlike other university systems, many of which operate at the national level, the vast majority of public universities in the U.S. are state schools. As such, funding appropriations and institutional characteristics vary widely from state to state. Yet even with this variation, there are general, discernible trends in the U.S. public university system, the two most striking being the growth in enrollment and state divestment. In 2000-2010, the U.S. saw the highest overall rate of growth in college attendance since the 1970’s, and enrollment at public four-year institutions grew by 34%—outpaced only by the growth in for-profit bachelor’s programs, which are far less numerous overall (NCES, 2012). Despite the growth in enrollment, state funding for higher education is tenuous and often suffers disproportionately during downturns, as allocations for college education—unlike the primary of secondary levels—are discretionary, and tuition increases can be implemented to balance institutional budgets. Though state appropriations per full-time equivalent student (FTE) grew modestly during the 1980’s and 1990’s, this trend began reversing during the last decade, and now stands at its lowest point since the 1970’s (College Board, 2012). State support for higher education relative to per capita income and as a percentage of total budget allocations are more clear in their illustration of a retrenchment from public funding for higher education over the past three decades, and make it more likely that this is a ‘new normal’ rather than a mere function of the business cycle (Quintero, 2012).

With tuition increases picking up the shortfalls, public university education in the U.S. is gradually shifting from a social to a private good. While the effects of state divestment are not always obviously related to student housing provision because of byzantine institutional and regional differences—i.e. some states enact de facto firewalls between taxpayer money and undergraduate residences, while others impose limits on bond issuance for new construction—funding trends have real if not clear-cut relationships to housing. For instance, though public universities have customarily issued bonds rather than directly financing new construction through endowments, many are increasingly reluctant to do so as debt to capital ratios escalate, and appropriations and private donations stagnate or shrink. Even with new construction, residence hall growth can scarcely keep up with enrollment. Despite an aggregate increase in dormitory populations from 2000-2010, they shrank as a proportion of total college enrollees in the U.S. (Census, 2012). Only five U.S. states saw increases in dormitory populations that kept up proportionally with growths in enrollment, while 44% of colleges report they have too little on-campus space relative to demand and changing student demographics (Arbury, 2012; Moore, 2012). As enrollment increases and funding lapses, public universities have been unable to keep up in terms of residence hall construction, leading to conspicuously larger increases in the numbers of off-campus students in their host cities.

The possible and in some cases probable effects of large numbers of off-campus populations include the economic (increases in rents and costs of living), the physical (housing conversions, university land purchases), and the social (demographic change and neighborhood cohesion), to name a few (Allinson, 2006). This analysis focuses on two distinct effects increasing numbers of off-campus students may have on their host communities: As systematically leading to higher rates of measured poverty—with attendant effects on federal

funding of college towns—and housing affordability outcomes, which may be obscured by the lack of conventional indicators of neighborhood change (i.e. gentrification) amidst the localized poverty. I examine the twenty largest public university towns in the U.S. and perform a series of first-difference models which regress the changes in the poverty rate, median rents, and rent as a percentage of income on a proxy measure of off-campus populations at the census tract level, with relevant demographic controls. I then situate the results in a greater context of debates on how universities are and are not provisioning housing, and discuss possible implications for both host communities and students. I conclude by arguing that these trends are emblematic of the larger issues of state retrenchment in the U.S. public university system and the attendant privatized modes of student housing provision.

2 The Evolution of College Towns: Neighborhood Change and ‘Studentification’

The increasing numbers of university students and their effect on surrounding neighborhoods has gone so far as to spur the creation of the neologism ‘studentification.’ Studentification is characterized by the simultaneous expansion of higher education and a deregulation of the housing system, often leading to physical transformation and residential turnover as students occupy private rental housing in increasing numbers (Smith & Holt, 2007; Smith, 2008). Indeed, the general themes of demographic transition and the likelihood of residential displacement have led some to subsume studentification under the general rubric of gentrification (e.g. Smith & Holt, 2007, p. 148), or to identify the former as a key factor in inducing the latter in a broader historical context (Davison, 2009). Though the historical importance of student habitation is indeed intriguing, not least because it emphasizes the crucial distinction between the relative importance and primacy of cultural or economic capital in various stages of gentrification, I

focus largely on specific elements of the former phenomenon: How off-campus populations relate to changes in the neighborhoods they reside in..

Researchers in the UK have found that students residing in urban environments are often segregated from other populations, and live in enclaves that are demographically concentrated and prone to high rates of turnover commensurate with their relatively short-term living arrangements (Munro, Turok, & Livingston, 2009). Others also find evidence of this fluctuation, contending that demographic change in areas characterized by studentification is often rapid, leading to potentially destabilizing effects on community composition and cohesion (Sage, Smith, & Hubbard, 2011). The influx of young students also often becomes a point of contention with established residents because of lifestyle differences, with ‘townies’ frequently taking umbrage at loud noise, late nights, dilapidated housing, and alcohol consumption, to name a few (Allinson, 2006, p. 88; Sage et al, 2011; See also Garmendia, Coronado, & Ureña, 2012, for a Spanish case).

Housing is a central theme in these studies, as students can bid rents up in existing market rate housing by combining their purchasing power through sharing accommodations. Landlords and management companies often overlook the downsides of renting to students because of the potential for greater profit and a steady influx of tenants, with housing conversions—i.e. single family homes turned into de facto multi-occupant accommodations—commonly described in the literature (Allinson, 2006, page 80; Hubbard, 2008). Purpose-built (i.e. ‘new build’) projects are also increasingly common, as the private market seeks to meet the demand for housing in university towns (Hubbard, 2009). In the U.S., off-campus student housing has become a reliably profitable and burgeoning niche market in real estate, as private concerns like American Campus Communities and Campus Crest Communities build developments that cater to undergraduates,

while also contracting with universities themselves to build and manage on-campus facilities.² Because of the promise of steady revenue even in times of recession—or even greater returns, as more young people enroll or return to school to weather the doldrums of economic downturns—large institutional investors are increasingly bullish on the ‘student sector’ (Drummer, 2011; NMHC, 2012). Aside from institutional investors, student housing is also becoming a financial instrument for individuals who buy property in college towns as second homes, house their children for the duration, and either rent or sell after graduation (Elmer, 2012).

New-build housing—particularly off-campus accommodations that developers target to undergraduate (and in some cases graduate) student populations—are often seen as an improvement over demographic turnover in existing housing stock. While more conventional housing conversions that see homes become de facto multi-occupancy student residences are durable and important, especially in considerations of conflict and uneven social geography (Sage, Smith, & Hubbard 2012), new build projects are an increasingly visible phenomenon in the U.K. and the U.S. Because these developments are often sited on brownfields or otherwise vacant or underutilized land, proponents argue that the existing social ecology and demographic composition of host communities remains largely intact. Yet aside from issues I will address in the conclusion (particularly related to cost, social bifurcations among students, and poverty demography) there are reasons to be skeptical of these claims. For instance, Sage, Smith, and Hubbard (forthcoming) show in their analysis of new-build projects in the U.K. that student/community relations are often problematic, and partly reflect an indirect or ‘softer’ set of displacement pressures (i.e. by raising prices by proximity rather than direct turnover).

² Public-private partnerships for housing construction on university land are considered by the U.S. census to be on-campus accommodation. Private development that remains unaffiliated with the university but aimed at undergraduates is not considered as such.

American college towns thus resemble their overseas counterparts in many ways with respect to demographic turnover, housing, and how the market is responding to these trends. In his analysis of American college towns, Gumprecht (2003) describes the ‘student ghetto’ as a distinct neighborhood type that often springs up around universities, along with the predictable tensions that arise over dilapidation, student behavior, resident turnover, and affordability, which are all longstanding trends. When college enrollments surged after WWII, landlords saw opportunities of extracting greater exchange value for their properties, with “abnormally high” rents continuing to be a point of contention (Gumprecht, 2006, page 250). Yet unlike today, public housing policies responded to these pressures by offering direct loans to universities for new residence hall construction as part of the Housing Act of 1950 (von Hoffman, 2012, p. 338). Now, in a context of moribund federal housing policy (Dreier, 2000), these trends are increasingly institutionalized and targeted as growth opportunities by private construction and management concerns which are both partnering with colleges and filling in the gaps independently.

3 Poor on Paper: The Paradox of Poverty

Along with housing outcomes, student populations also have the potential to substantially alter the demographic profiles of neighborhoods they live in. Because undergraduates are usually attending school full-time and have limited incomes because of the impracticality of employment during this time, many fall under the poverty line as a matter of course. Because of their low incomes and lack of college education attainment, as they are still in the process of completing their degree, neighborhoods in university towns (or larger central cities which contain universities) may be simultaneously characterized by the classic signifiers of blight—poor and

uneducated populations—despite having higher-cost housing and amenities.³ Empirically, on a fine-grained scale, this may obscure the socio-demographic composition in certain localized contexts. Policy-wise, and on a broader municipal level, this commonly results in certain cities and towns receiving funding based on inflated poverty rates.⁴

Enacted in 1974 by the Ford administration ostensibly as an administrative reform effort in the wake of the criticism leveled at categorical grants, the Community Development Block Grant (CDBG) program was aimed at ameliorating urban blight by targeting low and moderate income neighborhoods for infrastructure and housing improvements.⁵ With respect to funding allocations, the Department of Housing and Urban Development (HUD) has itself noted that more needy communities are increasingly left with a relatively smaller share of expenditures under the CDBG program.⁶ College towns have been specifically singled out to illustrate how the current methodology—of which overall poverty rates are a crucial component—are fundamentally flawed, and often result in inequitable outcomes (Richardson, 2005, page xi).⁷

³ Academic studies of this phenomenon are virtually non-existent, but see Hicks, 2008, for one brief example.

⁴ This is not to say that college towns are not characterized by poverty in any measure—like any city or town, they certainly are. The question is to what extent and of what character—among families, singles, students, etc.

⁵ An in-depth overview of the history of block grant funding is not possible due to space considerations—see Conlan (1984) for an early history, including the reorganization of block grants by the Reagan administration, and Finegold, Wherry, and Schardin (2004) for a more recent overview.

⁶ Of course, the administration and provisioning of funding by block grants more generally—aside from any statistical minutia used to calculate eligibility and funding—has often been criticized. For instance, Logan and Molotch (2007 [1987], page 172) point out that social equity directives have often been subsumed to pro-development goals, with funding going toward infrastructure projects of dubious value to the general public welfare.

⁷ To take two examples, the per capita CDBG expenditure in FY 2012 for Berkeley, CA, was \$21.16; for Oakland, CA, it was \$18.75. In Texas, the per capita 2012 expenditure was \$11.05 in College Station, and \$8.66 in Corpus Christi. Though, as Richardson (2005) notes, funding is still channeled toward poorer areas, funding toward college towns demonstrably makes up more funding than it otherwise would using different formulae.

While HUD recommended a change in the formula to congress based on family and elderly populations in poverty as opposed to the current catch-all categorization, no action was taken, and the formula remains the same from the 1970's. In a greater context of decreasing funding—particularly during the recent economic crisis—government inertia on the issue of how money is distributed is a predictable outcome, as cities and towns are especially loath to lose even more of the allocations that they have over time come to customarily expect.

To illustrate the effect of off-campus students on poverty rates, it is possible to adjust the calculation by excluding undergraduate college enrollees (both those under and over the threshold) from the estimates. . In Berkeley, California, home of the flagship of the University of California system, the 2008 poverty rate decreases from approximately 17.1% to 11.7% when undergraduates are discounted. In Gainesville, home of the University of Florida, the rate drops from 30.4% to 22.0%. In Ann Arbor, home of the University of Michigan, there is a reduction from 17.6% to 11.9%. Some inflationary effects are more substantial than others. In College Station, Texas, the poverty rate drops from 32.6% to 16.1% when undergraduates are not included in the calculation, rendering their baseline counts similar to Camden, New Jersey.. College towns can thus benefit from artificially high poverty rates, leading to a troubling yet familiar outcome: relatively affluent municipalities receiving a larger share of ever-shrinking state funding than they otherwise would have. Because CDBG funding has important threshold effects on poor neighborhoods and these improvements depend on fine-grained spatial targeting (Galster, Walker, Hayes, Boxall, & Johnston, 2004), accurate renderings of the socio-demographic profile of census tracts is doubly important. Moreover, because these funds are flexible and largely discretionary, it is hardly a foregone conclusion that they would then be reinvested into mitigating whatever inflationary effects on the housing market may be present in

certain localized contexts where large numbers of college students reside. Indeed, when money is provisioned for housing with CDBG funds, municipalities are usually rehabilitating or preserving older rather than constructing newer housing (von Hoffman 2000). In an economic and political context where public universities are seeing their funding decline as well, with a strong trend toward privatizing housing resources and a growing lag between growth in enrollment and new construction, the relative benefits college towns may reap from the current methodology of the CDBG program will likely only grow.

While these are real concerns of social demography and public policy, and poor student populations are very often qualitatively different from what we would conventionally understand as those living in urban poverty, it would nevertheless be a mistake to assume that all college students are free from deprivation, or that college towns do not face legitimate economic pressures. Even if students do not come from poor families, and even allowing for the potential for social mobility engendered by their college education (though there is ample evidence this too is waning), many are still in economically precarious situations and are often living independent financially. Moreover, even if students and families in poverty are quite different qualitatively, this may not be of much difference to local municipalities who see similar tensions between their tax base and the public services they provide. Thus even if funding allocations are not always going to places we would customarily expect, the difficulties that some students and host communities face should also not be ignored. Reconciling these considerations suggests nuanced caution.

4 Methods

This analysis focuses on the twenty largest four-year public universities in the U.S. located outside major central cities in examining the relationships between off-campus undergraduate populations, gross rent, rent as a percentage of income, and poverty rates. There are a number of justifications for focusing on this group of colleges. First, large public universities house a disproportionately small number of their undergraduates compared to private universities, the latter of which have the luxury of smaller enrollments and larger endowments. Second, focusing on universities which are not in major cities may perhaps illuminate the effects of undergraduate populations in more stark terms, where their effects may be more substantial. This precludes including universities such as the University of Washington, located in Seattle, or the University of Texas, Austin. In contrast to Gumprecht (2003), however, I include universities that reside in major metropolitan areas but outside of large central cities (which I define as a population over 300,000), which include schools like Berkeley (San Francisco MSA) and Arizona State University (Phoenix MSA). Finally, relegating the analysis to four-year public schools is a logical criteria for conceptual consistency and reducing the confounding effects of commuter students. Using the ‘public’ criteria excludes only one university that would otherwise be included based on its size—New York University, which is in a large and very exceptional central city location. Keeping community or vocational colleges out of the analysis reduces but does not eliminate the possibility of confounding off-campus students with those who commute from home.

The data are at the census tract level, organized by either municipality, Census Civil Division (CCD), or in some cases counties, in the aim of geographic consistency from the 2000 Census to the 2006-2010 American Community Survey 5-year averages (ACS) (See Table 1 for the list of universities, geographic units, and estimates of off-campus populations). Because the

ACS data at the level of the census tract is averaged over a five year span, 2006-2010, I describe data using the midpoint of 2008. In order to keep the tracts geographically consistent, I merged or split tracts based on how they were remapped from 2000-2010 by using Census GIS data. In other words, if one census tract in 2000 were divided into two for 2010 because of population growth, the latter two were merged to keep geographic consistency.⁸ The variables were all sourced from the 2000 Census and 2006-2010 American Community Survey, along with the 2010 Summary File 1 for group quarters figures. See Table 2 for a full list of dependent and independent variables used in the analysis.

TABLE 1 ABOUT HERE

For the measure of off-campus students, a proxy measure was calculated by subtracting the number of residents in college dormitories from the number of residents enrolled in the undergraduate years of college. This could include students who, say, live in a census tract proximate to the University of California Berkeley, but whom commute from home to Berkeley City College. Thus it is not a direct measure of off-campus populations at four year institutions, but is the best proxy measure based on the data available. Though the Census' Current Population Survey (CPS) does differentiate between students enrolled in two- and four-year programs in its data, which would help improve the estimation of off-campus students by disaggregation as community college students are likely more apt to commute than

⁸ Though the Neighborhood Change Database (NCDB, 2012) can be used expressly to accomplish this goal of geographic stability over time, their database does not include the variables necessary to calculate the proxy measure of off-campus resident populations. Also, to prevent artificially high values resulting from merging or splitting census tracts, all change scores in this analysis were based on proportions and not raw values.

undergraduates at four-year state colleges, it is not of a large enough sample size to report on geographic units as small as census tracts. For the calculation of the proxy measure of off-campus students, a small number of cases were negative—i.e. the number of reported dormitory residents exceeded the number of college enrollees. This is likely due to the different sources for these two variables; the 2010 Summary File 1 for the former, and the 5-year ACS averages for the latter. Unfortunately it was not possible to obtain ACS 5-year averages for the *types* of group quarters populations which would correspond to 5-year average enrollment figures.⁹ Because dormitory figures are from 2010 while enrollments are averaged from 2006-2010, the proxy for off-campus populations is very likely a conservative estimate, as in most cases the growth in enrollment likely exceeds the growth in dorm beds.

The measure of rent is also changed from a raw value to a proportion of the median value of the larger related geographic unit—i.e. by calculating the ratio of the median gross rent in a census tract within the municipality/CCD to the median gross rent of the municipality/CCD as a whole. This contextualizes the gross rent figures and standardizes the values across the geographies, which have substantial variation in housing costs. Thus the measure goes beyond raw changes in gross rent and becomes a broader metric of affordability in specific geographic contexts.¹⁰ Because students often live in unconventional (i.e. multiple unrelated persons) living

⁹ Custom tabulations are available from the census, but are cost prohibitive for this project. The ability for the census to develop these custom tabulations, however, indicates that it is possible to include more precise figures for off-campus populations in further research or administering public policy. Public Use Microdata samples would also include custom tabulations of this sort (5-year averages of the college dormitory populations), but the geographic units are too large to be meaningful for this analysis.

¹⁰ Consider an example: Median gross rents go up in census tracts X and Y 10 and 25%, respectively. Yet the median gross rent of the cities that census tracts X and Y are contained in—A and B—go down 20% and up 35%, respectively. Thus even though census tract Y has a higher increase, it is becoming more affordable in its specific geographic context compared to census tract X.

arrangements, there are concerns as to how census survey instrumentation portrays this statistically. Census materials state that any persons living in the surveyed domicile for more than two months must be counted, and ask for the total monthly rent for the entire housing unit (i.e. not individualized prices). Presumably students living in off-campus accommodations would report their full monthly rent regardless of if they sublet or do not intend to stay during summers (census materials do *not* ask what the average rent is for the past twelve months, for example). On-campus students are not included in calculations of poverty or rental cost. Utilities and other costs associated with rental properties are separately included in the survey instrumentation and the derivation of total gross costs.¹¹

Change scores were calculated consistent with a first-difference model, such that the changes in the rent ratio, the percentage of income spent on rent, and poverty rate were regressed on the changes in the proportion of off-campus residents and demographic controls. In the interest of a comprehensive approach to socio-demographic context and addressing confounding factors, all (or all realistically available) covariates were included—household income, educational attainment, ethnicity, foreign-born populations, and for the housing affordability outcomes, the general poverty rate. First-difference models based on two-wave panel data are preferable to cross-sectional analyses in illustrating dynamic associative relationships and attenuating omitted variable bias (Liker et al, 1985). Robust standard errors and robust regressions were used where appropriate. Variance Inflation Factor scores revealed no issues with multicollinearity. Missing data was modest in scope, and comprised no more than 3% of all cases for every model.

¹¹ New build accommodations would have to be counted the same way, according to the census survey documentation. For example, a six-person suite (with each person having a separate room and pooling costs such that they share a \$3,000 total cost including utilities—often bundled in developments like this) would be a six-person household with a \$3,000 gross rent.

TABLE 2 ABOUT HERE

Even though undergraduate students are likely to have low incomes because of their lifestyle circumstances, the association between their numbers and poverty rates are an empirical question because not all of them are measured as such. On a national level, the proportion of college enrollees at the undergraduate level counted under the poverty line is only about 22.3% (only off-campus populations are included in this statistic; neither poor nor non-poor students in dormitories are counted by the census). This is likely because for the off-campus population universe, more than half of students are commuters living at home and are counted under their parents' household income (Sallie Mae 2012), while many others attend part-time while fully employed or are adults continuing their undergraduate education and presumably run their own households which are above the poverty threshold. Second, there are scenarios in which an increase of even poor off-campus college students would not lead to an appreciable increase in the poverty rate. If, for instance, undergraduates were moving into poorer neighborhoods and displacing long-term residents there, the number of off-campus students would increase while the poverty rate would remain largely static, and, depending on the size of the families displaced, may even decrease. Thus measuring how poverty rates are associated with changes in off-campus populations is still a worthwhile exercise even if the results are seemingly intuitively predictable. To examine possible threshold effects—i.e. restricted to cases where a sizeable portion of the census tract is composed of the proxy measure of off-campus residents—a sensitivity analysis was undertaken whereby additional models were run containing observations

where the 2008 off-campus population was 10, 15, 20, and 25% of the total census tract population.

5 Results The change in poverty rate was significantly and positively associated with the change the off-campus proxy measure in both the full ($B=.186$; $p<.001$) and threshold-restricted model ($B=.219$; $p<.01$) (See Table 3). Regressions using 10%, 20%, and 25% thresholds revealed no substantive differences. Both models performed substantively similarly when using robust standard errors and robust regression techniques.

TABLE 3 ABOUT HERE

The change in rent ratio had insignificant associations with the change in the off-campus proxy measure in the full model. The association was positive and significant in the threshold-restricted model, however ($B=.212$; $p<.05$), net of relevant demographic controls (See Table 4).

Regressions using 10%, 20%, and 25% thresholds revealed no substantive differences. Robust regressions were performed due to the presence of a small number of severe outliers. The change in rent as a percentage of income had insignificant associations with the off-campus proxy measure in the full model. As with the rent ratio, however, positive, significant associations were present in the threshold-restricted model ($B=17.88$; $p<.01$) (See Table 5). Regressions using the 10%, 20%, and 25% thresholds revealed no substantive differences. Both models are reported with robust standard errors. While the threshold models were all significant and showed significantly positive associations between the growth in off-campus populations and poverty rates, rent ratios, and rent as a percentage of income, R^2 statistics show that the predictors only explain a modest amount of the variance. This can be interpreted as the dependent measures having variability and a substantial degree of random fluctuation which goes well outside the

bounds of whatever influence the predictors (including off-campus population measures) have. Nevertheless, the goal of the analysis is certainly not to define the causes of either poverty or housing affordability, but examine their associations with a specific factor.

TABLE 4 ABOUT HERE

TABLE 5 ABOUT HERE

6 Discussion

With the changes in the proxy measurement of off-campus populations strongly and significantly associated with the changes in poverty rates net of demographic controls, and the likelihood of increasing numbers of students relegated to market rate housing because of the inability for colleges to build new accommodations at a pace that keeps up with enrollment, several implications logically follow. One is that the federal provisioning of funding based on poverty rates is often misdirected away from populations it was meant to help, and that these trends will likely only continue, as illustrated by the strong associations between the growth in poverty and the growth in off-campus populations. While HUD has recommended using family and elderly populations under the poverty level as a substitute (Richardson, 2005), I suggest that college enrollees more specifically be at least partly subtracted from the total persons in poverty as to not unduly disadvantage areas that have large numbers of poor singles and childless couples, nor to ignore economic pressures both students and schools face. While housing more students on-campus is a worthwhile goal to attenuate the effects on poverty rates and the housing market,

changing the HUD formula is a relatively simple solution to the specific problem of possible grant misallocation.

The effects of college students on poverty rates are not only concerns of policy and service provisioning, but are also issues of how we view and measure the conditions of urban areas in the U.S. When the poverty rate of College Station, Texas, approaches that of Camden, New Jersey, special attention needs to be paid to geographic context and what kinds of poverty are being measured, especially in large-scale quantitative analyses. Even in more focused work on urban ‘regeneration’ and gentrification, care should be taken to isolate the effects of large numbers of undergraduates at fine-grained geographic levels, as these areas frequently appear as ‘blighted’ with poverty and lack of education by virtue of the characteristics of the students which inhabit them.¹² Fortunately, it is relatively easy to rectify the confounding influence of undergraduates on demography in both academic work and public policy, and care should be taken to do so. Nevertheless, care must also be taken to adjust figures in such a manner as to not unduly deprive either students or their host communities, which face real challenges even if the circumstances are often not what we would understand as conventional poverty.

Though the associations between market rent and the off-campus proxy measure are less robust, the restricted models do result in significant findings, and a number of caveats must be reiterated. First, the proxy measure of off-campus populations is arguably a conservative one, as discussed previously. In addition, the second wave of data using the 2006-2010 ACS includes—partially, at least, since these are five year averages—the effects of the recent recession. While

¹² Though researchers and policymakers undoubtedly realize how the demographics of municipalities with large institutions (or large numbers of institutions) of higher education differ from others, these effects are less obvious at smaller units of measurement like census tracts or block groups. Though this work does not extend to large central cities, it is also important in these contexts, where pockets of poverty in large population centers could in some cases be the result of large student populations.

rents are less elastic than overall housing values (and indeed may rise in selected cases as more families downsize to rental units), these findings nevertheless illustrate some positive associations between increases in off-campus populations and the changes in the ratio of rents to that of the larger housing market in a context of declining purchasing power and property values. If these associations are present, albeit muted, during busts, further research may do well to examine their relationships during booms. Finally, while this affects only a relatively small number of cases, figures for median gross rents are top-coded by the census at \$2,000. This could present subtle but still meaningful differences in select contexts, though it is unlikely to substantively change the results here.

The stronger relationships found among cases where off-campus residents made up a sizeable portion of the overall population in the second wave suggests that certain thresholds may result in stronger associations and more probable effects. That is, understandably, associations between the rise in off-campus populations and market rents relative to the greater housing market are more pronounced in areas with relatively high concentrations of undergraduates. While this association cannot be taken as a tacit assumption that market rate housing is generally unaffordable in geographies with large numbers of undergraduates, it does suggest that off-campus populations likely have some discernible effects on housing outcomes in these contexts. Moreover, the results that suggest associations between the changes in rent as a percentage of income and off-campus populations in a context of high numbers of undergraduates, net the poverty rate and other controls, lend some credence to this possibility.

While this has obvious implications for the provisioning of housing to low and middle-income residents of these municipalities, who may not be able to match students' combined spending power (largely either from personal savings, family resources, or federally guaranteed

student loans, both public and private), it also has potentially important implications for the students themselves. For instance, one would expect the positive association between the number of off-campus students and rent as percentage of income, because students' incomes are so small. Still, these are not cross-sectional relationships, but changes over time. Thus with greater numbers of off-campus students associated with higher percentages of income being spent for housing accommodations, both students and other residents may find themselves spending more of their resources on housing. While hypothetical scenarios where students bid up rents because they cannot obtain university housing may hurt local residents, this may also be a negative outcome for the students who are also forced to pay more for shelter. Municipalities have often responded to housing conversions and large numbers of off-campus students by passing bylaws limiting the number of non-related residents in rental units. Aside from being notoriously difficult to enforce as a means of ensuring families access to housing in areas of student saturation, it is decidedly unfair to undergraduates who may have nowhere else to turn for reasonably affordable accommodations.

Of course, private enterprise has recognized the need for housing provision in college towns and responded. Much of the time this takes the form of condo-style apartment complexes constructed in close proximity to campus with minimal or zero university affiliation or input and geared exclusively toward undergraduate tenants. Circle West, a complex built near UT Austin by Crescent Resources, a southeastern U.S. real estate developer, is among a litany of such projects. Wedding luxury with eco-chic principles, it appeals to students with what seems like a laundry list of culturally desirable symbols and amenities, subtly distinct from other urban condo conversions and new-build construction only in the target audience—students as opposed to

young professionals (Mearns, 2012).¹³ For all the minor differences in clientele, the market rents are commensurate with the accommodations and customarily exceed university-built, owned, and managed housing.

These private interests also often enter into public-private partnerships with universities to build new on-campus housing. Under these agreements, private interests will pay the upfront capital costs of the construction and agree to manage housing and set fees while receiving long-term leases for university land, in some cases for nearly a century. While this is often sold as a cost-cutting exercise for the universities, at least initially, there are some obvious potential vagaries. First, even for non-profit organizations, revenues must be set to match or exceed operating costs. In the case of profit-seeking private development, this could open the door for increases in the cost to students that outpace that of the universities' accommodations, and which already customarily exceed standard on-campus housing in price. Second, because of the long-term nature of the leases and the inflexibility to modify contracts save for specific opt-out provisions, universities have a set of unknowns related to the provisioning of housing for students well into the future, including the quality, management cost, and upkeep of the facilities themselves.

Faced with offering an 85-year lease to private developers for such a project, the University of Idaho Boise recently canceled a private development over concerns about the timeframe of the proposed relationship; the University of Kentucky took the opposite tack, and is currently in negotiations to privatize their entire housing stock after agreeing to an initial project with a Tennessee-based real estate developer (Kaysen, 2012; Blackford, 2012). A crucial unknown is whether these private interests will then seek and obtain tax abatements based on the

¹³ <<http://www.circlewestcampus.com/>>

university's exemption status. Even though the development and management of the edifice is undertaken by a private concern, the land is still owned by the public university, a tax-exempt institution. At present, officials in Lexington, Kentucky are maintaining their intention to tax the property, while the private concern is signaling its desire for abatement, arguing that these savings will then be passed on to either the students in the form of lower costs, or to the university in the form of higher ground rent.

Though these arrangements generally free up capital and lessen debt loads for universities in the short-term, common sense and recent history suggest the chances of the savings being passed on to students (who already must endure rising costs that routinely outstrip inflation and a bloated, overextended morass of debt) is nil. Public university systems would do well to adopt a unified strategy for housing and urban planning alongside the municipalities they reside in, and scrutinize both public-private partnerships and what private interests are doing to meet demand when schools cannot. Within the context of the specific universities themselves, the cost differential of the accommodations may also create a tiered student housing structure (separate from more conventional differences in cohort-specific units), which threatens a bifurcation based on social class in an environment where community cohesion and social 'leveling' is arguably crucially important (Curran & Hague, 2008). Indeed, the issues of college housing privatization and the creation of "silk stocking districts" and classes of accommodations is a historically well-established concern (Shay, 1968). State governments and public universities must ultimately ask themselves if students should be the rock private real estate interests rest on in tempestuous economic circumstances, and who ultimately benefits when these once-powerful engines of social mobility are left to compete in what increasingly resembles a commodity market (Smith, 2000).

7 Conclusion

This article examined the relationship between off-campus student populations and poverty rates and housing affordability metrics in twenty large college towns in the U.S. With the strong associations between poverty and off-campus populations, care must be taken to account for college enrollees when analyzing the demographic composition of urban areas; policy-wise, revisions of CDBG funding formulas consistent with HUD's earlier recommendations are wholly justified. With schools increasingly left on their own to operate as de facto businesses as funding disappears, institutional competition intensifies, and enrollments and housing needs steadily increase, not only are poverty rates likely to increase and affect the provisioning of ever-shrinking funding, but housing strategy remains an open question.

Here, it may be instructive to note parallels with social trends revolving around college towns and student housing in the U.K. While this paper is more concerned with specific factors that relate to the growth in off-campus student populations and the privatized modes of housing provision which are increasingly brought to bear on housing them, care must be taken to scrutinize the larger processes which may be at work. In particular, the social and economic pressures often accompanying either in-migration to existing housing or new-build developments should be investigated in promoting the sustainability of college communities here in the U.S., and situated in larger debates over housing. As the role of creating affordable housing has largely shifted to private interests through tax inducements and voucher systems, so are traditional modes of supplying undergraduates with living accommodations going along with them.

Private development is responding with off-campus accommodations, and more and more universities are entering into private agreements with these same developers to administer on-

campus facilities.¹⁴ In the former case, this may threaten housing affordability in college towns and constrain the ability of established residents to compete on the market as rents rise and space is locked up for the use of undergraduates. In both cases, students are likely to pay more for housing in a context of already ever-increasing college costs. These issues need to be articulated in a greater economic context rather than viewed as the quotidian minutia of institutional planning, with a critical examination of the implications of turning what were once public goods into increasingly privatized commodities. The inequalities of higher education in the U.S.—characterized more and more by a troubling lack of social mobility and opportunity (Roksa et al, 2007, page 169), of which cost is but one important facet—should also be on the agenda as we examine how public universities are changing in the U.S., and how that is affecting the places they inhabit and the students they enroll.

¹⁴ These same private interests often argue (along with some schools themselves) that housing is not a ‘core competency’ or concern of universities, which is a curious contention seeing that four year institutions by definition stress the importance of creating unified and geographically proximate residential learning communities.

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TABLE 1. Colleges, Geography, Enrollment, Off-Campus Population

University	Geography/unit	Total enrollment	Est. Percent Off-Campus
Arizona State	Tempe, AZ	68,064	80%
University of Central Florida	Union Park CCD, FL	53,401	87%
University of Florida	Gainesville CCD, FL	50,691	77%
Texas A&M	Bryan-College Station CCD, TX	48,702	76%
Michigan State	East Lansing, MI	47,071	60%
Penn State	University Park & College, PA	45,185	63%
U. Illinois Urbana-Champaign	Urbana & Champaign, IL	43,881	50%
Indiana U., Bloomington	Monroe County, IN	42,347	67%
University of Michigan	Ann Arbor, MI	41,674	63%
U. of Wisconsin, Madison	Madison, WI	41,654	75%
Purdue University	Tippacanoe County, IN	41,052	62%
Florida State	Tallahassee, FL	39,785	80%
Florida International U.	University Park, FL	39,610	92%
Rutgers University	New Brunswick, NJ	37,366	55%
University of Maryland	College Park, MD	37,195	58%
Cal State Fullerton	Fullerton, CA	36,262	90%
UC Berkeley	Berkeley, CA	35,830	65%
U. North Texas	Denton, TX	35,003	80%
University of Georgia	Athens, GA	34,885	72%
U. Colorado Boulder	Boulder, CO	33,010	76%

NOTE: Enrollment signifies undergraduate population only. These are based on Fall 2009 figures sourced from the National Center for Education Statistics (NCES, 2012). Emboldened values in the estimations of off-campus populations are sourced directly by resident life departments at the universities; others are supplied by U.S. News and World Report profiles (U.S. News, 2012).

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TABLE 2. Variables Used in Analysis

Variable	Explanation	Source
<i>Dependent Variables</i>		
Poverty rate	The change in the proportion of the total population of the census tract under the poverty line, 2000-2008	2000 Census SF1; ACS 5-year averages
Rent Ratio	The change in the ratio of median gross rent in the census tract to the median rent of the larger geographic area, 2000-2008	2000 Census SF3; ACS 5-year averages
Rent as Percentage of Income	The change in rent as a percentage of income, 2000-2008	2000 Census SF3; ACS 5-year averages
<i>Independent Variables</i>		
Off-campus undergraduates	The change in undergraduate populations as a proportion of the total census tract population, 2000-2008; off-campus students are calculated by subtracting college dormitory populations from those enrolled in college within census tracts.	2000 Census SF1; 2010 SF1 and ACS 5-year averages
Income	Change in median household income, 2000-2008	2000 Census SF3; 2010 ACS 5-year averages
B.A. Degrees	Change in the proportion of population in the census tract with a Bachelor's degree or higher, 2000-2008	2000 Census SF3; 2010 ACS 5-year averages
Ethnic Composition	Change in proportion of white-only population, 2000-2008	2000 Census SF3; 2010 ACS 5-year averages
Foreign Born	Change in proportion of foreign-born population, 2000-2008	2000 Census SF3; 2010 ACS 5-year averages

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TABLE 3. Change in Poverty Rate

Δ Proportion of Population	Full Model	$p < t $	15% Threshold	$p < t $
Off-campus population	0.19 [0.03]	<.001	0.22 [0.06]	0.001
B.A. Attainment	-0.07 [0.04]	0.052	—	—
Foreign-born	0.05 [0.01]	<.001	0.07 [0.02]	<.001
White Only	—	—	0.14 [0.08]	0.093
Median Household Income	-0.06 [0.01]	<.001	-0.11 [0.03]	0.001
<i>F</i> Statistics	24.35	<.001	11.65	<.001
R^2	0.17	—	0.26	—
Adjusted R^2	0.17	—	0.24	—
<i>N</i>	466	—	138	—

NOTE: Models using robust standard errors and robust regression were substantively similar. Insignificant variables were dropped from models for parsimony.

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TABLE 4. Change in Ratio of Rent to City/CCD-Wide Rent

Δ Proportion of Population	Full Model	$p < t $	15% Threshold	$p < t $
Off-campus population	0.06 [0.05]	0.179	0.21 [0.09]	0.020
B.A. Attainment	0.13 [0.06]	0.034	0.19 [0.09]	0.039
Foreign-born	—	—	-0.05 [0.03]	0.085
White Only	—	—	0.20 [0.12]	0.100
Median Household Income	—	—	—	—
Under Poverty Level	—	—	—	—
<i>F</i> Statistics	3.00	0.089	4.00	0.004
R^2	0.01	—	0.07	—
Adjusted R^2	—	—	—	—
<i>N</i>	465	—	138	—

NOTE: Robust regression was used to mitigate violations of normality. Multilevel median, quintile, and bootstrapped quintile regression results were all substantively similar. Insignificant variables were dropped from models for parsimony. R-squared values for robust regressions were obtained with 'regfit' command, which delivers goodness-of-fit values for robust regressions (Ender & Chen, 2008).

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TABLE 5. Change in Rent as Percentage of Income

Δ Proportion of Population	Full Model	$p < t $	15% Threshold	$p < t $
Off-campus population	5.20 [3.17]	0.128	17.88 [5.23]	0.001
B.A. Attainment	—	—	—	—
Foreign-born	—	—	—	—
White Only	7.67 [3.23]	0.061	—	—
Median Household Income	—	—	-5.48 [3.18]	0.087
Under Poverty Level	24.60 [5.09]	<.001	18.50 [7.58]	0.016
<i>F</i> Statistics	16.51	<.001	9.96	<.001
R^2	0.08	—	0.19	—
Adjusted R^2	—	—	—	—
<i>N</i>	467	—	138	—

NOTE: Both models reported with robust standard errors. Insignificant variables were dropped from models for parsimony.