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# Market Effect:
# The Impact of For-Profit Charter Schools on Racial and Socioeconomic Segregation

by

William Brett Robertson

A dissertation presented to the
Graduate School of Arts & Sciences
of Washington University in
partial fulfillment of the
requirements for the degree
of Doctor of Philosophy

May 2016
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W. Brett Robertson

*Washington University in St. Louis*

*May 2016*

Dedicated to Nicole, James, Luke & Baby Boy #3

ABSTRACT OF THE DISSERTATION

Market Effect:
The Impact of For-Profit Charter Schools on Racial and Socioeconomic Segregation

by

William Brett Robertson

Doctor of Philosophy in Education

Washington University in St. Louis, 2016

Professor Odis Johnson Jr., Chair

For-profit charter schools are a controversial new development in public education. They combine a structural imperative to maximize profit for private shareholders with the social good of providing public education. This dissertation describes two analyses of for-profit charter schools designed to explore their impact on racial and socioeconomic segregation. The analyses utilize geographic information systems, multilevel modeling, and logistic regression to determine whether and how for-profit charter schools are likely to locate in demographically different neighborhoods, and/or educate demographically different student populations from other types of public schools. The results indicate that for-profit charter schools are less likely than other types of schools to locate in low-income neighborhoods and educate low-income students. Further, in districts where there are significant numbers of for-profit charter schools, there may be a *market-effect* whereby other types of charter schools in those districts are more likely to behave in profit-maximizing ways akin to for-profit charter schools.

# Chapter 1: Introduction

*"Economic models conventionally emphasize efficiency in pursuing privately held interests; they focus attention on the choice of means and regard the determination of ultimate ends to be unproblematic or externally derived. The story of [school] choice-in-practice, however, reminds us that the conflicts that are most compelling and difficult to resolve revolve around questions about the kind of society we wish to become."* (Henig, 1994, p. 116)

This dissertation explores the impact of for-profit charter schools on racial and socioeconomic segregation. This chapter lays the foundation for that analysis by providing background on the topics of segregation and charter schools, and suggesting how the two may be linked. The racial and socioeconomic segregation of schools leads to educational inequity and the reproduction of social inequality. This educational inequity leads to demands for school reform. The current phase of school reform centers on "school-choice" which encompasses many innovations, most notably charter schools. The rise of charter schools is occurring concurrently with the re-segregation of public education, with school choice replacing explicitly equity-focused initiatives (Orfield & Frankenberg, 2013). Both charter schools and the processes that lead to the increased racial and socioeconomic segregation of schools are rooted in conceptions of education as a zero-sum struggle for competitive advantage.

A contemporary increase in racialized socioeconomic inequality has corresponded with an increase in educational inequity along racial and socioeconomic lines. Schools are the primary public institution designed to provide opportunities for individuals to subvert the inter-generational reproduction of socioeconomic inequality via the social mobility accorded through educational achievement and attainment. (Hochschild & Scorovnick,

2003). Meanwhile public education, particularly for many low-income city students, is changing from a homogenously public system to a deregulated landscape of school choice. Prominent in this are charter schools, which are publicly funded, but privately operated. The centrality of charters in contemporary education reform means that the emergence of these quasi-public schools necessarily impacts the reproduction of inequality. This dissertation explores for-profit charter schools because they represent a fuller realization of a competitive, "neoliberal" ideology in comparison to other types of charters. By exploring this subset of schools, it may facilitate a clearer understanding of how neoliberal ideology translates to the real world, its impacts on racial and socioeconomic student sorting patterns, and by extension on segregation and educational equity. There are three key recurring themes to this dissertation: 1) educational inequity, and the reproduction of social inequality, occur largely due to spatially segregated opportunity structures, 2) for-profit charter schools are attuned to norms of market-style competition that necessarily obstruct equity, and 3) for-profit charter schools utilize distinct marketing and locational strategies that lead to the market-ization of school districts, which in turn creates a *market-effect* that pressures other schools to behave in similarly profit-maximizing ways.

This chapter begins with a broad overview of social and economic inequality. Inequalities will be framed spatially, in order to highlight the geographic clustering of poverty and privilege and the inter-dependent nature of racial and socioeconomic inequalities. The resulting residential segregation leads to segregated schools that institutionalize social inequality via educational inequity. Thus the connection between the intergenerational reproduction of inequality and inequitable access to social institutions is spatial and largely perpetuated through racial and socioeconomic school segregation. The

development and current landscape of charter schools will be briefly discussed. The rationale for considering questions of equity in relation to charter schools will follow. This will set the groundwork for the theoretical framework in Chapter 2, which will describe how the operation of schools by profit-seeking corporations is likely to have adverse impacts on educational equity.

## Geographies of Inequality and Inequity

"[W]e are witnessing a nationwide return of concentrated poverty that is racial in nature, and … this expansion and continued existence of high-poverty ghettos and barrios is no accident. These neighborhoods are not the value-free outcome of the impartial workings of the housing market. Rather, in large measure, they are the inevitable and predictable consequences of deliberate policy choices." (Jargowski, 2015, p.1)

The United States has a long history of racial segregation, with accelerating trends of spatial isolation of wealthy from poor and people of different races from each other (Massey & Denton, 1993; Massey, 2007). Inequality is reproduced by the separation of people in space, by race and socioeconomic status, simultaneously denying those who are not wealthy and white access to the best opportunity structures, of which schools are a large part (Briggs, 2005). This highlights the importance of conceptualizing inequality and inequity spatially (Hogrebe & Tate, 2012). Racial and socioeconomic inequality is largely maintained by the production of spaces by privileged individuals and groups in which poverty and privilege are alternatively concentrated (LeFebvre, 1991, Harvey, 2009:1973, Soja, 1989, 2010).

*Income and Wealth Inequality*

By a number of measures of income and wealth, the US is becoming an increasingly unequal society. Between 1979 and 2012, the lowest two quintiles of wage earners saw decreases in real family income (Institute for Policy Studies webpage "Income Inequality"). Meanwhile, the third, fourth and fifth quintiles saw respective increases of 8.4%, 20.3%, and 48.8% in real family income. The highest 1% of wage earners accounted for 21.2% of all income in 2013. Wealth inequality is even starker. In 2013, the least-wealthy 90% of the population of the United States held 25% of the total wealth in the US, while the wealthiest 10% of the population controlled 75% (Institute for Policy Studies webpage "Wealth Inequality"). The top 10% also control 85% of financial assets. Saez and Zucman (2014) have calculated that the top 0.1% of wealthiest individuals has a nearly equal share of household wealth to the bottom 90% (22.0% to 22.8%). Significant racial wealth gaps also exist. In 2013, the median net worth of white households was 13 times higher than that for Black households, up from 6 times higher in 2001 (Institute for Policy Studies webpage "Wealth Inequality"). All of these measures point to a large and growing divide between wealthy and poor individuals and families. Moreover, the problem is worse than commonly perceived, as Americans consistently and dramatically underestimate the degree of socioeconomic inequality in the United States (Norton & Ariely, 2011). The increase in absolute socioeconomic inequality has coincided with the increasing spatial concentration of wealth and poverty (Reardon, 2013, Massey, 2007).

*Racial and Socioeconomic Segregation*

Segregation is the process by which inequality is rendered and reified in space. The long history of residential segregation by race in the United States has effectively constructed a system of "American apartheid" (Massey & Denton, 1993). Richard Rothstein's (2014) case study of policy factors facilitating and maintaining current-day Black-white segregation in the St. Louis region could be applied with little change to virtually any other large metropolitan area in the nation. The many policy factors he cites in the creation and maintenance of segregation, quoted at length here are:

> "Racially explicit zoning decisions that designated specific ghetto boundaries within the city of St. Louis, turning black neighborhoods into slums; Segregated public housing projects that separated blacks and whites who had previously lived in more integrated urban areas; Restrictive covenants, excluding African Americans from white areas, that began as private agreements but then were adopted as explicit public policy; Government subsidies for white suburban developments that excluded blacks, depriving African Americans of the 20th century home-equity driven wealth gains reaped by whites; Denial of adequate municipal services in ghettos, leading to slum conditions in black neighborhoods that reinforced whites' conviction that "blacks" and "slums" were synonymous; Boundary, annexation, spot zoning, and municipal incorporation policies designed to remove African Americans from residence near white neighborhoods, or to prevent them from establishing residence near white neighborhoods; Urban renewal and redevelopment programs to shift ghetto locations, in the guise of cleaning up those slums; Government regulators' tacit (and sometimes open) support for real estate and financial sector policies and practices that explicitly promoted residential segregation; A government-sponsored dual labor market that made suburban housing less affordable for African Americans by preventing them from accumulating wealth needed to participate in homeownership." (p. 6)

These factors demonstrate some of the many ways that racial inequality is created and reproduced. Due to the exceptional measures taken to maintain racially segregated housing, a durable pattern of inter-generational reproduction of racial segregation has been perpetuated. Black children are more than ten times as likely as white children to reside in high poverty neighborhoods (66% to 6%), and are much less likely to experience

inter-generational mobility out of poor neighborhoods (33% to 60%), reflecting the social reproduction of racialized poverty (Sharkey, 2013).

Socioeconomic segregation is increasing as well. Both poverty and affluence are increasingly concentrating, as "middle-class" neighborhoods decline. Bischoff and Reardon's (2013) analysis of neighborhoods by income found that "In 1970, 65 percent of families lived in middle-income neighborhoods… by 2009, only 42 percent of families lived in such neighborhoods." (p. 11). During this time the proportion of families living in both "affluent" (those with the highest concentration of income) and "poor" (concentrated low- to no-income) neighborhoods more than doubled. Increasingly, the rich are spatially segregating themselves from the rest of society. Meanwhile, a range of local, state and federal policies serve to continue to concentrate low-income individuals and families, often along racial lines (Rothstein, 2014; Jargowski, 2015).

**The Interdependence of Residential and School Segregation**

Traditionally in the United States, public schools have been idealized as a mechanism for inter-generational socioeconomic mobility (Coleman, 1968). One of the key justifications for the public funding of education is that it is supposed to ensure that the most intelligent, hardest working students are able to access the most economically rewarding jobs (Parsons, 1959). Public education has thus served as a powerful rhetorical tool for furthering the ideology of meritocracy, the idea that any individual is capable of succeeding to the extent to which they demonstrate natural ability and hard work (McNamee & Miller, 2009; Bowles & Gintis, 2011:1976). There has always been a gap between the ideology and the reality, and a child's family socioeconomic status remains

one of the strongest predictors of their educational achievement and attainment (Reardon, 2011, Bowles & Gintis, 2002).

Schools in racially and socioeconomically segregated metropolitan areas tend to be similarly segregated. Residential choices are highly influenced by perceived school quality, and perceived school quality influences real estate prices (Lareau & Goyette, 2014). Along with racially restrictive laws and regulations, real estate values and racial steering strategies operate to prevent non-white and low-income families from residing in predominantly white and wealthy school districts and catchment zones. Population shifts lead to the realignment of school catchment zones or exit of white and/or wealthier families from school districts. The funding of schools is largely tied to local property taxes, meaning that wealthy neighborhoods also tend to be able to provide higher levels of financial support to their schools. The result is broad gaps in school quality according to the racial and socioeconomic composition of neighborhoods, and lack of access to quality education for low-income and non-white populations (Rothwell, 2012). Because charter schools can in theory draw students from a broader geographic range than traditional public schools, some charter advocates have suggested that they may allow families to overcome these linkages between racial and socioeconomic segregation (A. Thernstrom & S. Thernstrom, 2004). However charter schools have not been found in practice to provide this theorized de-segregating effect, instead they have tended to have the opposite effect (Mickelson, Bottia & Southworth, 2008; Zimmer et al, 2009).

*Individual, Family, Neighborhood, and Peer Effects*

School segregation matters both because of the unequal resources available to different schools and because the composition of families, schools and neighborhoods profoundly influence student achievement. Due to the long history of racial discrimination and subsequent unequal access to quality education in the United States, there are persistent achievement gaps evident between racial groups, with Asian and white students consistently achieving at a higher level than Black and Hispanic/Latino students. Some of these achievement gaps, such as the Black-white achievement gap have decreased somewhat in the past 50 years, but are still substantial (Duncan & Murnane, 2011). Increasingly, socioeconomic status is predictive of educational outcomes. Reardon (2011) found that "the income achievement gap is now considerably larger than the black-white gap, a reversal of the pattern fifty years ago." (p. 110). Farkas (2011) notes "social-class differences in test score measures of cognitive performance are the largest sources of inequality in schooling and earnings achievement" (p. 86).

In addition to the impacts of family socioeconomic status on student outcomes, neighborhood socioeconomic status, and school mean socioeconomic status also impact student achievement (Borman & Dowling, 2010; Rumberger & Palardy, 2005). The level of academic achievement for a student of any given socioeconomic background would be expected to be higher if that student attended a school, and/or lived in a neighborhood with primarily high socioeconomic status families than if they attended a school and/or lived in a neighborhood with primarily low socioeconomic status families. Thus segregation impacts a student's likely academic performance in at least three ways. It isolates their family from socioeconomic opportunity, it locates them in neighborhoods

where they are further disadvantaged by concentrated poverty, and it compels them to attend schools where they are likewise disadvantaged by concentrated poverty and lower per-pupil expenditures.

*Educational Equity and Social Reproduction*

Schools are expected to provide individuals an opportunity for economic mobility. However, the degree to which socioeconomic inequality is reproduced inter-generationally raises questions about the extent to which they actually provide these opportunities for economic mobility (Bowles & Gintis, 2002). Academic achievement and attainment are a primary, though not sole, determinant of an individual's future life prospects. Where there is systemic educational inequity, it serves to bolster the reproduction of socioeconomic inequality in the projected life courses of students from different racial and socioeconomic backgrounds (Willis, 1981, 1981:1977; Giroux, 1983). This violates our common notions of fairness. This failure in turn leads to successive waves of school reform directed at "failing" urban schools and districts (Tyack & Cuban, 1995; Anyon, 2014). The current wave of education reform promotes a market-based model of school choice. At the forefront of the school choice movement is charter schools.

## The Growth of Charter Schools & Education Management Organizations

The first charter schools opened in Minnesota in 1992. From that time, charters have expanded rapidly. Since 1999-2000, the increase of charter schools has been roughly linear, with the total number of charter schools increasing by 300-400 each year. From 1999-2000 to 2013-14, the number of charters grew from approximately 1,542 to 6,440

(National Alliance for Public Charter Schools Dashboard, 2015). In the 2012-2013 school year, charter schools educated over 2.3 million students, representing 4.6% of all public school students in the United States (National Center for Education Statistics, Charter School Enrollment). Approximately 5.8% (5,619 out of 96,372) of all public schools were charters in 2011-2012. Charters are concentrated in urban areas, with 10.9% (2,921 out of 26,693) of all city schools being charters in 2011-12 (National Alliance for Public Charter Schools, 2015). They are proportionally under-represented in suburbs (4.2%, 1,150 out of 26,324), towns (2.9%, 398 out of 13,880) and rural areas (2.6%, 974 out of 33,358) compared to their proportion of all public schools.

Across cities, the distribution of charters is uneven, with certain large urban districts having increasingly sizable proportions of charter schools. The National Alliance for Public Charter School's annual report series, *A Growing Movement: America's Largest Charter Communities* (2014), describes in detail how charter schools are highly concentrated in certain urban school districts. One district (New Orleans) has over 90% of its public school students enrolled in charters, two have over 50% charter enrollment, four are above 40%, 12 above 30%, 43 above 20%, and 148 districts have at least 10% of all students enrolled in charters. In terms of the number of students enrolled in charters, there is one district (Los Angeles) with over 100,000 charter school students, six with more than 50,000 students, eleven with over 25,000, and thirty with over 10,000 students in charters. The top five districts in total charter enrollment enroll 14% of the total number of US charter school students, the top 10 enroll 22% of the total, the top 20, 29%, and the top 30, 33%. In the US, there are approximately 13,500 school districts of widely varying size, with

a third of all charter schools located in 30 of these districts (National Center for Education Statistics, 2015).

*Charter Schools By Management Type*

Charter schools are a diverse phenomenon that can be categorized and sub-divided along many different criteria. Wells et al (1999) note the importance of charter school research that recognizes the "particularistic nature of a reform that defies universal definitions" (p. 172). Charter schools can be sub-divided by curricular focus, pedagogical methodology, or cultural themes. Charter schools also have diverse geo-demographic contexts and funding levels. For the purposes of this dissertation, charter schools are primarily grouped according to their operational status. There are three different types of charter school operators: independent operators, non-profit education management organizations, and for-profit education management organizations. In 2009-10 (the year of interest for the dissertation's analyses), there were 3,502 (71.3% proportionally) independent charters, 637 (12.9%) for-profit charters, and 774 (15.8%) non-profit charters (NAPCS Dashboard, 2015). Non-profit and for-profit charters are commonly grouped together as education management organization (EMO) operated charter schools, to indicate that they operate under the umbrella of a larger organization.[1]

Early charter schools were overwhelmingly independent. The majority of charter schools are still independently operated, although their proportional share of the charter

[1] Some researchers term non-profit charter operators charter management organizations (CMO) and for-profit charter operators EMOs. Using the terminology EMO for both types and differentiating between for-profit and non-profit when appropriate provides a clearer etymology of charter school types and thus this naming convention is used in this dissertation, in line with Molnar, Miron, & Urschel (2010).

segment has been steadily decreasing, and as of 2010-11 stood at 67% (National Alliance for Public Charter Schools Dashboard, 2015). The growth of independent charter schools has slowed significantly. In the three years between 2007-08 and 2010-11, there was a 5% growth in the number of independent charter schools, while the overall charter school segment grew 22% during this time. The large-scale growth of charter schools operated by EMOs is the primary driver of the overall growth of the charter school segment. Over time, there has been an increasing proliferation and wider dispersion of EMOs, and an increase in the number of schools managed by larger EMOs. In just three years, from 2007-08 to 2010-11, the number of EMO-operated charter schools grew from 934 to 1,709, a growth of 83%, representing a proportional increase from 22% to 33% of the overall charter school segment (National Alliance for Public Charter Schools Dashboard, 2015). The largest and most well-known non-profit EMO is the Knowledge is Power is Program (KIPP), which in 2015-16 operates 183 schools and enrolls over 60,000 students (KIPP website). The largest, generally most well-known for-profit EMOs include Academica, National Heritage Academies, K12 Inc., and Edison Learning (Miron & Gulosino, 2013).

The growth of EMO-operated charters can be linked to the desire of education reformers and policymakers to rapidly expand the number of charter schools in particular states and districts (Scott and DiMartino, 2010). A key characteristic of EMOs, especially larger EMOs, is that they provide a generally replicable educational template that can be transferred across neighborhoods, districts, and states (Farrell, Wohlstetter & Smith, 2012). This provides a quicker route to expansion of charter schools in a given district or state than relying on grassroots community based groups planning new independently operated schools. In this way, EMOs provide a set of ready-made models for deployment by

a district or state seeking to rapidly add charter schools. As the popularity of charters has grown over the past twenty years, public pressure has increased in many urban districts to quickly scale up the number and variety of charter school options they offer (Scott and DiMartino, 2010). Influential charter advocating organizations assign "low grades" to states or localities that do not offer a large number and wide variety of charter schools, putting additional political pressure on politicians and policymakers to expand the number of charters (Chi & Welner, 2007). EMOs have become increasingly prevalent in the charter school segment in a relatively short amount of time, and considering their capacity for rapidly expanding the number of charter schools within a district, it is important to consider the characteristics of the students they serve. It is possible that the rapid scaling-up of these charter providers has underexplored implications for student sorting.

The primary focus of this dissertation is for-profit charter schools. For-profit charter schools exhibit a distinct range of market-oriented behaviors that warrant special attention (Brown, Henig, Lacireno-Paquet & Holyoke, 2004). For-profit charters enrolled 353,070 students in 637 schools in 2009-10. This represents slightly less than 1% of all public school students in the United States (National Center for Education Statistics, 2015). However, their influence may be greater than raw enrollment numbers would indicate. First of all, these charter schools are continuing to rapidly expand, indicating their influence is growing. Also, for-profit charters are highly concentrated in a limited number of districts, which may lead to them having an outsize influence in those districts. In addition to their ongoing growth and concentration, the existence of for-profit charter schools may precipitate fundamental changes in the nature of public education in the districts where they are located. The connection of for-profit charters to a neoliberal

ideology promoting market-style competition may substantially alter the landscape of public education in ways that impact educational equity. The hypothesis that for-profit charters may transform the public school landscape in the districts where they exist will be referred to as the for-profit *market-effect.* This concept will be developed further and discussed in detail in the theoretical framework. Beyond the impact in particular districts, the transformation of public education represented by for-profit charter schools has the potential to foster a broader re-conceptualization of public education even in those districts where they do not currently exist.

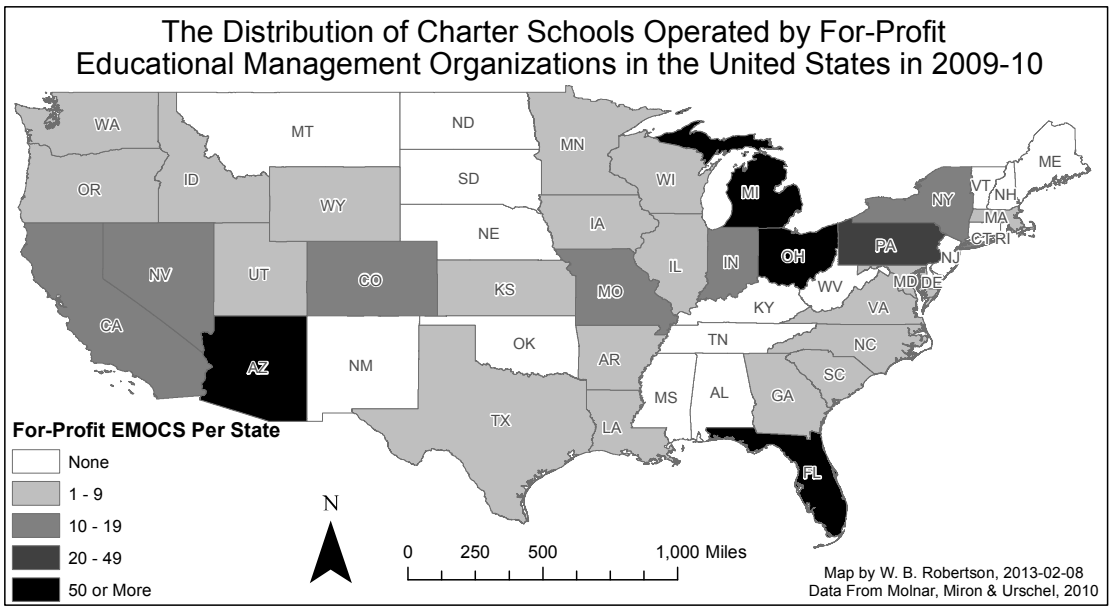
*The Geography of For-Profit Charter Schools*

Charter policy is primarily determined at the state level. State policies differ significantly, and greatly impact the extent to which charter schools can and do grow in a state. Some states do not allow charter schools at all, while other states have continually revised their charter laws to facilitate growth in the charter school segment (Holyoke, Henig, Brown & Lacireno-Paquet, 2009). This has led to a widely uneven distribution of charter schools across the United States.

For-profit charter schools are heavily concentrated in four states: Michigan, Florida, Arizona and Ohio. These states account for 509 out of 653 (78%) of all for-profit charters. Non-profit charters are also highly concentrated in four states; Texas, California, Arizona and Ohio. These four states account for 562 out of 733 (77%) of all non-profit EMO operated charters. These six states (Arizona and Ohio are listed in both groups) together account for 82% (1,131 out of 1,386) of all EMO operated charters. Of these six states, two have predominantly for-profit charter schools (Michigan and Florida), two have almost

exclusively non-profit charter schools (Texas and California), and two have large numbers of both for-profit and non-profit charters (Arizona and Ohio). These states will be of particular importance in analyzing the impact of for-profit charter schools. Figure 1.1 and Table 1.1 show the distribution of for-profit and non-profit charter schools across the United States.

**Figure 1.1: Map of For-Profit Charter School Distribution by State**




*Alaska & Hawaii (not pictured) have no for-profit charter schools.

**Table 1.1: Distribution of Non-Profit and For-Profit Charter Schools By State***

| State | # Non-Profit Charter | % Non-Profit Charter | # For-Profit Charter | % For-Profit Charter | Total # Of NP and FP | Total # Charter Schools | NP & FP as % of all Charters |
|---|---|---|---|---|---|---|---|
| KS | 0 | 0% | 1 | 100% | 1 | 36 | 2.8% |
| SC | 0 | 0% | 2 | 100% | 2 | 38 | 5.3% |
| ID | 0 | 0% | 3 | 100% | 3 | 36 | 8.3% |
| NV | 0 | 0% | 4 | 100% | 4 | 28 | 14.3% |
| WI | 0 | 0% | 5 | 100% | 5 | 206 | 2.4% |
| UT | 0 | 0% | 6 | 100% | 6 | 72 | 8.3% |
| FL | 13 | 8% | 141 | 92% | 154 | 411 | 37.5% |
| MI | 23 | 11% | 186 | 89% | 209 | 240 | 87.1% |
| MO | 2 | 13% | 13 | 87% | 15 | 33 | 45.5% |
| MN | 1 | 20% | 4 | 80% | 5 | 153 | 3.3% |
| GA | 2 | 25% | 6 | 75% | 8 | 89 | 9.0% |
| NC | 2 | 29% | 5 | 71% | 7 | 96 | 7.3% |
| MA | 1 | 33% | 2 | 67% | 3 | 62 | 4.8% |
| PA | 12 | 39% | 19 | 61% | 31 | 134 | 23.1% |
| OH | 70 | 44% | 90 | 56% | 160 | 321 | 49.8% |
| CO | 10 | 45% | 12 | 55% | 22 | 158 | 13.9% |
| LA | 4 | 50% | 4 | 50% | 8 | 77 | 10.4% |
| AZ | 102 | 53% | 92 | 47% | 194 | 509 | 38.1% |
| IN | 13 | 59% | 9 | 41% | 22 | 54 | 40.7% |
| NY | 28 | 68% | 13 | 32% | 41 | 140 | 29.3% |
| MD | 7 | 70% | 3 | 30% | 10 | 36 | 27.8% |
| AR | 6 | 75% | 2 | 25% | 8 | 29 | 27.6% |
| DC | 22 | 81% | 5 | 19% | 27 | 96 | 28.1% |
| OR | 6 | 86% | 1 | 14% | 7 | 102 | 6.9% |
| CA | 108 | 87% | 16 | 13% | 124 | 808 | 15.3% |
| IL | 10 | 91% | 1 | 9% | 11 | 101 | 10.9% |
| TX | 282 | 97% | 8 | 3% | 290 | 537 | 54.0% |
| OK | 1 | 100% | 0 | 0% | 1 | 18 | 5.6% |
| TN | 1 | 100% | 0 | 0% | 1 | 22 | 4.5% |
| NJ | 3 | 100% | 0 | 0% | 3 | 68 | 4.4% |
| CT | 4 | 100% | 0 | 0% | 4 | 18 | 22.2% |
| **TOTALS** | **733** | **53%** | **653** | **47%** | **1,386** | **4,728** | **29.3%** |

* States with no EMO-operated charter schools are omitted.

Data from: Miron & Urschel, 2010, Molnar, Miron & Urschel, 2010, National Alliance for Public Charter Schools Dashboard, 2013

## Why Study Charter Schools & Segregation?

The topic of charter school research that gets the most public attention is the question of educational effectiveness. Charter schools exemplify the latest wave of educational reform, initiated in response to persistently low achievement in high poverty urban school districts. It is understandable that the public wants to know if students in charter schools achieve better academic results than those in traditional public schools. Research in this area has been mixed, with charter school results varying significantly. Some charter schools perform better than similar traditional public schools, some much worse, many perform in statistically indistinguishable ways. The range of outcomes varies across districts, states, school types, and between different charter operators. A number of factors influence the relative educational effectiveness of particular charter schools. At this time, with regards to the question of educational effectiveness, charter schools as a segment generally perform no better, and at times much worse than comparable traditional public schools (Zimmer et al, 2009; Zimmer et al, 2012; Lopez, 2014). However, a narrow focus on the educational effectiveness of charter schools may conceal more than it reveals.

Simple side-by-side comparisons of charters and non-charter schools can lead to oversimplified notions of how charter schools influence student performance. Even those charter schools with a demonstrable record of academic success generally come with caveats (Miron, Urschel, & Saxton, 2011). Inequitable funding structures, student targeting and push-out, strategic geographic location of schools, the use of marketing or school thematic strategies likely to cultivate particular student populations, unrealistic

expectations on students, families, and teachers, are a few of the many reasons that direct comparisons between academic results at charter schools and non-charters may be misleading. Also, the focus on student performance can obscure other important questions about the impact of charter schools. One of these is the question of equity.

Fostering greater social equity has long been considered a key social function of public education (Hochschild & Scorovnick, 2004). Significant changes to the structure of public education, which charter schools certainly are, have the potential to impact the ability of public education to foster equity and ameliorate the inter-generational reproduction of advantage and disadvantage. Since 1954, the US government has recognized that segregation creates an inherently inequitable educational environment (*Brown v. Board of Education*). This dissertation represents an effort to better understand how one particular type of charter school influences broader educational equity via its impact on racial and socioeconomic segregation. If a charter schools demonstrates superior outcomes to traditional public schools, but does so with a demographically "advantageous" student population that would be more likely to demonstrate superior outcomes, it may not actually represent an improvement of public education. Understanding student sorting patterns is necessary for properly evaluating academic performance. Further, any skewed student sorting patterns can have broader negative equity impacts if they result in increased between-school racial and/or socioeconomic segregation.

## Summary and Outline of the Dissertation

This chapter began with a discussion of accelerating levels of inequality in US society. Socioeconomic and racial inequality are pervasive and on the rise. These

inequalities are increasingly place-based in an ever more racially and socioeconomically segregated society. The spatial concentration of poverty and privilege in turn results in the maintenance of school systems of widely unequal quality by geography. This has led to a profoundly inequitable system of public education where the life course chances of children are increasingly dependent upon the location of their birth (Duncan & Murnane, 2011).

At the same time that place-based inequality increases, new forms of "school choice" are emerging, largely in the lowest-performing, highest-poverty districts in the country. The rapid increase of charter schools in these areas raises questions about their impact on educational equity. The diverse nature of charter schools means that it is difficult, if not impossible, to assess their impact on equity by treating them as an undifferentiated whole. Thus, this dissertation engages a study of the subset of charter schools operated by for-profit corporations because the profit-maximizing constraints under which they operate may have a distinct impact on racial and socioeconomic segregation. The next chapter presents in detail a theoretical framework explicating more fully the reasoning behind the formulation of a research program examining the impact of for-profit charter schools on educational equity. The research methodology will be described in Chapter 3, the findings of that research presented in Chapter 4, and policy implications, discussion and directions for future research offered in Chapter 5.

# Chapter 2: Theoretical Framework

### Introduction: Public Education, Equity and Competition

At the societal and individual levels, public education serves two competing functions (Hochschild & Scorovnick, 2003). At the societal level, universal public education is supposed to function as a mechanism for ensuring each citizen can develop to their fullest potential and help to advance society. The goal is to connect a person's eventual station in life more closely to their "innate" ability and demonstrated effort instead of the conditions of their birth. Meanwhile, each individual family seeks to maximize the future life opportunities of their own child(ren). When there are pre-existing inequalities in political, economic, and social power, families may be differently able to promote their own children's interests. Because of this, there is an ongoing tension between the institutional imperative to promote equity through public education, and individual efforts to leverage schooling towards the pursuit of competitive advantage in a capitalist society (Bowles & Gintis, 2011:1976). This implies that public schools are in fact designed to optimize equity. What if some schools were fundamentally incompatible with the promotion of equity? The result would likely be an intensification of the inter-generational transmission of social, economic, and political (dis)advantage (Bowles & Gintis, 2002). What if certain public schools, instead of being oriented towards equity, were engaged in their own pursuit of competitive advantage in a profit-seeking marketplace? This chapter investigates how one particular type of school, for-profit pubic charters, may exacerbate educational inequity by

increasing racial and socioeconomic segregation when they engage in profit-maximizing behavior in a newly competitive public school landscape.

This chapter establishes how for-profit charter schools are uniquely ideologically and structurally incentivized to "target students with less-risky socioeconomic and demographic backgrounds" (Gulosino and Lubienski, 2011, p. 20), i.e. to avoid non-white and low-income students. This is likely to exacerbate racial and socioeconomic segregation in school districts where they proliferate. The ideological orientation of for-profit schools is towards neoliberal principles that tend to generalize norms of competition in ways that erode the possibilities for equity. Simultaneously, for-profit charters are structurally bound to a profit-maximization imperative. The obligation to maximize profit incentivizes targeting "more desirable" student populations. Taken together, there is substantial reason to believe that for-profit charters may attempt to cultivate whiter, wealthier student populations, and that this may exacerbate racial and socioeconomic segregation. Further, this may create an insidious *market-effect* that compels other charter schools in districts where for-profits predominate to engage in similar profit-maximizing strategies with implications for broader charter/non-charter school segregation patterns.

This chapter begins by outlining neoliberal ideology, with a particular focus on how the enactment of neoliberal ideology may systematically undermine the pursuit of equity. Next, the historical development of charter schools will be described in order to distinguish for-profit charters from other, less perfectly neoliberal-ized charters. The chapter then discusses the tactics that charter schools in general, and for-profit charters in particular, can and do undertake to maximize profit. There will be a particular focus on how and why for-profit charter schools may be incentivized to cultivate particular student populations

and how this may impact racial and socioeconomic segregation. Finally, given the ideological and structural particularities of for-profit charter schools, and the lacunae in the existing research, general research questions will be proposed.

**What is Neoliberal Logic?**

Neoliberalism is a word used both to describe the general conditions of the contemporary political and economic landscape as well as specific features of that landscape. It also refers to a particular ideology which preferences a particular set of political and economic conditions and guides the path of institutional development. This section discusses what is distinct about the logic that undergirds neoliberal ideology. It draws from a range of theorists of neoliberalism to locate the key distinguishing features of this ideology. Most importantly, neoliberalism will be shown to systematically subvert equity, indicating the dangers manifestations of neoliberalism may pose to equity in education and beyond.

According to David Harvey (2005);

> "Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade… [I]f markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution) than they must be created, by state action if necessary." (p. 2).

At its core the theory of neoliberalism lies in its distinctive vision of the centrality of markets. Daniel Stedman Jones (2012) defines neoliberal ideology as "the free market ideology based on individual liberty and limited government that connect[s] human freedom to the actions of the rational, self-interested actor in the competitive marketplace."

(p. 2). Jamie Peck (2010) presents perhaps the most concise definition of neoliberalism, defining it as "[p]olitically assisted market rule" (p. xii). All of these definitions point to the centrality of the "free market." The free market refers to profit-oriented capitalist economic activity. Neoliberalism fundamentally promotes the profit motive as the best way to regulate all of human activity, and the profit-maximizing corporation as the proper institutional form to regulate this activity.

As a theory and an ideology, neoliberalism simultaneously provides a frame for making sense of the world and a guide for taking action. This is the construct of neoliberal logic, compelling in its simplicity: Markets are the ultimate expression of collective human interest and the more they are generalized the better off everyone will be. Neoliberal logic is essentially an absolute faith in the market. As Philip Mirowski (2013) notes, neoliberals assert that "[a]ny problem, economic or otherwise, has a market solution, given sufficient ingenuity" (p. 65), and that "the market (suitably reengineered and promoted) can always provide solutions to problems seemingly caused by the market in the first place" (p. 64). If this form of circular logic is accepted, markets must be anywhere and everywhere the answer to all questions.

The neoliberal argument for market-based governance is essentially: 1) we live in a very complex society, 2) no individual or group can possibly understand all of the various needs and desires of everyone in society, 3) the market is the only mechanism that allows us to fruitfully coordinate human activity, and therefore, 4) we are all best off when we rely on markets (instead of the state, e.g.) to regulate our coexistence. There are two key corollaries that are implied here. First, humans are fundamentally ignorant of, and will always be unable to ever fully comprehend the workings of the market (Mirowski, 2013).

Second, trust in the market, even though its workings can never be understood, must be absolute (Jones, 2012). It has been noted that this construct approximates a religious commitment to the essentially god-like powers of the market (Mirowski, 2013; Jones, 2012). It is faith in the market above all else that characterizes neoliberal logic. It is also this blind faith, even in the face of overwhelming contradictory evidence that keeps the neoliberal agenda moving forward.

How did an ideology promoting markets as the ultimate social good become so compelling? David Blacker (2013) asserts that neoliberalism is "a *story* that is advanced – explicitly and also, more powerfully, implicitly as 'common sense' " (p. 25, italics in original). Blacker here emphasizes that the power of neoliberal ideology stems from the way that it has come to be accepted as everyday common sense. Mirowski (2013) echoes this thought in noting that "neoliberalism as worldview has sunk its roots deep into everyday life, almost to the point of passing as the 'ideology of no ideology' " (p. 28). If neoliberal faith in markets is not even recognized as an ideological construct, but simply taken as common sense, it becomes harder to refute its logic. Dardot & Laval (2013) assert that neoliberalism is "firstly and fundamentally a rationality, and as such tends to structure and organize not only the action of rulers, but also the conduct of the ruled. The principal characteristic of neoliberal rationality is the generalization of competition as a behavioral norm and of the enterprise as a model of subjectivation." (p. 4). When a theory or ideology becomes a *rationality*, it becomes *irrational* to behave in ways that run counter to its dictates. When neoliberal rationality reaches a certain social consensus, Dardot and Laval assert, people come to see themselves as competitive market actors in all phases of their lives.

*Neoliberal Logic and Equity*

What is the impact on equity when norms of competition become universalized? Brown (2015) discusses how the overriding neoliberal faith in markets impacts the very nature of human relationships, so that "when the political rationality of neoliberalism is fully realized, when market principles are extended to every sphere, inequality becomes legitimate, even normative, in every sphere" (p. 64). Brown sees neoliberalism as a dominant ideology that transforms people into "*homo economicus*", humans who are taught to think of all activity as economic, as opposed to political. Inasmuch as neoliberalism totalizes market rationality to all human activity, it inevitably alters the character of markets. When a market perspective takes over a new arena, such as public education, the ability to forge collective ideals or identities is lost. Without these collective identities, markets come to be based on competition instead of exchange, and competition is generalized. When competition is pervasive, it becomes harder to conceptualize public interventions to ameliorate inequity. In effect, everything becomes a zero-sum game. One individual's gain must come at the expense of the loss of another individual. In a competitive market scenario, any actor seeking to address equity is at a distinct competitive disadvantage. Equity becomes unthinkable because competition dictates that we must all seek to gain relative advantage over others at all times. In place of equity, efficiency through competition becomes the dominant social good.

In an environment where some actors are neoliberal-ized, i.e. driven by profit-maximizing behavior, while others maintain the structural imperative to address equity concerns, significant market asymmetries are liable to rise. Pressure arises for non-market

actors to behave in market-oriented ways. In this way, when formerly public sectors begin to privatize, competition becomes a dominant norm, compelling other actors to also engage in competitive market-style behaviors. The more that a particular arena (e.g. a public school district) is suffused by neoliberal logic, the more that all actors within that arena are pressured to act in accordance with competitive pressures.

Historical accounts of neoliberalism's ascendancy place it within a framework of class struggle and crises of profitability (Dumenil & Levy, 2011; Harvey, 2005). Thus neoliberalism is seen as marking a new historical phase of capitalism, one marked by an aggressive retrenchment of capital, or "a second financial hegemony" (Dumenil & Levy, 2011; 17). In this way, neoliberalism is a response to post-World War II economic practices, labeled Keynesianism, or the postwar compromise. "[T]he postwar compromise involved the increase in purchasing power, policies in favor of full employment, and the establishment of the so-called welfare state, that is the gradual commitment of the state to provide for the health, retirement, and education of popular classes" (Dumenil & Levy, 2011; 16) These policies fostered an unprecedented growth of middle class wealth, and created a more economically equal society (Piketty, 2014). Thus Keynesianism was rooted in the notion that the state could be leveraged to actively foster greater equity, while neoliberalism is in part organized around a rejection of that idea.

Jones (2012) traces the growing power of neoliberalism, manifested in an increasingly influential network of intellectuals and think tanks in the postwar era as neoliberals came to define themselves in opposition to the Keynesian postwar consensus. Neoliberalism also grew out of a reaction to the social changes stemming from the popular movements of the 1960s, including the Feminist, Civil Rights, and school desegregation

movements (Jones, 2012, Friedman, 1955). School desegregation became a key arena of dispute because it combined social norms asserting the need to redress inequalities stemming from a racist American history with redistributive economic spending and an expanded role of government in education. In this way, neoliberalism was a reaction against policies designed to redress social and economic inequities, concerned with transforming common sense away from commitments to building a more egalitarian society.

### The Emergence of Neoliberal School Reform & For-Profit Charter Schools

For the purposes of this dissertation, neoliberalism has been defined as an ideology. Neoliberalism as an abstract ideology is not something visible that materially manifests in the real world. Rather, different individuals, schools, school districts, and other educational actors and institutions are more or less influenced and guided by neoliberal ideology. Some theorists have broadly characterized the current era of school reform as neoliberal (Lipman, 2011). This is accurate inasmuch as neoliberal discourse predominates in the school reform conversation. However, the extent to which neoliberal ideology informs the nature of actually existing public schools varies greatly. For example, many wealthy suburban districts are not substantially impacted by neoliberal ideology. These districts generally do not have charter schools or wide implementation of other school choice models. Meanwhile other districts, particularly low-income urban districts, have experienced wholesale neoliberal reinvention. This is most systematically represented by the essentially complete replacement of traditional public schools with charter schools in New Orleans following Hurricane Katrina (Buras, 2011; Klein, 2007). Neoliberal school

reform is thus spatially uneven in its application. Just as some areas have been more impacted by neoliberal reforms than others, some institutional forms represent more radically neoliberal reforms than others. Because of the incompatibility of neoliberal ideology to the promotion of equity, it may be useful to consider how certain of these forms exemplify neoliberalism to a greater or lesser extent.

The historical emergence of for-profit charter schools demonstrates how they developed as a particularly pure representation of a particular market-oriented model of reform. For-profit charters represent the apex in the development of incrementally more neoliberal forms over time. However, they also coexist with other, less fully neoliberal reforms. This distinction may lead to for-profit charter schools exhibiting a distinct influence on educational equity via racial and socioeconomic segregation.

*Desegregation and the Genesis of School Choice*

For two reasons, the story of neoliberal school reform begins with the school desegregation movement. First, the roots of neoliberal school reform emerged directly out of white opposition to the state-based equity promoting measures of desegregation. Second, large-scale public school choice measures were pioneered during the desegregation movement. Additionally, the desegregation movement emerged from the understanding that segregated schooling is necessarily inequitable: in short, that equity and segregation are fundamentally linked. In 1954, the US Supreme Court unanimously ruled in *Brown v. Board of Education* that racially segregated public schools were unconstitutional. The court found that segregated schools "deprive the children of the minority group of equal educational opportunities". (Chief Justice Earl Warren, Opinion of

the U.S. Supreme Court in Brown v. Board of Education (1954) *347 U.S. 483*, quoted in Martin, 1998, p. 173). Crucially, *Brown* represented a realization that how students are sorted into schools has implications for educational equity. In a direct rejection of *Plessy v. Ferguson (1896), Brown* recognized that racially separate education could never be equal. When students of different races are sorted into separate schools, white students benefit at the expense of non-white students. While *Brown* was rightfully hailed as a landmark decision for public education, for ten years after the ruling little substantive desegregation took place (Orfield & Lee, 2004). This was largely attributable to massive white resistance to school desegregation. It took additional legislation and court cases (especially the 1964 Civil Rights Act and the *Green v. New Kent County, Alexander v. Holmes, and Swann v. Charlotte-Mecklenburg* cases) to spur meaningful school desegregation, but white resistance remained an obstacle to the implementation of desegregation.

It is important to note that the geography of school desegregation has unfolded distinctly in different regions of the country. Prior to 1954, in the Southern United States, school segregation often constituted the creation of artificial barriers to prevent Black students from accessing local neighborhood schools, instead maintaining parallel educational systems divided by race. This is often referred to as *de jure* segregation, because it was formally enshrined in law. In other regions of the country where residential segregation was more pronounced, the attendance of neighborhood schools (along with the intentional drawing of school catchment boundaries contiguous with residential segregation lines) was the primary source of school segregation. This is known as *de facto* segregation, reflecting its more informal nature. School desegregation outside of the South would require either massive residential relocation or the attendance of non-neighborhood

schools. In the face of violent white resistance to residential integration, desegregation in the Northern US came to be premised on student attendance of non-neighborhood schools. All things being equal parents prefer their children to attend schools nearby and compelling students to attend non-local schools is problematic. The solution to this dilemma came in the form of the first large-scale school choice plans. The general form of these desegregating school choice plans consisted of 1) allowing Black families to choose to send their child(ren) to their (generally highly segregated) neighborhood public school, or to have them bussed to a predominantly white school, or to an integrated magnet school and 2) allowing white families to send their children to their (generally highly segregated) neighborhood public school, or to an integrated magnet school (notably white students were not bussed to predominantly Black neighborhood schools). While there were notable limitations to these voluntary desegregation plans, and white resistance never subsided, many were able to markedly decrease racial segregation in the cities where they were implemented (Wells & Crain, 1997). These plans generally included racial integration targets, with applicable sanctions for falling short of these targets. Crucially, these desegregation plans had direct court oversight with explicit goals for addressing educational equity via racial desegregation.

While in the North, school choice was the primary vehicle for desegregation, because of the distinct racial geography in the South, school choice was instead primarily a tool for avoiding desegregation. In 1959, for example, in order to avoid the implementation of school desegregation, the Prince George's County school district in Virginia closed all public schools and initiated a wholesale private school voucher system (Orfield and Frankenberg, 2013). Under this system, government funding for education was available in

the form of a voucher that could be used to pay tuition at a private school. With the public schools closed, new private schools opened to hire the formerly public school teachers and take advantage of the vouchers. Notably, only whites had access to the resources necessary to open private schools, and the new white-established private schools only enrolled white students. Because these schools were nominally private, they were able to select their enrollment. There were no Black-operated schools, with the result that Black students in Prince George's County were entirely unable to attend school for five years, until the courts intervened. Other, similar quasi-private efforts to avoid desegregation arose in the form of so-called segregation academies (Champagne, 1973). These private schools opened up throughout the South with all-white enrollment, oftentimes with direct government funding, making the avoidance of integrated public schools possible for larger numbers of white families.

Due to increasing unpopularity, demographic changes (e.g. white flight), and court rulings limiting the scope of desegregation plans, the racial segregation of public schools has been on the rise for at least 25 years. For example, between 1960 and 1990, the percentage of Black students in the South that attended majority white schools increased from 0% to over 40% (Orfield & Frankenberg, 2014). However, by 2010, less than 25% of Black students in the South attended majority white schools. Most of the large-scale voluntary desegregation plans that arose in the 1960's, 70s and 80s have either been substantially reduced in size or ceased operation altogether. Today they have been largely eclipsed by school choice plans that by and large do not have explicit equity objectives. Desegregation programs could be classified as neoliberal in the sense that they introduced the strategy of offering a range of public school choices for families to choose. However,

they are very much not neoliberal in the respect that they entail close state oversight, local-control of fully public schools, and explicit equity-focused objectives.

**The Evolution of Charter Schools: Two Competing Visions**

Charter schools are sometimes presented as the quintessential neoliberal education reform. This is an oversimplification. It ignores how other forms of school choice, including open enrollment, private school vouchers, intra- and inter-district desegregation plans, and magnet schools are also neoliberal reforms. It also misunderstands the diverse, decentralized nature of charter schools. In one sense all charter schools do represent market-based neoliberal reform; they transfer the operation of public schools to private hands. Charter schools are structurally distinct from district-run public schools, representing new institutional actors where previously there were only government-operated schools (outside of private education). However, charter schools differ in the extent to which they are conceived of and designed to be true market actors. A spectrum exists, with some charter schools hewing more closely to the neoliberal ideal than others. For-profit charter schools exemplify the most neoliberal end of this spectrum. The operation of public schools by for-profit corporations is the structural manifestation of neoliberal ideology.

The first charter schools were designed "to encourage educators, parents, and community members to create innovative and independent schools" (Scott & DiMartino, 2010, p. 175). This "democratic control" vision, originated by Al Shanker and Ray Budde in 1988, saw charter schools as a way to experiment with new educational practices in order both to broadly improve pedagogy and to devise educational environments suited to the

needs of particular local student populations. Importantly, while these schools would be free of the day-to-day oversight of school districts, the charters were conceived of as originating within and ultimately fall under the purview of the local districts. Democratic control advocates saw charters as localized projects, integrated into local communities, and responsive to democratic processes and control. Democratic control advocates hold that the particularities of local communities mean that schools should be tailored to each community's needs. Thus while charter schools might demonstrate new educational methodologies that prove successful, it should not be assumed that successful innovations can or should be blindly replicated elsewhere.

The other, later-emerging strand of charter thought, termed "market control" conceptualizes charter schools differently (Scott & DiMartino, 2010). The market control model emphasizes the importance of charter schools operating independently from local districts. For market control advocates, local school boards, teachers unions, and other special interest groups stand in the way of quality education (Friedman,1955, 1962 ; Chubb & Moe, 1997). They see government as inherently inefficient, often corrupt, and an obstacle to optimizing public education. In this way, market control advocates mirror the general neoliberal argument that government is inefficient and ought to be supplanted by the market wherever possible. Further, market control advocates look to market demand as the proper mechanism for administering charter schools. This image of charter schools envisions free-market-style competition between charter school providers producing winners and losers, with successful charter providers replicating at scale.

For market control advocates, the mark of success is high "market demand" for a particular charter school or provider on the part of families, and popular schools should be

replicated locally and nationally. Market control advocates see the ability of charter providers to capture and retain "market share" by enrolling ever-larger quantities of students as the primary measure of a charter school provider's success. They see charter schools opening up a new marketplace in public education, forcing inefficient traditional public schools to compete with market-modeled schools for scarce student populations. Market control advocates promote economies of scale, and assert that successful charter schools ought to be replicated to the fullest extent possible. This reflects a belief that a school reform that works in one place should work anywhere, regardless of local particularities. Instead of advocating unique reforms for diverse communities, market control models posit a set of best practices that can and should be applied broadly to public education. For these reasons, market control is more closely aligned with neoliberal ideology than is democratic control.

*Charter School Operators and Market / Democratic Control*

There are three types of charter school operators, independent, non-profit and for-profit. Independent charter schools are single free-standing charters. Education management organizations (EMOs) are organized as either non-profit or for-profits and are of varying size, some operating as few as one school some operating over a hundred schools (Molnar, Miron & Urschel, 2010). For purposes of this dissertation, charter schools operated by non-profit or for-profit EMOs are treated as distinct charter school types. Markets, in the most general sense, are comprised by competition between for-profit firms. In this respect, for-profit charter schools fundamentally represent the market model at

work in public education. Independent and non-profit charter schools are more likely than for-profit charters to operate according to a democratic control model.

It is possible that any given independent or non-profit charter will operate in a market-oriented, profit-maximizing manner. Non-profit organizations represent a diverse set of actors (DiMaggio & Anheier, 1990). In fact it is undoubtedly the case that some non-profit schools are what Burton Weisbrod (1988) termed "for-profits in disguise" (p. 11), disbursing "profits" in the form of outsize executive salaries to nominally non-profit executives. However, the key distinction is that while independent charter schools and non-profit EMOs individually may be more or less inclined towards a market-model, for-profit charter schools are structurally constrained to a neoliberal, profit-maximizing model. Thus considered as discrete segments (all independent charter schools, all non-profit charter schools, all for-profit charter schools), independent and non-profit schools would be expected to be a mix of democratic control and market control oriented schools, while for-profit charters would be expected to be uniformly oriented towards a market control model.

Desegregation represented the first large-scale experiment with voluntary school choice plans. The winding down of voluntary desegregation has coincided with the rise of charter schools (Orfield & Frankenberg, 2013). The push to scale up charter schools has led to the rapid growth of EMOs (Chi & Welner, 2007). Market control neoliberals assert that profit-oriented models are best suited to meeting the charter demand. However the proliferation of for-profit charter schools raises an important question: how does a charter school maximize profit, and what are the impacts of these profit-maximization efforts?

## How Can/Do Charter Schools Maximize Profit?

Burton Weisbrod's (1988) seminal analysis of the different behaviors of for-profit and non-profit firms in the provision of social services uncovered significant differences in the behavior of the two segments. Weisbrod characterizes for-profit providers as being "profit-driven", while non-profit providers are generally, although not always, "mission-driven". Profit-driven social service providers seek to maximize return-on-investment, with all other concerns secondary. Mission-driven social service providers arise with the express purpose of addressing some perceived need in a community. Weisbrod notes that only in efficient markets with well-informed consumers would for-profit providers be expected to provide high-quality services. By contrast, in inefficient markets, for-profit corporations have an incentive to exploit information asymmetries in order to maximize profit. When markets do not function properly, for-profit operators can take advantage of under-informed consumers by maximizing investment in superficial indicators of quality while simultaneously minimizing investments in more costly quality factors. They are also likely to seek to serve the population that is most likely to yield the greatest profit. Information asymmetries are endemic to public education, which gives profit-seeking actors eminently exploitable opportunities to maximize return on investment (Brown, 1992). There is substantial evidence that charter schools make efforts to minimize costs and maximize returns. There is additional evidence that for-profit charter schools, as a segment, engage in these profit-maximizing processes to a greater extent than other types of charter schools. This section reviews existing research on the methods that charter schools take to optimize their return on investment.

A for-profit charter school can seek to maximize profit by minimizing costs, and/or maximizing returns. Costs are relatively self-explanatory, all of the money that is paid to operate a school. Returns can be conceived of in two very different ways. In the most straightforward sense, "return" is all of the money that a charter takes in from federal, state, district, and private funding sources. From this perspective cost and return are straightforward. Each school costs a certain amount to operate, a particular formula dictates the per-pupil funding that flows to the school operator, multiplied by the number of students in the school. Subtract cost from return and the remainder is profit. However, in another sense, the "return" could be interpreted as the academic outcomes of the students in a school. The academic performance of students dictates: 1) at the school level, whether that charter is likely to be able to continue to operate or at risk of having their charter revoked due to academic underperformance, and 2) the extent to which an EMO is seen as successful and thus its ability to expand enrollment both within a given school and by opening new schools. In order to maximize profit in the long term, an EMO thus must pay attention to their *academic return* in addition to their economic return on investment. Essentially, they want to achieve a given level of academic return as cost-effectively as possible.

*Minimizing Costs: Staffing, Curricula, Pedagogy & Grade Structure*

Garcia, Barber and Molnar's (2009) study of Arizona charter schools finds that for-profit charter schools are particularly likely to employ rote curricula and constant drilling as pedagogical techniques. They cite two reasons for this. First, for-profit schools can minimize their labor costs by hiring less experienced, less qualified teachers. These de-

skilled teachers necessitate tools like scripted curricula. Second, the ways that accountability is structured in US education generally incentivizes organizing education around the mastery of easily testable sorts of knowledge that are often amenable to rote instruction. This is particularly true in the early grades, and for-profit EMOs are much more likely to operate elementary and middle schools than high schools (Henig, Holyoke, Brown & Lacireno-Paquet, 2005). Maximizing test scores can be efficiently accomplished by the use of test-based curricula and scripted pedagogy. However, examinations measuring the higher order thinking of students in these schools demonstrates that performance in these areas lag behind, as would be expected from students educated by inexperienced, under-qualified teachers and highly scripted curricula (Garcia, Barber & Molnar, 2009). The use of lower-cost employees by for-profit EMOs thus reduces their costs while providing a superficial picture of good educational outcomes.

Consistent with the logic of employing lower-cost teachers, Miron & Urschel (2010) found that there are clear gaps in the proportion of Total Current Expenditures (TCE) spent on instruction (as opposed to operations, administration, and student support services) by traditional public schools, charter schools in general, and for-profit charters. Nationally, traditional public school districts spent 60.3% of TCE on instruction. Charter schools as a whole spent 54.8%. For-profit charters spent the lowest proportion of TCE on instruction, at 48.9%. Whether these schools are reducing teaching costs by increasing the number of teachers per pupil, and/or paying instructors less by hiring less qualified and experienced teachers, or by some other method, the end results is that more money can be redirected to other sources, such as marketing and profit distribution.

For-profit providers have been found to be less likely than other charter operators to offer high school grades (Henig, Holyoke, Brown & Lacireno-Paquet, 2005). It is generally the case that the per-pupil cost of educating high school students is higher than the per-pupil cost of educating elementary school students. Despite this, per-pupil funding in most states is the same for all grade levels. If a charter operator is focused on reducing costs, it makes sense that they would focus on operating elementary and middle schools, which generally cost less per-student to operate while yielding per-pupil funding equivalent to high schools. The lower costs for an equivalent return is an obvious advantage for profit-maximizing charters. The dearth of for-profit high schools indicates that for-profit providers may see the operation of high schools as presenting less of an opportunity for profit.

*Maximizing Return: Larger and More Schools*

One of the simplest ways for a school to increase its return is by increasing enrollment. A profit-maximizing school would be expected to have a higher enrollment than a mission-oriented school. The average enrollment of for-profit charters, 484 students per school, is 66% higher than the average enrollment of non-profit charters (292 students per school) (Molnar, Miron & Urschel, 2010, Miron & Urschel, 2010). This trend to operate larger schools suggests that for-profit charter schools are more likely to try to maximize profit by multiplying their per-pupil income. In addition to bringing in greater return by educating more pupils, there may be additional economic efficiencies to operating larger schools that create further opportunities for profit. For-profit EMOs are also more likely than non-profit EMOs to operate larger numbers of schools. This is consistent with market-

control logic that holds that economies of scale should be brought to bear for cost savings in the public education realm. The market dictates economies of scale, which privileges more schools and larger schools.

## Engineering Student Enrollment

One significant way that a school can simultaneously minimize costs and maximize academic returns is by cultivating a student population with particular demographic characteristics. There is evidence that charter schools generally, and for-profit charters in particular, engage in a variety of behaviors designed to attract, enroll and retain certain types of students and to avoid other types of students.

### *Special Education & English Language Learner Students*

Special education students and English language learners (ELL) are commonly recognized as being comparatively expensive to educate groups of students. Special education students require a range of special services, and often are placed in classrooms with lower student/teacher ratios. Thus the cost of educating a special education student tends to be significantly higher than a non special education student. Miron et al (2010) found that while 13.6% of traditional public schools students have Individualized Education Plans (an indicator of special education status), that figure is 7.9% for non-profit charters and 6.5% in for-profit charters. For-profit charters have the lowest rate of special education students, indicating that even relative to other charter schools, they are less likely to enroll special education students. Like special education students, ELL students require specialized instruction that may be costly for a school to provide. This incentivizes

profit-maximizing schools to avoid ELL students. Non-profit and for-profit charter schools have both been found to substantially under-enroll ELL students (Miron et al, 2010). By under-enrolling special education and ELL students, for-profit charter schools avoid having to provide costly services to educate these students, increasing potential profit.

*Racial and Socioeconomic Segregation*

A long history of racial segregation in the United States has led to persistent racial academic achievement gaps, particularly for Black and Latino students. As a result, profit-maximizing charters may wish to avoid enrolling these students. In a relatively new development, achievement gaps by socioeconomic status have actually surpassed racial achievement gaps (Reardon, 2011). Charter school operators are no doubt aware of this, and understand that attracting students from higher-income families is likely to result in superior academic outcomes. On top of the impact of family socioeconomic status on student achievement, there is a strong concentration effect as well. Rumberger & Palardy (2005) found that the mean family socioeconomic status of a school's students is an equally important predictor as an individual student's family socioeconomic status in predicting that student's academic outcomes. A student with a higher family SES would be expected to have higher achievement than a student from a lower SES family. Additionally, a student in a school with a higher average SES would be expected to have better academic achievement than if that same student was in a school with a lower average SES. If a school is able to recruit predominantly higher SES students, student outcomes would be expected to be higher based on individual characteristics, and additionally boosted by way of the concentration effects of those higher SES students. Recruitment of higher-SES students and

the converse, avoidance of lower-SES students, may be a particularly efficient strategy for a charter school seeking to maximize return on investment.

A substantial body of research has found that in general, the entry of charter schools into a district tends to intensify segregation by race and socioeconomic status. However, this segregation does not manifest in predictable ways. In some districts, charter schools over-enroll white students and under-enroll non-white students. In other districts the pattern is reversed, with charters under-enrolling white students and over-enrolling non-white students. Likewise, in some districts charter schools over-enroll low-income students compared to non-charters, while in other districts charters under-enroll low-income students compared to non-charters. Existing research does not provide a clear answer as to why these patterns vary. It may be that the presence of for-profit charter schools is one factor influencing the nature of these patterns of segregation.

Bifulco, Ladd and Ross (2009a) found that in Durham, North Carolina, charter schools were disproportionately used by relatively highly educated white families to exit from traditional public schools with large proportions of less educated and non-white families, sorting black and white students to traditional public schools and charter schools respectively. Conversely, Gulsonio & D'Entremont (2011) found that in New Jersey, charter schools tended to encircle largely African-American neighborhoods and enroll largely African-American student populations. This pattern helped to ensure that traditional public schools in racially diverse neighborhoods were disproportionately white, while charter schools had predominantly African American student populations. In both cases, clear gaps in racial enrollment patterns in charters versus traditional public schools intensified between-school segregation in districts and regions. These studies demonstrate

that while charter schools may disproportionately enroll either more or less privileged students, both patterns can result in substantial increases in segregation.

Garcia's (2008) analysis of the impact of charter school choice on segregation in Arizona found that "[p]arents [of all races] choose to leave more racially integrated district schools to attend more racially segregated charter schools" (p. 590). His analysis does not note whether a desire for racial homogeneity is driving parental choice, or whether the racial homogenization is a side effect of other choice criteria. Either way, this represents a third possible pattern, charter schools as an overall segment attracting all racial groups, but individual charters attracting disproportionately racially homogenous student populations. This pattern, like those in Durham and New Jersey, results in sharp increases in between-school segregation. Booker, Zimmer & Buddin's (2005) analysis of charter school segregation in Texas and California found similar homogenizing patterns in charter school attendance across all races, most notably with regards to Black students enrolling in charter schools that were more racially homogenous than the traditional public schools that they left. In these instances, the segregation patterns are not always clear between charters and non-charters, but the growth of charters, largely due to heightened marketing and differentiation, results in increased overall between-school racial segregation.

Mickelson, Bottia & Southworth's (2008) review of the research on school choice and segregation effects finds that "choice programs [primarily charter schools] formally and informally allow schools to select students, thereby including some youth while excluding others" (p. 1). Further analyses have confirmed that the entry of charter schools into districts tends to segregate students by race and socioeconomic status (Frankenberg, Siegel-Hawley and Wang, 2011, Frankenberg and Lee, 2003).

There has been one large-scale study specifically analyzing EMO-operated charter schools and segregation (Miron et al 2010). The authors found that EMO-operated charters are "strongly racially segregative [and that] for economically challenged students, EMO-operated charter schools more strongly segregate students than do their respective local districts" (p. 3). They note that the patterns of segregation observed are not uniform. In some instances, EMO-operated charters disproportionately enroll white students, while in other instances they disproportionately enroll non-white families. This accords with the different local patterns observed by Bifulco, Ladd and Ross (2009a) Gulosino & D'Entremont (2011) and Garcia (2008). Miron et al (2010) additionally found dual patterns of high/low-income segregation between EMO operated charters and traditional public schools. Thus, while an examination of overall student proportions might indicate that EMOs do not educate student populations substantially different from traditional public schools, when examining the demographics of student enrollment in EMO-operated charters relative to the overall local district enrollment, socioeconomic segregation seems to be intensified by their existence. Notably, the authors found no significant differences in the student populations served by for-profit and non-profit EMOs. However, the methodology used was insufficient to conclude that there are not actual differences in the student population of these two types of schools. The study was not designed to systematically investigate distinct for-profit charter school enrollment patterns. Use of either multilevel modeling to facilitate analysis across diverse state contexts, and/or closer analysis of local-level patterns across a range of contexts would be necessary for a better understanding of whether for-profit and non-profit providers educate significantly distinct student populations.

## How Do Charter Schools Segregate?

The research on charter schools and segregation make clear that charter growth often corresponds with increased racial and socioeconomic segregation. This raises questions about how these patterns of segregation develop. It is likely that some charter schools do not intend to disproportionately enroll students of difference races or socioeconomic statuses. It is also true that the rise of charter schools has in some areas coincided with the curtailing of existing desegregation programs, meaning the rise in segregation is likely in part a result of other concurrent changes. However, there is evidence that charter schools can, and in some cases do, undertake intentional strategies to either attract or avoid students of particular races or income levels. The primary mechanisms detailed by existing research are marketing and school location strategies.

### *Marketing*

One significant impact that increased school choice has had on public education is a substantial increase in the marketing of public schools. In districts where traditional public schools are the only public school option, there is little need for marketing. The district is divided into school catchment zones and students attend the school for which they are zoned by residence. The introduction of choice brings increased pressure to influence family school choices in order to maintain or grow enrollment. If a school cannot attract a sufficient number of students it will not be able to remain open. Additionally, schools may seek to enroll particular types of students. Christopher Lubienski (2007) analyzed the

marketing materials published by charter schools in a competitive educational market. His analysis found that:

> "The information made available to families through commercial-style materials challenges the notion of parents making reasoned choices based on institutional effectiveness. Instead, more emotional themes and images dominate school marketing strategies, with implications for ethnic and socioeconomic sorting within diverse but competitive climates. Promotional strategies suggest that competition is creating an environment in which, rather than responding to incentives intended to improve education for more disadvantaged students, schools are instead attracting better performing students through their marketing campaigns." (p. 118)

The introduction of marketing materials, instead of promoting market efficiency, may be being utilized instead as an explicit sorting tool. When school districts become more like markets and marketing becomes ubiquitous, investing in marketing may be more cost effective than investing in educational quality, in the high-stakes competition to attract better-performing students (Lubienski, 2005; Weisbrod, 1988). As Lubienski (2005) notes "schools might recognize that marketing can 'increase' achievement by appealing to families of higher-achieving students," (p. 480). This creates clear incentives to exploit information asymmetries, and there is evidence that some charter operators do so.

In addition to sometimes deliberately misleading marketing, charter schools also may appeal differentially to particular populations by virtue of their mission or focus. Many charter schools are organized around either a curricular (e.g. science focused, dual language), pedagogical (e.g. Montessori, back-to-basics), or cultural/religious (e.g. Afrocentric, Christian-oriented) focus that may inherently appeal differently to students from different racial and socioeconomic backgrounds. Compared to most public schools, which usually have a more generalist focus, more specialized schools of this sort may, intentionally or unintentionally, exacerbate racial and socioeconomic segregation.

*School Location Strategies*

The neighborhood racial and socioeconomic demography of a school's location has a significant impact on the racial and socioeconomic student enrollment of that school. All things being equal, parents prefer to send their children to schools that are nearby to those that are distant (Ball, Bowe, & Gerwitz, 1995). This makes the children that are proximally closest to a school the likeliest to attend. Parents may also be resistant to enroll their child(ren) in schools located in neighborhoods that are demographically different from the neighborhood where they reside. This is particularly the case for white families and higher-income families. Because of these factors, the racial and socioeconomic composition of the neighborhoods where a school is located will undoubtedly play a role in the racial and socioeconomic status of families who are likely to seek to enroll their child(ren) is that school. This also suggests that a charter school operator seeking to avoid particular student populations may also avoid locating schools in areas where those populations are concentrated.

Lubienski, Gulosino & Weitzel (2009) tested this theory by analyzing the geo-demographic location patterns of charter schools in three cities with high proportions of charter schools: Detroit, New Orleans and Washington DC. They found that in each city charters "showed patterns of exclusionary strategies that schools embraced to enhance market position" (p. 601). These strategies served to increase racial and socioeconomic segregation in each district. The authors found that charter schools seemed to be intentionally cultivating particular student populations by careful choice of school location. In a further analysis focusing solely on Detroit, Gulosino and Lubienski (2011) again confirm this pattern of charters locating in order to access "the opportunity to target

students with less-risky socioeconomic and demographic backgrounds" (p. 20). These studies did not examine for-profit charters in particular, and to date there have not been any geo-demographic analyses that specifically analyze for-profit charter schools. Given their predisposition to profit-maximization, it is possible that they may be more likely than other types of charters to pursue locational strategies designed to target students from particular demographic backgrounds.

**Market Effects**

In a charter school market, charter schools exist alongside traditional public schools. When students exit traditional public schools for charters, it impacts the students that remain in public schools as well. If the population of students that select charter schools is demographically different from the population that does not choose charters, these patterns can have deleterious impacts on equity. Bifulco, Ladd & Ross (2009b) found that in Durham, North Carolina, systematic patterns of wealthy white students accessing charter schools resulted in the increasing concentration of low-income Black students in fewer existing traditional public schools. Whether the pattern is an intentional creation of charter school providers or not, the entry of charter schools into a district has often increased between-school racial and socioeconomic segregation. Renzulli & Evans (2005) found that "relatively even distributions of white and nonwhite students within districts and corresponding competitive pressures spur white charter school enrollment." (p. 398). Essentially, white parents may be systematically utilizing charter schools to avoid sending their children to integrated public schools, thus using charters as a tool to circumvent desegregation. The risk of the entry of charters into a district increasing racial and

socioeocnomic segregation seems to be particularly high in the most racially diverse districts.

If charter schools enter a district with a focus on marketing themselves, they apply pressure on existing traditional public schools in that district to similarly engage in marketing in a newly competitive market for students (Lubienski, 2007). For-profit charter schools, operated as market actors by corporations are likely to bring sophisticated marketing strategies and opportunistic locational tactics to bear. These strategies may be disproportionately likely to be geared towards targeting "less risky" student populations. This means that charter school marketing may be different in districts where for-profit charter schools proliferate compared to districts where they are not present. This may result in a *market-effect*. In this way, the presence of for-profit charter schools may fundamentally change student-sorting patterns in a district. No analysis to date has analyzed whether for-profit charter schools are associated with a unique *market-effect* of this sort. This is a crucially important question, especially in light of Brown's (2015) thesis that the generalization of neoliberal market-style competition can systematically foreclose broader possibilities for the pursuit of equity.

Evidence from existing research indicates that the growth of charter schools tends to exacerbate racial and socioeconomic segregation. However, this segregation manifests in diverse ways. In some areas charter schools enroll disproportionately disadvantaged populations, while in other areas they enroll disproportionately advantaged populations. There is no existing theory of why these dissimilar patterns manifest. This chapter presents the case that for-profit charter schools are ideologically and structurally distinct from other types of charter schools in ways that may foster specific patterns of segregation. If for-

profit charter schools are disproportionately likely to engage in competitive strategies to enroll "more desirable" student populations in order to fulfill their structural imperative to maximize profit, we might expect for-profit charter schools to have a distinct impact on student segregation. In this respect, the existence of for-profit charter schools may help to explain why and how diverse patterns of segregation unfold based on the types of charter schools that arise in a district.

In schools where higher-income students are concentrated, benefit accrues to both the schools and students of the school in the form of beneficial concentration effects. High-income students would be expected to exhibit higher academic performance when attending school with similarly high-income students (Rumberger & Palardy, 2005). Thus parents have an incentive to seek out schools with high concentrations of high-income students in a struggle for competitive advantage (Hochschild & Scorovnick, 2003). A for-profit charter school operator may seek to leverage this tendency to increasingly concentrate students from higher-income families in the schools they operate. If higher-income students increasingly concentrate in for-profit charter schools, that leaves the remaining schools to educate increasing proportions of lower-income students, further intensifying socioeconomic achievement disparities.

**Towards Research Questions**

This chapter began by emphasizing the ongoing struggle between collective and individual interests within public education. While the institution of public education is intended to promote equity, individual families struggle to position their children in positions of competitive advantage. This rubric posits that public schools make positive

efforts to promote equity. What if some public schools are not concerned with equity outcomes? The emergence of for-profit charter schools, the manifestation of an anti-equity, competition-focused neoliberal ideology, presents the possibility that some public schools may in fact systematically undermine educational equity. For-profit charter schools are ideologically and structurally predisposed instead to compete for desirable students in an effort to maximize their (financial and academic) return on investment. The review of relevant research demonstrated that for-profit charter schools are particularly likely to engage in certain profit maximization strategies, including enrolling more students per school, operating fewer high schools, and enrolling a particularly low rate of special education students compared to other charters. The review also provided evidence that the entry of charter schools into districts generally increases between-school racial and socioeconomic segregation, but that these sorting patterns were unpredictable. Three notable gaps exist in the research pertaining to the impact of for-profit charter schools on racial and socioeconomic segregation:

1) There have been no systematic population-level analyses of differences in the racial and socioeconomic composition of for-profit charter schools versus other types of charter schools.
2) There have been no analyses comparing the racial and socioeconomic demographics of the areas where for-profit charter schools locate to the demographics where other charter schools locate.
3) There have been no analyses that examine whether charter/non-charter student sorting patterns are influenced by the relative proliferation of for-profit charter schools, i.e. whether for-profit charter schools foster a *market-effect.*

The ideological and structural particularities of for-profit charter schools warrant further examination into these neglected areas of research. The theoretical framework presented here suggests that for-profit charter schools may pursue distinct student recruitment strategies to avoid low-income and non-white students. These strategies may manifest as distinct spatial (school location) and/or non-spatial (marketing) strategies. And the entry of for-profit charter schools into a district may have a distinct effect on the overall charter/non-charter sorting patterns in ways that may help to explain inconsistencies in charter school segregation patterns. The next chapter will describe the research strategy for exploring these gaps in the existing research.

# Chapter 3: Research Methodology

## Introduction[1]

Chapter 2 demonstrated how for-profit charter schools are ideologically and structurally distinct from other types of schools. For-profit charters were shown to have a unique affinity to neoliberal ideology, and a structural form binding them to a profit-maximization imperative (Conn, 2002). Other charters, those that are independently or non-profit operated, are likely heterogeneously mission-oriented/equity-focused, and profit-oriented/competition-focused. As a segment, independent and non-profit charters would be expected to be composed of schools alternatively pursuing both paths. However, for-profit charters are constrained to a profit-orientation. Thus, as a segment of schools, compared with other types of schools, we might expect for-profit charters to exhibit unique profit-maximizing behaviors.

While mission-oriented schools by definition seek to educate the highest-need students, profit-oriented schools may be likely to pursue the opposite strategy, to seek to educate the *lowest*-need students (Lubienski, 2005, 2007, Weisbrod, 1988). A profit-maximizing strategy for public charter schools incentivizes avoiding the most difficult, or expensive, to educate student populations (Bifulco, Ladd & Ross, 2009b). This strategy might consist of efforts to maximize the number of students from certain demographic groups (higher-income, white) and minimizing the number of students from other demographic groups (lower-income, non-white). This chapter describes the methodology

[1] Unless otherwise noted, all descriptive statistics in this chapter are from school year 2009-10 or calendar year 2010.

used to test hypotheses developed from the framework presented in Chapter 2. The analyses explore whether for-profit charter schools exhibit unique student enrollment patterns, and investigate what effect any differences might have on between-school racial and socioeconomic segregation.

In racially and socioeconomically segregated urban areas, the demographic composition of a school's student population is highly predictive of the student outcomes at that school (Rumberger & Palardy, 2005). This means that all else being equal, a school with a lower proportion of disadvantaged students is likely to exhibit better academic outcomes, or in market terms a greater return on investment, than a school educating higher proportions of disadvantaged students. Charter schools are expected to meet certain academic performance benchmarks in order to have their charters renewed and continue operation. Further, those EMOs seeking to expand can bolster their reputation and improve their visibility by producing superior academic outcomes. A school is more likely to both meet minimum benchmarks and produce higher overall levels of student performance with lower expenditures if it minimizes the proportion of disadvantaged students they enroll. In short, avoiding high-need students may permit both lower per-pupil expenditures on instruction and potentially open up greater opportunities for the EMO to expand.

**Limited existing research on for-profit charter schools and segregation**

There is a limited body of existing research examining the particular impact of for-profit charter schools on racial and socioeconomic segregation. Garcia, Barber & Molnar (2009) found that for-profit charter schools in Arizona were able to reduce their costs by hiring inexperienced, under-qualified teachers. Part of the reason this strategy was

successful for the for-profit charters is that these schools sought to avoid low-income students and English language learners. These schools could be reasonably confident that test-focused education that purposely excluded the highest-need students, would allow for cheaper instruction to attain similar results.

Two local-level studies have focused on for-profit charter schools and racial and socioeconomic segregation in Michigan. Miron & Nelson (2002) found evidence that for-profit providers were less likely than non-profit providers to serve low-income student populations. However, this study dates from when the EMO movement was in its infancy. Ertas & Roch's (2014) later study of Michigan found that for-profit charters were still less likely than non-profit charters to enroll lower-income students. Michigan has undoubtedly been studied multiple times because it is the state that has most enthusiastically embraced for-profit charter schools, with 28% of all for-profit charter schools in the US located in Michigan. These analyses provide evidence that for-profit charters do indeed seek to avoid low-income students. However, an analysis examining a single state is necessarily limited in its generalizability.

Miron, Urschel, Mathis & Tornquist, (2010) authored the most relevant comprehensive study of charter schools and segregation to include for-profit charters as a separate analytical category. Their analysis did not find systematic evidence that for-profit charter schools enrolled racially or socioeconomically distinct student populations compared to other types of charter schools. However, their study was largely descriptive in nature, and was not designed specifically to examine the distinct impact of for-profit charter schools on segregation. Their analysis compared the student demographic composition of EMO-operated charter schools with the overall student demographics in the

district. While useful for comparing how for-profit charter school enrollment compares with other schools in the district, this methodology cannot assess the extent to which for-profit charter schools are unevenly distributed across districts. It also does not take into account the variance that can and often does exist across highly segregated school districts. An approach using the district as the comparison group can determine whether certain types of schools are more or less likely to enroll students from different racial and socioeconomic categories. However, it cannot disaggregate whether these differences are due to geography (systematic differences in the geo-demography of school location) or to other factors (e.g. marketing strategies). Their analysis uses OLS regression for the population study, which while useful for a general picture of enrollment patterns, fails to account for different state contexts. A more nuanced strategy would allow for a better understanding of how patterns vary across states.

The limited set of existing studies on the impact of for-profit charter schools on racial and socioeconomic segregation do provide some evidence that for-profit charter schools may have a tendency to avoid low-income students. However, no systematic analyses have detailed socioeconomic or racial segregation trends between for-profit charters and other charter school segments. Further, there have been no analyses that consider the impact on broader student-sorting patterns in a given school district when for-profit charter schools proliferate in that district. The hypothesized *market-effect* associated with for-profit charter schools may lead to the entry of for-profit charter schools precipitating the development of a newly market-ized environment that alters or intensifies segregation patterns. The analyses described in this chapter seek to remedy

these gaps in the existing research. The analyses are based on four hypotheses derived from the theoretical framework and untested by existing research.

**Figure 3.1: Research Hypotheses:**

**(H1):** For-profit charter schools are less likely than other types of charter schools to enroll low-income students.

**(H2):** For-profit charter schools are likely to enroll higher proportions of white students than other types of charter schools.

**(H3):** For-profit charter schools use both geo-demographic (school location) and non-geo-demographic strategies to cultivate student enrollment patterns consistent with H1 and H2.

**(H4):** In districts where for-profit charter schools proliferate, charter schools as a whole are less likely than non-charter schools to enroll non-white and low-income students compared to districts without for-profit charters.

H1 and H2 propose that for-profit charter schools enroll fewer low-income and fewer non-white students than other types of schools. H3 proposes that for-profit charters utilize two strategies in their effort to under-enroll low-income and non-white students. The first strategy is geographic. Even though charter schools generally draw students from a somewhat larger radius than traditional public schools, proximity remains a major factor in school choice. Parents want their children to attend geographically proximate schools, and to attend schools in demographically similar neighborhoods to those where they reside (Ball, Bowe, & Gerwitz, 1995). Thus a charter operator seeking to avoid low-income and

non-white student populations may choose to locate schools in areas with indicators of higher socioeconomic status and with a relatively high white population proportion. Locating in areas with low concentrations of low-income families, and without significant proportions of traditionally under-served racial minority populations makes a school less likely to enroll proportions of low-income and non-white students.

In addition to geographic strategies, there is a range of non-geographic approaches a charter operator might take to avoid disadvantaged student populations. These include marketing and screening processes that a charter may engage in to attract and retain students with certain demographic characteristics, as well as sets of rules, regulations and retention strategies designed to avoid and weed out underperforming students (Lubienski, 2007; Jennings, 2010; Miron, Urschel & Saxton, 2011). A charter school operator seeking to avoid disadvantaged student populations might thus pursue spatial, and/or non-spatial strategies. The proposed analyses will be designed to disaggregate the impact of spatial and non-spatial sources of segregation.

A two-part analysis will be described. Analysis 1 (A1) is designed to test the first three hypotheses, H1, H2, and H3, utilizing the entire population of for-profit charter schools compared with the population of non-profit charters. The second analysis (A2) tests H1, H2, and H3 in six diverse local contexts, in order to test H4. This analysis explores whether the presence of for-profit charters is associated with particular charter/non-charter racial and/or socioeconomic student sorting patterns. In short A1 measures the particular racial and socioeconomic composition of for-profit charter schools to test H1, H2 and H3, while A2 tests H1, H2, and H3 in six diverse local contexts in order to assess H4 and begin to explore what effect the entry of uniquely market-oriented for-profit charter

schools may have on student sorting patterns within school "markets". Each analysis will now be described in detail.

## Analysis 1: Comparative for-profit/non-profit analysis[2]

**Figure 3.2: Analysis 1 Research Questions**

1.1. Does the racial composition of the census block group where an EMO-operated charter school is located predict the likelihood that the school is operated by a for-profit corporation or a non-profit organization?

1.2. Does the racial composition of the student population of an EMO-operated charter school predict the likelihood that the school is operated by a for-profit or non-profit organization?

1.3. Do the rates of homeownership in a census block group where an EMO-operated charter school is located predict the likelihood that the school is operated by a for-profit corporation or a non-profit organization?

1.4. Does the Title-I eligibility of an EMO-operated charter school predict the likelihood that it is operated by a for-profit corporation or a non-profit organization?

*Database Construction*

Analysis 1 explores what is distinct about the racial and socioeconomic student enrollment of for-profit charter schools. In order to provide perspective on the unique impact of a charter being operated by a for-profit corporation, a comparison group is

[2] The racial categories utilized (Black, white, Hispanic) are based on the categorization schema of the US Census and US Department of Education. For school enrollment numbers, "white" indicates white/non-Hispanic.

utilized. It would be possible to compare for-profit charters with the set of all other public schools. However, this would obscure differences between non-charter schools and charter schools that are not for-profit. Likewise, for-profit charters could be compared with all other charter schools. However, independent charters are distinct from EMO-operated schools. They are freestanding, uniquely idiosyncratic schools. Non-profit EMO-operated charters are chosen as the comparison group because of their similarity to for-profit charters. They have a comparable organizational structure, with groups (of varying sizes) of schools operated by management organizations. Both groups are more likely than non-charters or independent charters to seek to systematically develop strategies to serve certain student populations, whether these are mission-oriented or profit-oriented strategies. Further, the two segments are approximately equal in size, with 729 for-profit charters and 813 non-profit charters. For these reasons, it was determined that the best way to isolate the particular ways that operating as a for-profit charter impacts student-sorting is by comparison to the subset of schools most like them, non-profit EMO-operated charter schools.

The National Education Policy Center (NEPC) has produced a series of annual reports profiling for-profit and non-profit educational management organizations and the schools they operate. The NEPC reports profiling EMOs operating in the 2009-10 school year were used for the analysis (Miron & Urschel, 2010, Molnar, Miron & Urschel, 2010). These reports profiled 1,542 EMO run schools. Of these, 813 schools, educating approximately 237,591 students were run by non-profit EMOs. Another 729 schools, educating 353,070 students were run by for-profit organizations. These reports reflect the authors' efforts to identify all EMO run schools, and they note that "while it is still possible

that we have not identified all EMOs operating nationally, we are confident that we have now identified and profiled the great majority of all EMOs in this report" (Molnar, Miron & Urschel, 2010, p. 3). The NEPC reports enabled the identification of EMO-operated charter schools and identified whether schools were operated by for-profit or non-profit EMOs.

The NEPC reports provide the most comprehensive available data on which schools are operated by EMOs, and whether they are operated by for-profit or non-profit EMOs. However, they do not provide detailed information about school racial and socioeconomic demographics or location data. In order to create a database that provides information on the student demographics and geographic location of these schools, the list of EMO-operated charters from the NEPC reports was joined with information from the Common Core of Data (CCD). The CCD was downloaded from the National Center for Education Statistics (Common Core of Data website). The CCD is the core dataset describing all public K-12 schools in the United States. It provides essential basic information about each school. Of the 1,542 schools in the NEPC reports, 1,455, (94%) of the schools were successfully matched with the Common Core of Data. Another 69 schools were eliminated because they were district (non-charter) schools operated by EMOs, bringing the total number of schools in the analysis to 1,386. The CCD includes latitude and longitude data for each school, allowing for the geo-location of schools. It also provides detailed statistics on the racial composition of the school's student population. This is used both to compare the racial composition of various school types and compared with the racial composition of the CBGs where schools are located to determine how closely schools reflect the racial composition of the neighborhoods where they are located. The CCD also provides free and reduced lunch eligibility rates (FRL). FRL is the most commonly used proxy variable for the

socioeconomic status of a school's student population. If a student's family income is below given threshold levels ($40,793 for a family of four in the 2009-10 school year) that student is eligible for free or reduced price lunch. Therefore the proportion of eligible students expresses the proportion of students that come from families below that threshold. Another proxy measure for socioeconomic status is Title-I eligibility. Title I is a federal program that provides supplementary funding to schools that educate large proportions or numbers of students from low-income families. Specifically, "Schools in which children from low-income families make up at least 40 percent of enrollment are eligible to use Title I funds for schoolwide programs that serve all children in the school." (US DOE Title-I Program Description). In this way, a Title-I eligible school is a school that educates a significant proportion of low-income students. This variable is used to compare the rate of Title-I eligibility across different school types, and by extension the likelihood that different operators run schools that enroll high rates of low-income students.

*Geographic Information Systems*

Geographic Information Systems (GIS) is a broad term referring to software and technology that permits the representation and analysis of spatially categorized data. The use of GIS allows for analyses that are sensitive to the broad spatial continuities and differences that exist in the real world. Lubienski & Dougherty (2009) note how "GIS has been notably underexploited as a tool in education research, particularly in areas such as studies of school choice programs, where spatial patterns are critical to understanding the potential to leverage improvements in how we educate our children." (p. 487) The primary use of GIS for the current analyses is to facilitate the joining of different data sources based

on geography. In this way, data representing the local demography of neighborhoods where schools are located is joined with data on the racial and socioeconomic composition of the school's enrollment. Research on local school districts has demonstrated that charter schools may intentionally locate in areas that will allow them to access less-risky student populations (Lubienski, Gulosino & Weitzel, 2009; Gulosino & Lubienski, 2011). In order to determine whether this strategy is widespread among for-profit charter schools, geolocation is utilized to match each school to the racial and socioeconomic demography of the areas where they locate.

In Geographic Information Systems, geography is represented by vector geometry. Essentially, real-world geography is represented as points, lines and polygons. Schools are represented as points in the process of geolocation. The Common Core of Data includes detailed latitude and longitude data allowing for precise geolocation of schools. These x and y coordinates place a point within a set of polygons, representing the desired geographic unit, which sub-divide the geography of the United States. All geo-location and mapping was performed in ArcGIS 10 (Esri, 2012), a proprietary geographic information system software.

*The 2010 United States Census*

Every ten years, the United States conducts a census of its population. This census, conducted by the US Census Bureau, is intended to provide an accurate representation of who lives where within the entire nation. In addition to recording a number of demographic and socioeconomic factors, each census also entails the partial redrawing of the population geography of the United States. Zip codes, census tracts, and census block

groups are smaller census units that may be somewhat altered for each census due to population changes. The geography created for each decennial census is used over the following ten years to describe any further data collection by the census bureau.

The polygons to which points are matched for this analysis are 2010 census block groups (CBGs). Census block groups are subdivisions of census tracts, with populations generally ranging between 600 – 3,000 people. They are also the smallest unit by population for which the census bureau provides publicly available data on race and socioeconomic demography. Because they represent the smallest level of population aggregation for which data is available, researchers have found CBGs to be the preferred unit of analysis for describing local geography (Kaplowitz, Perlstadt & Post, 2010). This in turn follows from Tobler's (1970) first law of geography, "everything is related to everything else, but near things are more related than distant things". Gulosino & D'Entremont's (2011) analysis of charter school location in New Jersey demonstrated how using CBGs as a geographic unit of analysis better reflects how charter location may impact racial and socioeconomic segregation compared to zip codes or census tracts. Utilizing smaller geographic units reduces the likelihood that CBG demographic data is substantially unrepresentative of the actual neighborhood where schools locate. Previous research utilizing the school district as the geo-demographic unit of reference is not sensitive to the ways that in the large urban districts where charter schools proliferate, there can be a greatly uneven distribution of population by race and class (Miron, Urschel, Mathis & Tornquist, 2010). It is true that CBG boundaries do not necessarily line up with what people indigenous to an area would recognize as neighborhood boundaries. However, they represent the best widely available "neighborhood" demographic estimates for schools.

The census also includes data on the racial composition of CBGs. Cities in the United States are highly segregated, and there is a strong, self-reinforcing relationship between residential and school segregation (Lareau & Goyette, 2014). The racial composition of a CBG would thus be expected to be highly predictive of the racial composition of a school located in that CBG. The racial composition will be used both as a predictive variable of where different types of schools locate, and as a control variable for examining student population composition after controlling for CBG level racial composition. The census also includes data on rates of homeownership by census block group. Homeownership is an important socioeconomic indicator. The rate of homeownership in the CBG where a school is located is likely to be predictive of the proportion of low-income students in the area (Zhan & Sherraden, 2003). Homeownership is a measure of socioeconomic status known to be an important indicator of likely academic success. Family asset ownership is positively correlated with student academic success, and homes are generally the most valuable asset a family has. Higher homeownership in a CBG indicates that a higher proportion of families have significant assets. Dalton Conley (2001) has shown how wealth is able to explain educational inequalities that traditional measures of SES like income and parent's education do not. All other factors being equal, we would expect a CBG with a higher percentage of owner-occupied properties to in general be wealthier than a CBG with lower percentage of ownership. A charter school operator that was interested in avoiding enrolling high proportions of low-income students would be likely to consider homeownership among other socioeconomic factors before deciding where to locate a new school.

**Analytical Strategy: Multilevel Logistic Regression**

Douglas Luke (2004) discusses the value of multilevel modeling by noting that "[w]hen one considers almost any phenomenon of interest to social and health scientists, it is hard to overestimate the importance of context" (p.1). Crucial social science questions are generally situated within complex social contexts, however analyses are not always sensitive to this. Education researchers have been at the forefront of developing more contextually sensitive measurement schemas, with multilevel modeling, also called hierarchical linear modeling (HLM) or mixed-effects modeling, being an important development in placing the study of schools in proper social context (Raudenbush & Bryk, 1986). This analysis explores school geography and demography across 31 different state contexts that vary widely in terms of policy contexts, demographic profiles and EMO concentration. This necessitates the use of a modeling strategy that is sensitive to whether trends are consistent across these diverse state contexts.

Multilevel modeling is utilized because it allows for the disaggregation of variance to multiple levels. For this study the models separate within-state, school-to-school variance from variance across states. Multilevel regression models nested phenomena and more accurately determines the significance of a relationship across widely differing contexts. The analyses utilize multilevel modeling with schools as the level-1 unit of analysis and states as the level-2 unit. This data structure is utilized because of the demonstrated importance of state-level charter school policy in determining the degree to which charter schools proliferate, and the types of schools that proliferate in given states (Holyoke, Henig, Brown & Lacireno-Paquet, 2009, also see Appendices 1 and 2 for a detailed analysis of the impact of State contexts on for-profit charter proliferation). All modeling was performed in

**Figure 3.3 Multilevel Logistic Regression Equation for Analysis 1**

The multilevel equation can be expressed in two ways, either as a systems-of-equations model, or as a mixed-effects model (Luke, 2004).

<u>System of Equations Model:</u>

Level 1: $Y_{ij} = \beta_{oj} + \beta_{1j} X_{ij} + \ldots + r_{ij}$

Level 2: $\beta_{oj} = \gamma_{oo} + u_{oj}$

$\beta_{1j} = \gamma_{1o}$

<u>Mixed Effects (Combined) Model:</u>

$Y_{ij} = \gamma_{oo} + \gamma_{1o} X_{ij} + u_{oj} + r_{ij}$

Where:

- $Y_{ij}$ = The probability that school "i" in state "j" is operated by a for-profit EMO.
- $B_{oj}$ = The variable intercept for the given state "j".
- $B_{1j}$ = The value representing the overall slope of the relationship between the given explanatory variable $X_{ij}$ and the dependent variable $Y_{ij}$.
- $X_{ij}$ = The value of the given explanatory variable for school "i" in state "j".
- $r_{ij}$ = The error term (un-modeled variability) for school "i" in state "j".
- $\gamma_{oo}$ = The mean value of the level-1 dependent variable, controlling for the level-2 predictor.
- $u_{oj}$ = The error term (un-modeled variability) for state "j".
- $\gamma_{1o}$ = The mean value of the level-1 slope, controlling for the level-2 predictor.

"R", an open-source statistical software package (The R Foundation for Statistical Computing). The supplementary packages lme4 or "Linear Mixed-Effects Models Using S4 Classes" (Bates, Maechler & Bolker, 2011) and nlme or "Linear and Nonlinear Mixed Effects Models" (Pinheiro et al., 2012) were utilized for the multilevel analyses.

The equation form used is specified in detail in Figure 3.3. Logistic regression is used, with the probability that a school is operated by a for-profit, as opposed to non-profit EMO as the outcome variable. In this way, a statistically significant result from a given predictor variable indicates a failure of the null hypothesis that for-profit and non-profit charter schools enroll statistically indistinguishable student populations and/or locate in demographically statistically indistinguishable areas. The predictive variables are based on CBG racial composition, CBG rates of homeownership, school racial composition, and school Title-I eligibility. Testing whether the racial and/or socioeconomic composition of a school is predictive of whether a school is likely to be operated by a for-profit will be utilized in considering whether to reject or fail to reject Hypotheses 1 and 2. Testing whether the racial and/or socioeconomic composition of CBGs where schools locate is predictive of whether a school is likely to be operated by for-profit, will test whether it is proper to reject or fail to reject Hypothesis 3.

### Analysis 2: Six-district sample

The results of Analysis 1 will demonstrate whether for-profit charter schools, as a segment, have racially and/or socioeconomically different enrollment patterns than non-profit schools. However, Analysis 1 cannot demonstrate how local patterns of racial and socioeconomic segregation are impacted by the existence of for-profit charter schools.

Analysis 2 is designed to analyze these local patterns by performing detailed investigations into six individual school districts. To that end, four research questions are considered for each of the six districts being studied. The analyses conducted to address these research questions, from districts with different levels of for-profit school proliferation, will then address two *market-effect* research questions that assess how the prevalence of for-profit charter schools in a school district may influence student-sorting patterns within that district.

**Figure 3.4: Analysis 2 Research Questions**

*Individual district research questions*

**2.1.** **Racial Enrollment By School Type**: Do charter schools and non-charter schools enroll statistically different proportions of students of three different racial groups (Black, white, Hispanic)? Do different types of charter schools (independent, non-profit, for-profit) enroll statistically different proportions of students of three different racial groups (Black, white, Hispanic)?

**2.2.** **Racial Composition of Census Block Group By School Type**: Do charter schools locate in CBGs with statistically different proportions of residents of three different racial groups (Black, white, Hispanic)? Do different types of charter schools (independent, non-profit, for-profit) locate in CBGs with statistically different proportions of residents of three different racial groups (Black, white, Hispanic)?

**2.3.** **Socioeconomic Enrollment By School Type**: Do charter schools and non-charter schools enroll statistically different proportions of the students eligible for free or reduced price lunch? Do different types of charter schools (independent, non-profit,

for-profit) enroll statistically different proportions of the students eligible for free or reduced price lunch?

**2.4. Socioeconomic Composition of Census Block Group By School Type:** Do charter schools and non-charter schools locate in CBGs with statistically different median family incomes? Do different types of charter schools (independent, non-profit, for-profit) locate in CBGs with statistically different median family incomes?

*Market-effect research questions*

**2.5. Racial Market-Effect:** Do differences in student racial enrollment patterns and/or the racial composition of CBGs where schools locate vary between charters and non-charters systematically according to the proportion of charter schools that are operated by for-profit corporations in the districts?

**2.6. Socioeconomic Market Effect:** Do differences in student socioeconomic enrollment patterns and/or the socioeconomic composition of CBGs where schools locate vary between charters and non-charters systematically according to the proportion of charter schools that are operated by for-profit corporations in a given district?

*How School Districts Were Selected*

EMO-operated charter schools are highly concentrated in six states: Arizona, California, Florida, Michigan, Ohio, and Texas. These six states together account for 82% (1,131 out of 1,386) of all EMO-operated charter schools in school year 2009-10. The number of EMO-operated charters in these states ranged from a high of 290 (Texas) to a low of 124 (California) EMO-operated charters. The state with the next highest number of

EMO-operated charters after California is New York with 41, indicating that there is a substantial gap between the extent to which EMOs have penetrated into those six states compared to all other states (Table 1.1 provides an overview of the distribution of EMO-operated charters across states). Because EMOs are highly concentrated in these six states, they present the best opportunity for a further comparative analysis of how the relative proliferation of for-profit versus non-profit charters impacts student sorting at the district level. One district was selected for analysis from each state, so that student-sorting patterns across six very different state contexts could be analyzed. In each state, the largest urban district with the highest number of EMO operated schools was chosen. These districts, by state, are:

- Michigan: Detroit Public Schools (Detroit)
- Florida: Miami-Dade County Public Schools (Miami)
- California: Los Angeles Unified School District (Los Angeles)
- Texas: Houston Independent School District (Houston)
- Arizona: Tucson Unified School District (Tucson)
- Ohio: Cleveland Metropolitan School District (Cleveland).

These six districts alone accounted for 15% (206 out of 1,386) of all EMO-operated charter schools in 2009-10.

School districts are the chosen unit of analysis for a few reasons. The governance of schools in the United States has historically been highly localized (Tyack, 1974). Local control of public schools takes place within school districts. School districts are generally overseen by a democratically elected school board that oversees all public schools. The school district has historically been the most significant discrete unit determining the

operation of public education. Additionally, large city school districts have typically been the sites where each new wave of education reform is initiated (Mirel, 1999; Tyack, 1974). Large urban school districts are the location for a disproportionate share of all charter schools. In some states this happens in part because of formal restraints prohibiting the opening of charters outside of certain urban districts (e.g. Missouri). In many states, charter growth in cities is justified because these districts, typically with high concentrations of low-income students, often demonstrate substandard academic outcomes. Finally, charter growth in city districts is often imposed by outside interests following the dissolution or disempowerment of local school boards and the removal of democratic control through mayoral or state takeovers (Reckhow, 2013). Thus the relative lack of political and economic power is associated with the imposition and concentration of charter schools in large urban districts.

The racial and socioeconomic demographics of each district are detailed in Table 3.1. Figure 3.5 visualizes the socioeconomic distribution of each district. Table 3.2 provides a five-number summary of the racial distribution of students across the districts. The distribution of school types across the districts is detailed in Table 3.3, and visualized in Figure 3.6. Each of the six districts in the analysis is either majority Black or majority Hispanic/Latino. Median household income ranges widely, from $24,941 in Cleveland to $46,255 in Miami. Two of the districts have only non-profit EMO charter schools (Houston and Los Angeles), two have substantial proportions of both for-profit and non-profit charter schools (Cleveland and Tucson), and two have primarily for-profit EMO charter schools (Detroit and Miami-Dade). This provides a natural differentiation into three analytical categories (non-profit only, mixed for-profit/non-profit, predominantly for-

profit). If student-sorting patterns differ across categories, this would provide evidence of a possible *market-effect* associated with the proliferation of for-profit charters. Each district is now briefly described.

**Table 3.1: Socioeconomic and Racial Demographics of Selected Districts**

| | Cleveland, OH | Detroit, MI | Houston, TX | Los Angeles, CA | Miami-Dade, FL | Tucson, AZ |
|---|---|---|---|---|---|---|
| # of Public School Enrolled Families | 33,075 | 72,545 | 113,810 | 389,990 | 209,375 | 39,720 |
| Proportion By Household Income (*in dollars*) | | | | | | |
| Under 10,000 | 21.5% | 18.7% | 7.9% | 6.1% | 6.8% | 6.8% |
| 10,000-14,999 | 9.8% | 10.5% | 7.2% | 6.1% | 5.4% | 5.5% |
| 15,000-24,999 | 18.8% | 18.3% | 16.4% | 13.8% | 12.6% | 12.0% |
| 25,000-34,999 | 13.8% | 13.2% | 14.3% | 13.2% | 12.7% | 14.4% |
| 35,000-49,999 | 14.4% | 14.4% | 15.8% | 15.9% | 15.8% | 14.8% |
| 50,000-74,999 | 12.9% | 12.4% | 15.5% | 17.9% | 18.3% | 19.6% |
| 75,000-99,999 | 5.1% | 6.1% | 8.8% | 10.3% | 11.2% | 12.6% |
| 100,000-149,999 | 3.2% | 5.2% | 7.7% | 9.7% | 11.0% | 10.0% |
| 150,000-199,999 | 0.3% | 1.1% | 2.7% | 3.5% | 3.4% | 2.9% |
| Over 200,000 | 0.2% | 0.2% | 3.5% | 3.5% | 2.9% | 1.2% |
| Median Household Income | $24,941 | $26,577 | $38,606 | $44,644 | $46,255 | $45,790 |
| Percentage of Families Below the Poverty Line | 48.3% | 45.8% | 32.7% | 28.6% | 23.3% | 25.4% |
| # of Public School Enrolled Students | 58,945 | 141,955 | 208,365 | 688,795 | 354,350 | 69,620 |
| Proportion By Race/Ethnicity | | | | | | |
| Hispanic/Latino | 14.5% | 9.8% | **61.2%** | **73.0%** | **60.6%** | **57.9%** |
| Black Non-Hisp. | **64.7%** | **83.1%** | 25.6% | 8.9% | 25.1% | 4.8% |
| White Non-Hisp. | 16.3% | 3.8% | 9.2% | 9.8% | 12.1% | 27.8% |
| Asian Non-Hisp. | 0.7% | 1.1% | 3.0% | 5.6% | 1.2% | 1.5% |
| Other | 3.7% | 2.2% | 1.1% | 2.6% | 1.0% | 8.0% |

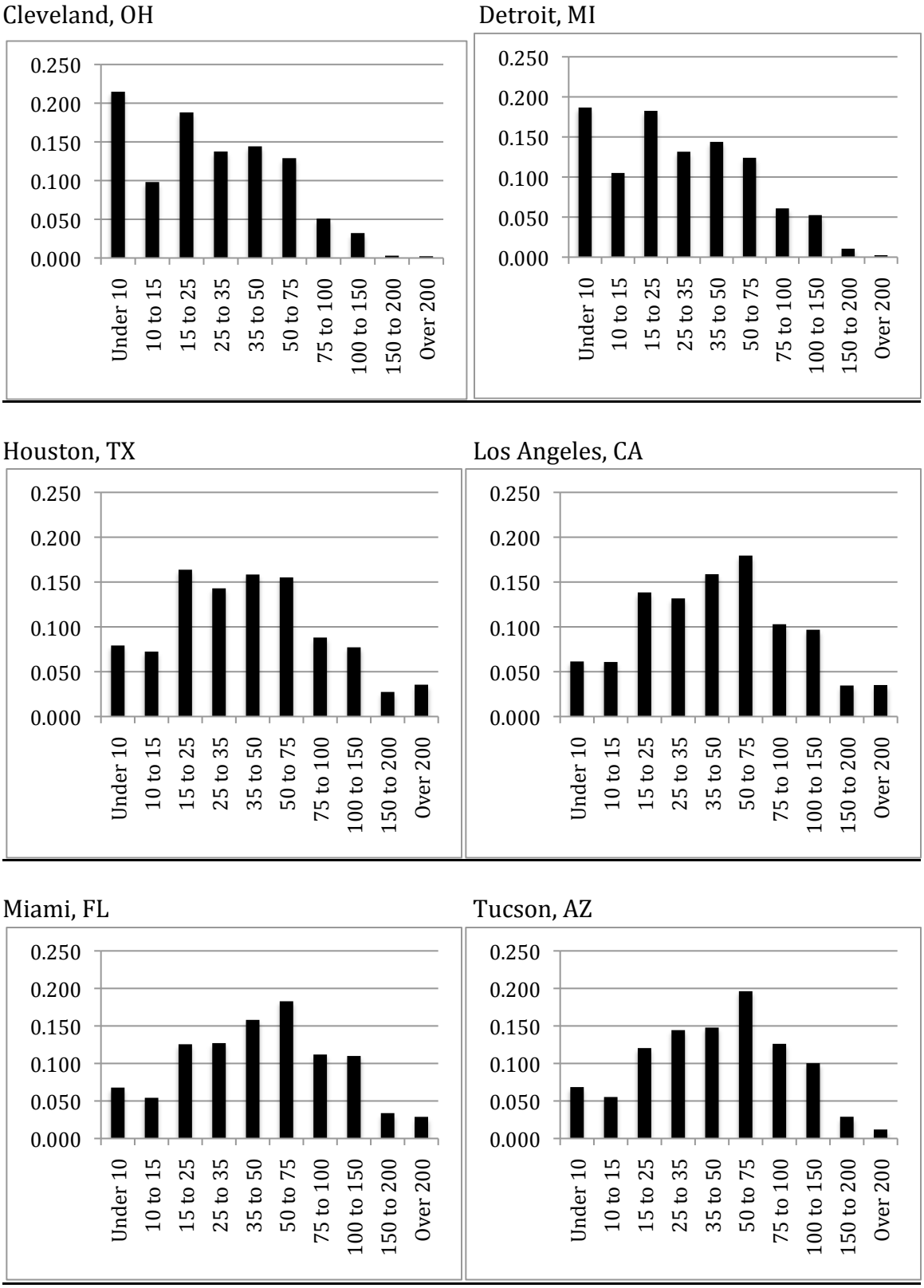
Data Sources: American Community Survey 2008-2012, Common Core of Data 2009-10

**Table 3.2: Five Number Summary of Dispersion of Students By Race and District Across all Public Schools: ***

| | | Minimum | 1st Quarter | Median | 3rd Quarter | Maximum |
|---|---|---|---|---|---|---|
| Miami | Black | 0% | 2.2% | 14.5% | 56.2% | 98.0% |
| | Hispanic | 2.0% | 35.9% | 66.0% | 88.7% | 100% |
| | White | 0% | 1.4% | 3.9% | 10.7% | 66.2% |
| Detroit | Black | 0% | 96.0% | 98.8% | 99.5% | 100% |
| | Hispanic | 0% | 0% | 0.2% | 0.9% | 100% |
| | White | 0% | 0% | 0.5% | 1.4% | 94.1% |
| Tucson | Black | 0% | 2.0% | 4.4% | 8.2% | 20.0% |
| | Hispanic | 3.2% | 40.3% | 55.0% | 78.5% | 97.0% |
| | White | 0% | 7.9% | 25.4% | 42.9% | 75.9% |
| Cleveland | Black | 0% | 43.5% | 88.5% | 97.6% | 100% |
| | Hispanic | 0% | 0.3% | 1.9% | 16.6% | 87.1% |
| | White | 0% | 0.8% | 4.7% | 25.0% | 81.1% |
| Los Angeles | Black | 0% | 1.2% | 4.5% | 13.1% | 99.7% |
| | Hispanic | 0.3% | 54.8% | 80.4% | 93.8% | 100% |
| | White | 0% | 0.2% | 1.1% | 8.9% | 96.7% |
| Houston | Black | 0% | 6.1% | 23.4% | 55.2% | 100% |
| | Hispanic | 0% | 31.8% | 63.1% | 87.5% | 100% |
| | White | 0% | 0.6% | 1.4% | 3.8% | 67.3% |

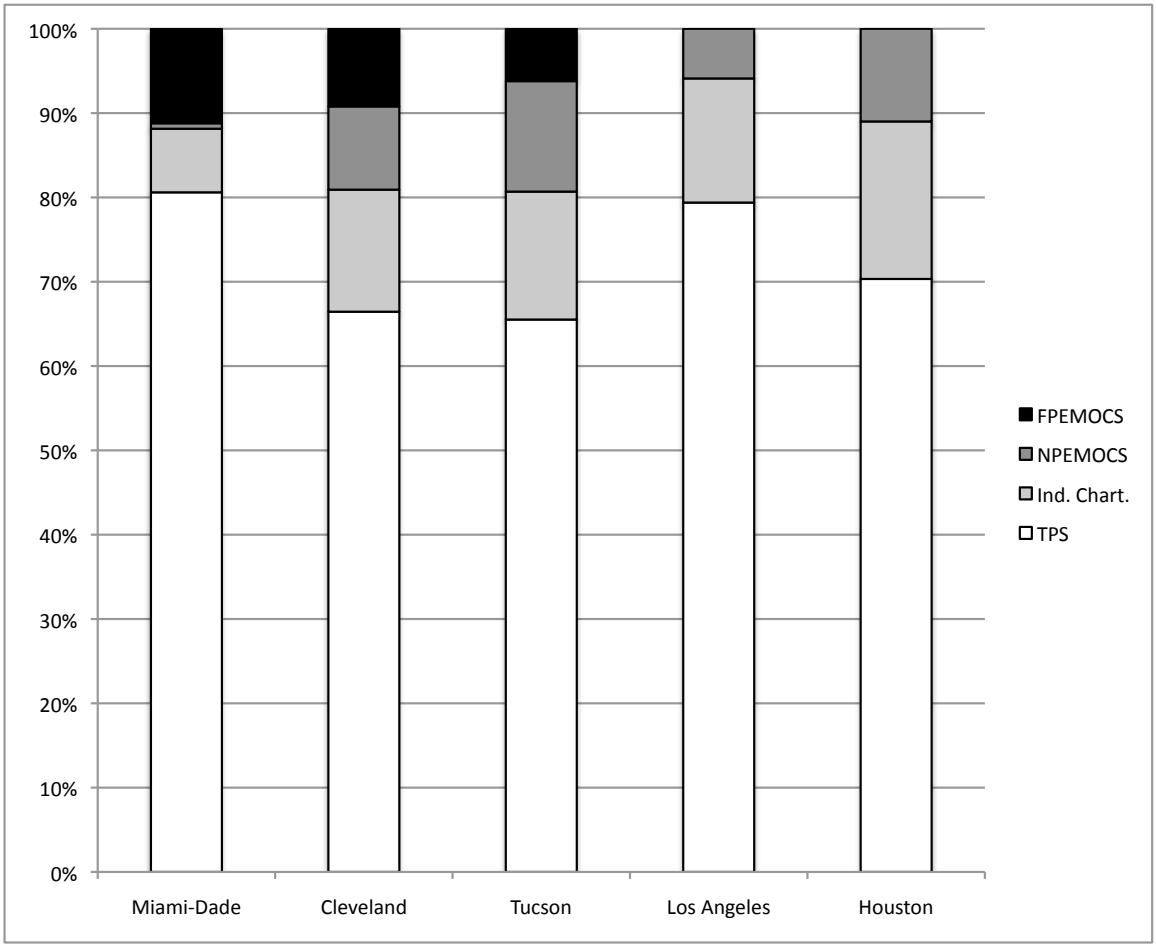
*HOW TO INTERPRET THIS TABLE: The analysis represents the distribution of students by race by district. For each race/district category, all schools are ordered from the school with the lowest proportion of students of that racial group in that district up to the highest proportion of students for that racial group. So, for example, for Black students in Miami, at least one school had 0.0% (zero) Black students, one-quarter of schools had 2.2% or fewer Black students, an equal number of schools had more and less than 14.5% Black students, one-quarter of schools had a 56.2% or higher proportion of Black students, and the highest proportion of Black students in any school in Miami was 98.0%.

**Figure 3.5: Proportion of Public School Enrolled Families By Income Level in $1,000s**




Data Source: Common Core of Data 2009-10

**Figure 3.6: School Type Proportion By District**




FPEMOCS = For-profit EMO operated charter school
NPEMOCS = Non-profit EMO operated charter scchol
Ind. Chart. = Independent charter school
TPS = Non-charter school (primarily traditional public schools

**Table 3.3: Number and Proportion of Schools By District and Type**

| | Traditional Public Schools | Independent Charters | Non-Profit Charters | For-Profit Charters | TOTAL |
|---|---|---|---|---|---|
| Detroit | 147 (65.3%) | 20 (8.9%) | 9 (4.0%) | 49 (21.8%) | 225 |
| Miami | 374 (80.6%) | 35 (7.5%) | 3 (0.6%) | 52 (11.2%) | 464 |
| Cleveland | 101 (66.4%) | 22 (14.5%) | 15 (9.9%) | 14 (9.2%) | 152 |
| Tucson | 95 (65.5%) | 22 (15.2%) | 19 (13.1%) | 9 (6.2%) | 145 |
| Los Angeles | 728 (79.4%) | 135 (14.7%) | 54 (5.9%) | 0 (0.0%) | 917 |
| Houston | 256 (70.3%) | 68 (18.7%) | 40 (11.0%) | 0 (0.0%) | 364 |
| TOTALS | 1,701 (75.0%) | 302 (13.3%) | 140 (6.2%) | 124 (5.5%) | 2,267 |

*Primarily For-Profit Districts: Miami, Florida & Detroit, Michigan*

The two states to most enthusiastically adopt for-profit charter schools are Michigan (with 186 for-profit charters) and Florida (141). Combined, just over half of all for-profit charters are located in these two states (327 out of 653). Both states also have low proportions of non-profit charter schools, with for-profits outnumbering non-profits at least 8 to 1. For Michigan, Detroit was the selected district, and for Florida it was Miami. These districts have a combined 101 for-profit charter schools, 15% of the total number of for-profit charter schools nationally.

Miami is the geographically largest district studied. As is common in many areas of the Southern United States, the school districts in Florida are coterminous with County boundaries. This often results in Southern states having geographically larger school districts. The Miami District is 2,431 square miles. The next largest district in the study is Los Angeles at 704 square miles, less than one-third the size of Miami. However, the inhabited proportion of Dade County is significantly smaller. The large majority of the population in Miami-Dade County is classified as city or suburban, with socioeconomic demographics similar to the unified districts in this study (Tucson and Los Angeles). Miami-Dade has by a small margin the highest median family income of the six districts, at $46,255. It has the highest number of for-profit charter schools (52), though a smaller proportion of all public schools are for-profit charters (11.2%) than in Detroit. It also has the highest ratio of for-profit to non-profit charters (95% of EMO-operated charters are for-profit).

Detroit has the highest proportion of public schools that are for-profit charters of any of the districts under analysis (21.8% of all public schools). It also has the least racially diverse student population, with an 83.1% Black student proportion. The large majority of public schools in Detroit enroll almost entirely Black students, with three-quarters of Detroit schools enrolling at least 96% Black students (Table 3.2). Detroit has the second-lowest median household income ($26,577) and the second highest percentage of families below the poverty line (45.8%) of the districts studied. 84% of EMO operated charter schools in Detroit are for-profit (49 out of 58). Detroit's racial homogeneity suggests that it may be more difficult for an EMO to pursue a particular racial enrollment strategy. Because

of this, Detroit presents an interesting counterpoint to the more racially diverse districts in the analysis.

These two districts are similar in their embrace of for-profit charter schools, but very different in other ways. One is in the South, the other in the North, one has a median household income 74% higher than the other, one is majority Black, the other majority Hispanic. Because of the significant demographic differences, they provide a useful comparison for the extent to which demographic differences or the proliferation of for-profit charter schools is more likely to predict student-sorting patterns.

*Mixed Non-Profit / For-Profit Districts: Tucson, Arizona & Cleveland, Ohio*

Tucson has the fewest total schools of any of the six districts studied (145). It has the second highest median family income at $45,790. It also has the highest proportion of white, non-Hispanic students (27.8%) of any of the six districts studied. A school operator attempting to cultivate a disproportionately white student enrollment may have more opportunity to do so in Tucson compared to the other districts studied. Arizona as a state has embraced the charter school movement to a greater extent than any other state, boasting the highest proportion of public charter schools of any state (not counting Washington D.C.). Tucson was selected instead of the more populous Phoenix area because the latter consists of a patchwork of several elementary school districts, high school districts, and unified districts. Because the analysis focuses on school districts as the unit of analysis, Phoenix was not as suitable for the analysis as Tucson, where one district represents the urban area.

Cleveland has the lowest median household income of the six school districts ($24,941), the highest proportion of public school enrolled families earning under $10,000 per year (21.5%), and highest percentage of families under the poverty line (48.3%). It has a large and diverse charter school sector, and is the only district of the six to have at least a 9% share of public schools in the independent (14.5%), non-profit (9.9%) and for-profit (9.2%) charter categories. Cleveland is also notable for having a substantial private school voucher program as an additional school choice option. Cleveland is in some ways the most racially diverse of the six districts. The overall student population is 65% Black, but with substantial white-non-Hispanic (16%) and Hispanic (15%) student segments, it is the only district in the study with as much as 13% of overall student population in three different racial groups.

There is a $20,849 difference in median household income between Tucson and Cleveland. Tucson is a predominantly Hispanic district while Cleveland is a predominantly Black district. Like the two predominantly for-profit districts, these two districts provide substantially different racial and socioeconomic landscapes.

*Non-Profit Only Districts: Houston, Texas & Los Angeles, California*

The metropolitan area of Houston Texas is by some measures the most racially diverse in the nation (Emerson et al, undated). Houston has a median household income of $38,606, fourth highest of the six districts. Houston is a predominantly Hispanic district (61%) with a substantial Black minority (26%). Houston is notable as the city where the largest non-profit EMO chain, the Knowledge Is Power Program (KIPP) schools, originated.

Los Angeles has the largest overall student enrollment of any of the school districts studied, and with 917 public schools, is the second largest school district nationally after New York City. It has the largest proportion of Hispanic students of the six districts, at 73.0%. The median family income is the third highest of the six at $44,644. It has the largest number of any of the six districts of both independent charter schools (135, 14.7% of public schools) and non-profit charters (54, 5.9% of public schools), and no for-profit charter schools.

In both districts a majority of students are Hispanic. Both districts also have fewer than a third of families living below the poverty line. Because of the greater socioeconomic diversity in Houston and Los Angeles, it may be easier to detect any efforts by different types of charter schools to enroll socioeconomically distinct populations, as compared to the comparatively more homogenous districts in the other two categories.

The six districts selected have some similarities and many important differences. They are all urban districts. They all have substantial numbers of EMO-operated charter schools. They all are majority non-white districts. They all have between 19% and 35% of public schools operating as charters. Among the important differences are overall district enrollment (11 to 1 total enrollment difference between Los Angeles and Cleveland), the overall balance of independent, non-profit, and for-profit charter schools, and the overall socioeconomic and racial profiles of the districts. This range of characteristics provides a diverse sample for analysis. Because of the purposeful selection of districts with disproportionately high numbers of charters, the results may not be generalizable to districts with lower concentrations of charter schools. However, the results may provide

evidence of what could happen in other districts that pursue charter growth strategies similar to these districts.

**Database Construction**

In order to get information for all public schools in the six target districts, the CCD was downloaded for each of the states in which the target districts are located (Arizona, California, Florida, Michigan, Ohio, Texas). For each state, all public schools were geolocated into ArcGIS using the detailed latitude and longitude data contained within the CCD. Then school district shapefiles were downloaded from the 2010 US Census. Every public school that was located within the target school district boundaries was selected, and all schools located outside district boundaries were eliminated. This left the schools located in each of the six target districts, which formed the basis of the sample of schools for the database.

The database from Analysis 1 was cross-referenced against the new database to identify for-profit and non-profit charter schools. The CCD includes a variable indicating whether a school is a charter, so schools identified as charters by the CCD that were not identified in the NEPC reports as for-profit or non-profit were labeled as independent charters. The resulting database has four categories of schools: for-profit charters, non-profit charters, independent charters, and non-charter public schools.

*The American Community Survey Five-Year Estimates (2008-2012)*

The American Community Survey represents the ongoing work of the US Census Bureau to provide updates to the decennial census. In addition to providing yearly updates

to census data, the ACS provides some unique data that is not available in the decennial census. Census block group level data on median income is not available from the census, but is included in ACS five-year estimates. These statistics are presented as five-year estimates because unlike the census, the ACS samples the population instead of attempting to survey all residents. Over five years of sampling, the estimates are considered to be relatively stable. Because all of the other data sources for the analysis are for the year 2010 or the school year 2009-2010, the ACS estimates for 2008-2012 are used because they are centered on the year 2010. This 2008-2012 ACS estimates were downloaded from the ACS website (American Community Survey website).

One variable was taken from the ACS 2008-2012 dataset for this analysis: median household income by census block group. This variable is important because median household income level is one of the best indicators of a given area's socioeconomic status. This variable will be used both to determine whether there are differences between the socioeconomic status where different types of schools are located, as well as to control for neighborhood socioeconomic status when analyzing the socioeconomic status of student enrollment patterns across different school types. Analysis 1 was conducted prior to the relevant ACS data being made available, but it was available at the time of Analysis 2. Median income provides a clearer SES proxy so it was used once it was available. The ACS median household income data was downloaded, as well as 2010 US census racial composition data and census block group geometry.

Each school from the database was geolocated into the CBG in which they are located using CCD latitude/longitude data. This allowed the appropriate CBG data to be attributed to schools. The resulting dataset includes school demographic information from

the CCD, EMO data from the NEPC reports, CBG racial composition data from the 2010 US census, and median income data from the 2008-2012 ACS.

**Analytical Strategy: Logistic Regression**

Analysis 1 utilized varying intercepts multilevel modeling in order to account for the wide variety of different state contexts in the analysis. Analysis 2 conducts separate analyses for individual districts, making multilevel modeling unnecessary. For each of the six districts, thirty single variable and combined analyses were conducted (180 total, detailed in Figure 3.7). The eight predictor variables are; the proportion of school enrollment that is (1) Hispanic, (2) Black, (3) white, the proportion of the CBG population where the school is located that is (4) Hispanic, (5) Black, (6) white, (7) the proportion of enrolled students eligible for free or reduced-price lunch and, (8) median family income of the CBG where the school is located. The geo-demographic and enrollment variables were also combined. For example, the proportion of school enrollment that is Hispanic, along with the proportion of CBG population that is Hispanic both as predictors of school type. The equation form used is illustrated in Figure 3.8.

Each demographic factor is analyzed separately in order to discern whether there are evident disparities between different types of schools based on the prevalence of any racial group or the distribution of socioeconomic factors. The first step of the analysis analyzes the probability that charter status predicts enrollment or geo-demographic differences. In this way, any differences between charters and non-charters will be demonstrated. This is similar to the analytical strategy utilized in Analysis 1, conducted at a district instead of a national level. After this, student enrollment and corresponding geo-

**Figure 3.8: Analytical Steps for Analysis 2**

1. Socioeconomic status
    - 1.1. Regress charter status on CBG median income.
    - 1.2. Regress charter status on FRL proportion.
    - 1.3. Regress CBG median income and charter status on FRL proportion.
    - 1.4. Regress EMO/non-EMO charter status on CBG median income.
    - 1.5. Regress EMO/non-EMO charter status on FRL proportion.
    - 1.6. Regress CBG median income and EMO/non-EMO charter status on FRL prop.
    - 1.7. Regress for-profit/non-profit status on CBG median income.
    - 1.8. Regress for-profit/non-profit status on FRL proportion.
    - 1.9. Regress CBG median income and for-profit/non-profit status on FRL proportion.

2. Racial composition
    - 2.1. Regress charter status on CBG white population proportion.
    - 2.2. Regress charter status on CBG Hispanic population proportion.
    - 2.3. Regress charter status on CBG Black population proportion.
    - 2.4. Regress charter status on white enrollment proportion.
    - 2.5. Regress charter status on Hispanic enrollment proportion.
    - 2.6. Regress charter status on Black enrollment proportion.
    - 2.7. Regress CBG white pop. prop. and charter status on white enrollment
    - 2.8. Regress CBG Hispanic pop. prop. and charter status on Hispanic enrollment
    - 2.9. Regress CBG Black pop. prop. and charter status on Black enrollment
    - 2.10. Regress EMO/non-EMO charter status on CBG white pop. proportion.
    - 2.11. Regress EMO/non-EMO charter status on CBG Hispanic pop. proportion.
    - 2.12. Regress EMO/non-EMO charter status on CBG Black pop. proportion.
    - 2.13. Regress EMO/non-EMO charter status on white enrollment.
    - 2.14. Regress EMO/non-EMO charter status on Hispanic enrollment.
    - 2.15. Regress EMO/non-EMO charter status on Black enrollment.
    - 2.16. Regress for-profit/non-profit charter status on CBG white pop. proportion.
    - 2.17. Regress for-profit/non-profit charter status on CBG Hispanic pop. proportion.
    - 2.18. Regress for-profit/non-profit charter status on CBG Black pop. proportion.
    - 2.19. Regress for-profit/non-profit charter status on white enrollment.
    - 2.20. Regress for-profit/non-profit charter status on Hispanic enrollment.
    - 2.21. Regress for-profit/non-profit charter status on Black enrollment.

A total of nine socioeconomic and twenty-one racial composition analyses were conducted in each of six districts, for 180 total analyses.

**Figure 3.9: Logistic Regression Equation for Analysis 2**

Eight separate analyses were conducted for each of the six districts, using three different outcome variables $Y_i$ (144 total separate analyses). Each used the same equation form:

$$\text{General Equation Form: } Y_i = \beta_o + \beta_1 X_i + r_i$$

Where:

- $Y_i$ = The probability that a given school "i" is either
  - A charter school or a non-charter school, or
  - A charter operated by a for-profit or non-profit EMO or
  - An EMO-operated charter school or an independent charter.
- $\beta_o$ = The fixed intercept value for the given equation
- $\beta_1$ = The value representing the overall slope of the relationship between the given explanatory variable $X_i$ and the dependent variable $Y_i$.
- $X_i$ = The value of the given explanatory variable for school "i".
- $r_i$ = The error term (unmodeled variability) for school "i".

$X_i$ refers to different racial and socioeconomic explanatory variables.

For each of the six districts, six racial composition analyses were conducted, where:

- $X_i$ = proportion of school enrollment that is Hispanic.
- $X_i$ = proportion of school enrollment that is Black.
- $X_i$ = proportion of school enrollment that is white.
- $X_i$ = proportion of CBG population that is Hispanic.
- $X_i$ = proportion of CBG population that is Black.
- $X_i$ = proportion of CBG population that is white.

For each of the districts, two socioeconomic composition analyses were conducted, where:

- $X_i$ = proportion of enrolled students eligible for free or reduced-price lunch.
- $X_i$ = median family income of CBG where school is located.

demographic statistics are combined in the analysis in order to explore whether school location and/or non-locational factors are significantly associated with any observed differences in student enrollment between charters and non-charters. Than, similar analyses are conducted comparing for-profit charters with non-profit charters, and EMO charters versus independent charters.

While Analysis 1 attempts to construct a single equation to explain the distinctive student enrollment patterns of for-profit charter schools, Analysis 2 aims for a more detailed and granular analysis. In this way it is more of an exploratory analysis (Tukey, 1977). Because there have been no studies examining *market-effects* associated with the proliferation of for-profit charter schools, this exploratory approach is warranted in order to broadly identify what, if any, sort of *market-effects* may exist. By going through three stages of analysis it will be possible to compare (1) charter/non-charter schools, (2) EMO-operated charter/independent charter schools and (3) for-profit/non-profit charter school sorting patterns. Also, by introducing each predictor variable separately, it may be easier to isolate exactly what, if any sorts of differences there may be between the enrollment and geo-demography of different school types in each of these districts. With each of these analyses conducted in six districts with three different levels of concentration of for-profit charters, some indication of the impact of for-profit charter school proliferation on broader student sorting patterns may be discernible. In this way, a wide range of discrete analyses are conducted to determine whether there is an organic emergence of evidence for a for-

profit *market-effect*. After conducting these analyses, it will be determined whether the evidence calls for rejecting or failing to reject the *market-effect* hypotheses of H4. This hypothesis stated that: In districts where for-profit charter schools proliferate, charter schools as a whole are less likely than non-charter schools to enroll non-white and low-income students compared to districts without for-profit charters.

**Discussion**

The results of these analyses will greatly expand the knowledge base of research on for-profit charter schools and racial and socioeconomic segregation. Analysis 1 tests whether for-profit charter schools' racial and socioeconomic enrollment patterns demonstrate that they are systematically likely to enroll demographically different student populations. Analysis 2 tests whether the entry of explicitly market-oriented for-profit charters into a district have broader impacts on overall charter/non-charter student-sorting patterns. If for-profit charter schools really are uniquely incented to behave in particular ways in order to maximize profit, there should be some evidence from school location and student enrollment patterns. Further if there is some *market-effect* associated with the proliferation of for-profit charter schools, than a comparison of districts with dissimilar patterns of for-profit charter proliferation may illuminate evidence of these effects. The next chapter details the results of these analyses.

# Chapter 4: Findings

This chapter details the findings of the analyses described in Chapter 3. First, the results of Analysis 1, a population-level comparison of for-profit and non-profit charter schools will be discussed. Then the results of Analysis 2, the exploration of student-sorting patterns between all public school types across six diverse school districts will be described. A brief summary of the findings of the two analyses will be presented. This will set the stage for the final chapter of the dissertation, which will discuss the implications of these findings in greater detail and specify promising directions for future research.

## FINDINGS FROM ANALYSIS 1: [1]

### Population Level Comparison of For-Profit and Non-Profit Operated Charter Schools[2]

*Race and Profit Status*

The two research questions for exploring the relationship between race and profit status are as follows: 1.1. Does the racial composition of the census block group where an EMO-operated charter school is located predict the likelihood that the school is operated by a for-profit corporation or a non-profit organization? 1.2. Does the racial composition of the student population of an EMO-operated charter school predict the likelihood that the school is run by a for-profit or non-profit organization?

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[1] Unless otherwise noted, any differences reported in this Chapter are statistically significant at $\alpha = 0.05$.

[2] The results of the analysis described in this section were previously published by the author in Mapping the Profit Motive: The Distinct Geography and Demography of For-Profit Charter Schools (Robertson, 2015).

In order to test these questions, two analyses were conducted. To address question Q 1.1, the racial composition of Census Block Groups (CBGs) where EMO-operated schools were located was regressed on the for-profit status of each school (Table 4.1). Racial composition analyses were performed separately for three racial groups, using the proportion of (1) white, (2) Hispanic, and (3) Black population in a CBG. White student enrollment is of particular interest as H2 hypothesizes that for-profit charters may seek to over-enroll white students. For these multilevel analyses, schools (level-1) were nested in states (level-2). There were no statistically significant relationships between any of the racial composition variables of the CBG where a school is located and the likelihood that it is for-profit or non-profit. To address question Q 1.2 the racial composition of the student population of EMO-operated was regressed on the for-profit status of each school. Again, three separate racial composition analyses were conducted for (1) white, (2) Hispanic, and (3) Black student population proportions. As with the CBG analysis, there were no statistically significant relationships between enrollment of any racial group and profit status (Table 4.2).

No evidence was found that charter schools operated by for-profit versus non-profit providers demonstrate statistically significantly different racial compositions, or that there were systematic differences in the racial demographics of the CBGs in which the schools are located. While there are no statistically significant relationships between racial composition and profit status nationally, this could be the result of state-by state patterns that alternatively segregate (1) white students into for-profit EMOCS and non-white students into non-profit EMOCS and (2) non-white students into for-profit EMOCS and white students into non-profit EMOCS. As the literature on charter schools and racial

**Table 4.1: Multilevel Log Regression of % White in CBG On For-Profit Status**

| FIXED EFFECTS | Estimate | Stand. Error | z value | pr>z |
|---|---|---|---|---|
| Intercept | -0.161 | 0.376 | -0.428 | 0.669 |
| % White in CBG | 0.503 | 0.287 | 1.753 | 0.080 |
| | | | | |
| RANDOM EFFECTS | | Variance | Std. Deviation | |
| State | Intercept | 2.853 | 1.689 | |

AIC = 1,251

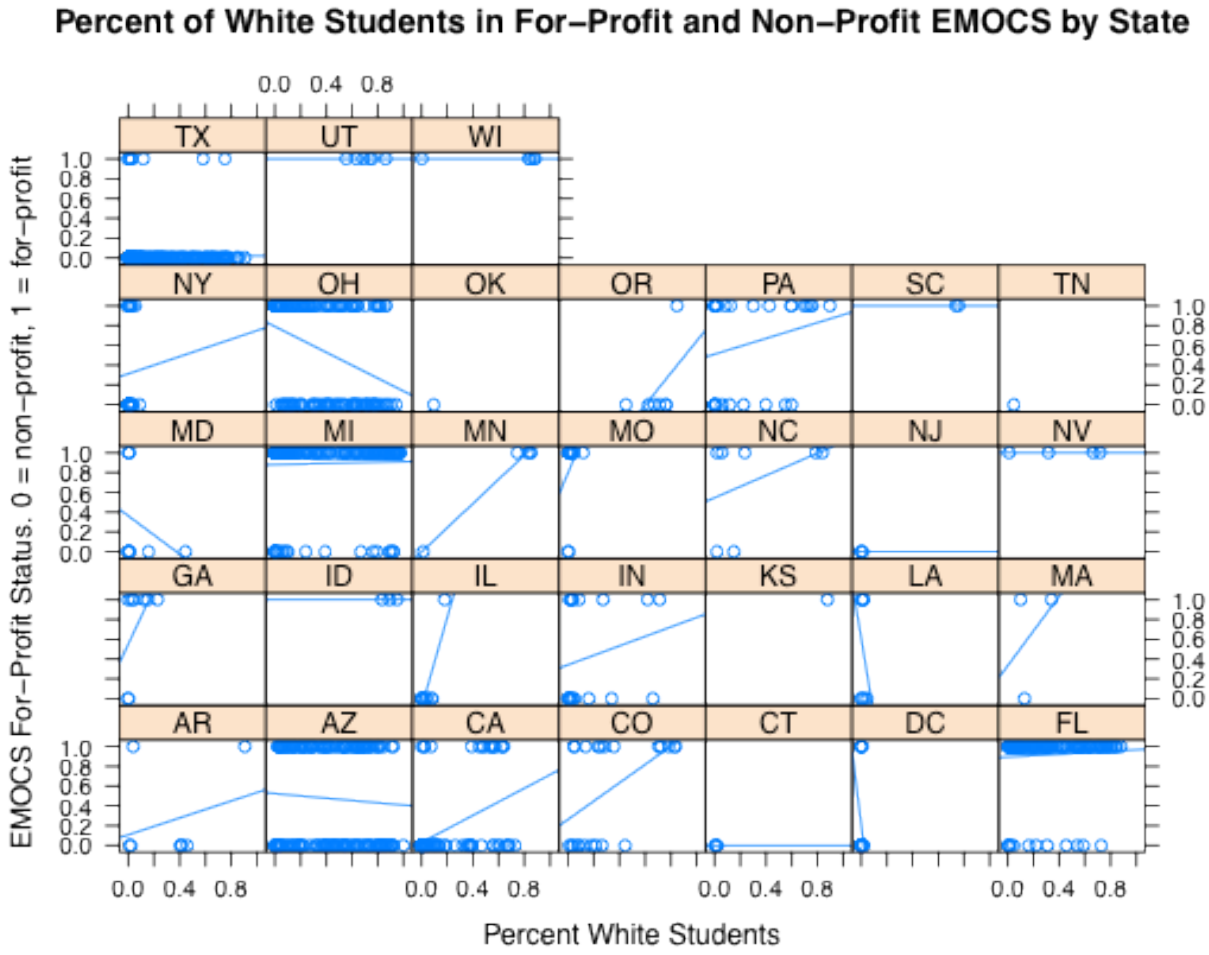
**Table 4.2: Multilevel Log Regression of % White in Student Pop. On For-Profit Status**

| FIXED EFFECTS | Estimate | Stand. Error | z value | pr>z |
|---|---|---|---|---|
| Intercept | 0.047 | 0.358 | 0.131 | 0.896 |
| % White Studs. | 0.180 | 0.263 | 0.684 | 0.494 |
| | | | | |
| RANDOM EFFECTS | | Variance | Std. Deviation | |
| State | Intercept | 2.928 | 1.711 | |

AIC = 1,320

segregation makes clear, the patterns associated with charter school growth are not necessarily consistent. Local dynamics can lead to charter schools being used alternatively by white families to avoid racially diverse traditional public schools, or as a mechanism to draw non-white families away from racially diverse traditional public schools (Bifulco, Ladd & Ross, 2009; Gulosino & D'Entremont, 2011). Either pattern results in greater between-school segregation. Figure 4.1 illustrates the state-by-state regressions of the relationship between white student percentage and for-profit status. This Figure illustrates the wide variance in patterns across states. There are more states with a positive slope than a negative slope, indicating that the more common state pattern is for charter schools with higher proportions of white students to be more likely to be operated by for-profit corporations than non-profit organizations. However, this pattern is not universal, in some states there is little relationship between the two, and in a few, the pattern in reversed. The multilevel models confirm that there is no statistically consistent pattern

**Figure 4.1: White Student Proportion By For/Non-Profit Status By State***




* Each state with at least one EMO-operated non-profit school.

across all states in terms of racial composition and profit status. Thus, the analysis finds that neither the racial composition of the CBG where an EMO-operated charter is located, nor the racial composition of the student population of an EMO-operated charter predict the likelihood that the school is run by a for-profit or non-profit EMO.

The answer to research questions 1.1 and 1.2 are that both the racial composition of a CBG where a school is located, and the racial composition of a school's enrollment are not predictive of a school's for-profit/non-profit status. It is thus possible, at the population

level, to reject Hypothesis 2, that for-profit charter schools enroll white students at higher rates than other charter schools.

**Socio-Economic Indicators and Profit Status**

The research questions for testing the relationship between socio-economic indicators and profit status were as follows: Q 1.3. Do the rates of homeownership in a census block group where an EMO-operated charter school is located predict the likelihood that the school is operated by a for-profit corporation or a non-profit organization? Q 1.4. Does the Title-I eligibility of an EMO-operated charter school predict the likelihood that it is operated by a for-profit corporation or a non-profit organization?

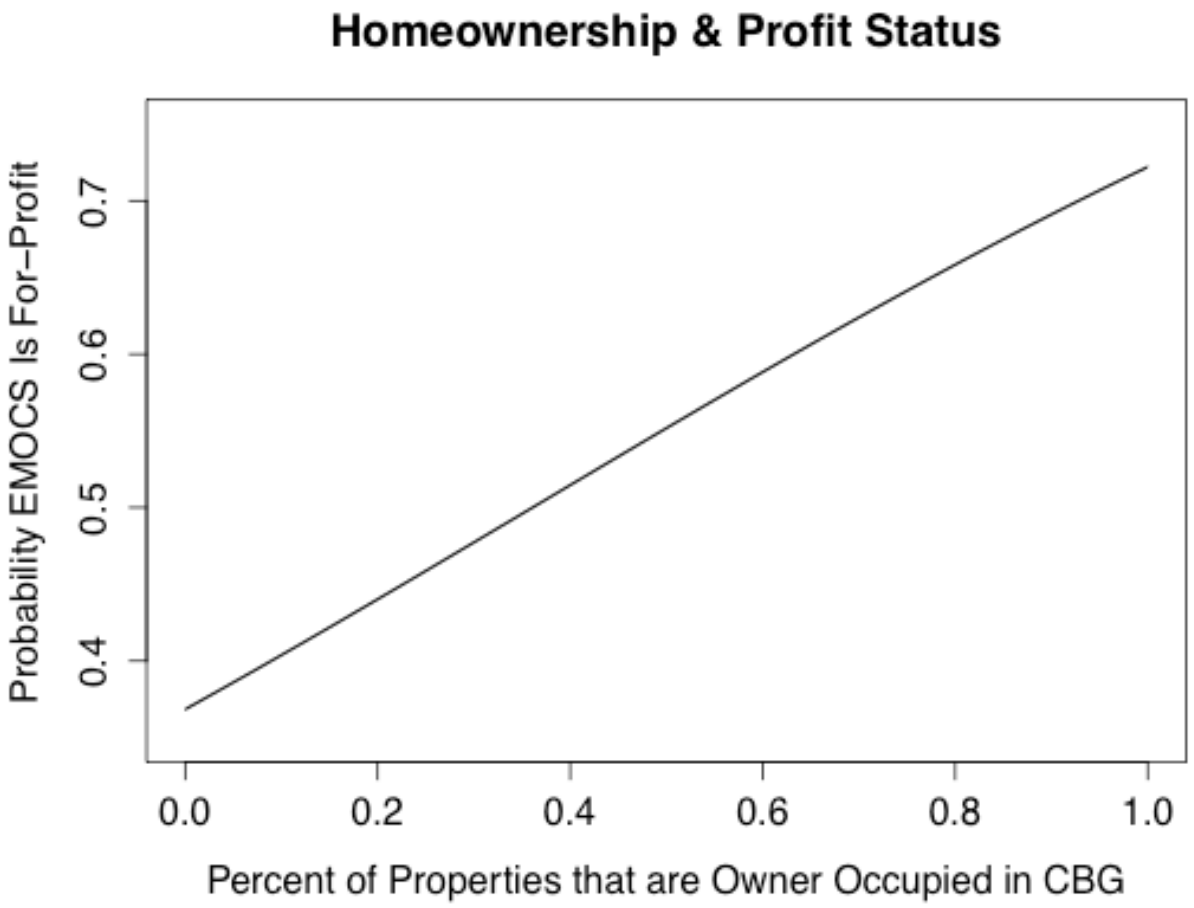
Median CBG rate of homeownership was found to be a significant predictor of whether an EMO-operated charter school was likely to be operated by a for-profit or non-profit (Table 4.3). Figure 4.2 provides a visual representation of the overall relationship between rates of homeownership and the predicted probability of a school's for-profit status. The model demonstrates a non-significant intercept value, likely due to widely divergent property ownership rates in the different state contexts studied. This is why varying-intercepts multilevel modeling was utilized for this analysis. Because of this,

**Table 4.3: Multilevel Log Regression of % Homeownership On For-Profit Status**

| FIXED EFFECTS | Estimate | Stand. Error | z value | pr>z |
|---|---|---|---|---|
| Intercept | -0.539 | 0.375 | -1.437 | 0.151 |
| % Homeowner. | 1.493 | 0.328 | 4.561 | $5 \times 10^{-06}$*** |
| RANDOM EFFECTS | | Variance | Std. Deviation | |
| State | Intercept | 2.871 | 1.694 | |

AIC = 1,232

**Figure 4.2: Multilevel Log Regression of Homeownership On For-Profit Status**




the intercept value cannot be interpreted directly. However, there is a significant relationship between higher levels of property ownership in a CBG and higher probability that an EMOCS located in that CBG is for profit. Specifically, as CBG homeownership rates increase from 0% to 100%, the likelihood that a charter school located in that CBG is operated by a for-profit corporation as opposed to a non-profit organization increases 32.8%. In other words, moving from CBGs with lower to higher rates of homeownership, there is a steadily increasing probability that a school located in that CBG would be a for-profit charter (represented by the slope of Figure 4.2). In short, for-profit charter schools are less likely than non-profits to locate in more socioeconomically distressed areas.

Title I eligible schools serve substantial proportions of low-income students, making it is a useful proxy measure for determining the likelihood that a particular school serves predominantly lower-income students. This study examines Title I eligibility rates because they approximate the rate at which for-profit and non-profit EMOs in practice proportionally educate a certain proportion of low-income students. The majority of both for-profit and non-profit charter schools are Title I eligible, indicating that both types of schools educate lower socioeconomic status students, but there is a significant gap. It is more likely that an EMO-operated charter school that is not a Title-I school is operated by a for-profit than a non-profit provider.

The Title I eligibility of a school is a significant predictor of whether that school is operated by a for-profit or non-profit EMO (Table 4.4). Knowing that an EMO-operated charter is Title-I eligible greatly increases the probability that the school is non-profit instead of for-profit. Likewise, a school that is non Title-I eligible is more likely to be operated by a for-profit instead of a non-profit EMO. As in the previous analysis, a non-significant intercept value precludes a more direct interpretation of the values. For-profit charter schools have a 77% higher proportion of non Title-I eligible schools compared to non-profit charters, reflected in a non Title-I eligibility rates of 13% (96 out of 726) for non-profit schools, while the figure for for-profit charters is 23% (144 out of 631) (Figure 4.3).

These findings suggest that at the population level, for-profit and non-profit EMO-operated charter schools educate low-income populations at different rates. This finding corresponds to the hypothesized relationship between schools operated by profit seeking enterprises and student population characteristics. The hypothesis held that in seeking to

maximize profit, for-profit charter operators have a clear incentive to avoid high-risk student populations. Research shows that family socioeconomic status is one of the most important predictors of student performance (Rumberger & Palardy, 2005; Borman & Dowling, 2010). For-profit schools are less likely to be Title-I eligible, and more likely to locate in CBGs with higher rates of homeownership. This suggests that as a segment, they enroll a socioeconomically easier to educate student population. This may better position for-profit EMOs to maximize their return on investment. The findings of this analysis are not sufficient to conclude that enrollment differences are the direct results of profit-maximizing behaviors, but they do suggest that further analysis in this area is warranted.

**Figure 4.3: For-Profit and Non-Profit Title-I Eligibility Rates**

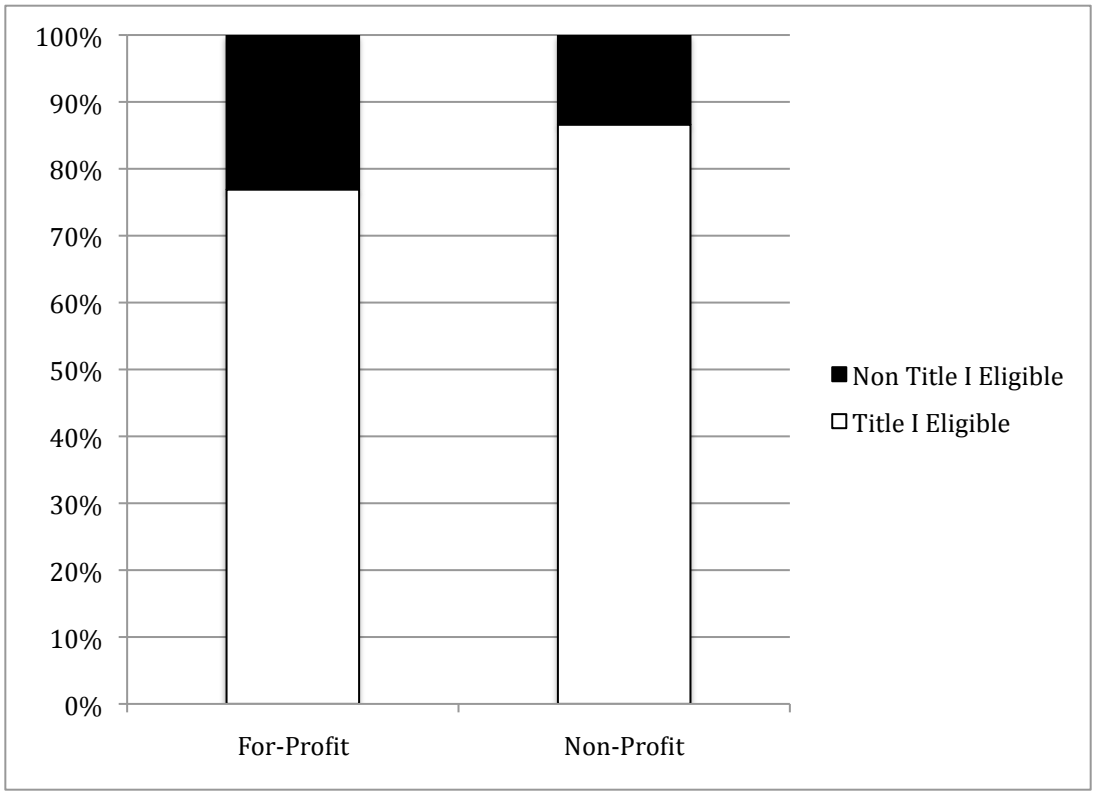


**Table 4.4: Multilevel Log Regression of Title I Eligibility On For-Profit Status**

| FIXED EFFECTS | Estimate | Stand. Error | z value | pr>z |
|---|---|---|---|---|
| Intercept | -0.072 | 0.356 | -0.201 | 0.841 |
| TITLE I Eligible | 0.689 | 0.214 | 3.215 | 0.001** |
| | | | | |
| RANDOM EFFECTS | | Variance | Std. Deviation | |
| State | Intercept | 3.329 | 1.825 | |

AIC = 1,301

**Reviewing Hypotheses H1, H2, & H3**

**(H1):** For-profit charter schools are less likely than other types of charter schools to enroll low-income students.

There is evidence that for-profit charter schools are less likely than non-profit charter schools to enroll high proportions of low-income students. The significance of Title-I eligibility as a predictor of for-profit/non-profit status indicates that for-profit charter schools are less likely than non-profits to educate high proportions of low-income students. Based on the findings of Analysis 1, we must fail to reject Hypothesis 1.

**(H2):** For-profit charter schools are likely to enroll higher proportions of white students than other charter schools.

Analysis 1 does not provide evidence to support the hypothesis that for-profit charter schools enroll higher proportions of white students than non-profit charter schools. There were no statistically significant differences in the racial composition of for-profit charters as compared to non-profit charters. There is no evidence to support a hypothesis of systematic racial sorting between for-profit and non-profit EMO-operated charter

schools. Thus at the population level, we can reject Hypothesis 2. Analysis 2 may provide more detail on any disproportional racial enrollment patterns at the local level.

**(H3):** For-profit charter schools use both geo-demographic (school location) and non-geo-demographic strategies to cultivate student enrollment patterns consistent with H1 and H2.

The analysis provides evidence that for-profit charter schools do locate in geo-demographically different areas than non-profit charters (locating in higher-home-ownership CBGs) and enroll fewer low-income students (lower rates of Title-I eligibility). Rates of homeownership in a CBG was shown to be a significant predictor of whether an EMO-operated charter in that CBG was likely to be operated by a for-profit or non-profit. When controlling for homeownership rates, there is not a significant independent effect of Title-I eligibility on for-profit status. For this analysis, there is evidence that differences between for-profit and non-profit charters seem to be primarily driven by school location. Based on the available data, there is greater evidence of geo-locational difference driving enrollment differences instead of non-geo-locational difference. Analysis 2 may provide more detail on how geo-locational and other factors interact at the local level.

*What Analysis #1 Does and Does Not Reveal*

The results of Analysis #1 provide evidence that there are differences in both the school location demographics and student enrollment demographics between for-profit and non-profit EMO-operated charter schools with respect to socioeconomic status. There

is no evidence that for-profit and non-profit charters are similarly systematically differentiated by racial enrollment or location patterns. The findings of Analysis #1 provide evidence that for-profit charters draw a student population that is socioeconomically dissimilar from non-profit charters. This is the first national-level analysis to demonstrate clear differences between the demographic student enrollments of for-profit versus non-profit charter schools. However, the analysis is limited in terms of revealing the impact of this dissimilarity relative to broader student-sorting patterns across all school types in particular districts.

When charter schools open in a district, there are many possible impacts on student sorting patterns. Most obviously, if overall district enrollment numbers remain stable, traditional public schools will see reduced overall enrollment when charters enter a district. This is likely to result in the closing of traditional public schools. In addition to the opening and closing of individual schools, there is likely to be a qualitative transformation in how schools attract students. The traditional public school model sub-divides school districts into catchment zones. Residency determines a student's zoned school, and the population of the catchment zone largely determines the population of the students in the school. In this scenario, marketing is largely irrelevant to public schools. The growth of charter schools is largely premised on the appeal of maximizing freedom of choice. This means that charters are encouraged to differentiate themselves through marketing (Lubienski, 2005). When schools market themselves it is possible that students with similar characteristics may become more concentrated in schools that are marketed towards them. They alter student-sorting patterns in ways that may exacerbate between-school racial and/or socioeconomic segregation.

Analysis 1 provides evidence that socioeconomic sorting processes lead to under-representation of low-income students in for-profit charter schools. These sorting processes are likely to impact traditional public schools and independent charter schools as well. In order to determine how the entry of for-profit charter schools effects student sorting patterns in school districts, Analysis 2 includes all public school types in six districts to determine if there is any *market-effect* associated with the degree to which for-profit charters proliferate. This dissertation hypothesizes that the marketing and school location strategies of individual for-profit charter schools is likely to have a broader impact on student sorting patterns at the district level in the districts where they are present. Analysis 2 is designed to explore whether there is evidence that broader sorting patterns provide evidence of a for-profit *market-effect*.

## Findings From Analysis 2: Targeted Six District Sample

Analysis 2 explores socioeconomic and racial differences in student enrollment and geo-demographic location between four types of schools (non-charters, independently operated charter schools, charters operated by non-profit organizations, and charters operated by for-profit corporations) in six different school districts. The first four research questions parallel the questions from Analysis 1, while including all public school types. The questions are: Q 2.1 Do charter schools and non-charter schools enroll statistically different proportions of students of three different racial groups (Black, white, Hispanic)? Do different types of charter schools (independent, non-profit, for-profit) enroll statistically different proportions of students of three different racial groups (Black, white, Hispanic)? Q 2.2 Do charter schools locate in CBGs with statistically different proportions

of residents of three different racial groups (Black, white, Hispanic)? Do different types of charter schools (independent, non-profit, for-profit) locate in CBGs with statistically different proportions of residents of three different racial groups (Black, white, Hispanic)? Q 2.3. Do charter schools and non-charter schools enroll statistically different proportions of the students eligible for free or reduced price lunch? Do different types of charter schools (independent, non-profit, for-profit) enroll statistically different proportions of the students eligible for free or reduced price lunch? Q 2.4**.** Do charter schools and non-charter schools locate in CBGs with statistically different median family incomes? Do different types of charter schools (independent, non-profit, for-profit) locate in CBGs with statistically different median family incomes?

The first four research questions for Analysis 2 explore differences between enrollment patterns of different school types in three different types of districts, 1) districts that have non-profit but not for-profit charters, 2) districts with a mix of non-profit and for-profit charters, and 3) districts with primarily for-profit charters, in order to determine whether student sorting patterns differ according to the level of for-profit charter proliferation. By addressing these four questions across six diverse districts, the results are intended to provide insight into the final two research questions: Q 2.5**.** Do differences in student racial enrollment patterns between charters and non-charters vary systematically according to the proportion of charter schools that are operated by for-profit corporations in the districts? Q 2.6. Do differences in student socioeconomic enrollment patterns between charters and non-charters vary systematically according to the proportion of charter schools that are operated by for-profit corporations in a given district?

There were nine different socioeconomic analyses and twenty-one different racial analyses conducted for each of the six districts (180 total, see Figure 3.8). Because of the large number of analyses, the complete results will not be reported in the text of this Chapter. Appendix 3 contains complete results. For each district, key findings will be discussed, accompanied by a summary table of racial and socioeconomic analyses. For each district, the proportion of enrolled students of different racial groups (Black, white, Hispanic), and socioeconomic statuses (based on free or reduced lunch eligibility rates) are compared across the four school types to determine if significant differences exist. The racial and socioeconomic demography of the CBGs where schools are located is also compared. Then the enrollment and demographic variables are combined. The purpose of this strategy is to determine how location and non-location-based factors play into how charter/non-charter student-sorting patterns unfold in the districts. In this way, the analysis also explores whether patterns of racial and socioeconomic difference between charter schools and non-charters varies across districts based on the proliferation of for-profit charter schools in the district. The key purpose of Analysis 2 is to better understand whether there may be a racial and/or socioeconomic *market-effect* associated with for-profit charter schools that more broadly influences student-sorting patterns in ways that may impact racial and socioeconomic segregation.

The six districts (Houston Independent School District (Houston), TX, Los Angeles Unified School District (Los Angeles), CA, Cleveland Metropolitan School District (Cleveland), OH, Tucson Unified School District (Tucson), AZ, Miami-Dade County Public Schools (Miami), FL and Detroit Public Schools (Detroit), MI) were selected because they represent the six states where the large majority of EMO-operated (non-profit and for-

profit) charter schools are located, and because each is the largest, highly chartered (indicating either at least one-third of all schools in the district are charters and/or at least 90 total charter schools in the district), urban district in the State. Two of the districts had no for-profit charters (Houston and Los Angeles), two had a relatively equal mix of for-profit and non-profit charters (Cleveland and Tucson), and two had predominantly for-profit charter schools (Miami and Detroit). By including districts with three different levels of for-profit charters, it is possible to compare how students are sorted in highly chartered school districts with varying concentrations of for-profit charters. This should provide evidence about whether the proliferation of for-profit charter schools in a district impacts racial and/or socioeconomic student sorting patterns in that district. Because for-profit charter schools were found to enroll fewer low-income students in Analysis 1, this analysis will provide insight into whether and how this translates into broader district sorting patterns. This serves as a test of Hypothesis 4, which states that: in districts where for-profit charter schools proliferate, charter schools as a whole are less likely than non-charter schools to enroll non-white and low-income students compared to districts without for-profit charters.

**Districts With No For-Profit Charter Schools**

*Houston Independent School District, Texas*

In Houston, 29.7% of public schools are charters (18.7% independent, 11.0% non-profit, 108 total charter schools). Houston charters locate in CBGs where the median income is $6,736 lower than the median income where non-charters locate (Table 4.5). Houston is the only district of the six where charter schools locate in CBGs with statistically

different median income levels than non-charter schools. Charter status was also predictive of free/reduced lunch eligibility rates, with charter schools enrolling 21.4% higher proportions of free/reduced lunch eligible students than non-charters. After controlling for the median family income in the CBG where a school is located, charter schools average a 20.4% higher percentage of free-and-reduced lunch eligible students than non-charter schools. Non-profit charters have a free/reduced lunch enrollment rate significantly higher than independent charter schools, although both groups enroll substantially more than non-charters. Disaggregating by school type, non-charters in Houston average 50.3% free or reduced lunch students, independent charters average 63.1%, and non-profit charters average 86.1%.

There is a clear gap in free/reduced lunch eligibility rates between charters and non-charters in Houston, and the gap grows when comparing non-profit charters to non-charter schools. The socioeconomic pattern in Houston is clear. Charter schools of all types tend to locate in poorer neighborhoods than non-charter schools. Even after accounting for this difference, charter schools disproportionately over-enroll low-income students. This indicates that charter schools locate in lower-income neighborhoods than non-charters, and enroll even higher proportions of low-income students than would be expected by their location. This is evidence that Houston charter schools, by and large, appear to be operating in a mission-oriented fashion, and providing education to the most socioeconomically underprivileged students both by locating in poorer neighborhoods and disproportionately enrolling low-income students.

Charter schools locate in neighborhoods that on average have a 9.0% lower proportion of white population and a corresponding 9.0% higher Black population

**Table 4.5: Houston Results Summary**

| Outcome Var. | Predictor Var. | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| CBG Median Income | Intercept | 41,126 | 1,535 | 26.80 * |
| | Charter | -6,736 | 2,818 | -2.39 * |
| Free/Reduced Lunch Elig. | Intercept | 0.503 | 0.012 | 43.35 * |
| | Charter | 0.214 | 0.021 | 10.06 * |
| Free/Reduced Lunch Elig. w/ Income Cont. | Intercept | 0.568 | 0.038 | 25.451 * |
| | Med. Income | -0.000002 | 0.0000004 | -4.065 * |
| | Charter | 0.203 | 0.021 | 9.69 * |
| White Stud. Enrollment % | Intercept | 0.068 | 0.007 | 9.878 * |
| | Charter | -0.035 | 0.013 | -2.738 * |
| Hispanic Stud. Enrollment % | Intercept | 0.598 | 0.019 | 31.44 * |
| | Charter | -0.050 | 0.035 | -1.44 |
| Black Stud. Enrollment % | Intercept | 0.296 | 0.019 | 15.965 * |
| | Charter | 0.098 | 0.034 | 2.892 * |
| White Prop. In CBG Pop. | Intercept | 0.498 | 0.016 | 31.283 |
| | Charter | -0.090 | 0.029 | -3.084 * |
| Hispanic Prop. In CBG Pop. | Intercept | 0.471 | 0.019 | 24.643 * |
| | Charter | -0.024 | 0.0349 | -0.681 |
| Black Prop. In CBG Pop. | Intercept | 0.259 | 0.019 | 13.377 * |
| | Charter | 0.090 | 0.035 | 2.533 * |
| White Stud. Enrollment % w/ race cont. | Intercept | -0.019 | 0.012 | -1.586 |
| | White Pop. % | 0.176 | 0.021 | 8.406 * |
| | Charter | -0.019 | 0.012 | -1.634 |
| Hispanic Stud. Enrollment % w/ race cont. | Intercept | 0.246 | 0.020 | 12.106 |
| | Hisp. Pop. % | 0.757 | 0.034 | 22.148 * |
| | Charter | -0.036 | 0.023 | -1.587 |
| Black Stud. Enrollment % w/ race cont. | Intercept | 0.101 | 0.014 | 7.002 * |
| | Black Pop. % | 0.737 | 0.032 | 23.071 * |
| | Charter | 0.037 | 0.022 | 1.691 |

* significant at $\alpha = 0.05$

compared to neighborhoods where non-charters are located. Houston charters have 9.8% higher rates of Black student enrollment and a 3.5% lower rate of white enrollment than non-charters. There are no statistically significant differences for Hispanic student or CBG proportions. After controlling for the racial composition of the CBG where schools are located, there were no statistically significant differences between charter schools and non-charters in the proportion of Black, Hispanic or white students enrolled. This indicates that the racial enrollment differences in Houston are largely attributable to school location. There were no statistically significant differences found between the racial composition of non-profit and independent charter schools. The proportional over-enrollment of Black students and under-enrollment of white students provides more evidence that Houston charter schools appear to follow a mission-oriented approach, by locating in neighborhoods and disproportionately enrolling traditionally under-served Black students. In summary, in Houston, both non-profit and independent charter schools enroll more free/reduced lunch eligible students, fewer white students, and more Black students than non-charters.

*Los Angeles Unified School District, California*

In Los Angeles 20.6% of public schools are charters (14.7% independent, 5.9% non-profit, 189 total charter schools). Charter schools do not locate in CBGs with statistically different levels of median income than non-charters. Despite this, charter status was predictive of a school's free/reduced lunch eligibility rate. Charter schools enroll an 8.4% higher proportion of free and reduced lunch students than non-charters. After controlling for the median family income in the CBG where a school is located, charter schools average

7.6% higher proportion of free-and-reduced lunch eligible students than non-charter schools. This indicates that charter/non-charter differences in free/reduced lunch eligibility rates in Los Angeles seem to be driven by factors other than the socio-demographic location of schools. Independent charters in Los Angeles have a 9.9% higher percentage of free/reduced lunch students, while non-profit charters have a 4.3% higher percentage than non-charter schools. In Los Angeles, independent charters are more likely than non-profit charters to serve low-income students, but both segments disproportionately serve low-income students relative to non-charter schools.

Los Angeles charters locate in CBGs with a 6.3% lower proportion of white students and a 6.8% higher proportion of Black students. Charter schools do not enroll distinct proportions of white students. They under-enroll Hispanic students by 12.7% and over-enroll Black students by 8.8% relative to non-charters. After controlling for the racial composition of the CBGs where schools are located, charter schools enroll statistically different proportions of all three racial groups. Charters enroll 4.6% more white students than non-charters, 12.2% fewer Hispanic students than non-charters, and 3.1% more Black students than non-charters (Table 4.6). This indicates that, relative to the racial composition of CBGs where they are located, Black and white students are proportionally over-represented, and Hispanic students are under-represented in charters. Disaggregating charters by type, EMO-operated charter schools enroll white students at a rate 10.5% lower than non EMO-operated charters. The charter/non-charter difference in white enrollment is driven by independent charter schools over-enrolling white students. Mean white student proportions in non-charter schools are 8.8%, for independent charters 13.8%, and in non-profit charter schools 0.6%. The very low non-profit charter school

**Table 4.6: Los Angeles Results Summary**

| Outcome Var. | Predictor Var. | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| CBG Median Income | Intercept | 46,571 | 972 | 47.924 * |
| | Charter | -2,584 | 2,138 | -1.209 |
| Free/Reduced Lunch Elig. | Intercept | 0.612 | 0.009 | 67.858 * |
| | Charter | 0.084 | 0.020 | 4.241 * |
| Free/Reduced Lunch Elig. w/ Income Cont. | Intercept | 0.753 | 0.037 | 24.755 * |
| | Med. Income | -0.000003 | 0.0000003 | -10.395 * |
| | Charter | 0.076 | 0.019 | 4.045 * |
| White Stud. Enrollment % | Intercept | 0.088 | 0.006 | 14.168 * |
| | Charter | 0.012 | 0.014 | 0.873 |
| Hispanic Stud. Enrollment % | Intercept | 0.734 | 0.010 | 72.978 * |
| | Charter | -0.127 | 0.022 | -5.724 * |
| Black Stud. Enrollment % | Intercept | 0.104 | 0.007 | 14.624 * |
| | Charter | 0.088 | 0.016 | 5.645 * |
| White Prop. In CBG Pop. | Intercept | 0.473 | 0.007 | 65.286 * |
| | Charter | -0.063 | 0.016 | -3.935 * |
| Hispanic Prop. In CBG Pop. | Intercept | 0.562 | 0.011 | 50.874 * |
| | Charter | -0.007 | 0.024 | -0.298 |
| Black Prop. In CBG Pop. | Intercept | 0.098 | 0.007 | 15.055 * |
| | Charter | 0.068 | 0.014 | 4.739 * |
| White Stud. Enrollment % w/ race cont. | Intercept | -0.172 | 0.0114 | -15.126 * |
| | White Pop. % | 0.549 | 0.022 | 25.204 * |
| | Charter | 0.046 | 0.011 | 4.381 * |
| Hispanic Stud. Enrollment % w/ race cont. | Intercept | 0.353 | 0.013 | 26.838 * |
| | Hisp. Pop % | 0.675 | 0.020 | 33.74 * |
| | Charter | -0.122 | 0.015 | -8.244 * |
| Black Stud. Enrollment % w/ race cont. | Intercept | 0.021 | 0.005 | 4.211 * |
| | Black Pop. % | 0.843 | 0.023 | 36.794 * |
| | Charter | 0.031 | 0.010 | 3.084 * |

* significant at $\alpha = 0.05$

white student proportion suggests that they may be explicitly targeting non-white student populations in Los Angeles. It also suggests that there may be substantial differences between the racial enrollment strategies of non-profit and independent charters. However, independent charters enroll the highest proportion of free/reduced lunch students of all school segments in Los Angeles, which would not likely be the case if these schools were systematically profit-oriented. The socioeconomic enrollment patterns provide strong evidence that both non-profit and independent charters operate in a mission-oriented fashion in Los Angeles.

## Districts With Substantial Numbers of Both Non-Profit and For-Profit Charters

### *Tucson Unified School District, Arizona*

In Tucson, 34% of public schools are charters (15% independent, 13% non-profit, 6% for-profit, 50 total charters). Charter status was not predictive of CBG median income, but was predictive of free/reduced lunch eligibility rates. Charter schools educate an 11.8% lower proportion of free/reduced lunch eligible students After controlling for the median family income in the CBG where a school is located, charter schools average a statistically significant 12.3% lower percentage of free-and-reduced lunch eligible students than non-charter schools located in CBGs with the same median income (Table 4.7). In Tucson, all charter school types, independent, non-profit, and for-profit charter schools enroll lower proportions of low-income students than non-charter schools. This is a reversal of the pattern in Los Angeles and Houston where non-profit and independent charters over-enrolled free/reduced lunch eligible students relative to non-charters.

**Table 4.7: Tucson Results Summary**

| Outcome Var. | Predictor Var. | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| CBG Median Income | Intercept | 39,137 | 1,801 | 21.734 * |
| | Charter | -972 | 3,067 | 0.752 |
| Free/Reduced Lunch Elig. | Intercept | 0.578 | 0.027 | 21.389 * |
| | Charter | -0.118 | 0.046 | -2.563 * |
| Free/Reduced Lunch Elig. w/ Income Cont. | Intercept | 0.782 | 0.087 | 6.202 * |
| | Med. Income | -0.000005 | 0.000001 | -4.420 * |
| | Charter | -0.123 | 0.043 | -2.841 * |
| White Stud. Enrollment % | Intercept | 0.240 | 0.022 | 11.17 * |
| | Charter | 0.102 | 0.037 | 2.79 * |
| Hispanic Stud. Enrollment % | Intercept | 0.607 | 0.024 | 25.228 * |
| | Charter | -0.104 | 0.041 | -2.537 * |
| Black Stud. Enrollment % | Intercept | 0.056 | 0.004 | 12.711 * |
| | Charter | -0.007 | 0.007 | -0.886 |
| White Prop. In CBG Pop. | Intercept | 0.712 | 0.015 | 49.09 * |
| | Charter | -0.011 | 0.025 | -0.44 |
| Hispanic Prop. In CBG Pop. | Intercept | 0.424 | 0.025 | 17.117 * |
| | Charter | -0.064 | 0.042 | -1.528 |
| Black Prop. In CBG Pop. | Intercept | 0.040 | 0.003 | 11.560 * |
| | Charter | 0.014 | 0.006 | 2.443 * |
| White Stud. Enrollment % w/ race cont. | Intercept | -0.429 | 0.070 | -6.098 * |
| | White Pop. % | 0.941 | 0.096 | 9.787 * |
| | Charter | 0.112 | 0.028 | 3.955 * |
| Hispanic Stud. Enrollment % w/ race cont. | Intercept | 0.331 | 0.031 | 10.578 * |
| | Hisp. Pop % | 0.651 | 0.060 | 10.784 * |
| | Charter | -0.062 | 0.031 | -2.016 * |
| Black Stud. Enrollment % w/ race cont. | Intercept | 0.040 | 0.005 | 6.882 * |
| | Black Pop. % | 0.397 | 0.102 | 3.878 * |
| | Charter | -0.012 | 0.007 | -1.685 |

* significant at $\alpha = 0.05$

In Tucson, charter schools locate in CBGs with slightly higher proportions of Black population than non-charters (1.4%), but enroll statistically indistinguishable proportions of Black students. Charter schools over-enroll white students by 10.2% and under-enroll Hispanic students by 10.4% compared to non-charters. After controlling for the racial composition of CBGs where schools are located, charter schools enroll 11.2% higher proportions of white students than non-charters, and 6.2% lower proportion of Hispanic students than non-charters. These enrollment gaps exist despite no statistically significant gaps in the white or Hispanic racial composition of CBGs where charters and non-charters are located. This suggests that the racial enrollment differences in Tucson are not the result of charter school location. It is possible that within CBG racial variation is a factor. Comparing the racial composition of EMO versus non-EMO charter schools and for-profit versus non-profit charter schools demonstrated no statistically significant differences. The proportions of white student enrollment for non-profit (38.3%) for-profit (36.0%) and independent charters (30.1%), are all substantially higher than non-charter white student enrollment (24.0%). There are no statistically significant differences in racial student enrollment rates between for-profit and non-profit charters. In Tucson, charter schools are less likely to enroll lower income students, less likely to enroll Hispanic students, and more likely to enroll white students than non-charters.

*Cleveland Metropolitan School District, Ohio*

Cleveland has 33.6% charter schools (14.5% independent, 9.9% non-profit and 9.2% for-profit, 51 total charters). Charter status was not predictive of CBG median income, but was predictive of free/reduced lunch eligibility rates. Charter schools educate a 19.4%

lower proportion of free/reduced lunch eligible students than non-charter schools. After controlling for the median family income in the CBG where a school is located, charter schools average a 19.4% lower percentage of free-and-reduced lunch eligible students than non-charter schools located in CBGs with the same median income (Table 4.8). Like Tucson, differences in free/reduced lunch rates were not related to differences in CBG median income. This suggests that charters in Cleveland enroll fewer low-income students for reasons outside of socioeconomic geo-demographic difference. In Tucson there is a sizable gap between free/reduced lunch eligibility rates between charters and non-charters. Non-charters enroll 80.6% free and reduced lunch eligible students, while each charter type enrolls around 60% (58.7% independent charters, 62.4% non-profit charters, 64.3% for-profit charters, charter types statistically indistinguishable) free or reduced lunch eligible students. Each charter school segment enrolls significantly lower proportions of low-income students than non-charter schools. There are not significant differences between free/reduced lunch enrollment rates between the different charter segments.

Charter schools locate in CBGs with 11.7% higher white population than non-charters and 12.8% lower Black population than non-charters. Despite these sizable differences in CBG racial composition, there is no statistically significant difference in racial enrollment by school type. Compared to independent charters, EMO-operated charters enroll more white students (13.6%), more Hispanic students (6.2%), and fewer Black students (27.2%). This suggests that EMO-operated charters substantially under-enroll Black students. For-profit charters enroll 18.6% fewer white students than non-profit charters, and 21.5% more Black students than non-profit EMO charters. In Cleveland, non-profit charter schools in particular are enrolling substantially more white students and

**Table 4.8: Cleveland Results Summary**

| Outcome Var. | Predictor Var. | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| CBG Median Income | Intercept | 26,689 | 1,000 | 26.684 * |
| | Charter | 699 | 1,727 | 0.405 |
| Free/Reduced Lunch Elig. | Intercept | 0.806 | 0.032 | 25.566 * |
| | Charter | -0.194 | 0.054 | -3.557 * |
| Free/Reduced Lunch Elig. w/ Income Cont. | Intercept | 0.804 | 0.119 | 3.502 * |
| | Med. Income | 0.00000006 | 0.000003 | 0.98 |
| | Charter | -0.194 | 0.055 | -3.544 * |
| White Stud. Enrollment % | Intercept | 0.134 | 0.020 | 6.649 * |
| | Charter | 0.066 | 0.035 | 1.913 |
| Hispanic Stud. Enrollment % | Intercept | 0.112 | 0.016 | 7.145 * |
| | Charter | -0.024 | 0.027 | -0.907 |
| Black Stud. Enrollment % | Intercept | 0.711 | 0.033 | 21.764 * |
| | Charter | -0.041 | 0.056 | -0.726 |
| White Prop. In CBG Pop. | Intercept | 0.318 | 0.030 | 10.628 * |
| | Charter | 0.117 | 0.052 | 2.274 * |
| Hispanic Prop. In CBG Pop. | Intercept | 0.088 | 0.011 | 8.266 * |
| | Charter | -0.002 | 0.018 | -0.125 |
| Black Prop. In CBG Pop. | Intercept | 0.592 | 0.035 | 17.023 * |
| | Charter | -0.128 | 0.060 | -2.123 * |
| White Stud. Enrollment % w/ race cont. | Intercept | -0.025 | 0.018 | -1.392 |
| | White Pop. % | 0.499 | 0.037 | 13.521 * |
| | Charter | 0.008 | 0.024 | 0.329 |
| Hispanic Stud. Enrollment % w/ race cont. | Intercept | -0.005 | 0.011 | 0.466 |
| | Hisp. Pop. % | 1.217 | 0.068 | 17.878 * |
| | Charter | -0.022 | 0.015 | -1.420 |
| Black Stud. Enrollment % w/ race cont. | Intercept | 0.253 | 0.032 | 7.946 * |
| | Black Pop. % | 0.772 | 0.044 | 17.679 * |
| | Charter | 0.058 | 0.033 | 1.765 |

* significant at $\alpha = 0.05$

fewer Black students than all other school types. It is also notable that non-profit charter schools in Cleveland are the only charter school subset in any of the six districts to locate in CBGs where the median income is higher than it is for non-charter schools. The racial and socioeconomic location and enrollment patterns of non-profit schools in Cleveland suggests that they may not be operating in a mission-oriented fashion, as they appear to be enrolling students in patterns more consistent with profit-maximization. It could be that the presence of for-profit charter schools has some impact on the enrollment patterns of non-profit charters in Cleveland.

**Districts Where For-Profit Charters Predominate**

*Miami - Dade County Public Schools, Florida*

In Miami, 19.4% of public schools are charters (7.5% independent, 0.6% non-profit 11.2% for-profit, 90 total charters). For-profit charters are the most common type of charter schools, outnumbering non-profits 52 to 3. Charter status was not predictive of CBG median income, but was predictive of free/reduced lunch eligibility rates. Charter schools educate a 17.9% lower proportion of free/reduced lunch eligible students than non-charter schools. After controlling for the median family income in the CBG where a school is located, charter schools average a 17.4% lower percentage of free-and-reduced lunch eligible students than non-charter schools located in CBGs with the same median income. Like the previous districts (with the exception of Houston) the socioeconomic enrollment differences appear to be unrelated to the socioeconomic location of schools. Both independent and for-profit charters enroll substantially lower proportions of low-income students than non-charters. Non-profit charters educate the highest proportion of

**Table 4.9: Miami Results Summary**

| Outcome Var. | Predictor Var. | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| CBG Median Income | Intercept | 43,713 | 1,366 | 32.000 * |
| | Charter | -1,539 | 3,102 | -0.496 |
| Free/Reduced Lunch Elig. | Intercept | 0.741 | 0.012 | 64.063 * |
| | Charter | -0.179 | 0.026 | -6.812 * |
| Free/Reduced Lunch Elig. w/ Income Cont. | Intercept | 0.902 | 0.045 | 12.234 * |
| | Med. Income | -0.000004 | 0.0000004 | -10.356 * |
| | Charter | -0.174 | 0.023 | -7.455 * |
| White Stud. Enrollment % | Intercept | 0.075 | 0.005 | 14.350 * |
| | Charter | 0.027 | 0.012 | 2.284 * |
| Hispanic Stud. Enrollment % | Intercept | 0.574 | 0.016 | 36.544 * |
| | Charter | 0.129 | 0.036 | 3.614 * |
| Black Stud. Enrollment % | Intercept | 0.334 | 0.017 | 20.117 * |
| | Charter | -0.154 | 0.038 | -4.066 * |
| White Prop. In CBG Pop. | Intercept | 0.644 | 0.016 | 39.499 |
| | Charter | 0.063 | 0.037 | 1.721 |
| Hispanic Prop. In CBG Pop. | Intercept | 0.574 | 0.015 | 37.758 |
| | Charter | 0.087 | 0.034 | 2.536 * |
| Black Prop. In CBG Pop. | Intercept | 0.289 | 0.016 | 17.681 * |
| | Charter | -0.082 | 0.037 | -2.225 * |
| White Stud. Enrollment % w/ race cont. | Intercept | 0.014 | 0.010 | 1.359 |
| | White Pop. % | 0.092 | 0.014 | 6.446 * |
| | Charter | 0.022 | 0.011 | 1.942 |
| Hispanic Stud. Enrollment % w/ race cont. | Intercept | 0.102 | 0.019 | 5.206 * |
| | Hisp. Pop. % | 0.826 | 0.030 | 27.849 * |
| | Charter | 0.055 | 0.022 | 2.510 * |
| Black Stud. Enrollment % w/ race cont. | Intercept | 0.089 | 0.012 | 7.248 * |
| | Black Pop. % | 0.846 | 0.027 | 31.377 * |
| | Charter | - 0.083 | 0.021 | -3.868 * |

* significant at $\alpha = 0.05$

free/reduced lunch students of all school types, representing a small outlier of three schools, representing less than one percent of public schools in the district.

Charter schools locate in CBGs with 8.7% higher Hispanic populations and 8.2% lower Black populations than non-charters. Charters enroll 2.7% higher white student proportions, 12.9% higher Hispanic student proportions, and 15.4% lower Black student proportions than non-charters. After controlling for the racial composition of CBGs where schools are located, charters enroll 5.5% more Hispanic students, and 8.3% less Black students than non-charters. This suggests that differences in the racial composition of the school's location are the main factors driving racial differences in student enrollment. There are no significant differences in the racial composition of independent and EMO-operated charter schools. In Miami, charters educate fewer free/reduced lunch eligible students, fewer Black students, and more white and Hispanic students than non-charters. These patterns are similar to those in Tucson and Cleveland. In these three districts with for-profit charters, independent charter schools have enrollment patterns more in line with what would be expected from a profit-maximization than a mission-oriented strategy.

*Detroit Public Schools, Michigan*

In Detroit, 34.7% of public schools are charters (8.9% independent, 4.0% non-profit, 21.8% for-profit, 78 total charters). Detroit is the only district in the study that did not show statistically significant differences in free/reduced lunch eligibility rates between charter schools and non-charters. There was also no difference between CBG median income between charter schools and non-charters. Detroit and Cleveland have much lower median income levels compared to the other districts under examination. This could be one

explanation for why there is no difference in the free/reduced lunch eligibility rates between charters and non-charters in Detroit. Detroit is also the one deviation from the emerging pattern whereby districts with for-profit schools enroll substantially fewer free/reduced lunch eligible students compared with non-charters (Miami 17.9%, Cleveland 19.4%, Tucson 11.8% lower), while districts without for-profit charters enroll substantially more free/reduced lunch students than non-charters (Los Angeles 8.4%, Houston 21.4% higher). It does not contradict the pattern, but instead does not show any significant socioeconomic charter/non-charter differences.

Charter schools are located in neighborhoods that have 7.8% higher white population and 10.4% lower Black population in Detroit. Despite this, charters do not enroll students from different racial groups at different rates than non-charters. This is because Black students are proportionally over-represented in charter schools based on the CBGs where the schools are located, with charters predicted to have a 7.6% higher Black enrollment after controlling for the proportion of Black population in the CBGs where they locate. The difference in the racial composition of the CBGs where charters versus non-charters locate could indicate that charter schools intended to locate in areas that would allow them to enroll lower proportions of Black students, but student enrollment does not reflect this. There are no significant differences in the racial enrollment of independent versus EMO-operated charter schools. Detroit presents a contrast to the other districts studied. It is the only district with no free/reduced lunch eligibility rate differences between charters and non-charters. The fact that it is the only one of the six with no difference suggests that, at least in the districts being studied, substantial

**Table 4.10: Detroit Results Summary**

| Outcome Var. | Predictor Var. | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| CBG Median Income | Intercept | 28,361 | 970 | 29.234 * |
| | Charter | -1,289 | 1,655 | -0.779 |
| Free/Reduced Lunch Elig. | Intercept | 0.796 | 0.013 | 62.36 * |
| | Charter | 0.037 | 0.021 | 1.70 |
| Free/Reduced Lunch Elig. w/ Income Cont. | Intercept | 0.766 | 0.044 | 19.220 * |
| | Med. Income | 0.000001 | 0.0000009 | 1.210 |
| | Charter | 0.038 | 0.022 | 1.762 |
| White Stud. Enrollment % | Intercept | 0.027 | 0.011 | 2.499 * |
| | Charter | 0.035 | 0.018 | 1.902 |
| Hispanic Stud. Enrollment % | Intercept | 0.090 | 0.019 | 4.615 * |
| | Charter | -0.011 | 0.033 | -0.341 |
| Black Stud. Enrollment % | Intercept | 0.873 | 0.024 | 36.908 * |
| | Charter | -0.016 | 0.040 | -0.397 |
| White Prop. In CBG Pop. | Intercept | 0.098 | 0.015 | 6.627 * |
| | Charter | 0.078 | 0.025 | 3.076 * |
| Hispanic Prop. In CBG Pop. | Intercept | 0.080 | 0.017 | 4.619 * |
| | Charter | 0.018 | 0.030 | 0.593 |
| Black Prop. In CBG Pop. | Intercept | 0.834 | 0.023 | 35.538 * |
| | Charter | -0.104 | 0.040 | -2.605 * |
| White Stud. Enrollment % w/ race cont. | Intercept | -0.016 | 0.009 | -1.736 |
| | White Pop. % | 0.436 | 0.039 | 11.316 * |
| | Charter | 0.001 | 0.015 | 0.048 |
| Hispanic Stud. Enrollment % w/ race cont. | Intercept | 0.009 | 0.009 | 0.998 |
| | Hisp. Pop. % | 1.004 | 0.033 | 30.809 * |
| | Charter | -0.029 | 0.014 | -2.006 * |
| Black Stud. Enrollment % w/ race cont. | Intercept | 0.139 | 0.029 | 4.652 * |
| | Black Pop. % | 0.880 | 0.033 | 26.639 * |
| | Charter | 0.076 | 0.019 | 3.788 * |

* significant at $\alpha = 0.05$

socioeconomic enrollment differences are the norm, with the presence of for-profit charters generally predicting the directionality of the difference.

## Summary

*Socioeconomic Status*

In five of the six districts, there are no statistically significant differences between the CBG median income of charters versus non-charters. The exception is Houston, where charters locate in CBGs where the median family income is $6,736 (17% of district median income) lower than non-charters. Despite the fact that there is no statistically significant relationship between CBG median income and charter status in five of six districts, there are statistically significant free/reduced lunch rate gaps between charters and non-charters in five of the six districts. The direction of this gap was not uniform. In the two districts without for-profit charter schools, charters had significantly higher proportions of free/reduced lunch eligible students than non-charter schools located in census block groups with the same median income (Houston 21.4% and Los Angeles 8.4% more). In three of the four districts with substantial proportions of for-profit EMOCS, the opposite effect is seen. Charter schools enroll significantly lower proportions of free/reduced lunch eligible students than traditional public schools in census block groups with the same median income (Miami, 17.9% lower, Cleveland, 19.4% Tucson 11.8%). The fourth district with large numbers of for-profit EMOCS, Detroit, demonstrated no statistically significant differences in the free/reduced lunch student proportion between charters and traditional public schools.

The results suggest that gaps in free/reduced lunch rates are not due to differences in school location neighborhood demographics, but instead due to differences in the demographic composition of each school's student enrollment unrelated to socioeconomic geography. This may indicate that other factors beyond geo-demographic differences impact student composition in ways that may intensify stratification. It also provides additional evidence that for-profit and non-profit EMO operated charter schools take different approaches to the cultivation of particular socio-demographic profiles of their student populations.

Comparing the rate at which charters and non-charters educate the highest proportion of low-income students in Houston and Miami offers an example of these differences. Both districts are predominantly Hispanic, Southern districts with similar median income levels. In Houston, charter schools are much more likely than non-charters to educate the highest-poverty populations (Figures 4.4 & 4.6). This indicates that in Houston, there is a concentration of high-poverty students in charter schools. A sizeable 34.3% (37 out of 108) of charter schools have between 90-100% free/reduced lunch eligible students, while only 0.8% (2 out of 256) of non-charter schools enroll 90-100% of free/reduced lunch students. The corollary of this is that traditional public schools end up educating lower proportions of high-poverty students than if charters did not have such highly concentrated proportions of free and reduced lunch eligible students. In Miami, on the other hand, charter schools have disproportionately fewer free and reduced lunch eligible students (Figures 4.5 & 4.7). Very few independent or for-profit charter schools educate the highest proportion of low-income students. Only 3 out of 87 (3.4%) for-profit or independent charter schools, have between 90-100% free/reduced lunch eligible

**Figure 4.4: Houston FRL Proportion By CBG Income and Charter Status**
**Blue = Non-Charter Schools. Pink = Charter Schools.**

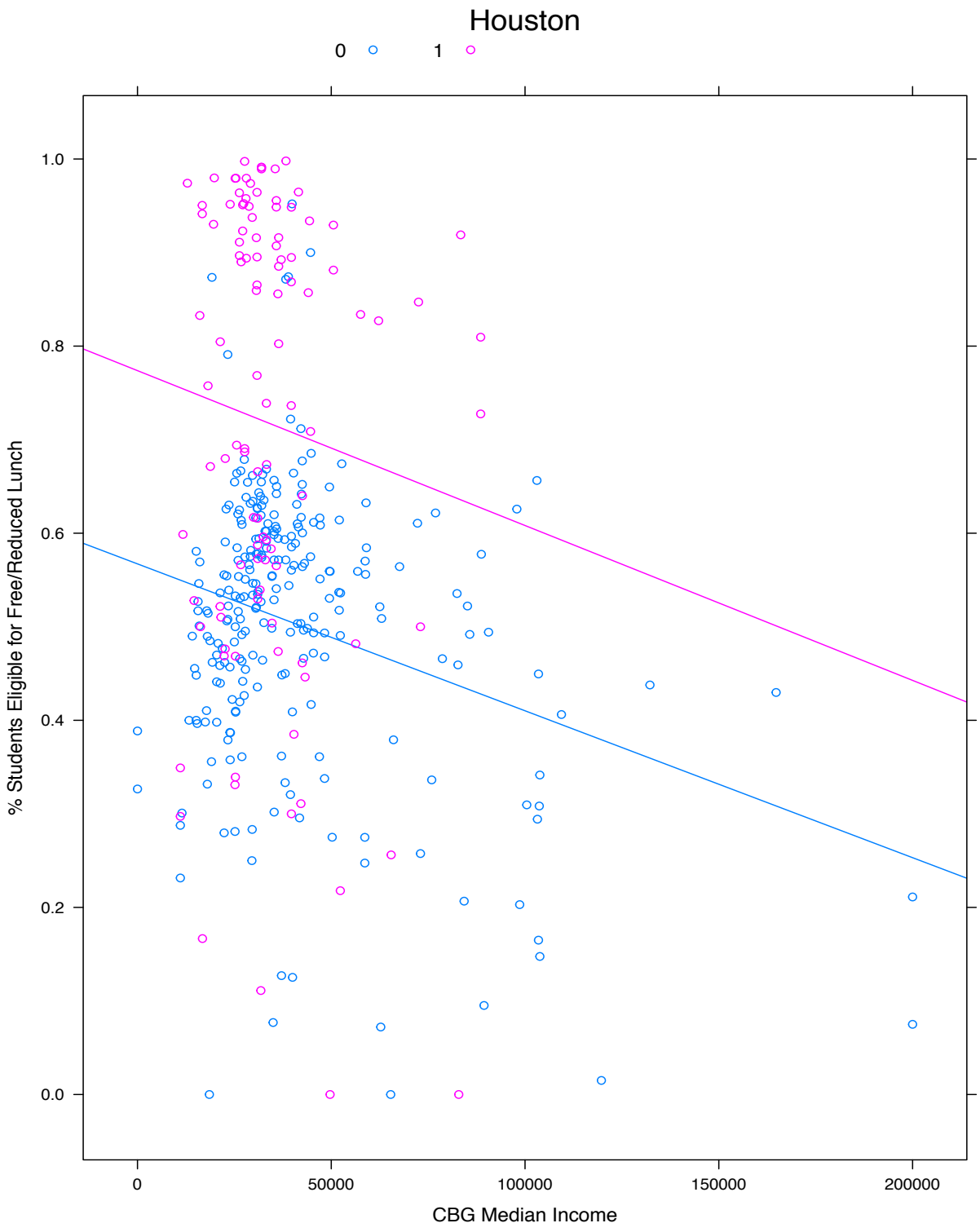


**Figure 4.5: Miami FRL Proportion By CBG Income and Charter Status**
**Blue = Non-Charter Schools. Pink = Charter Schools.**

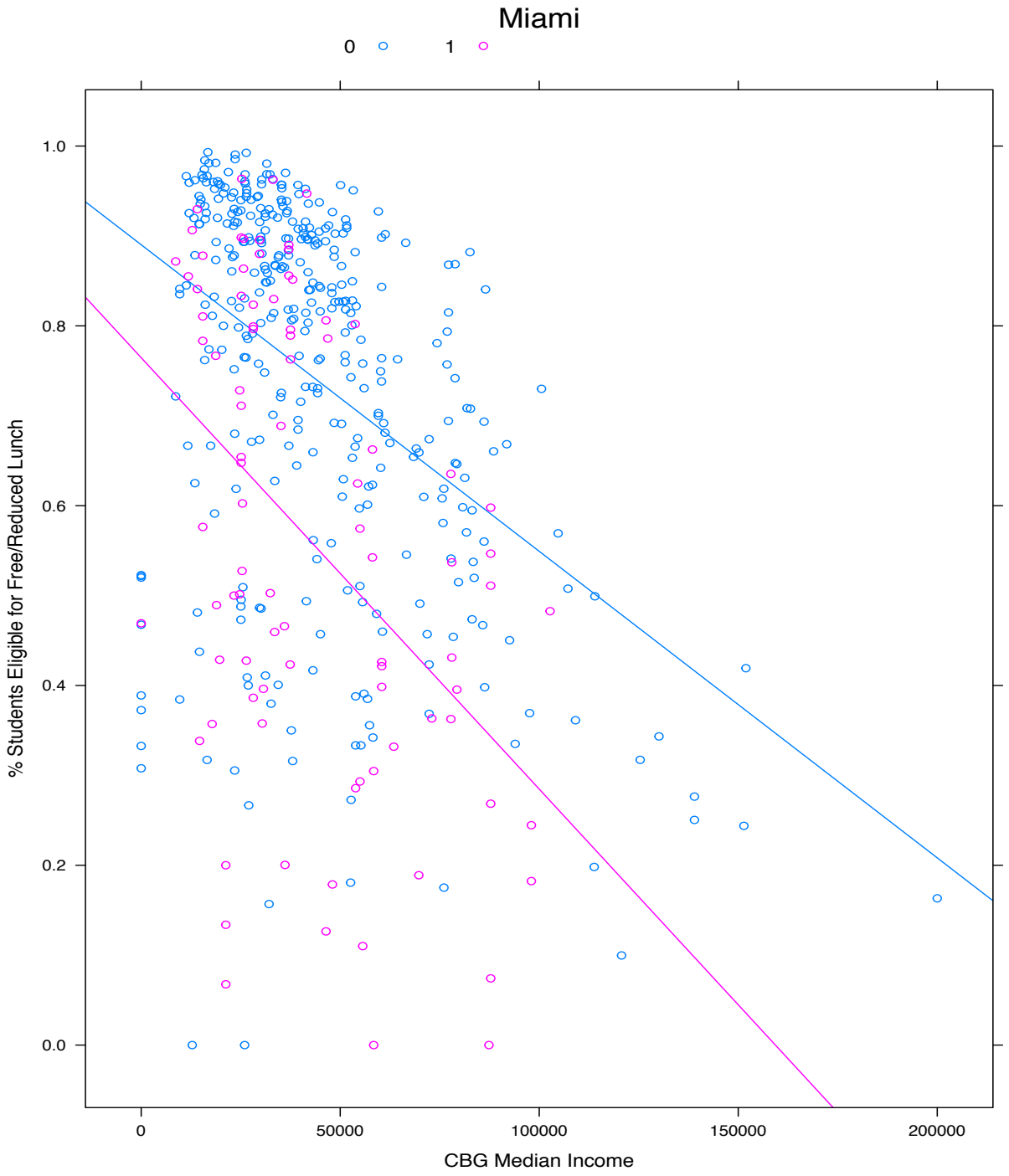
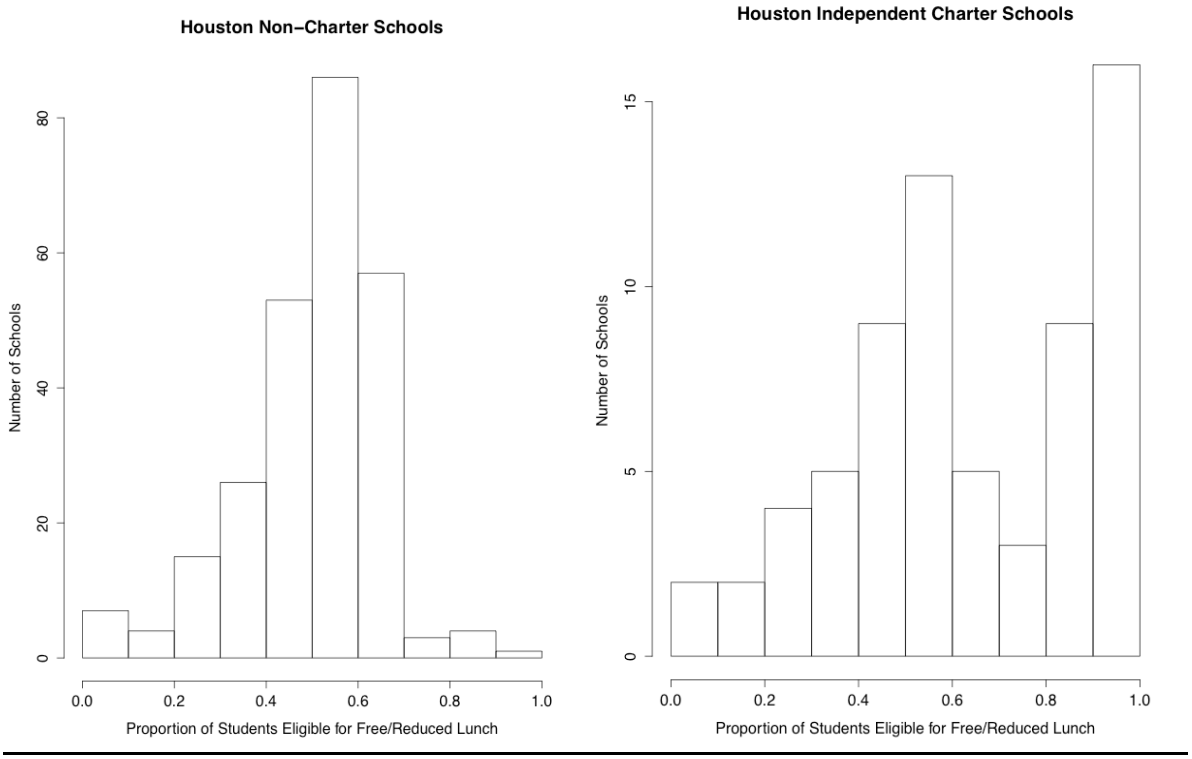


**Figure 4.6: Houston FRL Eligibility Rates By School Type**



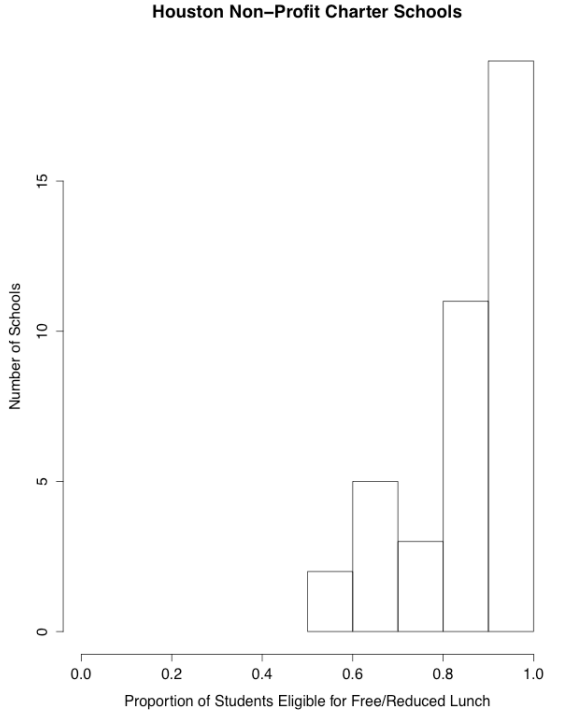
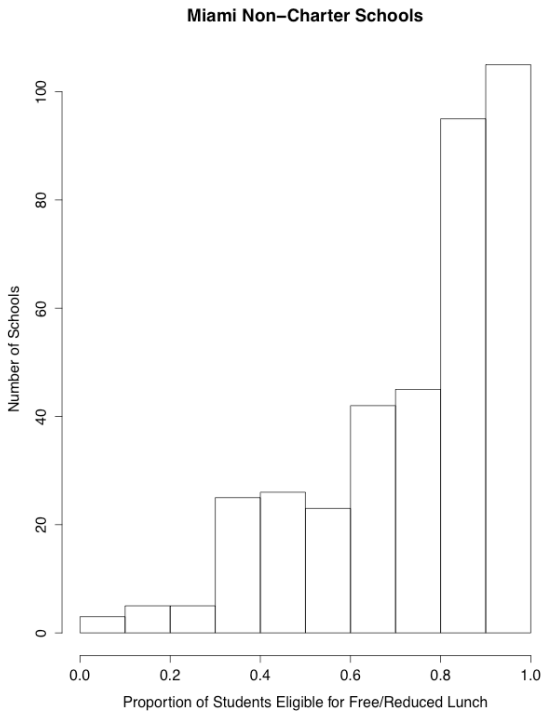
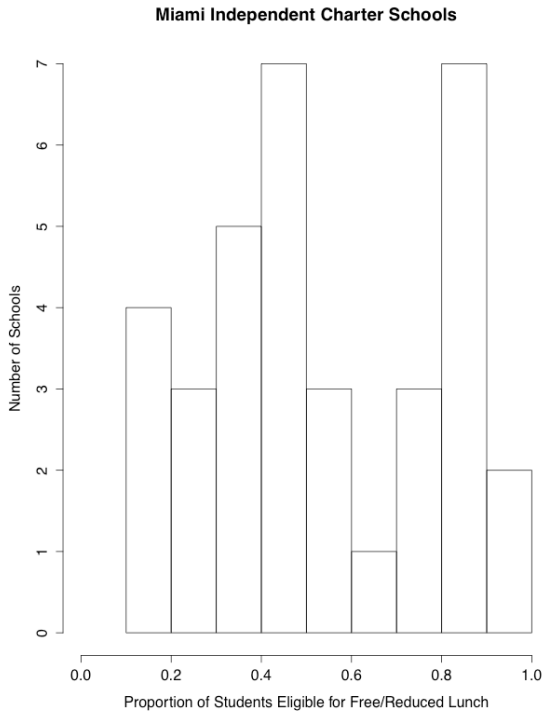
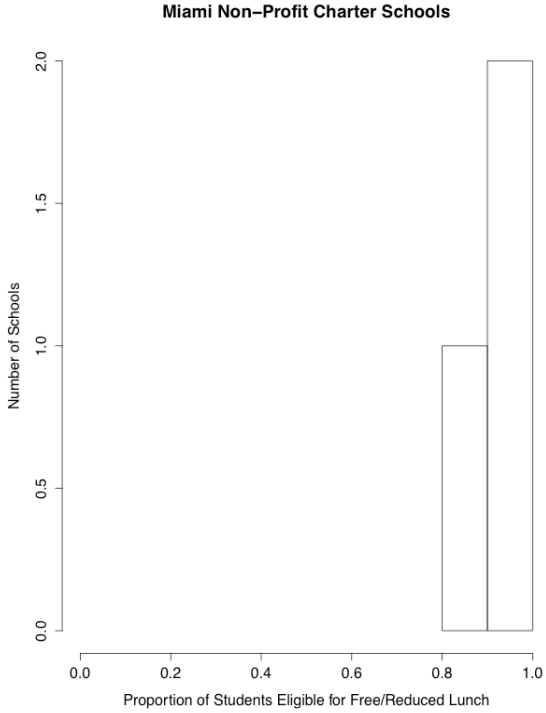
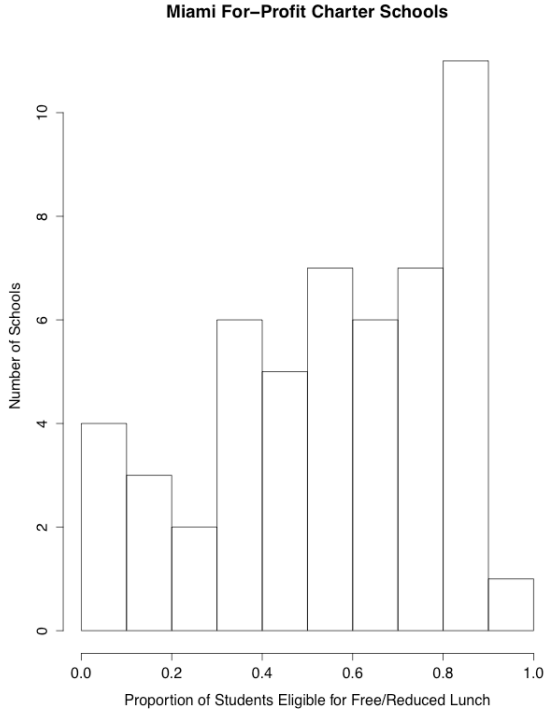




**Figure 4.7: Miami FRL Eligibility Rates By School Type**


Miami Non−Charter Schools
Number of Schools
0
20
40
60
80
100
0.0
0.2
0.4
0.6
0.8
1.0
Proportion of Students Eligible for Free/Reduced Lunch


Miami Independent Charter Schools
Number of Schools
0
1
2
3
4
5
6
7
0.0
0.2
0.4
0.6
0.8
1.0
Proportion of Students Eligible for Free/Reduced Lunch


Miami Non−Profit Charter Schools
Number of Schools
0.0
0.5
1.0
1.5
2.0
0.0
0.2
0.4
0.6
0.8
1.0
Proportion of Students Eligible for Free/Reduced Lunch


Miami For−Profit Charter Schools
Number of Schools
0
2
4
6
8
10
0.0
0.2
0.4
0.6
0.8
1.0
Proportion of Students Eligible for Free/Reduced Lunch

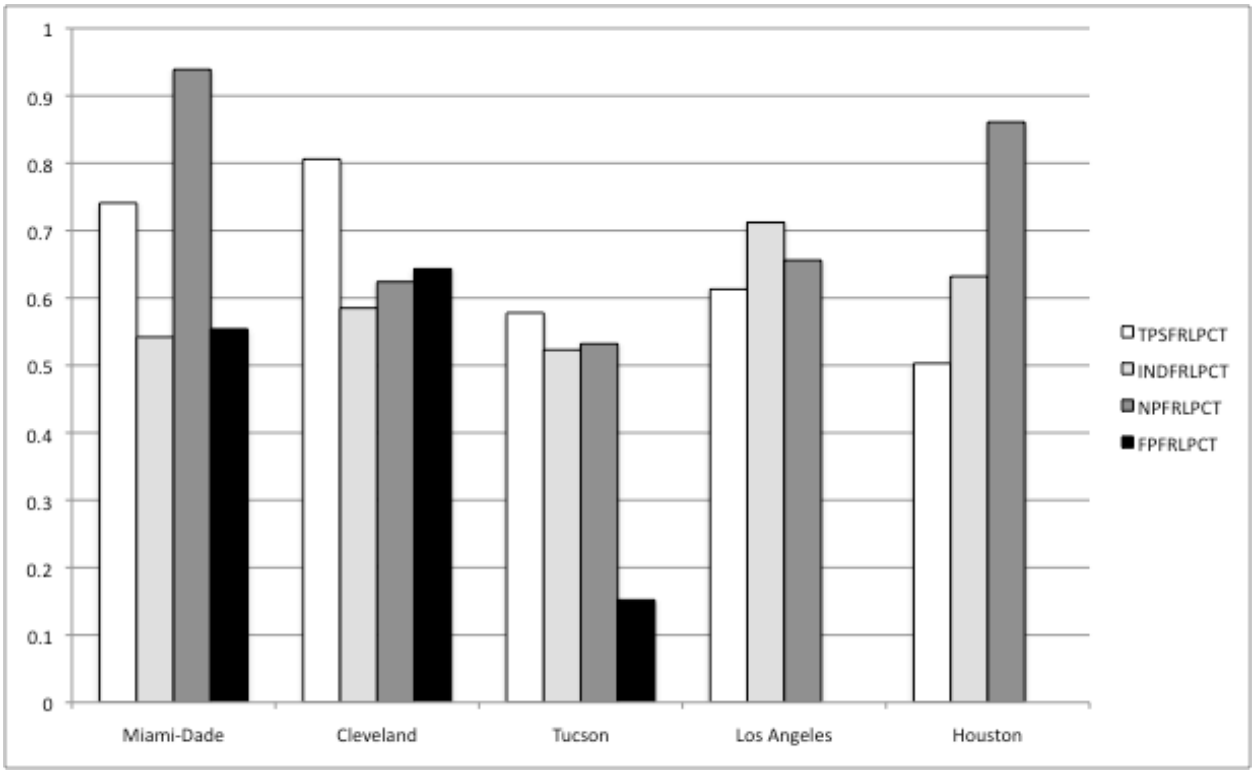
students, while 118 out of 374 (31.6%) of non-charter schools enroll 90-100% proportion of free/reduced lunch students. This suggests that charter schools in Miami-Dade may indeed be pursuing exclusionary strategies to avoid cultivating student populations with highly concentrated proportions of high-risk students (Lubienski, Gulosino & Weitzel, 2009). This absence of low-income students in charters in Miami could result in an increased concentration of lower-income students in non-charter schools, and through this concentration disadvantaging these students (Rumberger & Palardy, 2005).

If charter schools systematically seek to avoid low-income students, it could push non-charters to take on higher proportions of these students, further concentrating poverty. The existence of for-profit charters here may be associated with a *market-effect* whereby low-income students are disproportionately sorted into non-charter schools. This *market-effect*, inasmuch as it works to identify a particular school type (either charters or non-charters) with concentrated poverty, and another school type with relative affluence could become a self-reinforcing pattern exacerbating between-school socioeconomic segregation.

Figure 4.8 Illustrates the free/reduced lunch eligible student rate for each school type for each district. Independent charter schools in each district with for-profit charters had lower free/reduced lunch enrollment rates than non-charters. In the two districts without for-profits, independent charters enrolled higher proportions of free/reduced lunch students than non-charters. Likewise, non-profit charter schools in each district with for-profit charters had lower free/reduced lunch enrollment rates than non-charters (with the exception of three non-profit charters in Miami), while the opposite holds in districts without for-profit charters. This suggests that independent and non-profit charters

demonstrate different student enrollment patterns in districts with for-profit charters than in those without. The presence of for-profit charters seems to be associated with other charter school types emulating profit-oriented enrollment patterns.

**Figure 4.8: Proportion of FRL Eligible Students By School Type & District**




TPRFLRPCT = Non-charter school free/reduced lunch percent
INDFRLPCT = Independent charter school free/reduced lunch percent
NPFRLPCT = Non-profit charter school free/reduced lunch percent
FPFRLPCT = For-profit school free/reduced lunch percent

Outside of Houston charter schools do not systematically locate in CBGs with statistically different median income levels than non-charter schools. Despite this, charters of all types in Cleveland, Tucson, and Miami (with the exception of Miami's 3 non-profit charters) enroll lower proportions of low-income students than non-charters. Meanwhile,

in Houston and Los Angeles, both non-profit and independent charters enroll higher proportions of low-income students compared to non-charters. Enrollment patterns at independent charter schools are very different in districts with for-profit charters than in districts without. This suggests that where for-profit charters exist, a more market-oriented philosophy may come to take hold throughout the charter school segment. In five of the six districts studied, something besides school location appears to be impacting whether students from lower-income families are more likely to attend charter or non-charter schools. There is evidence that this *market-effect* is associated with the presence of for-profit charter schools. This market effect may influence socioeconomic sorting patterns in ways that increase between-school socioeconomic stratification.

*Race*

The racial composition of the six districts under examination vary substantially. There are four majority Hispanic districts (Tucson, 57.9%, Miami-Dade, 60.6%, Houston, 61.2%, and Los Angeles, 73.0%) and two majority Black districts (Cleveland, 64.7% and Detroit, 83.1%, see Table 3.1 for full racial breakdown). Non-profit charter schools in districts without for-profit charter schools (Los Angeles and Houston) under-enroll white students. This is consistent with a mission-orientation whereby with non-profit providers are more likely to seek out higher-need populations (Weisbrod, 1985). Generally, non-white students are more likely to be an under-served, higher-need student population. Significantly, non-profit charter schools in districts where there are for-profit charter schools do not demonstrate the same lower proportional enrollment of white students. In both of the non-profit/for-profit mixed districts (Cleveland and Tucson) non-profit charter

schools actually enroll the highest proportion of white students of any of the four school types in those districts. This suggests that in the case of non-profit charter schools, there may be some connection between the presence of for-profit charter schools and the likely racial composition of student enrollment. In the absence of for-profit charters, non-profit charters behave consistent with mission-oriented principles, while in the presence of for-profit charters, non-profit charters exhibit racial enrollment patterns more like what would be expected of profit-oriented providers. This is similar to the differences in non-profit socioeconomic enrollment discussed above. In two of the four districts with for-profit charters (Tucson and Miami), white enrollment is substantially higher in charters than in non-charters. This suggests a possible targeting of white students by for-profit charter operators. It also suggests that districts with for-profit charters may develop distinct charter/non-charter racial sorting patterns compared to those without for-profit charter schools.

Looking solely at the racial composition of CBGs, there are significant differences between the non-profit only districts and the districts with for-profit charters. In the districts without for-profit charters (Houston and Los Angeles) charter schools locate in CBGs where there is a lower white population proportion (9.0% and 6.3% respectively) and a nearly equivalent higher Black population proportion (9.0% and 6.8%). Two of the four districts with for-profit charters (Cleveland and Detroit) locate in districts with a higher white population proportion (12.8% and 10.4% respectively) and lower Black population proportion (11.7% and 7.8%), while the other two districts with for-profits (Miami and Tucson) have no statistically significant difference in white CBG proportion. It is the two majority-Black districts where charters are likely to locate in more-white, less-

Black neighborhoods. These are also the districts with the highest absolute charter/non-charter differential in Black CBG composition, with charters locating in CBGs with 12.8% lower Black population proportion in Cleveland and 10.4% lower in Detroit. Despite the location differences, charters in for-profit districts do not systematically under enroll Black students. It may be that locating in areas with a lower proportion of Black population equates with the ability to attract relatively higher-income Black students, as is reflected in the gaps in low-income enrollment between charters and non-charters in for-profit districts discussed above. Racial geo-demography and socioeconomic student enrollment may thus interact in complicated ways. Either way, CBG Black population proportion is the one racial category for which there are significant differences between charters and non-charters in each district. In the districts without for-profit schools, charters locate in CBGs where the Black population is at least 6.8% higher. In the districts with for-profit charters, one district has slightly higher Black population proportion than non-charters (Tucson at 1.4%) while in the other three districts, charters locate in CBGs that have at least 8.2% lower proportion of Black population.

The primary purpose of Analysis 2 was to test Hypothesis 4: in districts where for profit charter schools proliferate, charter schools as a whole are less likely than non-charter schools to enroll non-white and low-income students compared to districts without for-profit charters. In the case of low-income students there is evidence of charter schools of all types being less likely to enroll low-income students in districts with for-profit charters than in districts without for-profit charters. In the two districts without for-profits, charters are likely to locate in CBGs with higher Black population proportions and lower white population proportion, while the opposite pattern holds in two of the four

districts with for-profit charters. This does not directly translate to racial enrollment differences, however. The evidence is stronger for a socioeconomic market-effect, but there is some evidence for a racial market-effect as well. The results of Analysis 2 indicate that it is reasonable to fail to reject Hypothesis 4, and that further research into a potential for-profit *market-effect* is warranted.

**Table 4.11: Charter/Non-Charter CBG Racial Composition Difference**

| **District** | Difference between charter and non-charter white enrollment | Difference between charter and non-charter Black enrollment |
|---|---|---|
| Houston | - 0.090 * | + 0.090 * |
| Los Angeles | - 0.063 * | + 0.068 * |
| Tucson | *Non-significant difference* | + 0.014 * |
| Cleveland | + 0.117 | - 0.128 * |
| Miami | *Non-significant difference* | - 0.082 * |
| Detroit | + 0.078 * | - 0.104 * |

* = statistically significant difference at $\alpha = 0.05$

Negative numbers indicate charter schools enroll lower proportions than non-charters of the racial group, positive numbers indicate charters enroll higher proportions than non-charters.

**Discussion:**

The results of Analysis 1 demonstrated that nationally, there are significant differences in the socioeconomic characteristics where for-profit and non-profit charter schools locate, and significant differences in the likelihood of each segment educating high proportions of low-income students. For-profit schools were found to be less likely to locate in low homeownership census block groups, and less likely to educate high proportions of low-income students (as expressed in Title-I eligibility). No significant

differences were found in the racial composition of student populations of for-profit versus non-profit schools.

Analysis 2 examined six districts in greater detail, providing a more nuanced picture of socioeconomic differences associated with for-profit charter schools. There is evidence that differences between the free/reduced lunch rates of charter versus non-charters in districts are directionally opposite in those districts where for-profit charter schools were present versus those where they were not present. In three of four districts with for-profit charter schools, charters educated lower proportions of free and reduced lunch eligible students than non-charters. In both of the districts without for-profit charters, charter schools educated higher proportions of free-and-reduced lunch eligible students than non-charters. This suggests the possibility that there may be something distinct about the districts, or "markets" where for-profit charters exist. This analysis cannot determine whether there is a causal relationship between the presence of for-profit charter schools, and the general behavior of charter schools in a district. However, the analysis does provide evidence that suggests that in districts with for-profit charters, it is more likely that charters of all types will operate according to market incentives by seeking to avoid low-income students. There may be a socioeconomic *market-effect* whereby the average socioeconomic status of student enrollment in charter schools that are independent or non-profit is different when for-profit charters exist or do not exist in the district. The predominantly for-profit and mixed for-profit/non-profit districts exhibit substantially similar results in this analysis, while the districts without for-profits exhibit directly opposite results.

Racial differences are not as straightforward. It is notable that three of the four districts with for-profit charters, charter schools located in neighborhoods with substantially lower Black populations compared to non-charters, while in both districts without for-profit charter schools, charters located in neighborhoods with substantially higher Black populations. This did not equate to clear racial enrollment differences, but may be linked to socioeconomic enrollment differences. It could be that schools located in intensely racially segregated areas are less appealing to higher income Black families, although this is only one possible interpretation of the data. There is less evidence for a racial *market-effect* than for a socioeconomic *market-effect*. However, there is enough evidence of racial geo-demographic differences that the possibility of a racial *market-effect* cannot be discounted. It could be that these factors are related in more complicated ways, and that students are targeted based on multiple intersecting demographic factors.

Every school district is different, and differences in student sorting patterns no doubt reflect a number of local particularities. However, the results of this analysis suggest that one common factor influencing student-sorting patterns is whether for-profit charter schools exist in significant numbers in a district. It is not possible to infer causality from these patterns. It could be that the presence of for-profit schools creates a neoliberal-ized school choice market where charter schools pursue competitive strategies to avoid the highest-need students (Brown, 2015, Lubienski, 2007; Lubienski & Weitzel, 2009). It could be that causality is reversed, that prior to the entry of for-profit charter schools into a district that there were pre-existing patterns whereby socioeconomically privileged students were more likely to attend charters. Either scenario is consistent with the hypothesis that for-profit charter schools are incented to avoid certain student populations

in order to maximize student outcomes, and by extension, return on investment. This might happen through choosing to enter or not enter particular districts, or it may entail effecting transformations to charter/non-charter sorting patterns upon entering a district. There are clear differences in the overall enrollment of for-profit charter schools versus non-profit charters. Additionally, there is evidence of a *market-effect* whereby in districts with for-profit charters, other types of charter schools behave more like profit-oriented than mission-oriented schools. The next chapter will discuss in greater detail the implications of the findings described in this chapter.

# Chapter 5: Discussion & Conclusion

The previous chapter laid out the findings from the two-stage analysis undertaken in this dissertation. This Chapter expands on these findings, comparing the results to the hypothesized relationships from Chapter Two's theoretical framework. After that, there is a discussion of the implications of these findings. Then, the dissertation's contribution to broader research will be detailed. Promising directions for future research will be laid out and a series of policy recommendations will be presented. The dissertation closes with a brief discussion of the implications of neoliberal school reform and the broader questions underlying current school reform initiatives.

## Revisiting the Theoretical Framework

In Chapter 2, it was theorized that for-profit charter schools represent a distinct phenomenon in public education. For-profit charters are the paradigmatic exemplar of neoliberal logic in contemporary public education reform. This neoliberal logic radically re-prioritizes the social functions of public education and normalizes market-based competition as the proper regulator of the new "marketplace" of public education. The charter school movement emerged from dual origins (Scott & DiMartino, 2010). On one hand, the democratic-control perspective envisioned charters as a way to cultivate local schools that better fit specific community needs and which would be able to experiment with promising new educational methodologies. In contrast, the market-control perspective is premised upon bringing market logic to public education. For-profit charter

schools are the natural outgrowth of the market control model. They exemplify public education recast as a free-market competition. While individual independent and non-profit charter schools may be more or less mission or profit-oriented, for-profit charters by definition can only be profit-oriented (Weisbrod, 1988, Conn, 2002). It is this that distinguishes for-profit charter schools. It is also what makes for-profit charter schools a compelling test case for the impact of the neoliberal-ization of public education.

Neoliberal logic normalizes inequity through the reformulation of education as a zero-sum competition. Schools that more closely follow neoliberal logic would be expected to be ideologically disinclined to and structurally incapable of promoting educational equity. Neoliberalism envisions market competition in public education as compelling increased efficiency, and by extension improvement in all schools. However, the behavior of charters in school marketplaces suggests their marketing tactics may not be geared towards competitive optimization, but instead towards cultivating a more desirable student population (Lubienski, 2005, 2007). In market-ized public school districts, profit-seeking charter schools may be able to take advantage of under-informed consumers and competitive incentives in order to cultivate a demographically desirable student population. Targeting "less-risky" student populations may permit for a greater educational return on investment. Because of the ideological and structural particularities of for-profit charter schools, it was hypothesized that they may systematically under-enroll the highest need student populations. Specifically it was hypothesized that for-profit charters may under-enroll low-income and non-white students.

The results described in Chapter 4 present a complex picture, but one that is consistent with some of the hypothesized relationships in the theoretical framework. The

clearest factors distinguishing for-profit charters are socioeconomic. Analysis 1 demonstrated that there are significant differences in Title-I eligibility rates between for-profit and non-profit charter schools, and in homeownership rates in Census Block Groups where they locate. There were clear socioeconomic differences in both the geo-demography and student enrollment of for-profit versus non-profit charter schools. These differences are consonant with the hypothesis that profit-seeking charter schools may seek to avoid enrolling low-income students. Analysis 2 demonstrated systematic differences in the socioeconomic student sorting patterns between districts that had or did not have for-profit charter schools. The presence of for-profit charter schools may be linked to a decreased likelihood that all types of charter schools, not just for-profit charters, educate low-income student populations. In districts with for-profit charter schools, independent charter schools enroll lower free/reduced lunch eligibility rates than non-charters, while in districts without for-profit charters, independent charters over-enroll free/reduced lunch eligible students (Figure 4.8).

These results, taken together, suggest that there may be both a general difference between the student enrollment of for-profit and non-profit schools, as well as a potential socioeconomic *market-effect* associated with the presence of for-profit schools that impacts broader student enrollment patterns. Both of these patterns are consistent with the hypothesized relationships from the theoretical framework. For-profit charter schools are distinctly less likely to enroll certain student population demographics, and districts with for-profit charter schools demonstrate distinct student-sorting patterns compared to districts that do not have for-profit charters.

## Implications of Research Findings

The overall differences between student populations in for-profit and non-profit charter schools as well as the evidence of a for-profit *market-effect*, suggest that the proliferation of for-profit charter schools in a district may lead to systematic changes in student-sorting patterns. What are the implications of these differences? In the districts in this study with for-profit schools, charters tend to educate fewer low-income students than non-charters, while in the districts without for-profit charters, charter schools tend to over-enroll low-income students relative to overall student populations. Interestingly, both of these patterns may be problematic.

If charter schools in a district were predisposed to disproportionately under-enroll low-income students, as charter schools grew, enrolling an increasing proportion of students in the district, low-income students could be increasingly concentrated in fewer non-charter schools. The concentration of low-income students is likely to be disadvantageous to their academic achievement and attainment (Rumberger & Palardy, 2005; Borman & Dowling, 2010). The disproportionate over-enrollment of low-income students in charter schools, as opposed to non-charters, could also be problematic inasmuch as it likewise may entail the increasing concentration of disadvantaged students in fewer schools, in this case charter schools. In either case, there is a possibility of increased socioeconomic polarization with low-income students over-represented in one segment of schools. Either pattern risks concentrating students in ways that could worsen pre-existing educational inequities. The magnitude of the socioeconomic gaps between charters and non-charters varies by district. The comparison of Miami and Houston discussed in Chapter 4 illustrates there is a potential for extreme polarization by

socioeconomic status (illustrated in Figures 4.4 - 4.7). In Miami, 3% of charter schools have a 90-100% free/reduced lunch eligible student population, while 32% of traditional public schools do. By contrast, in Houston, 34% of charter schools educate a 90-100% free/reduced lunch eligible student population, while less than 1% of traditional public schools do. While every district does not demonstrate gaps so large, patterns such as this may reflect a meaningful increase in socioeconomic polarization, with fewer schools educating higher proportions of low-income students. It is beyond the scope of this analysis to determine what the overall rates of increase in between-school socioeconomic segregation result from the entry of charter schools.

For a number of reasons, it may be more problematic when low-income students are concentrated in non-charter schools than when they are concentrated in charter schools. Large-scale non-profit charter operators may be able to disproportionately access supplemental funding. Houston, one of the districts in the study, is notable as the origin of the Knowledge is Power Program (KIPP) schools, the largest non-profit charter chain in the United States. KIPP has demonstrated the ability to leverage substantial philanthropic investment, such that its per-pupil funding levels tend to be substantially higher than traditional public schools in the districts where they operate, averaging $6,500 more per pupil than traditional public schools in the same districts (Miron, Urschel & Saxton, 2011). KIPP is exceptional in this regard, but non-profits in general are structurally better suited to leveraging additional funding compared to for-profit charters. The higher level of funding for schools that are more likely to disproportionately enroll low-income students could be seen as an essentially redistributive measure. If low-income students are receiving more per-pupil funding at non-profit charter schools like KIPP, this represents a form of

equity-based reform, although it is not entirely unproblematic. KIPP has also been shown to have extremely high attrition rates, indicating that they may be actively trying to eliminate their highest-need students while maintaining an overall high-need student population demographic (Miron, Urschel, & Saxton, 2011).

For-profit schools are generally not able to procure philanthropic funding on the same order as non-profits, and as such are more likely to have lower per pupil expenditures than traditional public schools (Morley, 2006). They also have been found to spend lower proportions of their Total Current Expenditures on instruction than both traditional public schools and other types of charter schools (Miron & Urschel, 2010). Additionally, in their effort to maximize profits, for-profits are incentivized to lower instructional costs as much as possible (Miron, Urschel, Mathis & Tonquist, 2010). Following a corporate model, for-profit providers are also more likely to spend higher proportions of their funding on marketing, leaving less for instruction. Of course they seek to retain a profit as well, further reducing instructional funding. Given these facts, it is perhaps better if for-profit charter schools do not serve the highest-need students, as students in for-profit schools are likely to receive a lower level of per-pupil investment than students in either non-profit charters or traditional public schools. For-profit schools have demonstrated worse academic outcomes than non-profit charters even when for-profit schools educate lower proportions of low-income students (Miron & Gulosino, 2013). However, if for-profit charters skim the lowest-need students in a district, this leaves dwindling numbers of traditional public schools to enroll disproportionately higher-need student populations.

For-profit charter schools, operating in a market-oriented manner, typically invest heavily in marketing (Lubienski 2005, 2007). The expansion of school marketing concurrent with the entry of for-profit charter schools into a district may compel other charter schools and traditional public schools to reallocate funds into marketing in order to compete for enrollment. This coincides with a decrease in enrollment for district-operated schools with every new charter school that opens in a district. As traditional public schools are closed in favor of charter schools, this increases their transportation budget, as fewer schools must serve larger areas of districts. If for-profit charters do disproportionately under-enroll low-income students, traditional public schools are compelled to make up the difference by over-enrolling low-income students. Traditional public schools may simultaneously have less money, and increased marketing and transportation costs, resulting in a seriously diminished capacity to adequately educate these students.

The entry of non-profit charter schools into struggling urban districts presents its own set of challenges. In addition to the aforementioned structural stresses on marketing and transportation, non-profits may be filtering their student populations in other ways. KIPP, and other non-profit charters have been found to engage in "push-out" tactics that seek to eliminate students that do not perform up to a certain academic level (Miron, Urschel & Saxton, 2011). There is also a selection bias at work in the case of charters in general, one that may be particularly magnified at schools like KIPP that call for particularly stringent requirements on students and families seeking to enroll. This selection bias means that parents that seek to enroll in a charter school are demonstrating a certain baseline level of involvement in their child(ren)'s education, a factor that is substantially predictive of academic success. Thus the population of families that seek to

enroll in charter schools and those that send their children to neighborhood public schools would not be expected to be similarly successful. In these ways, schools that appear to educate a high-need population (primarily low-income, largely non-white) may actually be educating the particular subset of this population that would be most likely to demonstrate higher educational achievement and attainment. That being said, it seems likely that the enrollment patterns associated with for-profit charter schools are likely to be more harmful to the most high-needs students than the changes associated with non-profit charters.

## Contribution to Research

Prior to the analyses conducted in this dissertation, there had been no population-level comparisons of the student demographic composition and geo-demography of for-profit and non-profit charter schools. Analysis 1 provided the first such comparison of how these two school types differ in terms of the demographics of their student enrollment and of the neighborhoods where they locate. Analysis 1 permits a clearer understanding of how the profit motive may influence the behavior of charter school operators by under-enrolling socioeconomically disadvantaged students. Analysis 2 deepened the insights from the population-level study, providing evidence of a possible *market-effect* associated with the presence of for-profit charter schools. The possibility that the existence of for-profit charter schools could impact the demographic student-sorting patterns of other types of charter schools, not only for-profit charters, suggests that market-oriented reforms may have an impact beyond what had previously been thought. Analysis 2 contributes to research by suggesting that it is important to attend to the ways that new institutional

forms of schools, guided by particular ideological commitments, may transform the broader landscape for equity in public education. It is the first study to suggest and provide evidence of a for-profit *market-effect*.

This study provides a basis for further analyses of for-profit charter schools. It suggests that a closer investigation of the impacts of for-profit charters on racial and socioeconomic segregation is warranted. The current study cannot demonstrate how student enrollment gaps between for-profit charters and other types of schools develop, although the role of geography is likely to be critical. Both of these analyses expanded knowledge about the distinct impact of for-profit charters on racial and, particularly, socioeconomic segregation. Beyond the contributions represented by the particular insights of this dissertation, this research demonstrates the importance of looking at charter schools in a more nuanced manner. Too often charter school research treats charter schools as a singular phenomenon, when in fact they represent an incredibly diverse set of forms (Wells et al, 1999). While differences between for-profit charters and other types of charters was the focus of this analysis, there are a great many other ways to structure research in order to further explore particular subsets of charter schools. Some researchers have sought to better define typologies of charter schools and why these distinctions matter (Henig, Holyoke, Brown & Lacireno-Paquet, 2005; Miron, 2007). However too much research on charter schools still relies on over-generalizations, failing to contextualize fundamental differences between, for example, for-profit, non-profit and independent charter schools.

This study also emphasizes the importance of utilizing a geographic perspective in researching school segregation issues. By combining variables analyzing the demographic

characteristics of both census block groups where schools locate and demographic student enrollment across various types of schools, it is possible to better understand what might drive observed patterns of segregation. Analysis 1 showed that differences in the locational choices of for-profit and non-profit charters seemed to be driving student enrollment differences, affirming existing local-level findings (Lubienski, Gulosino & Weitzel, 2009; Gulosino & Lubienski, 2011). In the new, often highly marketized urban education landscape, it may not be clear whether geography and/or marketing and/or something else are driving segregation. Cities in the United States remain highly racially segregated, and increasingly socioeconomically segregated. Segregation is a spatial concept, whereby the persistent spatial isolation of certain groups of people (historically non-white and low-income people) from others based on exclusionary practices on the part of dominant groups drives persistent inequality. The new age of vastly expanded school marketing, and increased student mobility associated with charter schools means that school segregation may increasingly be driven by non-geographic factors. Analysis 2 found that many of the socioeconomic enrollment differences between charters and non-charters was not attributable to geo-demography, suggesting that marketing and/or other non-geographic factors may play an increasingly significant role in student segregation. It is important to continue to develop better understandings of how geographic and non-geographic factors interact to drive processes of racial and socioeconomic segregation.

## Directions For Future Research

The analyses described in this dissertation represent the beginning of a research program exploring how for-profit charter schools may impact student-sorting patterns, and

by extension racial and socioeconomic segregation. There are a number of different analytical strategies that could expand on this research.

*Multivariate Analysis*

Because of the exploratory nature of the analyses in this dissertation, each regression model entailed the use of one or two predictive variables. A follow-up analysis utilizing a multivariate approach would be better able to determine whether omitted variable bias or confounding factors may challenge the findings of these analyses. In addition, a multivariate analysis could offer a more nuanced perspective of how the factors explored here interact with other variables, and thus give a clearer picture of how the growth of charter schools in general, and for-profit charter schools in particular, may be likely to impact racial and socioeconomic segregation.

*Longitudinal Analysis*

The analyses presented here are from a single point in time. A longitudinal analysis would be better suited to tracing the impact of growth patterns of for-profit charter schools. This may permit a clearer understanding of how the growth of for-profit charter schools impacts student-sorting patters in particular districts by exploring whether and how increases in student enrollment at for-profit charter schools over time was associated with increases in overall between-school racial or socioeconomic segregation in a given school district. If it was found that either increases in for-profit enrollment, the entry of for-profit charter schools into a district, or the reaching of some threshold point in for-profit charter enrollment correlated with a rise in between school segregation, this would

provide stronger evidence of a link between for-profit charter schools and particular between-school segregation patterns. It may also provide better evidence for what, if any, threshold of for-profit penetration is necessary to produce a *for-profit* market effect. Conversely, if no increase in between-school segregation was associated with the growth of for-profit charters, that may indicate that for-profit charters are instead more likely to be taking over existing niches within already racially and socioeconomically segregated school districts.

Longitudinal geospatial analysis could also be utilized to analyze charter school growth patterns. For-profit charter schools are highly concentrated in a few states, with 78% of all for-profit charters located in four states: Michigan, Florida, Arizona or Ohio. Within those states, for-profit charters are further concentrated in a limited number of urban districts. Understanding how for-profit charter schools have historically expanded within districts, between districts, and between states could offer greater insight into what, if any, coordinated market strategies for-profit charter schools have pursued to grow in general, and how growth strategies have aligned with geo-demographic student recruitment strategies.

*Greater Detail in Individual Districts*

The second part of this dissertation's two-part analysis looks at six districts in detail. This allowed for the development of a more nuanced understanding of how the existence of for-profit charter schools in a district is associated with particular student-sorting patterns. However, an even more fine-grained analysis that focused on a single school district could provide a deeper understanding of the dynamics related to the growth of for-profit charter

schools and student sorting patterns. Such an analysis could better account for the unique history and current conditions of a district. It would also permit a more in-depth examination of individual education management organizations, which may yield additional insight into why observed student-sorting patterns hold. Some studies of this nature have been conducted, such as Gulsonio & Lubienski's (2011) analysis of Detroit and Gulsonio & D'Entremont's (2011) analysis in New Jersey. Further studies of this nature could provide a clearer knowledge base of how and why certain segregation patterns emerge in concert with the growth of charter schools of various types. It could also provide insight into complex differences between different charter school providers that are not entirely exposed by looking solely at whether they are or are for-profit, non-profit or independent.

*Virtual Schools*

For-profit EMOs are increasingly moving into the realm of online, or virtual education. Virtual schools can reduce or eliminate many of the costs associated with so-called brick-and-mortar schools, including facility construction, rent and maintenance, and can dramatically reduce other costs, particularly in instructional staff. This potentially makes virtual schools a more profitable venture than brick-and-mortar schools for profit-oriented EMOs. Research is limited at this point, but with virtual schools growing at exponential rates (projected growth of 3,100% between 2010-2016, Waters, Barbour, Menchaca, 2014), this is sure to be a similarly quickly developing area of research. For-profit EMOs are currently dominant in the field of virtual schools, and there are indications

that virtual schools will be the primary growth segment for for-profit charter operators in the near future.

Virtual schools present a different challenge in terms of segregation. By virtue of their structure they serve to segregate students at a much more granular scale, at the level of the individual or the household. They may also be more likely to serve suburban and rural populations where brick-and-mortar charters are less likely to be located. What impact these trends have on overall student segregation levels is not well understood at this time. It is also not well understood what the long-term impact on individual students and more broadly of increasing segregation from other students result if the growth of virtual schools leads to increasing numbers of students not attending brick-and-mortar schools. On one hand, online schooling could be seen as a possible route for bypassing segregated schooling, by rendering neighborhood demographics irrelevant to school composition. On the other hand, online schooling could be seen as a particularly pernicious form of segregation as it isolates individual students from substantial in-person contact with peers.

There are also questions about which students are likely to exit physical schools and enroll in virtual schools. There are gaps in online access that may result in low-income students being less able to access online schools. Additionally, recent research into online schools has found that student academic performance consistently trails far behind that of students in brick and mortar schools (Gill et al, 2015). Whether online charter schools will continue to grow, or whether continued academic failures will impede the segment's expansion is unclear. More research is needed into this growing phenomenon, although the

methods utilized in this study may be inadequate to that task due to the non-traditional geography of attending school in "cyber-space".

*Regional Analyses*

The United States is a large, diverse nation. States differ substantially from each other, and districts within and between states likewise differ greatly. In addition, there are certain regional particularities that make generalizations about public education in the US difficult at times. In particular, the US South differs in important ways from other regions of the US (Morris & Monroe, 2009). Historically, the scale of segregation in the South has been different than in the North, dating back to before the Civil War, when Black slaves and white masters lived in close proximity. Under Jim Crow laws, residential segregation was not required on the same scale as in the North to maintain segregation of public institutions. Also of note, school districts tend to be larger and coterminous with county boundaries in the South. All of these differences mean that in the South, desegregation within district boundaries has historically been *theoretically* easier. Indeed the South experienced the highest degree of success in desegregating public schools between the 1960s and 1980s (Orfield & Lee, 2004). Because of the unique history of school segregation in the South, a study focusing on charters and segregation in this region could be particularly illuminating.

Because of particular regional differences, an analysis that explores the nature of racial and socioeconomic sorting of students between charters and non-charters, and between different sorts of charters in the US South could be useful. The typology utilized in this study selected six districts, two from what would be considered the South (Miami and

Houston), but sorted them into different categories based on the proliferation of for-profit schools. There were substantial differences between those districts with for-profit charters and those without, but a regional analysis may reveal additional distinguishing factors characteristic of that particular region.

## Policy Recommendations and Obstacles

A few policy suggestions are presented here. However, each of the recommendations comes with a unique set of obstacles, making it difficult to present clear, easily implemented, uncontroversial fixes to problems presented by for-profit charter schools. Many of the solutions proposed below directly contradict the central ideology behind the charter school movement. The lack of easy solutions points to the need to take up broader questions regarding the social purposes of public education.

### *Enact/Enforce Racial and Socioeconomic Status Balancing Provisions*

At least fourteen states have some sort of provision stipulating that the racial composition of charter schools must reflect to some extent the racial composition of the area or district in which they are located (Oluwole & Green, 2009). Because charter school law is primarily determined at the state level, the structure and language of racial balance provisions for charter schools likewise differ by state. Some prescribe particular racial balance targets that charter schools are supposed to achieve. As an example of a strict guideline: “Nevada's racial-balancing provision requires that the racial balance of charter schools not differ by more than 10% from the racial composition of students in the school district” (Oluwole & Green, 2009, p. 34). Some states lack specific guidance, in favor of

"general non-discrimination provisions". However, even in those states where charter law contains clear, unambiguous racial balance provisions and strict consequences are prescribed for violations, enforcement tends to be weak or non-existent. If strict racial representational stipulations existed in every state, and were consistently enforced, this would effectively create a barrier to charter school growth leading to the concentration of students by race. Notably, these provisions do not deal with socioeconomic balance, which may be of particular concern given the findings of this dissertation. There is also reason to believe that this approach may present more problems than it solves.

One problem with enforcing representational enrollment in charter schools is that it goes against one of the central justifications for charter schools. A fundamental appeal of charter schools is that they represent a more diverse range of specific curricula, pedagogical approaches, subject-area concentrations and cultural orientations than traditional public schools can offer. The greater specificity of approach represented by different charter schools may explicitly or implicitly appeal differently to families from diverse racial and socioeconomic backgrounds. Enforcing representational enrollment may conflict with the efforts of charter schools to actively cultivate particular academic niches, and in the process compromise the rationale for charter schools overall. Ethnic, cultural, racial or linguistically oriented charter schools present a particular challenge to the notion that charter schools should be racially representative of the districts in which they locate (Eckes, Fox & Buchanan, 2011). In these contexts a particular school may serve a felt need in a particular community, and yet serve to exacerbate segregation. Can a culturally focused charter school be compelled to enroll a racially representative student population when families from different cultural backgrounds may have no interest in enrolling their

child(ren) in such a school? Or should such schools be prohibited? Either option seems to violate a key assumption about the value and purpose of charter schools. Either approach serves to reduce the family/consumer freedom of choice. Any strict racial/socioeconomic balancing requirements will naturally conflict with the freedom of choice ideal central to the school choice narrative.

Another factor inhibiting proportional enrollment is pre-existing residential segregation in urban school districts. In a district with substantial racial and/or socioeconomic segregation, which is to say virtually any large urban district in the nation, a school must surmount substantial logistical barriers in order to garner school enrollment patterns that reflect the overall racial composition of the district. This is and has been a problem for traditional public schools, as demonstrated by the high costs associated with desegregating bussing programs. It may be an even more intractable problem for charters. There is a question of who would bear the costs for ensuring that individual charter schools enroll racially and socioeconomically representative sample of a district's population. This could present extreme obstacles in terms of providing transportation, even if it was possible to convince families to send children to schools quite distant from their homes. Traditional public schools may be better equipped than a multitude of charter operators to coordinate across an entire district due to their central administration and district-wide purview. There is also the question of whether a school being demographically representative of a school district reflects any true level of integration. In many highly segregated metropolitan areas, individual districts have highly concentrated disadvantaged populations, often surrounded by wealthier, whiter suburbs. Detroit for example has 83% Black students and a 46% poverty rate, meaning that integration within the district may

not substantially represent a truly desegregated education. Proportional enrollment in Detroit would essentially maintain racial and socioeconomic segregation.

The existence of segregated cities is one reason why charter schools are able to target particular student populations through locational choice. Schools may make locational choices with the best of intentions, in order to educate an underserved population. Alternatively, they may locate in order to target "less risky" student populations. Expecting charter schools to reflect the racial and socioeconomic composition of a district or region is difficult at a time when increasingly even traditional public schools do not do so in any meaningful way as desegregation programs collapse (Orfield & Lee, 2004). This, along with the very nature of charters as schools of *choice*, would make the establishment and enforcement of racial and/or socioeconomic balance provisions in charter enrollment difficult to effectively implement. That being said, because meaningfully equitable education fundamentally depends on the dismantling of segregated schooling, key actors may wish to more carefully consider the proper balance between unlimited choice and the pursuit of equity.

*Utilize More Nuanced Assessment Strategies*

So-called high-stakes testing has proliferated in conjunction with the rise of school choice. These two phenomena are the most notable feature of the modern education reform movement (Ravitch, 2013). High-stakes testing, as the name implies, attempts to dramatically increase the consequences associated with tests of student achievement. It can determine the continued existence of individual public schools, with poor scores leading to school closure. With this imperative comes substantial pressure on school

administrators to boost their test scores. One way to raise these scores is by avoiding student populations that are more likely to perform poorly on these testing measures, including low-income students, students with learning disabilities, English language learners, and traditionally under-served racial minorities. This incentivizes schools, especially though not exclusively for-profit schools, to take steps to cultivate a particular student population. One way to counteract this is to make high-stakes accountability measures more sensitive to a school's student demographics.

Current accountability measures are often not sensitive to the fact that schools enroll demographically dissimilar student populations and that this has profound impacts on student outcomes. Schools are compared in a manner that presumes that the student population of each school is equally likely to perform at a given level on local, state and federal accountability measures. Research has demonstrated that student population demographics matter individually and collectively in terms of the expected performance of students and schools on testing measures (Rumberger & Palardy, 2005; Borman & Dowling, 2010). All else being equal, a school that enrolled 90% free or reduced lunch eligible students would be likely to perform worse on accountability measures than a school that enrolls 10% free or reduced lunch eligible students. Many testing measures are not sensitive to these important student population differences.

One solution to this problem is to make accountability measures sensitive to the actual composition of the student population. In such a system, a school's expected level of achievement would be based in part on the demographic composition of the student population. This could increase the pressure on schools with relatively privileged student populations, by raising the level of expectations of schools with such a demographic

composition. It could also reduce or eliminate the existing incentivize for charter school operators to seek out disproportionately easier to educate student populations if it no longer provided them an assessment advantage.

Some major difficulties arise with this approach. First, such a testing regime could be interpreted as setting lower standards at those schools with higher proportions of lower-income, or Black or Latino student populations. This runs the risk of enshrining existing achievement gaps as normative and acceptable, if students are held to different standards of success. Second, concentration effects research has demonstrated that it is not only a student's own family's socioeconomic status that impacts their academic outcomes, it is also the socioeconomic status of their peers' families that impacts a students' achievement. This means that even a testing regime that controlled for disproportionate enrollment of low-income, or English-language learner students may be likely to underestimate the concentration effect on student outcomes.

Another major problem is the feasibility of developing reliable testing instruments that accurately measure student learning and that are sensitive to demographic difference. The most current and analytically sophisticated accountability strategies, such as value-added assessment, have been found to be unreliable in the contexts they are used, and are projected to be prohibitively expensive to implement in a meaningful way (Ravitch, 2013; Harris, 2011). With the flaws of current testing and assessment strategies, developing an even more complex system that allowed for the comparison of schools in ways that are sensitive to student demographic composition may be unrealistic.

There is also a broader inherent problem with using testing strategies to determine school quality. Test-based accountability regimes may more accurately measure how well

students are coached in test-taking as opposed to measuring their cognitive growth. This reality may be more likely to be exploited by for-profit charter schools. In Arizona, for-profit charters' curricula and pedagogy are aligned to maximize test-based competencies at the expense of developing higher-order thinking (Garcia, Barber & Molnar, 2009). Thus test-based accountability itself may incentivize the sort of superficially high-quality, but lacking in depth sort of education that could be expected from a profit-oriented provider (Weisbrod, 1988).

*A Moratorium on For-Profit Charter Schools*

A more straightforward policy solution would be the prohibition of for-profit corporations from operating publicly funded schools. One of the foundational justifications for public education is that it is supposed to promote a more equitable society. For-profit charter schools may be less likely to serve high-need student populations, and may exacerbate existing socioeconomic segregation, based on the findings of this dissertation. If these findings were confirmed more broadly, a case could be made that the existence of for-profit charter schools is counterproductive to the achievement of basic public education objectives. If further research confirmed that for-profit charters systematically undermine equity outcomes, there would be a compelling justification for the elimination of for-profit charter schools. Some states already specifically prohibit for-profit charter schools, demonstrating that substantial skepticism exists in many states about the implications of allowing public schools to be operated by profit-seeking entities.

Like the other policy suggestions, there are problems here. The largest obstacle is the fact that in 2009-10, there were over 700 for-profit charter schools, educating more

than 300,000 students. The number of students served by for-profit charters has increased since then. There is no clear path towards the elimination of for-profit charter schools in a district like Detroit, where for-profit charters educate substantial proportions of the overall student population. Clearly a mass closing of these schools would not be a viable option. It is possible that these schools be moved from for-profit management to non-profit management. Imagine Schools, which was until recently the largest for-profit charter chain, transitioned to non-profit status in 2015 (Imagine Schools Website). Questions remain as to whether an EMO that transitions from for-profit to non-profit status is likely to exhibit mission-oriented behaviors. However, the transition may result in reduced pressure to maximize profit. The case of Imagine Schools for-profit to non-profit transition would make for a compelling case study into whether and how operating as a for-profit or non-profit impacts the demographic enrollment of an EMO's schools.

Given the difficulties of closing existing schools, and questions about the impacts of transitioning from for-profit to non-profit status, the policy focus may be best placed on those schools that do not yet exist. Those states and districts that do not currently have for-profit charter schools should carefully consider the evidence presented here and elsewhere about for-profit charter schools before permitting for-profit corporations to open new schools in their localities. Those states with existing for-profit charter schools may wish to consider a moratorium on the opening of new for-profit charter schools pending more research into their impacts. This may meet serious political resistance, with continuing pressure from market-control advocates calling for the unrestricted expansion of charter schools of any and all types.

If for-profit charters were to be universally rejected, it would represent a decisive defeat for the market-control vision in public education. A rejection of for-profit charter schools would constitute an understanding that treating public education like a market good may present more problems than it solves. Because charter school proliferation is generally determined by a combination of a local district's political economy, and the state-level policy environment, any effort to curtail for-profit charter schools would need to target local and state, and possibly federal agencies for charter reform.

*Summary of Recommendations*

All of the policy suggestions presented come with substantial caveats. This is because any solutions to the increase in socioeconomic and racial segregation associated with charter school growth generally, and for-profit charter schools in particular, contradict the very logic out of which charter schools emerged. The school choice movement emerged in part in reaction against the equity-focus of desegregation programs (Orfield & Frankenberg, 2013). Charter schools are in some cases leveraged by individual families and privileged groups in the pursuit of competitive advantage (Bifulco, Ladd & Ross, 2009a). For these reasons, it may be the case that charter schools, in their current form, may inevitably increase socioeconomic and racial segregation. It may also be the case that for-profit charter schools complicate these effects in particular ways. This emphasizes that the question of what to do about racial and socioeconomic segregation associated with charter schools ultimately goes back to more fundamental questions about the purposes of public education.

**The Continuing Evolution of For-Profit Charter Schools**

Charter schools continue to expand rapidly. The six districts examined in Analysis 2 are experiencing a particularly quick growth of charter schools. Between 2010-11 and 2013-14, these districts on average went from having 20% to 29% of their public school students enrolled in charter schools. This represents, on average, a 46% growth in the proportion of the overall student proportion educated in charter schools in only three years. In the same three-year span, the total number of charter schools nationally grew from 5,258 to 6,440, a 22% growth. Charter schools remain a rapidly growing phenomenon, and they seem to be growing most rapidly in those districts where they already exist in substantial numbers. As this increasingly EMO-fuelled growth of charter schools continues, the impact that these schools have on student sorting patterns will be magnified. In this context, the decisions that states and districts make about whether they will permit or encourage the proliferation of for-profit charter schools could increasingly influence student-sorting patterns. The number of for-profit charter schools is increasing at a slower rate than that of non-profit charters, but per-pupil enrollment is higher in for-profit charters (Miron & Gulosino, 2013). In the two years between 2009-10 and 2011-12 (the latest year for which data is available), for-profit charters increased from 637 to 840 (31.9% increase) while non-profit charters grew from 774 to 1,206 (55.8% increase) (Miron & Gulosino, 2013). For-profit EMOs are increasingly moving into other realms, including supplementary educational services and technology and virtual/online schools. Virtual charter schools have grown from enrolling 150,000 students in 2010 to enrolling 4,800,000 in 2016 (projected), a 31-fold increase in enrollment in six years (Waters, Barbour & Menchaca, 2014). The limited rate of increase in the number of non-virtual for-

profit charter schools, along with the continued rapid growth of non-profit charter schools, suggests that corporations may be increasingly seeing brick and mortar charter schools as less than optimal enterprises for profit-seeking and/or that school districts and states are becoming less willing to sanction the expansion of for-profit charters. This may be the reason for the 2015 transition of what had been the largest for-profit EMO, Imagine Schools, to non-profit status. The current landscape for brick and mortar charter schools may favor non-profit providers, with for-profits increasingly moving to online schooling in search of greater profits. However, when a for-profit provider transitions to non-profit status it may further obscure connections between formal for-profit-status and profit-seeking behavior, resulting in increased numbers of profit-seeking actors disguised as mission-oriented operators (Weisbrod, 1988).

Non-profit EMOs are not necessarily unproblematic either. As the findings of the six-district analysis found, in districts without for-profit charters, non-profit charters tend to enroll substantially higher rates of low-income students and lower rates of white students than non-charter schools. While the segregation patterns in these districts seem to be less opportunistically motivated than in the districts with for-profit schools, that does not mean that they are harmless. Inasmuch as distinct gaps in the racial and socioeconomic composition of charters and non-charters represent increases in between-school segregation, equity concerns arise. Also, this dissertation provides evidence that non-profit charter schools may behave more like profit-oriented charters when they locate in the same districts as for-profit charters. There are other complicating factors as well. Some large non-profit EMOs, have high student attrition rates associated with "push-out" strategies, indicating that even though these schools serve a demographically high-need

student population, they may actually be counseling out their highest need individual students (Miron, Urschel & Saxton, 2011). Traditional public schools must then take on any students counseled out of charter schools. . As non-profit charters continue to grow, and especially as high-profile charter chains like KIPP proliferate, there are a number of unpredictable student sorting impacts likely to result.

## Towards A Larger Question

The growth of charter schools has been linked to segregation by race, socioeconomic status, "ability", special needs status, and language-learner status (Frankenberg, Siegel-Hawley, & Wang, 2011; Miron, Urschel, Mathis & Tonquist, 2010). This dissertation was undertaken to better understand what, if any, specific effect for-profit charters might have on student segregation. For-profit charters were found to be less likely to educate low-income students compared to non-profit charters. Evidence was found for a possible additional *market-effect* whereby, in districts with for-profit charter schools, other charter schools may be more likely to enroll student populations similar to for-profit charters, promoting broader charter/non-charter segregation patterns. There is, at best, mixed evidence regarding the educational performance of charter schools. Further, there is evidence that as a group, for-profit charter schools perform worse than other types of charter schools (Miron & Gulosino, 2013). While this dissertation has explored the equity implications of for-profit charter schools, if they also fail to deliver on educational performance measures, there remains little to recommend them.

At a time of increasing socioeconomic segregation and growing gaps in student achievement by socioeconomic status, alongside persistent racial achievement gaps, it is

increasingly important to consider how to address these inequalities. Neoliberal models of education reform de-emphasize equity concerns in favor of ideals of productive efficiency and consumer choice that are likely to intensify competition and inequity. Although most have sidestepped the issue, some charter advocates have posited that market-based education reforms could be the solution to persistent educational inequities (A. Thernstrom, & S. Thernstrom, 2004). This ignores the link between the rise of charter schools and the abandonment of school desegregation (Orfield & Frankenberg, 2013). While desegregation was not unproblematic, it represented a concerted commitment to addressing very real equity concerns. In those particular times and places where desegregation was robustly implemented, it resulted in substantial progress in the racial integration of schools and an expansion of educational opportunity for Black students (Orfield & Lee, 2004, Wells & Crain, 1997).

The move away from desegregation and towards neoliberal reform represents a rejection of the equity imperative in public education. In its place is a collection of atomized individuals struggling for competitive advantage on an uneven playing field. This raises a basic question about the importance of equity within the public education system in the United States. Evidence has demonstrated that charter school growth is associated with increased segregation. This dissertation has shown that for-profit charter schools, the most neoliberal contemporary school reform, are associated with particularly problematic student sorting patterns. Neoliberal reforms have demonstrated an inability to ameliorate educational inequity, and the fundamental nature of neoliberal logic renders them unlikely to have the capacity to address equity concerns. Direct replacement of desegregation with "mandatory school choice" has been tried and found to result in substantial increases in

racial segregation and the Black/white achievement gap (Godwin, Baxter, Leland & Southworth, 2006).

The dissertation opened with a quote from Jeffrey Henig (1994) who noted that conflicts about charter schools center around "questions about the kind of society we wish to become" (p. 116). Ultimately, the pursuit of educational equity depends on a public that demands an educational system that is structured to promote equity. Worsening racial and socioeconomic segregation of schools is the natural result of the competitive struggle built into capitalist public education systems when they are not explicitly structured to ameliorate educational inequity rooted in existing social inequalities (Bowles & Gintis, 2011:1976). Neoliberal school reform structurally and ideologically elides equity in favor of promoting each individual's ability to pursue educational advantage. For-profit charter schools are the ultimate exemplification of neoliberal rationality in public education. If the public demands educational institutions that promote a more equitable society, for-profit charter schools are more likely to be part of the problem then part of the solution.

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# Appendix 1: Analysis of state policy contexts & profit-status

States differ significantly in terms of their charter school policies. Some states still do not allow charter schools at all, while others have continually revised their laws in order to encourage a rapid expansion of charters. There are relationships between particular policy approaches and the relative proliferation of for-profit or non-profit charters in a state. Chi and Welner (2007) note that many different organizations publish ideologically driven charter law state report cards. The Center for Education Reform (CER) is one such group that publishes ratings of state charter school policies (Consoletti, 2012). CER advocates for the expansion of charter schools, and their ratings largely reflect the ease with which charter schools can begin and sustain operations in a given state. CER does seem to have a clear, consistent and transparent system for ranking states, even as the rankings they provide reflect a pre-existing pro-charter bias. Holyoke, Henig, Brown & Lacireno-Paquet (2009) have utilized CER scores to measure the flexibility of charter school policy and found it be a consistent, valid and reliable metric for this purpose.

Each of CER's ranking criteria might also be of particular interest to for-profit firms. CER provides higher rankings to those states that offer multiple paths to charter authorization, specifically routes that are independent of government. More favorable grades are given to states that have high numbers of charters allowed, or preferably, no caps on the number of charter schools and total enrollment allowed in the charter segment in a state. Both of these factors contribute to ease of entry and expansion for EMOs in a given state. CER assigns favorable grades to states that allow charters to operate more

autonomously, reducing the need of EMOs to expend resources tailoring their approach on a state-by-state basis. Finally, CER grades states highly where charters receive equal or close to equal per pupil funding compared to traditional public schools, a direct factor in the potential profitability of an EMOCS. Combining these four criteria, CER provides ordered rankings (1-42) for each state's charter policy (including DC, please note that nine states do not allow charter schools and thus do not receive rankings). Holyoke, Henig, Brown & Lacireno-Paquet (2009) describe the calculation of CER scores in greater detail.

CER state rankings were regressed on the for-profit status of EMOCS to determine if state level policy contexts influenced the relative distribution of for-profit and non-profit schools in each state (Table A1.1) (methodological note: multilevel modeling was not used here due to autocorrelation effects from the state level variable used in analysis). State rankings were utilized instead of raw scores because they can be more readily understood by the wider public as an indicator of how charter-friendly a state's policy is. Because of the widespread popularity of charter schools, state policymakers may feel pressure to be at the top of the CER state policy rankings. There was a statistically significant relationship between CER state charter policy rankings and the percentage of a state's EMOCS that are operated by for-profit organizations. Higher state rankings were associated with a higher relative percentage of for-profit EMOCS. The results can be seen visually in figure A1.1. A particular EMOCS located in a state with a rank of 1 would be predicted to have a greater than 70% probability of being operated by a for-profit EMO, while an EMOCS located in a state with a rank of 42 would be predicted to have a less than 10% probability of being operated by a for-profit EMO. The $R^2$ value of 0.162 indicates that while CER rankings are significantly predictive of the likely for-profit/non-profit ratios in a state, most of the

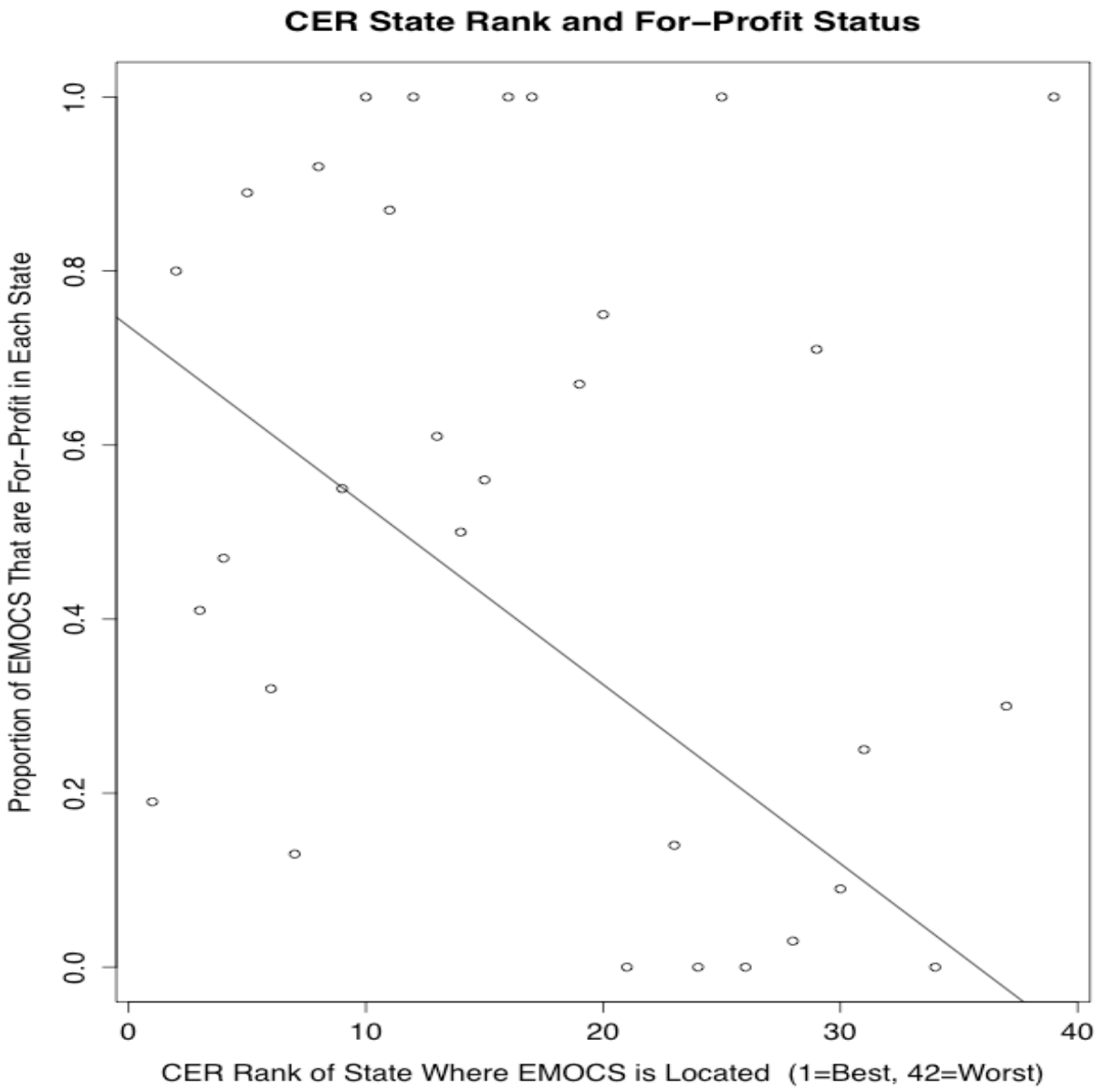
variance remains unexplained by the CER rankings. However, the explanatory value provided by this analysis is an indication that state-level charter school policy can influence the relative proliferation of for-profit or non-profit EMOCS. Those states with more favorable policy towards charter schools may be more likely to have higher proportions of for-profit charter schools in the EMOCS sector. The attractiveness of fewer restrictions and greater per-pupil funding is correlated with an increased proliferation of for-profit instead of non-profit EMOs. It may also be that for-profit providers are more likely to target states with more charter-friendly policies, as they perceive them to offer fewer barriers to rapid expansion. Further research that isolates specific policy differences is necessary to determine what specific measures are most likely to encourage the proliferation of for-profit EMOCS.

**Table A1.1: Log Regression of CER State Rank on EMOCS' For-Profit Status**

| | Estimate | Stand. Error | z value | pr>z |
|---|---|---|---|---|
| Intercept | 0.736 | 0.021 | 36.28 | $2 \times 10^{-16}$ *** |
| CER GPA | -0.021 | 0.001 | -16.41 | $2 \times 10^{-16}$ *** |

$R^2$ : 0.162

**Figure A1.1: CER State Rank and For-Profit Status**




$R^2$ : 0.162

# Appendix 2: Factors influencing state level proliferation of charter schools

Why do some states have higher proportions of charter schools than others? Why some states have more EMO operated charters than others? And why do some states have more for-profit charter schools than others? A series of analyses were conducted using ordinary least-squares regression to determine what factors influence the proliferation of charter schools in general, as well as the proliferation of various types of charter schools. The results are shown in detail in Tables A2.1 – A2.5. The first analysis examined how a number of policy and demographic factors impacted the proportion of public schools that were charters in each state. Of all the policy factors, only state autonomy was found to be a statistically significant predictor of the proportion of schools that were charters in a state. Of the demographic factors, only urban population percentage was found to be a statistically significant predictor of the proportion of schools that are charters. As charter schools are more likely than non-charter schools to be located in urban areas (in the school year 2011-2012, 52% of charter schools were located in cities, compared to 25% of non-charter schools (NAPCS Dashboard)) it is not surprising that urbanicity is a predictor of charter proliferation.

The existence of multiple independent charter authorizers was the only statistically significant predictor of EMO-operated charters as a proportion of charter schools. This accords with previous findings that multiple authorizers are strong predictors of charter proliferation (Kuscova & Buckley, 2004). State autonomy was the only statistically

significant predictor of for-profit charter schools as a proportion of EMO-operated charter schools. Thus state autonomy is found to be doubly predictive of both relative proportion of charter schools and relative proliferation of for-profit charter schools. More autonomy from state operational rules and procedures is a clear factor in the proliferation of charter schools in general, and for-profit charter schools in particular. Following from last chapter's discussion of how for-profit charter schools uniquely reflect an abiding neoliberal preference for subordinating the state to market imperatives, it makes sense that autonomy from state rules appeals to for-profit operators. The concluding chapter will discuss the implications of the connection between state autonomy and for-profit charter growth in more detail.

**Table A2.1: Regression of Policy & Demographic Factors on State Charter %**

| Variable | Estimate | Std. Error | t-value | p of t |
|---|---|---|---|---|
| Intercept | -0.001047 | 0.06403 | -0.016 | 0.9871 |
| POLICY FACTORS | | | | |
| Years | 0.000431 | 0.00152 | 0.284 | 0.7784 |
| Total Schools | $-4.35 \times 10^{-6}$ | $3.01 \times 10^{-6}$ | -1.447 | 0.1599 |
| Ind. Authorizers | -0.001041 | 0.00257 | -0.405 | 0.6889 |
| Number Allowed | 0.001842 | 0.00205 | 0.901 | 0.3760 |
| State Autonomy | 0.01412 | 0.00646 | 2.185 | 0.0381 * |
| District Autonomy | 0.006812 | 0.00721 | 0.945 | 0.3534 |
| Teacher Freedom | -0.00187 | 0.00054 | -0.346 | 0.7324 |
| Funding | -0.00106 | 0.0038 | -0.279 | 0.7827 |
| Facility Funding | 0.01421 | 0.01291 | 1.100 | 0.2813 |
| Implementation | 0.00049 | 0.00588 | 0.077 | 0.9396 |
| DEMOGRAPHY | | | | |
| Urban Pop. Prop. | 0.1796 | 0.0868 | 2.069 | 0.0487 * |
| Hispanic Pop. Prop. | 0.06284 | 0.07391 | 0.850 | 0.4030 |
| Black Pop. Prop. | -0.05782 | 0.07045 | -0.821 | 0.4192 |
| White Pop. Prop. | -0.05106 | 0.05917 | -0.863 | 0.3961 |

Adjusted R-squared: 0.5225

**Table A2.2: State Political Affiliation as (Non) Predictor of State Charter Percent**

| Variable | Estimate | Std. Error | t-value | p of t |
|---|---|---|---|---|
| Intercept | 0.054302 | 0.006995 | 7.763 | $1.97 \times 10^{-9}$ |
| Political Affiliation | -0.033319 | 0.049782 | -0.669 | 0.507 |

Adjusted R-squared: -0.01399

**Table A2.3: Best Fit Model of Charter Percent In State**

| Variable | Estimate | Std. Error | t-value | p of t |
|---|---|---|---|---|
| Intercept | -0.042915 | 0.015251 | -2.814 | 0.007709* |
| State Autonomy | 0.017402 | 0.003603 | 4.830 | $2.25 \times 10^{-5}$ * |
| Urban Pop. Prop. | 0.225049 | 0.056752 | 3.965 | 0.000313 * |

Adjusted R-squared: 0.5407

**Table A2.4: EMO-operated Charter Schools as a Proportion of Charters**

| Variable | Estimate | Std. Error | t-value | p of t |
|---|---|---|---|---|
| Intercept | 0.019749 | 0.037117 | 0.532 | 0.597625 |
| Ind. Authorizers | 0.023946 | 0.006489 | 3.690 | 0.000668 * |

Adjusted R-squared: 0.2353

**Table A2.5: For-Profits as Proportion of EMOCS**

| Variable | Estimate | Std. Error | t-value | p of t |
|---|---|---|---|---|
| Intercept | 0.09862 | 0.12829 | 0.769 | 0.4466 |
| State Autonomy | 0.10721 | 0.04311 | 2.487 | 0.0171 * |

Adjusted R-squared: 0.1123

# Appendix 3: Full Analytical Results

The following tables and figures (Tables A3.1 – A3.15, and Figures A3.1 - A3.21) show those portions of the complete results of Analysis #2 that were omitted from Chapter 4 due to space considerations. The significant results are described in the text of Chapter 4 where relevant.

**Table A3.1: CBG Median Income & Charter Status Regressed on FRL Proportion**

| District | Variable | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| Miami | Intercept | 0.902 | 0.045 | 12.234 * |
| | Med. Income | -0.000004 | 0.0000004 | -10.356 * |
| | Charter | -0.174 | 0.023 | -7.455 * |
| Cleveland | Intercept | 0.804 | 0.119 | 3.502 * |
| | Med. Income | 0.00000006 | 0.000003 | 0.98 |
| | Charter | -0.194 | 0.055 | -3.544 * |
| Tucson | Intercept | 0.782 | 0.087 | 6.202 * |
| | Med. Income | -0.000005 | 0.000001 | -4.420 * |
| | Charter | -0.123 | 0.043 | -2.841 * |
| Los Angeles | Intercept | 0.753 | 0.037 | 24.755 * |
| | Med. Income | -0.000003 | 0.0000003 | -10.395 * |
| | Charter | 0.076 | 0.019 | 4.045 * |
| Houston | Intercept | 0.568 | 0.038 | 25.451 * |
| | Med. Income | -0.000002 | 0.0000004 | -4.065 * |
| | Charter | 0.203 | 0.021 | 9.69 * |
| Detroit | Intercept | 0.766 | 0.044 | 19.220 * |
| | Med. Income | 0.000001 | 0.0000009 | 1.210 |
| | Charter | 0.038 | 0.022 | 1.762 |

* significant at $\alpha = 0.05$

NOTE: This table shows charter/non-charter differences in enrollment after controlling for CBG SES.

**Figure A3.1: FRL Eligibility By CBG Income and School Type in Houston**

**0=Non-Charters, 1=Independent Charters, 2=Non-Profit Charters.**

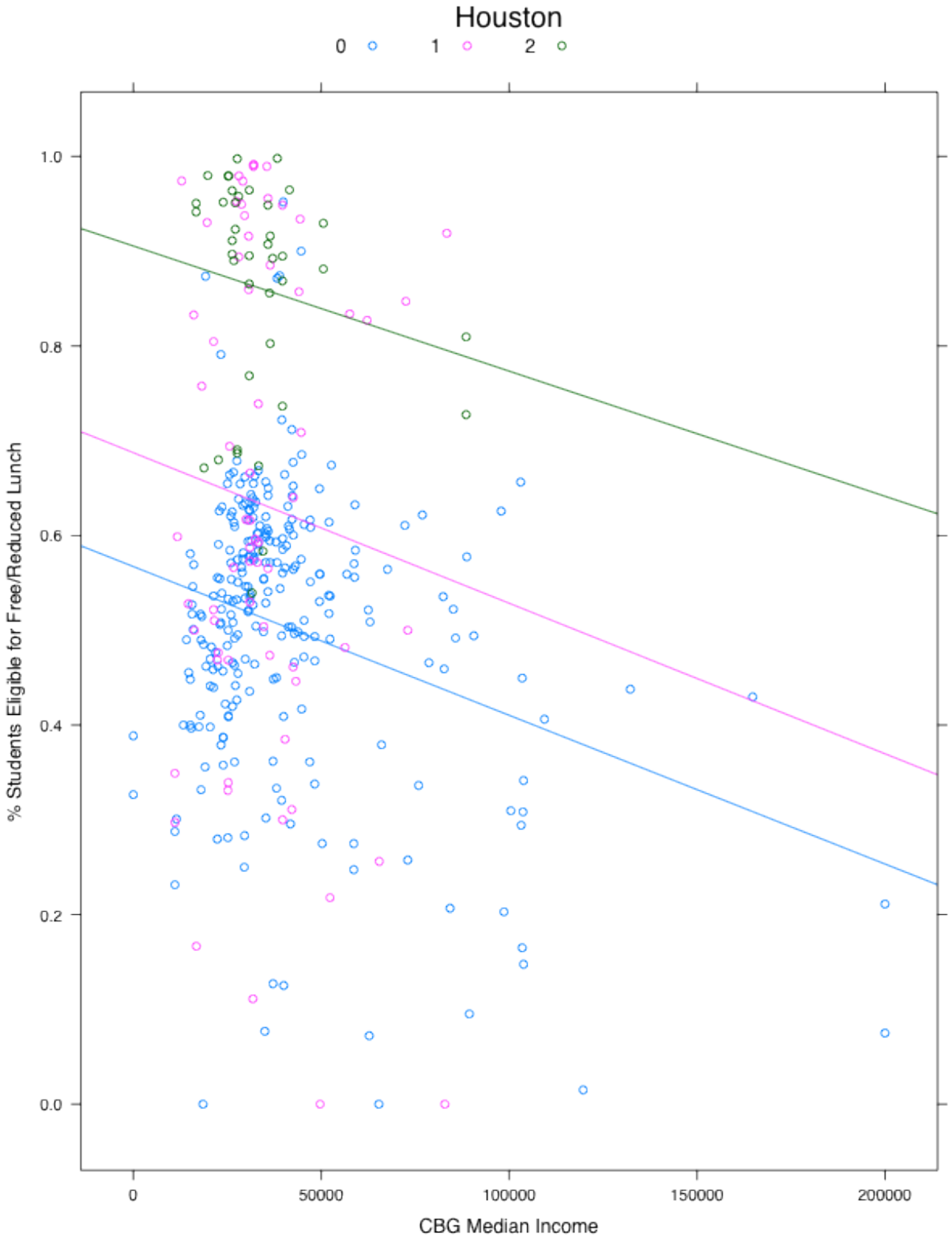


**Table A3.2: Free & Reduced Lunch Proportion By School Type and District**

| | Traditional Public School | Independent Charter School | Non-Profit EMO Charter School | For-Profit EMO Charter School |
|---|---|---|---|---|
| Houston | **50.3%** | 63.2% | 86.1% | - |
| Los Angeles | **61.3%** | 71.2% | 65.6% | - |
| Miami-Dade | **74.1%** | 54.2% | * | 55.4% |
| Cleveland | **80.6%** | 58.7% | 62.4% | 64.3% |
| Tucson | **57.8%** | 52.3% | 53.2% | 15.2% |

- There are no for-profit charters in Houston or Los Angeles
* Non-profit charters are omitted in Miami-Dade due to small sample size (3).

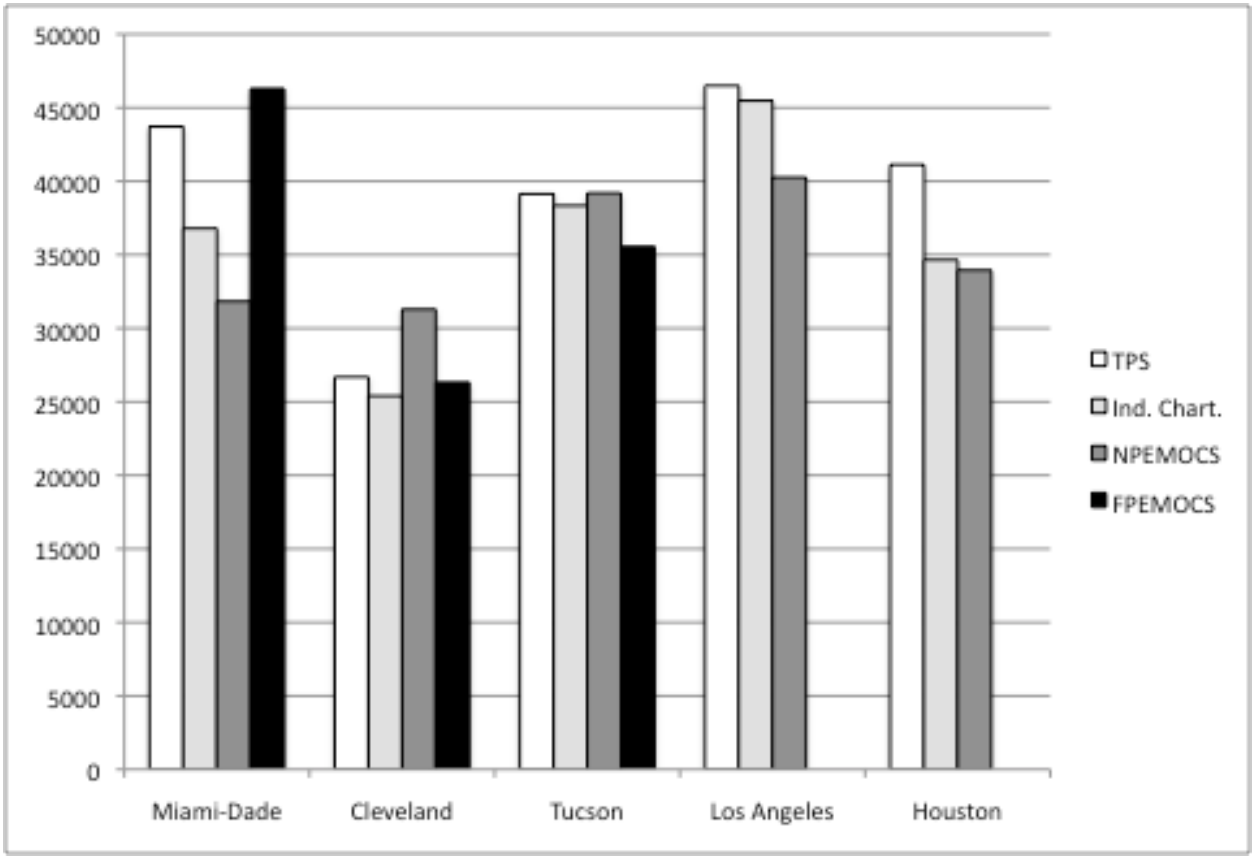
*Note: statistics are descriptive*

**Table A3.3: CBG Median Income and School Type By District**

| | Traditional Public School | Independent Charter School | Non-Profit EMO Charter School | For-Profit EMO Charter School |
|---|---|---|---|---|
| Houston | **$33,239** | $31,427 | $30,849 | - |
| Los Angeles | **$38,366** | $34,353 | $34,896 | - |
| Miami-Dade | **$38,321** | $35,122 | $33,120 | $37,095 |
| Cleveland | **$25,660** | $25,220 | $32,196 | $24,957 |
| Tucson | **$37,728** | $32,280 | $35,230 | $37,548 |

*Note: statistics are descriptive*

**Figure A3.2: Median Household Income of CBG By School Type and District**




*Note*: For-profit charter schools do not exhibit higher median household income by location except in Miami-Dade. In Cleveland and Tucson, median income is lower for for-profit charters than it is for traditional public schools. Compare to following chart.

*Note: statistics are descriptive*

**Table A3.4: CBG Median Family Income by Charter Status (*Expressed in Dollars*)**

| District | Variable | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| MIAMI - DADE | Intercept | 43,713 | 1,366 | 32.000 * |
| | Charter | -1,539 | 3,102 | -0.496 |
| CLEVELAND | Intercept | 26,689 | 1,000 | 26.684 * |
| | Charter | 699 | 1,727 | 0.405 |
| TUCSON | Intercept | 39,137 | 1,801 | 21.734 * |
| | Charter | -972 | 3,067 | 0.752 |
| LOS ANGELES | Intercept | 46,571 | 972 | 47.924 * |
| | Charter | -2,584 | 2,138 | -1.209 |
| HOUSTON | Intercept | 41,126 | 1,535 | 26.80 * |
| | Charter | -6,736 | 2,818 | -2.39 * |
| DETROIT | Intercept | 28,361 | 970 | 29.234 * |
| | Charter | -1,289 | 1,655 | -0.779 |

**Table A3.5: FRL Eligible Student Proportion by Charter Status**

| District | Variable | Parameter Est. | Std. Error | t-value |
|---|---|---|---|---|
| MIAMI - DADE | Intercept | 0.741 | 0.012 | 64.063 * |
| | Charter | -0.179 | 0.026 | -6.812 * |
| CLEVELAND | Intercept | 0.806 | 0.032 | 25.566 * |
| | Charter | -0.194 | 0.054 | -3.557 * |
| TUCSON | Intercept | 0.578 | 0.027 | 21.389 * |
| | Charter | -0.118 | 0.046 | -2.563 * |
| LOS ANGELES | Intercept | 0.612 | 0.009 | 67.858 * |
| | Charter | 0.084 | 0.020 | 4.241 * |
| HOUSTON | Intercept | 0.503 | 0.012 | 43.35 * |
| | Charter | 0.214 | 0.021 | 10.06 * |
| DETROIT | Intercept | 0.796 | 0.013 | 62.36 * |
| | Charter | 0.037 | 0.021 | 1.70 |

**Table A3.6a: Charter / Non-Charter Differences in Racial Enrollment Rates After Controlling For Racial Composition of CBGs Where Schools are Located**

| TUCSON | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.429 | 0.070 | -6.098 * |
| | White Pop. % | 0.941 | 0.096 | 9.787 * |
| | Charter | 0.112 | 0.028 | 3.955 * |
| Hisp. Stud. % | Intercept | 0.331 | 0.031 | 10.578 * |
| | Hisp. Pop % | 0.651 | 0.060 | 10.784 * |
| | Charter | -0.062 | 0.031 | -2.016 * |
| Black Stud. % | Intercept | 0.040 | 0.005 | 6.882 * |
| | Black Pop. % | 0.397 | 0.102 | 3.878 * |
| | Charter | -0.012 | 0.007 | -1.685 |

| MIAMI – DADE | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | 0.014 | 0.010 | 1.359 |
| | White Pop. % | 0.092 | 0.014 | 6.446 * |
| | Charter | 0.022 | 0.011 | 1.942 |
| Hisp. Stud. % | Intercept | 0.102 | 0.019 | 5.206 * |
| | Hisp. Pop. % | 0.826 | 0.030 | 27.849 * |
| | Charter | 0.055 | 0.022 | 2.510 * |
| Black Stud. % | Intercept | 0.089 | 0.012 | 7.248 * |
| | Black Pop. % | 0.846 | 0.027 | 31.377 * |
| | Charter | - 0.083 | 0.021 | -3.868 * |

| HOUSTON | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.019 | 0.012 | -1.586 |
| | White Pop. % | 0.176 | 0.021 | 8.406 * |
| | Charter | -0.019 | 0.012 | -1.634 |
| Hisp. Stud. % | Intercept | 0.246 | 0.020 | 12.106 |
| | Hisp. Pop. % | 0.757 | 0.034 | 22.148 * |
| | Charter | -0.036 | 0.023 | -1.587 |
| Black Stud. % | Intercept | 0.101 | 0.014 | 7.002 * |
| | Black Pop. % | 0.737 | 0.032 | 23.071 * |
| | Charter | 0.037 | 0.022 | 1.691 |

**Table A3.6b: Charter / Non-Charter Differences in Racial Enrollment Rates After Controlling For Racial Composition of CBGs Where Schools are Located, cont**

| LOS ANGELES | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.172 | 0.0114 | -15.126 * |
| | White Pop. % | 0.549 | 0.022 | 25.204 * |
| | Charter | 0.046 | 0.011 | 4.381 * |
| Hisp. Stud. % | Intercept | 0.353 | 0.013 | 26.838 * |
| | Hisp. Pop % | 0.675 | 0.020 | 33.74 * |
| | Charter | -0.122 | 0.015 | -8.244 * |
| Black Stud. % | Intercept | 0.021 | 0.005 | 4.211 * |
| | Black Pop. % | 0.843 | 0.023 | 36.794 * |
| | Charter | 0.031 | 0.010 | 3.084 * |

| CLEVELAND | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.025 | 0.018 | -1.392 |
| | White Pop. % | 0.499 | 0.037 | 13.521 * |
| | Charter | 0.008 | 0.024 | 0.329 |
| Hisp. Stud. % | Intercept | -0.005 | 0.011 | 0.466 |
| | Hisp. Pop. % | 1.217 | 0.068 | 17.878 * |
| | Charter | -0.022 | 0.015 | -1.420 |
| Black Stud. % | Intercept | 0.253 | 0.032 | 7.946 * |
| | Black Pop. % | 0.772 | 0.044 | 17.679 * |
| | Charter | 0.058 | 0.033 | 1.765 |

| DETROIT | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.016 | 0.009 | -1.736 |
| | White Pop. % | 0.436 | 0.039 | 11.316 * |
| | Charter | 0.001 | 0.015 | 0.048 |
| Hisp. Stud. % | Intercept | 0.009 | 0.009 | 0.998 |
| | Hisp. Pop. % | 1.004 | 0.033 | 30.809 * |
| | Charter | -0.029 | 0.014 | -2.006 * |
| Black Stud. % | Intercept | 0.139 | 0.029 | 4.652 * |
| | Black Pop. % | 0.880 | 0.033 | 26.639 * |
| | Charter | 0.076 | 0.019 | 3.788 * |

**Table A3.7: Houston Race Results By Student Population and Location**

| Houston School Racial Comp. | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. Pop. | Intercept | 0.068 | 0.007 | 9.878 * |
| | Charter | -0.035 | 0.013 | -2.738 * |
| Hisp. Stud. Pop. | Intercept | 0.598 | 0.019 | 31.44 * |
| | Charter | -0.050 | 0.035 | -1.44 |
| Black Stud. Pop. | Intercept | 0.296 | 0.019 | 15.965 * |
| | Charter | 0.098 | 0.034 | 2.892 * |
| **Houston CBG Racial Comp.** | | | | |
| White CBG Pop. | Intercept | 0.498 | 0.016 | 31.283 |
| | Charter | -0.090 | 0.029 | -3.084 * |
| Hisp. CBG Pop. | Intercept | 0.471 | 0.019 | 24.643 * |
| | Charter | -0.024 | 0.0349 | -0.681 |
| Black CBG Pop. | Intercept | 0.259 | 0.019 | 13.377 * |
| | Charter | 0.090 | 0.035 | 2.533 * |

**Table A3.8a: EMO/Non-EMO Differences in Racial Enrollment Rates After Controlling For Racial Composition of CBGs Where Schools are Located**

| TUCSON | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.347 | 0125 | -2.772 * |
| | White Pop. % | 0.952 | 0.174 | 5.474 * |
| | EMO | 0.040 | 0.055 | 0.721 |
| Hisp. Stud. % | Intercept | 0.213 | 0.075 | 2.832 * |
| | Hisp. Pop % | 0.812 | 0.145 | 5.607 * |
| | EMO | -0.004 | 0.061 | -0.058 |
| Black Stud. % | Intercept | 0.033 | 0.011 | 2.901 * |
| | Black Pop. % | 0.105 | 0.136 | 0.769 |
| | EMO | 0.019 | 0.011 | 1.708 |

| MIAMI – DADE | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | 0.046 | 0.038 | 1.196 |
| | White Pop. % | 0.102 | 0.052 | 1.951 |
| | EMO | -0.026 | 0.026 | -1.021 |
| Hisp. Stud. % | Intercept | 0.232 | 0.061 | 3.801 * |
| | Hisp. Pop. % | 0.639 | 0.085 | 7.490 * |
| | EMO | 0.079 | 0.043 | 1.833 |
| Black Stud. % | Intercept | 0.024 | 0.035 | 0.669 |
| | Black Pop. % | 0.833 | 0.076 | 10.925 * |
| | EMO | -0.025 | 0.037 | -0.667 |

| HOUSTON | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | 0.013 | 0.014 | 0.931 |
| | White Pop. % | 0.059 | 0.028 | 2.135 * |
| | EMO | -0.011 | 0.014 | -0.836 |
| Hisp. Stud. % | Intercept | 0.199 | 0.048 | 4.192 * |
| | Hisp. Pop. % | 0.787 | 0.084 | 9.411 * |
| | EMO | -0.009 | 0.049 | -0.181 |
| Black Stud. % | Intercept | 0.153 | 0.041 | 3.723 * |
| | Black Pop. % | 0.701 | 0.079 | 8.868 * |
| | EMO | -0.008 | 0.050 | -0.168 |

**Table A3.8b continued: EMO/Non-EMO Differences in Racial Enrollment Rates After Controlling For Racial Composition of CBGs Where Schools are Located, cont.**

| LOS ANGELES | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.115 | 0.027 | -4.205 * |
| | White Pop. % | 0.597 | 0.056 | 10.660 * |
| | EMO | -0.105 | 0.026 | -4.119 * |
| Hisp. Stud. % | Intercept | 0.226 | 0.045 | 5.066 * |
| | Hisp. Pop % | 0.664 | 0.073 | 9.148 * |
| | EMO | 0.040 | 0.047 | 0.853 |
| Black Stud. % | Intercept | 0.023 | 0.020 | 1.171 |
| | Black Pop. % | 0.951 | 0.067 | 14.197 * |
| | EMO | 0.038 | 0.032 | 1.182 |

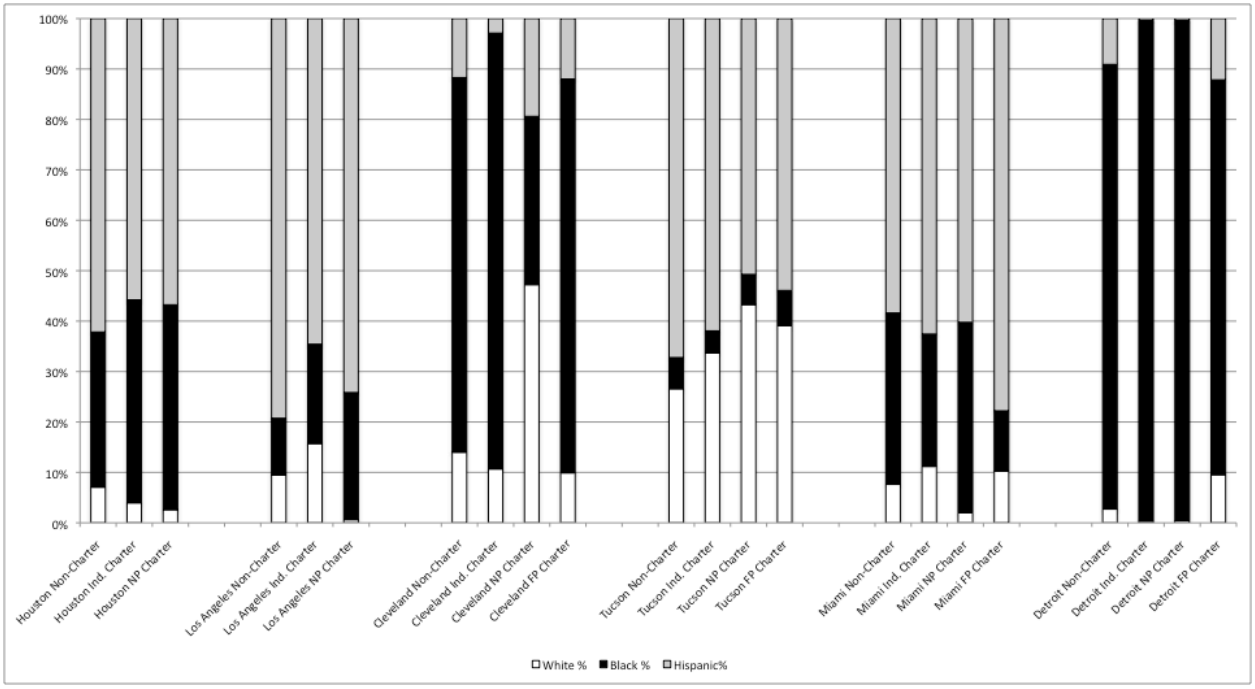
| CLEVELAND | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.139 | 0.056 | -2.465 * |
| | White Pop. % | 0.602 | 0.095 | 6.334 * |
| | EMO | 0.136 | 0.055 | 2.470 * |
| Hisp. Stud. % | Intercept | -0.015 | 0.018 | -0.811 |
| | Hisp. Pop. % | 0.779 | 0.126 | 6.161 * |
| | EMO | 0.062 | 0.023 | 2.672 * |
| Black Stud. % | Intercept | 0.467 | 0.067 | 7.015 * |
| | Black Pop. % | 0.769 | 0.096 | 7.996 * |
| | EMO | -0.272 | 0.063 | -4.327 * |

| DETROIT | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.049 | 0.037 | -1.345 |
| | White Pop. % | 0.629 | 0.089 | 7.038 * |
| | EMO | -0.0002 | 0.043 | -0.005 |
| Hisp. Stud. % | Intercept | -0.036 | 0.026 | -1.382 |
| | Hisp. Pop. % | 0.873 | 0.059 | 14.654 * |
| | EMO | 0.039 | 0.030 | 1.268 |
| Black Stud. % | Intercept | 0.313 | 0.068 | 4.618 * |
| | Black Pop. % | 0.790 | 0.064 | 12.279 * |
| | EMO | -0.044 | 0.047 | -0.936 |

**Table A3.9: Average Racial Composition of Schools by District and School Type**

| | Non-Charter School | Independent Charter School | Non-Profit EMO Charter School | For-Profit EMO Charter School |
|---|---|---|---|---|
| HOUSTON | | | | |
| White % | 6.8% | 3.9% | 2.5% | - |
| Black % | 29.6% | 39.6% | 39.1% | - |
| Hispanic % | 59.8% | 54.9% | 54.6% | - |
| | | | | |
| LOS ANGELES | | | | |
| White % | 8.8% | 13.8% | 0.6% | - |
| Black % | 10.4% | 17.3% | 24.1% | - |
| Hispanic % | 73.4% | 56.7% | 70.9% | - |
| | | | | |
| CLEVELAND | | | | |
| White % | 13.4% | 10.4% | 43.6% | 10.0% |
| Black % | 71.1% | 84.2% | 30.8% | 78.8% |
| Hispanic % | 11.2% | 2.8% | 17.9% | 12.1% |
| | | | | |
| TUCSON | | | | |
| White % | 24.0% | 30.1% | 38.3% | 36.0% |
| Black % | 5.6% | 3.9% | 5.3% | 6.4% |
| Hispanic % | 60.7% | 55.3% | 44.9% | 49.6% |
| | | | | |
| MIAMI | | | | |
| White % | 7.5% | 11.0% | 2.0% | 10.1% |
| Black % | 33.4% | 25.8% | 37.6% | 11.8% |
| Hispanic % | 57.4% | 61.5% | 60.0% | 76.7% |
| | | | | |
| DETROIT | | | | |
| White % | 2.7% | 0.3% | 0.4% | 9.5% |
| Black % | 87.3% | 99.1% | 98.8% | 78.0% |
| Hispanic % | 9.0% | 0.4% | 0.4% | 12.1% |
| | | | | |
| | | | | |

**Figure A3.3 Average Racial Composition of School Types By District**




Most Notable Differences:
HOUSTON: Declining white proportions from non-charter to ind. charter to NP charter.
LOS ANGELES: Dramatically smaller white proportion in non-profit charters
CLEVELAND: large numbers of white students in NP charters.
TUCSON: higher white proportions in all school types compared to non-charters.
MIAMI: much lower Black proportion and higher Hispanic proportion in FP charters
DETROIT: FP charters similar to non-charters, with ind. and NP charters by contrast enrolling almost entirely Black students.

**Figure A3.4: Los Angeles FRL Eligibility and CBG Median Income**

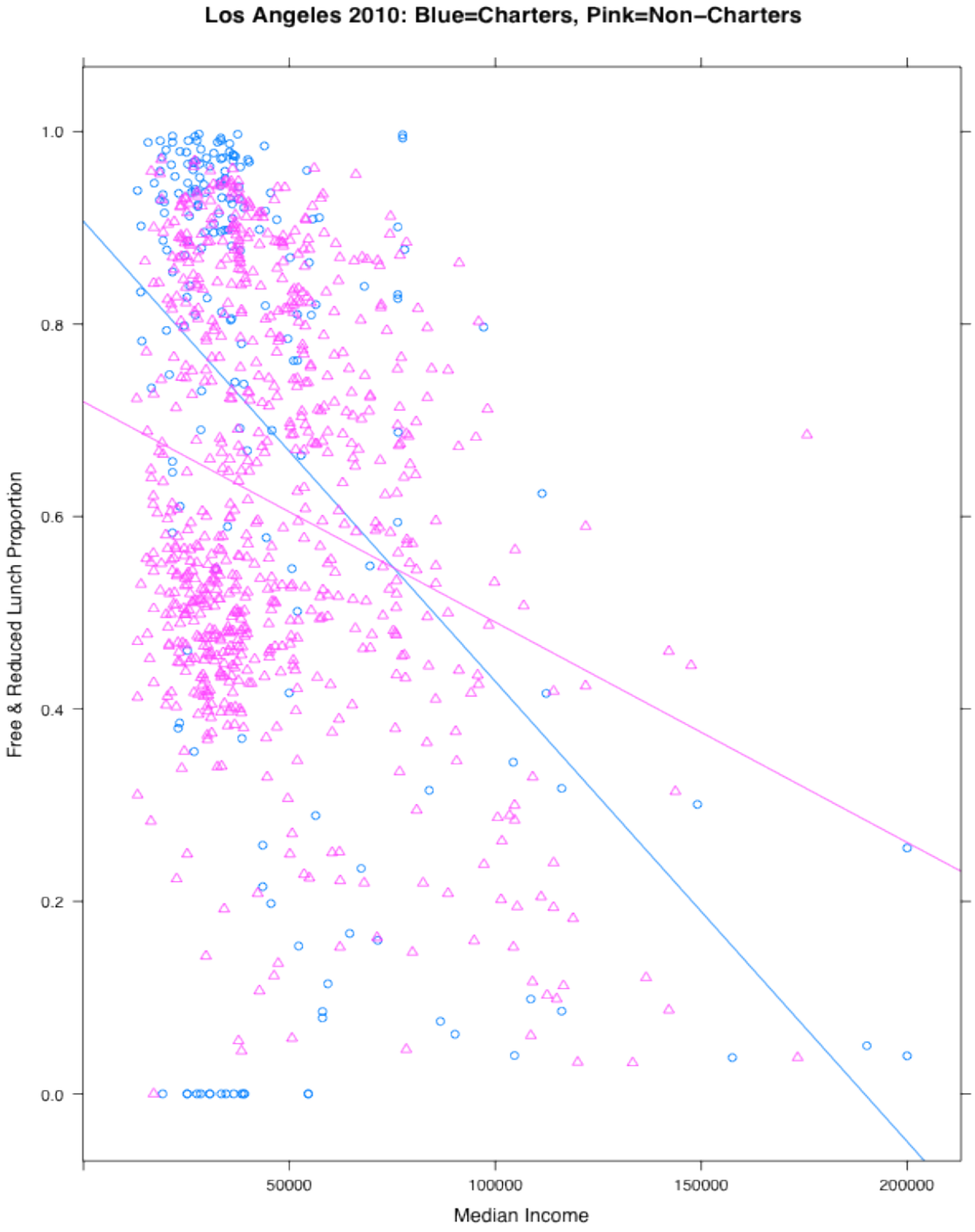


**Figure A3.5: FRL Eligibility By CBG Income and School Type in Los Angeles**

**0=Non-Charters, 1=Independent Charters, 2=Non-Profit Charters.**

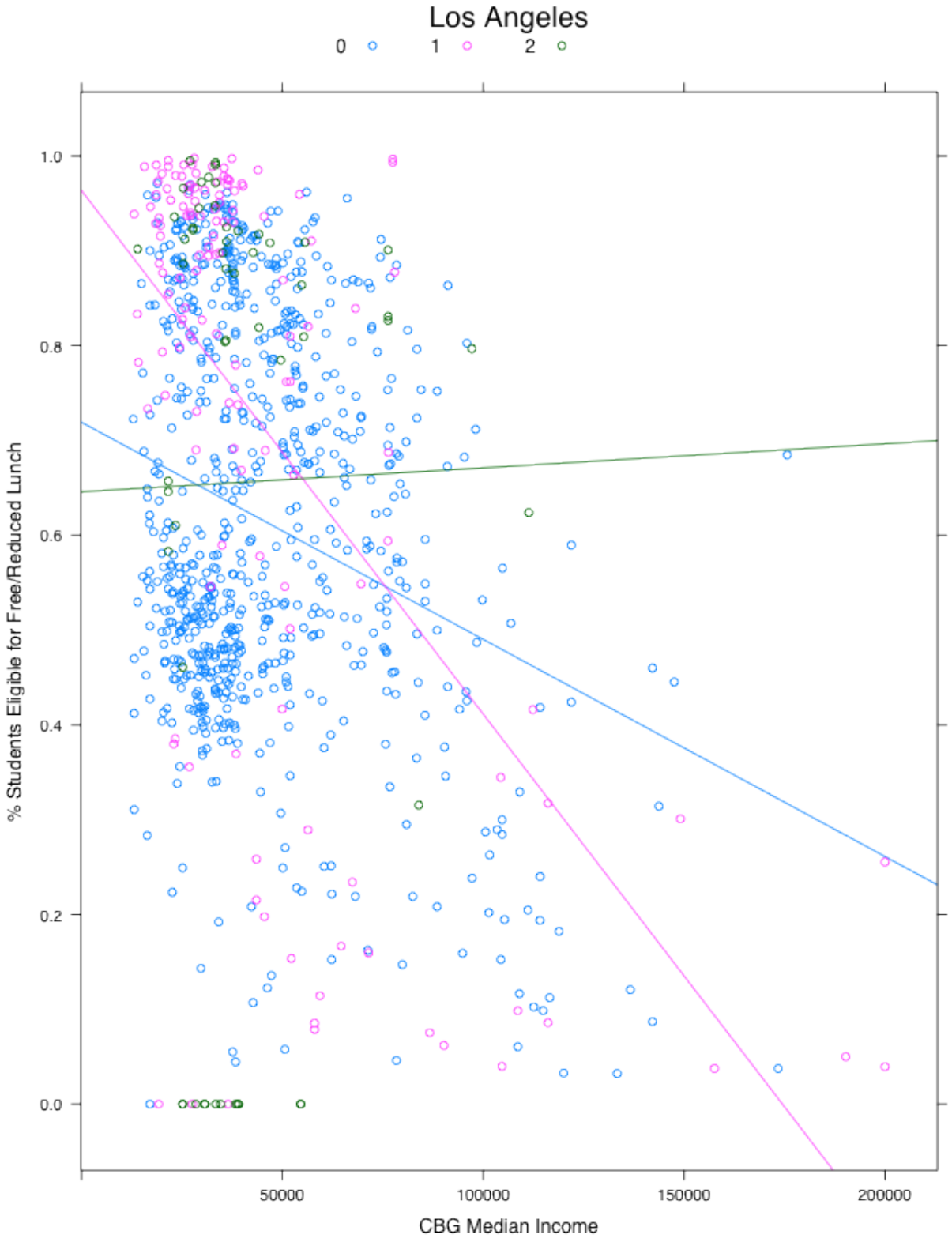


**Table A3.10: Los Angeles Race Results Disaggregated By Student Pop. and Location**

| Los Angeles School Racial Comp. | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. Pop. | Intercept | 0.088 | 0.006 | 14.168 * |
| | Charter | 0.012 | 0.014 | 0.873 |
| Hisp. Stud. Pop. | Intercept | 0.734 | 0.010 | 72.978 * |
| | Charter | -0.127 | 0.022 | -5.724 * |
| Black Stud. Pop. | Intercept | 0.104 | 0.007 | 14.624 * |
| | Charter | 0.088 | 0.016 | 5.645 * |
| Los Angeles CBG Racial Comp. | | | | |
| White CBG Pop. | Intercept | 0.473 | 0.007 | 65.286 * |
| | Charter | -0.063 | 0.016 | -3.935 * |
| Hisp. CBG Pop. | Intercept | 0.562 | 0.011 | 50.874 * |
| | Charter | -0.007 | 0.024 | -0.298 |
| Black CBG Pop. | Intercept | 0.098 | 0.007 | 15.055 * |
| | Charter | 0.068 | 0.014 | 4.739 * |

Los Angeles charter schools are located in CBGs that have 6.3% lower white population and 6.8% higher Black population. LA charters have 12.7% less Hispanic students despite no difference in CBG characteristics, and 8.8% more Black students.

**Figure A3.6: Los Angeles Black Student Proportion by School Type**
**0 = Non-Charter , 1 = Independent Charter, 2 = Non-Profit Charter**

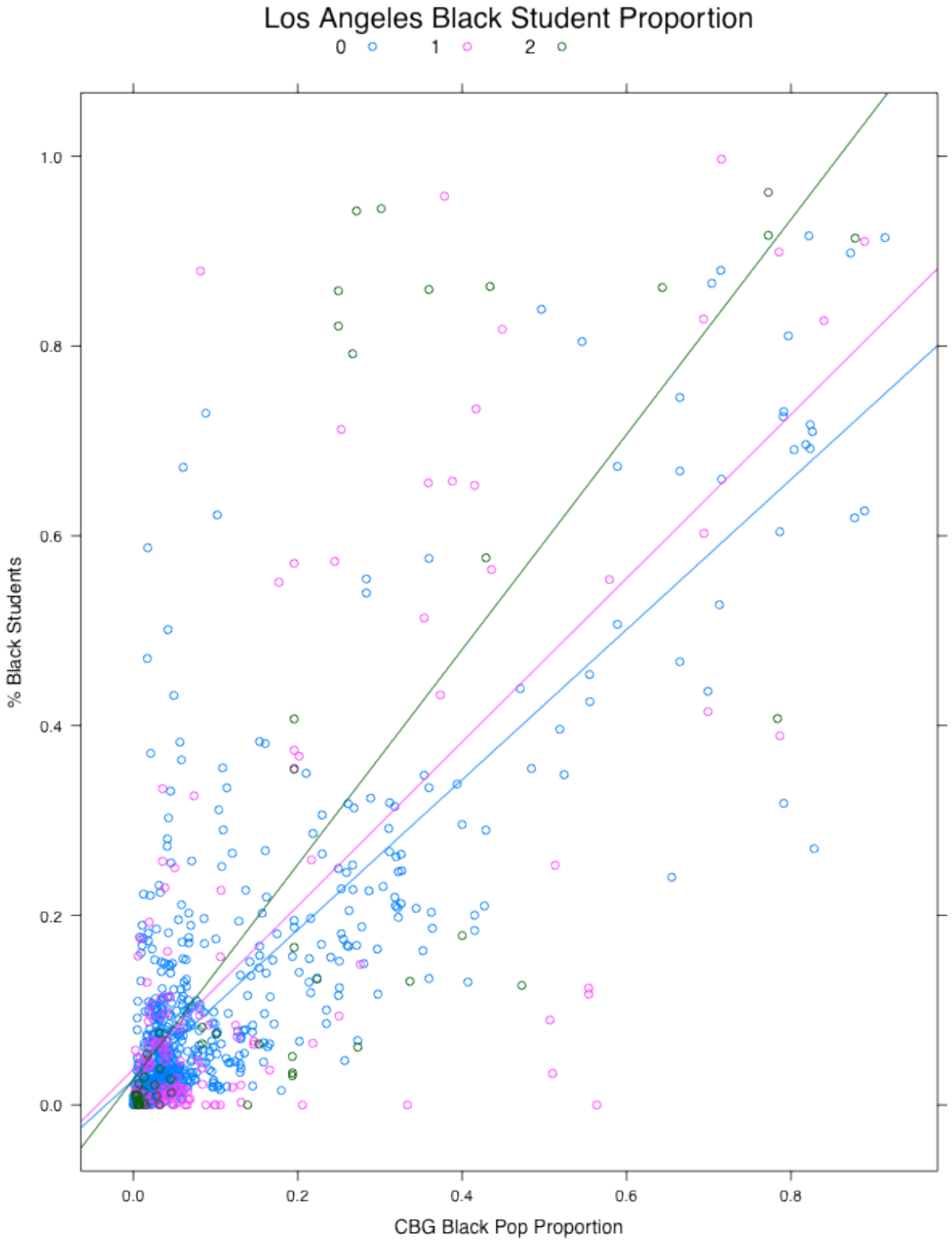


**Figure A3.7: Los Angeles Hispanic Student Proportion by School Type**
**0 = Non-Charter , 1 = Independent Charter, 2 = Non-Profit Charter**

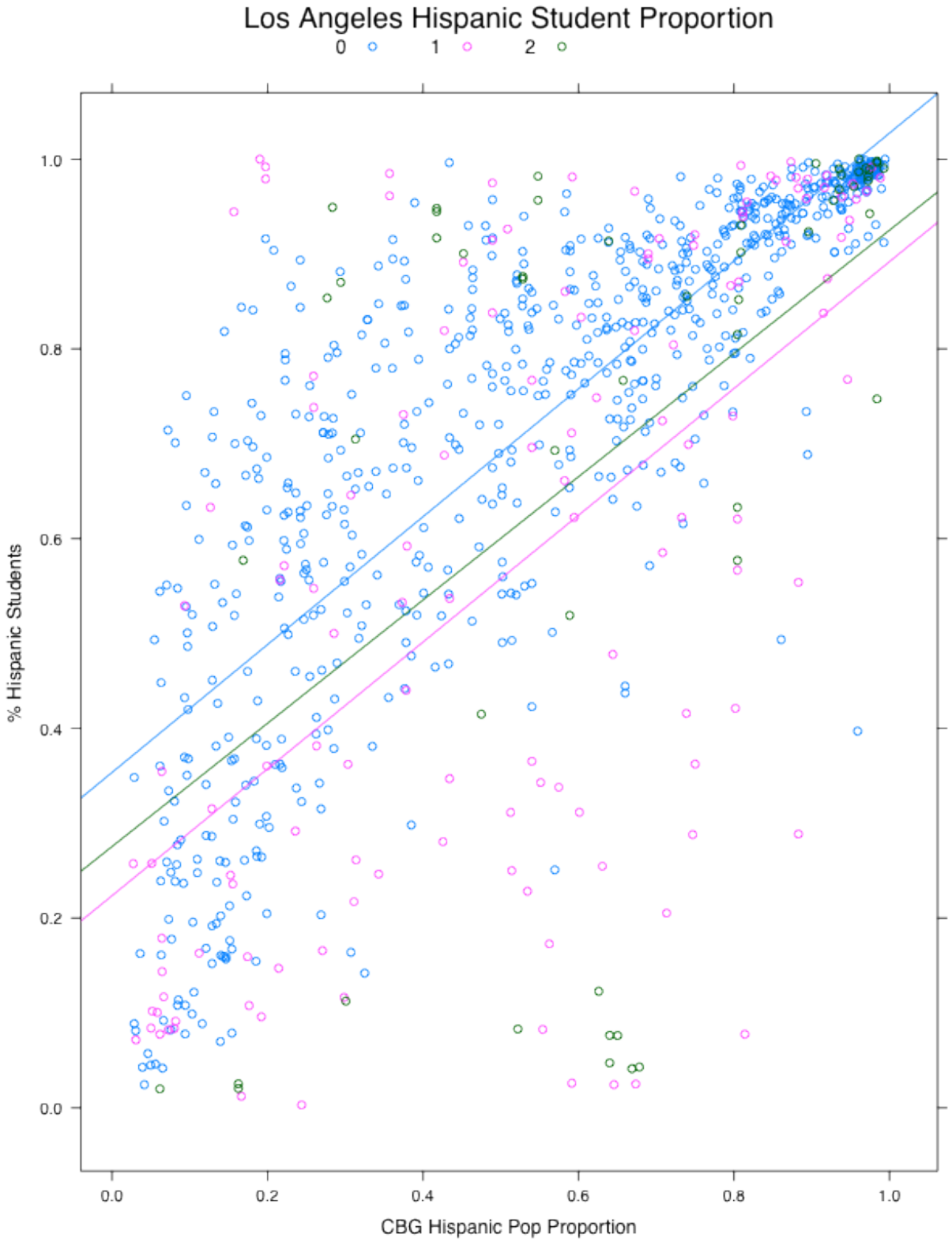
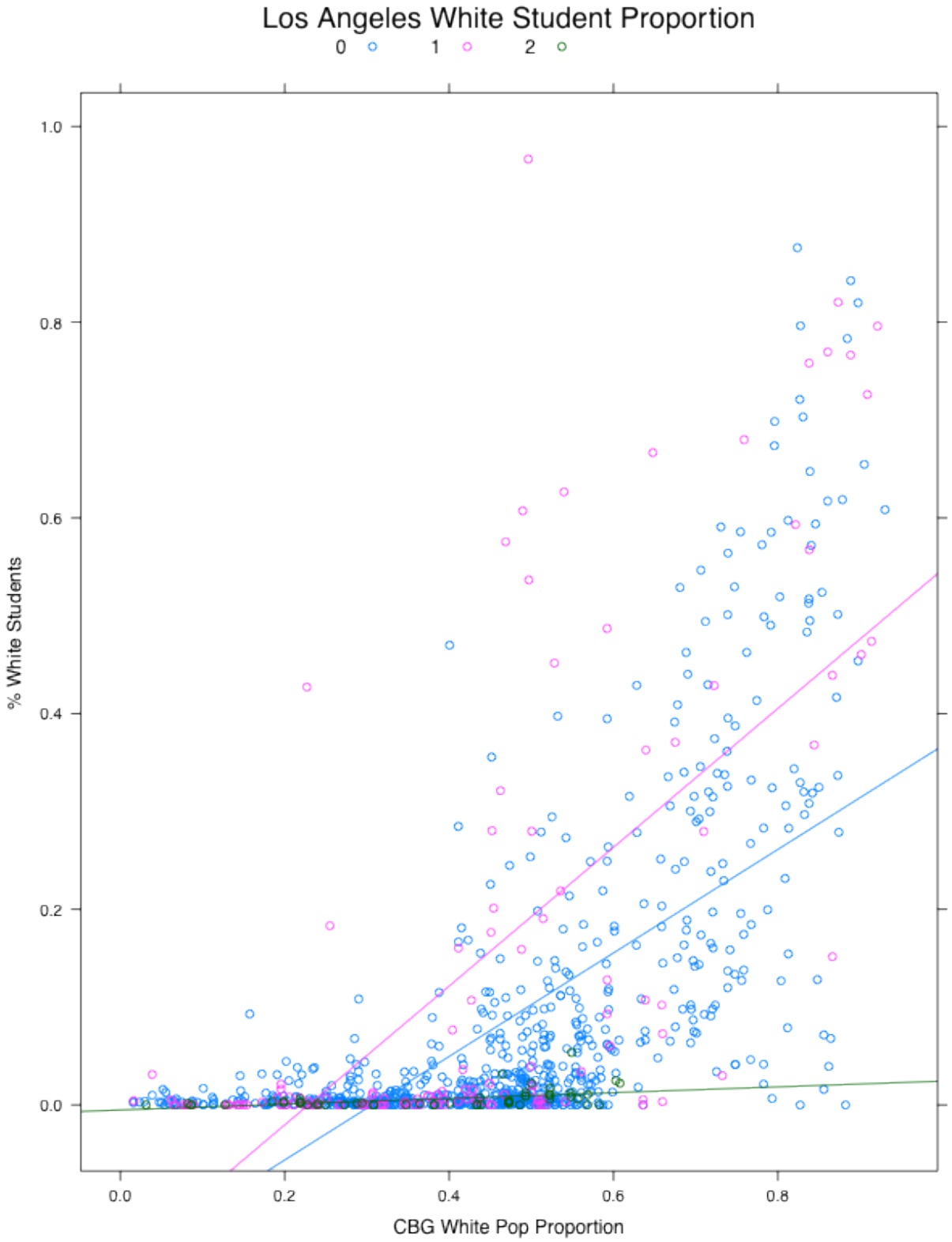


**Figure A3.8: Los Angeles White Student Proportion by School Type**
**0 = Non-Charter , 1 = Independent Charter, 2 = Non-Profit Charter**



## Figure A3.9: Tucson Free & Reduced Lunch Eligibility Rates By School Type

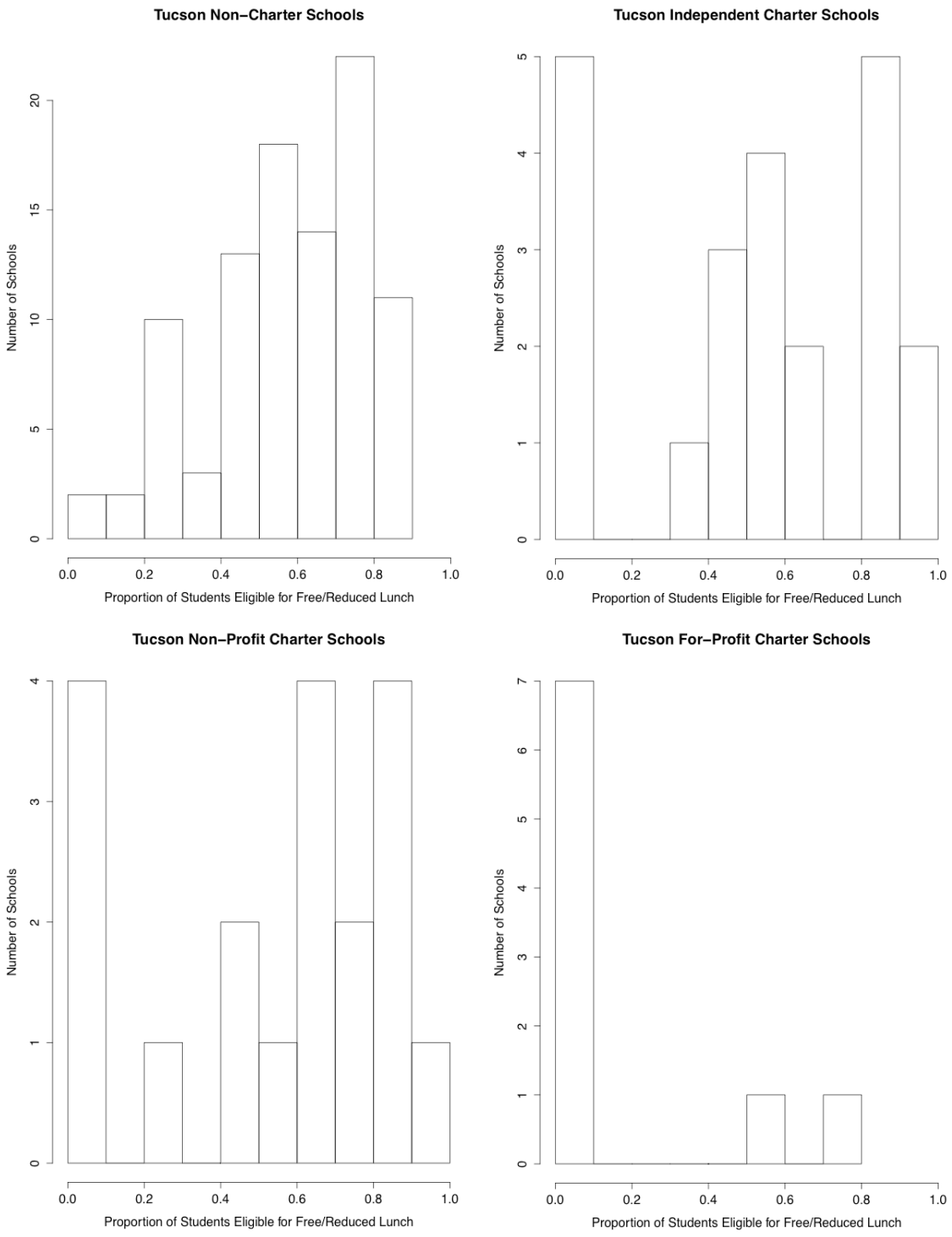


**Figure A3.10: Tucson FRL Rate By Charter/Non-Charter Status**

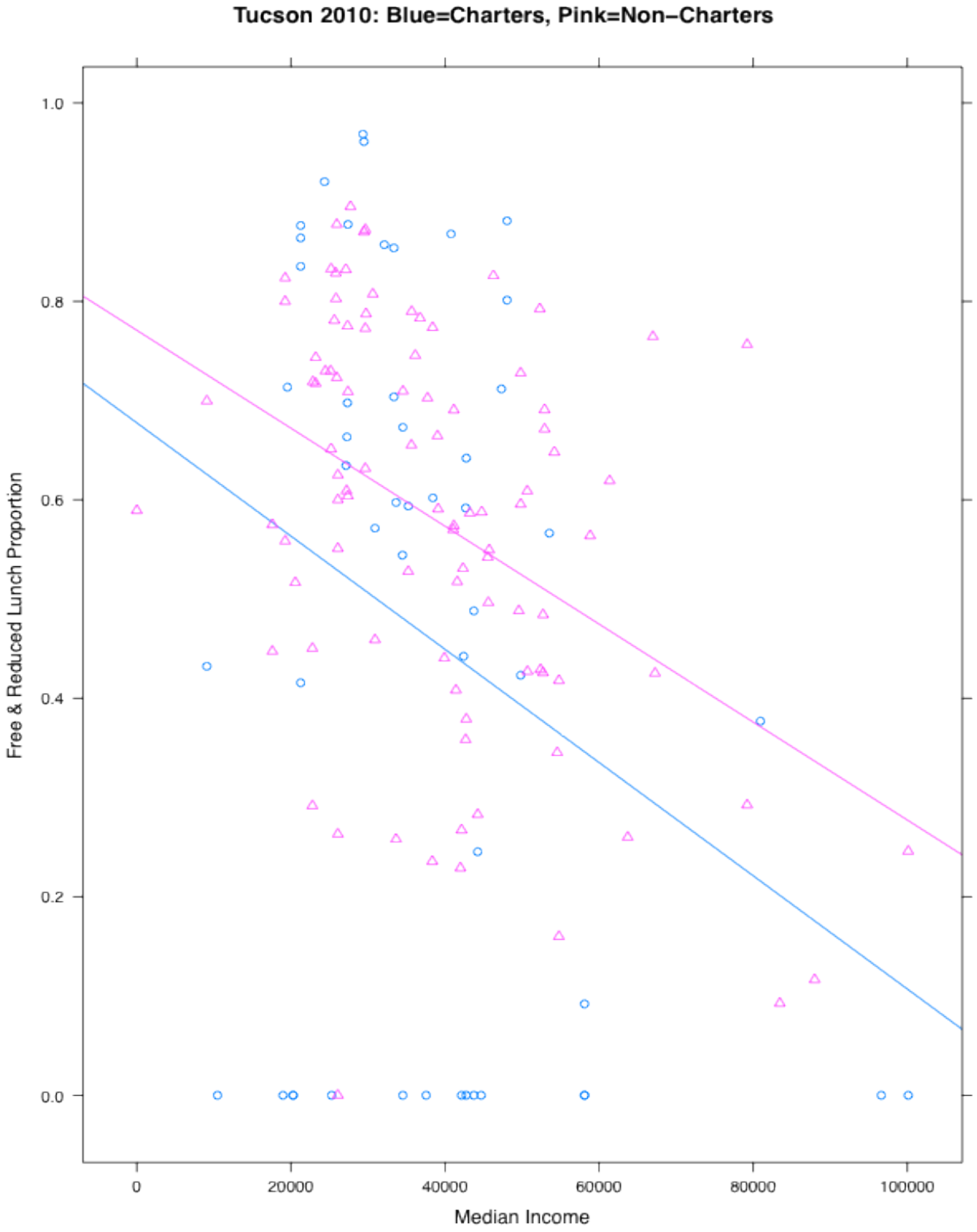


**Figure A3.11: Tucson FRL Rate By CBG Median Income & School Type**

**0=Non-Charters, 1=Ind. Charters, 2=Non-Profit Charters, 3=For-Profit Charters**

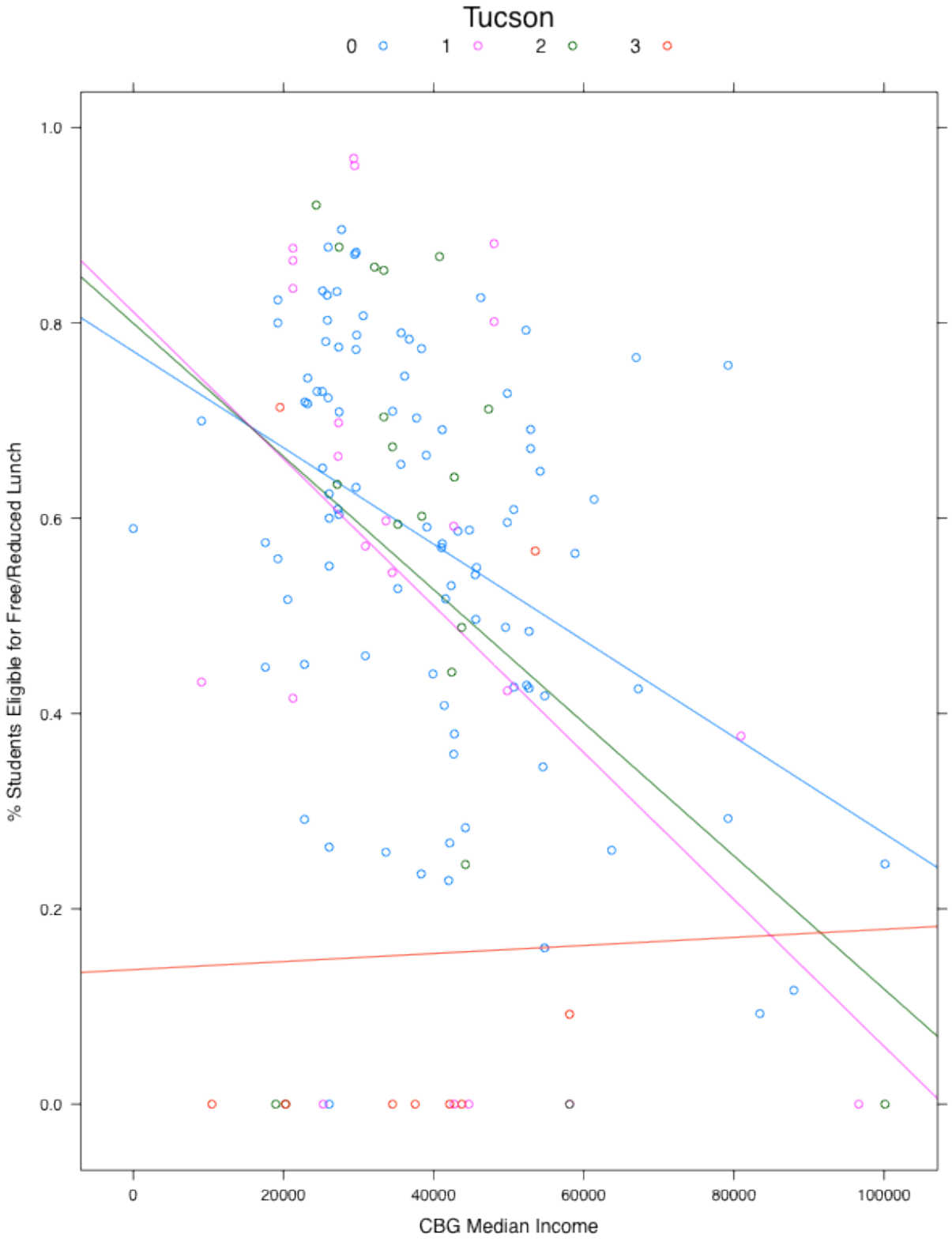


**Table A3.11: Tucson Race Results Disaggregated By Student Population and Location**

| Tucson School Racial Comp. | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. Pop. | Intercept | 0.240 | 0.022 | 11.17 * |
| | Charter | 0.102 | 0.037 | 2.79 * |
| Hisp. Stud. Pop. | Intercept | 0.607 | 0.024 | 25.228 * |
| | Charter | -0.104 | 0.041 | -2.537 * |
| Black Stud. Pop. | Intercept | 0.056 | 0.004 | 12.711 * |
| | Charter | -0.007 | 0.007 | -0.886 |
| Tucson CBG Racial Comp. | | | | |
| White CBG Pop. | Intercept | 0.712 | 0.015 | 49.09 * |
| | Charter | -0.011 | 0.025 | -0.44 |
| Hisp. CBG Pop. | Intercept | 0.424 | 0.025 | 17.117 * |
| | Charter | -0.064 | 0.042 | -1.528 |
| Black CBG Pop. | Intercept | 0.040 | 0.003 | 11.560 * |
| | Charter | 0.014 | 0.006 | 2.443 * |

Charters are located in CBGs with 1.4% higher Black population. Charters enroll 10.2% higher proportions of white students and 10.4% lower proportions of Hispanic students.

**Figure A3.12: Tucson White Student Proportion By School Type**

**0 = Non-Charter , 1 = Ind. Charter, 2 = Non-Profit Charter, 3 = For-Profit Charter**

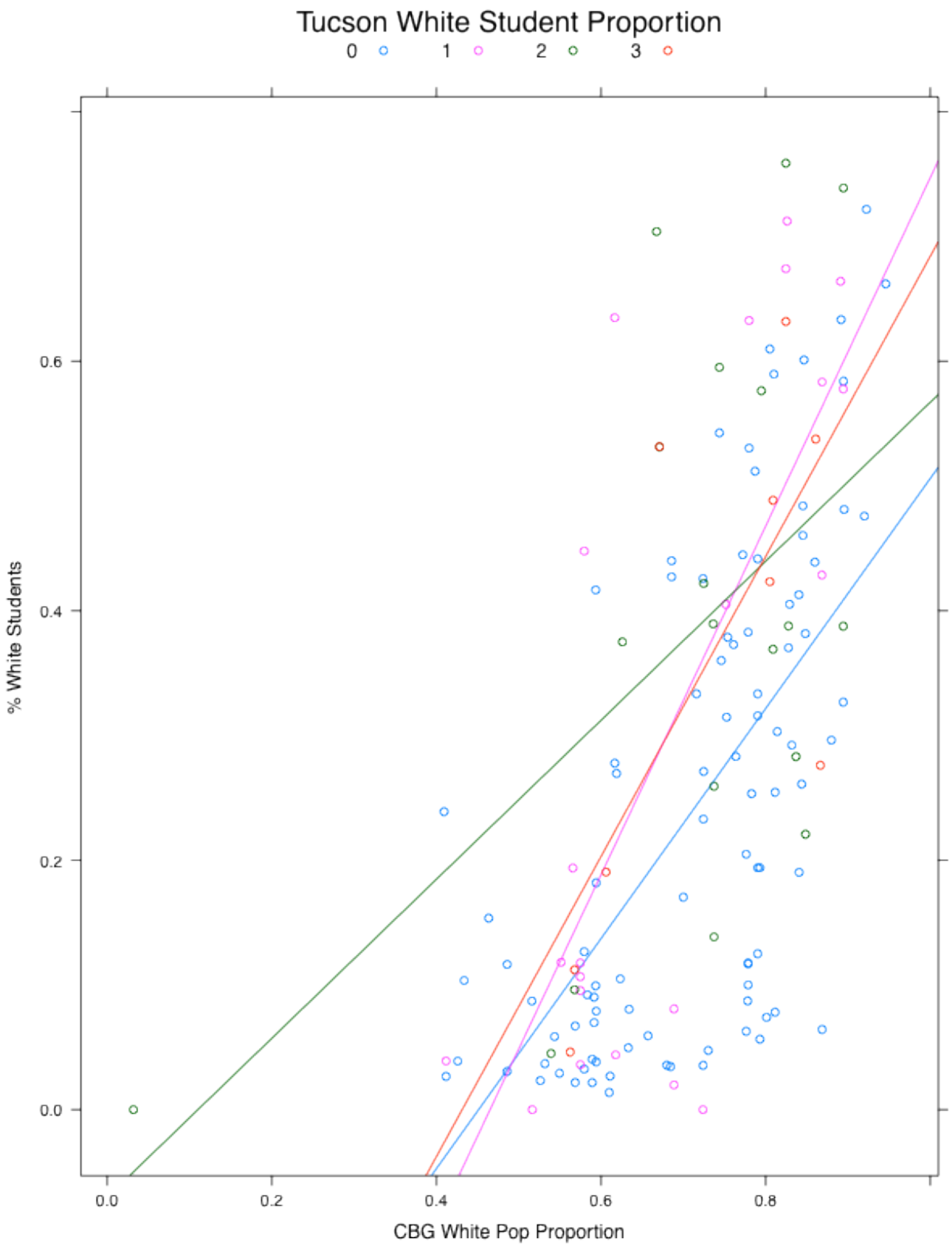


**Figure A3.13: Tucson Hispanic Student Proportion By School Type**

**0 = Non-Charter , 1 = Ind. Charter, 2 = Non-Profit Charter, 3 = For-Profit Charter**

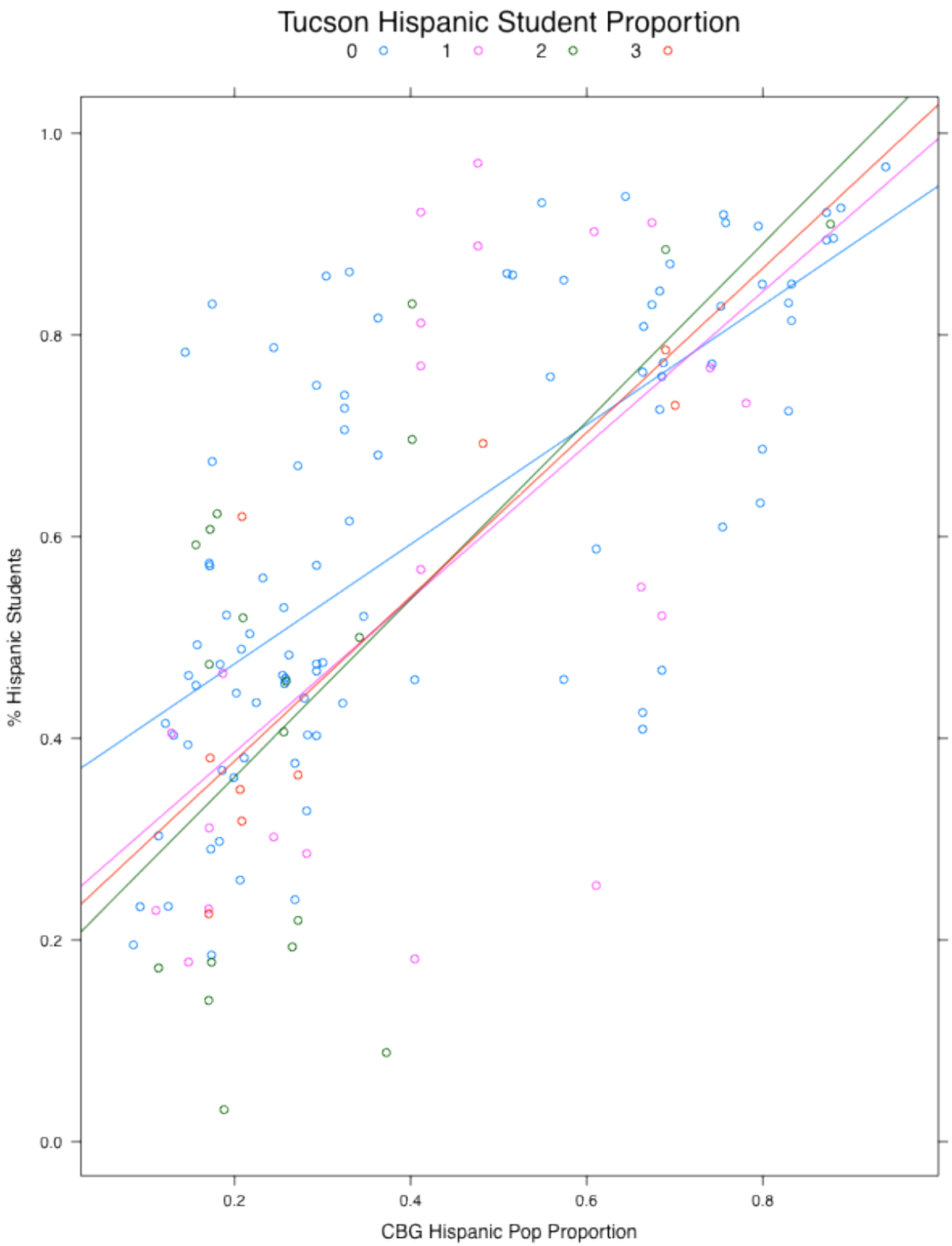


**Table A3.12: Race Results 2: For-Profit/Non-Profit Differences in Racial Enrollment Rates After Controlling For Racial Composition of CBGs Where Schools are Located**

| TUCSON | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | -0.135 | 0.153 | -0.884 |
| | White Pop. % | 0.729 | 0.207 | 3.521 * |
| | For-Profit | -0.037 | 0.075 | -0.497 |
| Hisp. Stud. % | Intercept | 0.193 | 0.071 | 2.696 * |
| | Hisp. Pop % | 0.857 | 0.188 | 4.563 * |
| | For-Profit | 0.007 | 0.078 | 0.092 |
| Black Stud. % | Intercept | 0.043 | 0.015 | 2.753 * |
| | Black Pop. % | 0.217 | 0.235 | 0.924 |
| | For-Profit | 0.012 | 0.017 | 0.661 |

| CLEVELAND | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. % | Intercept | 0.090 | 0.082 | 1.106 |
| | White Pop. % | 0.595 | 0.119 | 4.964 * |
| | For-Profit | -0.186 | 0.068 | -2.723 * |
| Hisp. Stud. % | Intercept | 0.040 | 0.037 | 1.081 |
| | Hisp. Pop. % | 0.886 | 0.187 | 4.747 * |
| | For-Profit | -0.009 | 0.038 | -0.248 |
| Black Stud. % | Intercept | 0.066 | 0.052 | 1.278 |
| | Black Pop. % | 0.823 | 0.105 | 7.862 * |
| | For-Profit | 0.215 | 0.069 | 3.106 * |

**Figure A3.14: Cleveland FRL Rates By Charter/Non-Charter Status**

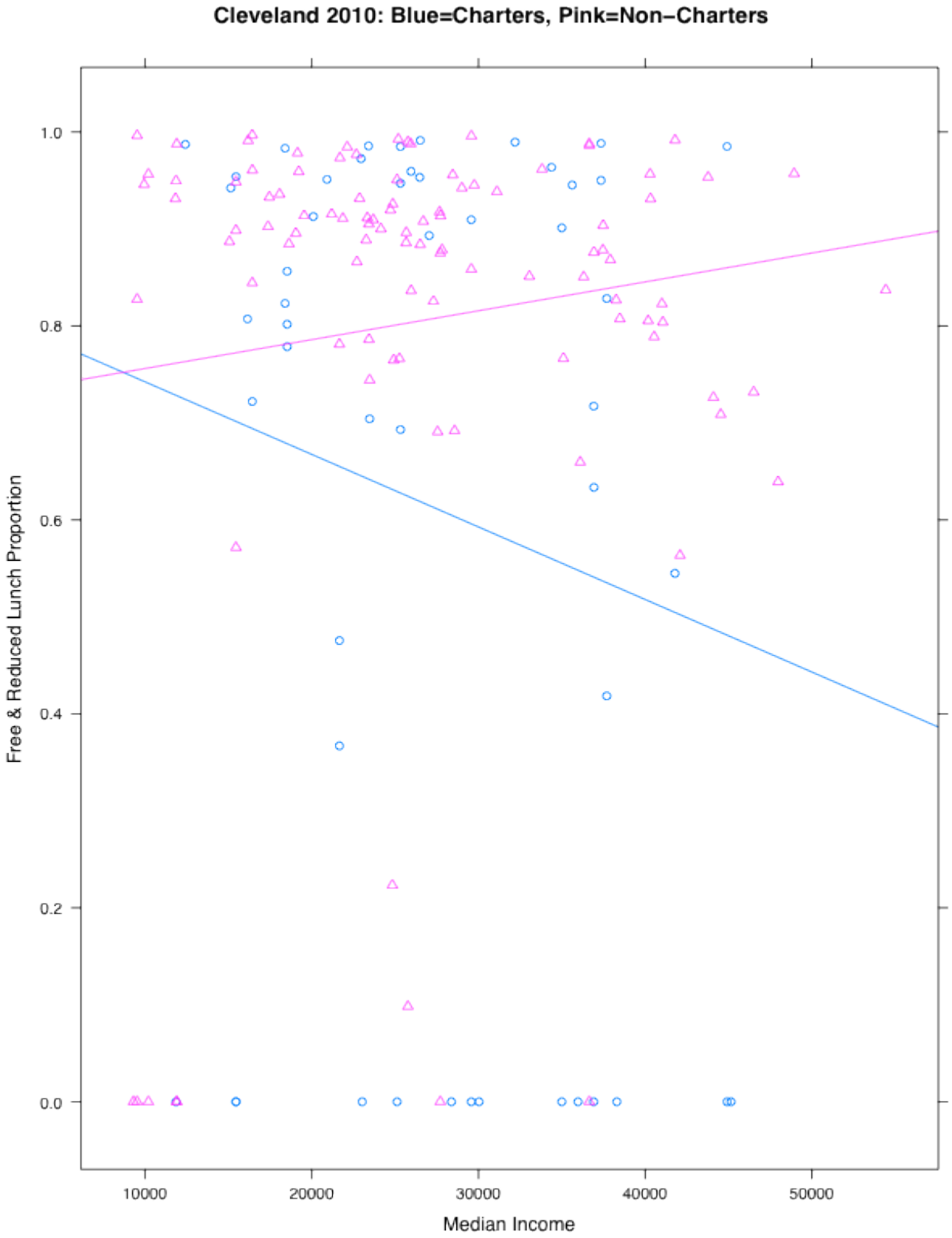


**Figure A3.15: Cleveland FRL Rates By CBG Income and School Type.**

**0=Non-Charters, 1=Ind. Charters, 2=Non-Profit Charters, 3=For-Profit Charters**

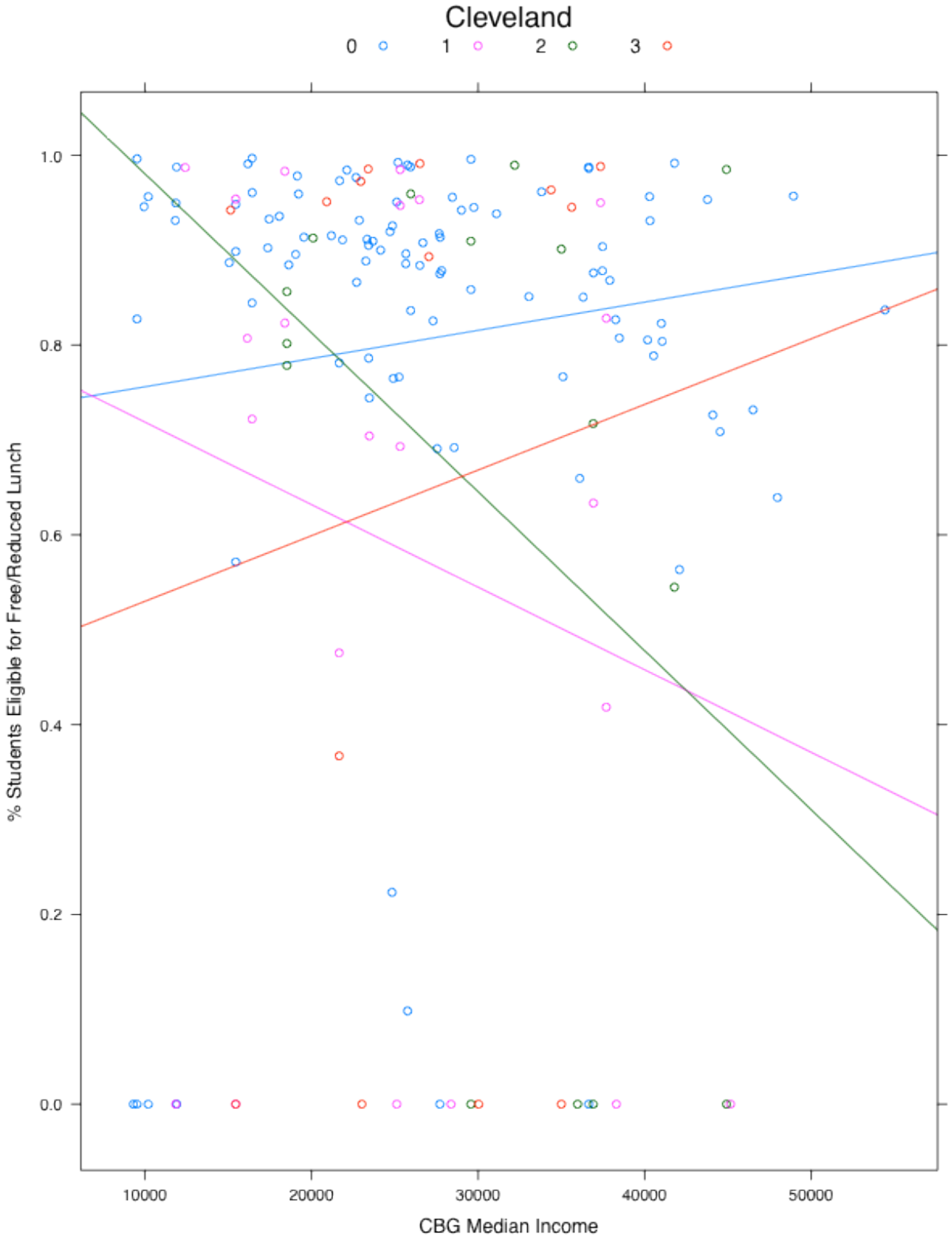


**Table A3.13: Cleveland Race Results Disaggregated By Student Pop. and Location**

| Cleveland School Racial Comp. | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. Pop. | Intercept | 0.134 | 0.020 | 6.649 * |
| | Charter | 0.066 | 0.035 | 1.913 |
| Hisp. Stud. Pop. | Intercept | 0.112 | 0.016 | 7.145 * |
| | Charter | -0.024 | 0.027 | -0.907 |
| Black Stud. Pop. | Intercept | 0.711 | 0.033 | 21.764 * |
| | Charter | -0.041 | 0.056 | -0.726 |
| Cleveland CBG Racial Comp. | | | | |
| White CBG Pop. | Intercept | 0.318 | 0.030 | 10.628 * |
| | Charter | 0.117 | 0.052 | 2.274 * |
| Hisp. CBG Pop. | Intercept | 0.088 | 0.011 | 8.266 * |
| | Charter | -0.002 | 0.018 | -0.125 |
| Black CBG Pop. | Intercept | 0.592 | 0.035 | 17.023 * |
| | Charter | -0.128 | 0.060 | -2.123 * |

In Cleveland, charters locate in CBGs with 11.7% higher white population and 12.8% lower Black population, yet enroll students at racially indistinguishable numbers.

**Figure A3.16: FRL Rates By CBG Income and School Type.**

**0=Non-Charters, 1=Ind. Charters, 2=Non-Profit Charters, 3=For-Profit Charters**

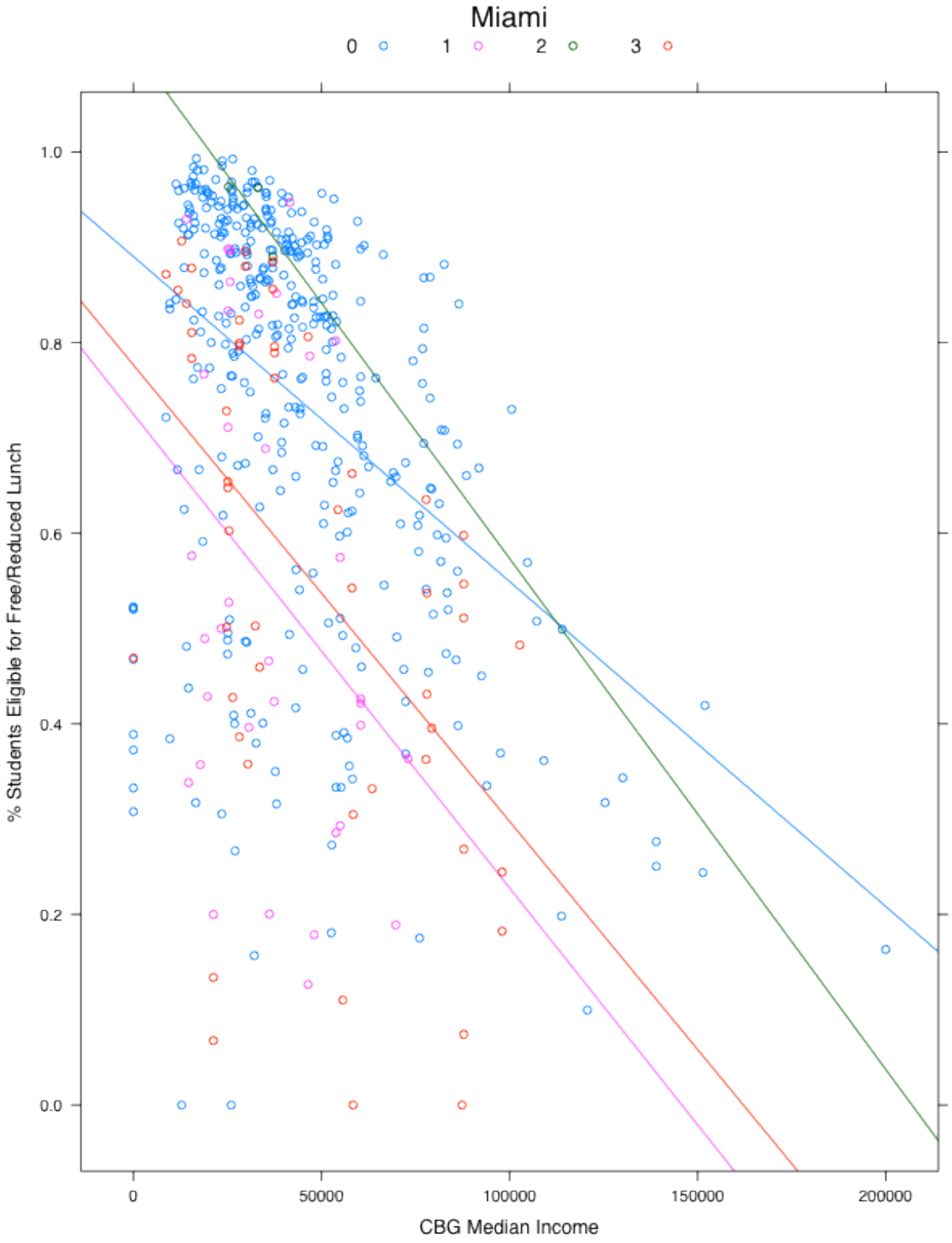


**Figure A3.17: Miami Black Student Proportion By School Type**
**0 = Non-Charter , 1 = Ind. Charter, 2 = Non-Profit Charter, 3 = For-Profit Charter**

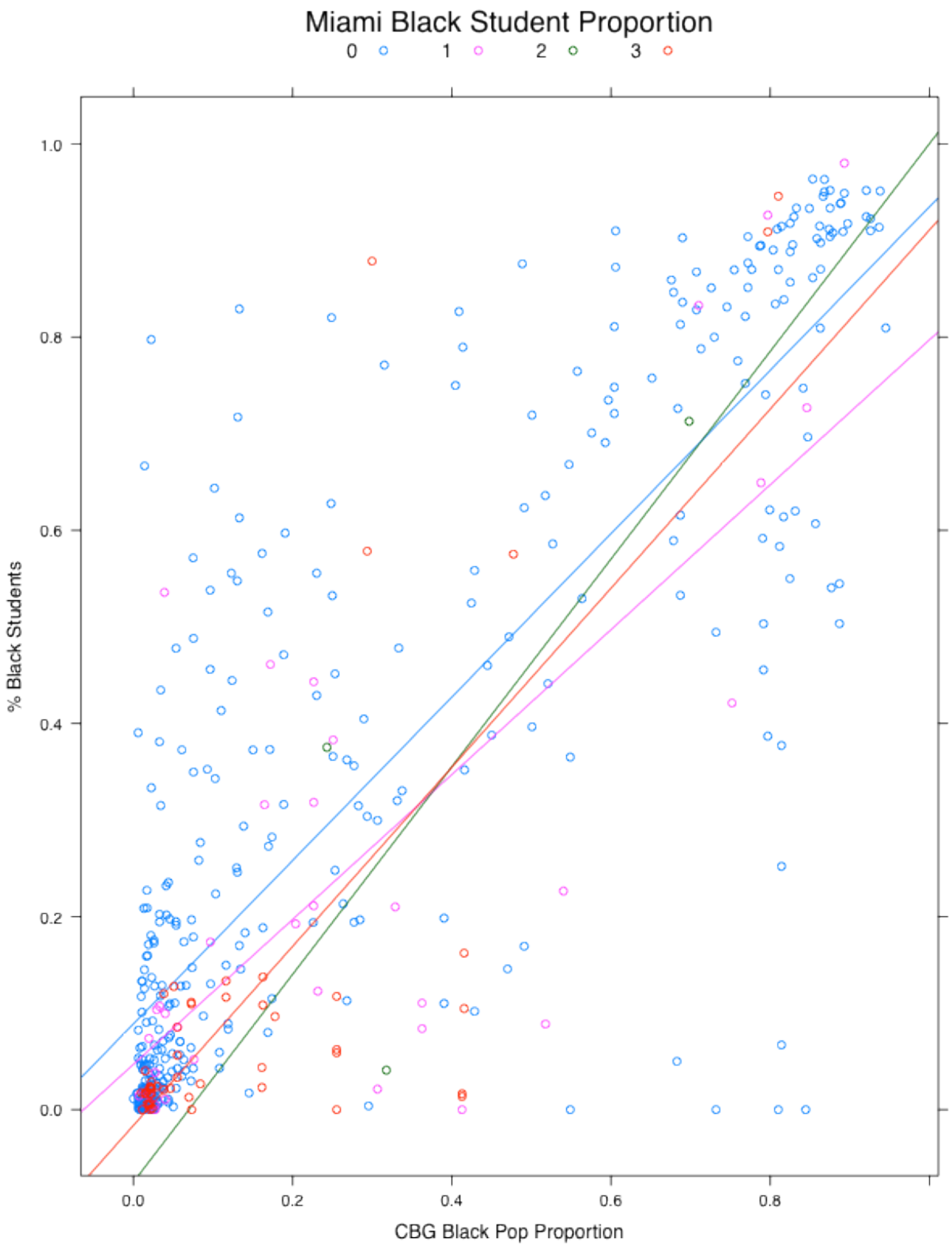


**Figure A3.18: Miami Hispanic Student Proportion By School Type**
**0 = Non-Charter , 1 = Ind. Charter, 2 = Non-Profit Charter, 3 = For-Profit Charter**

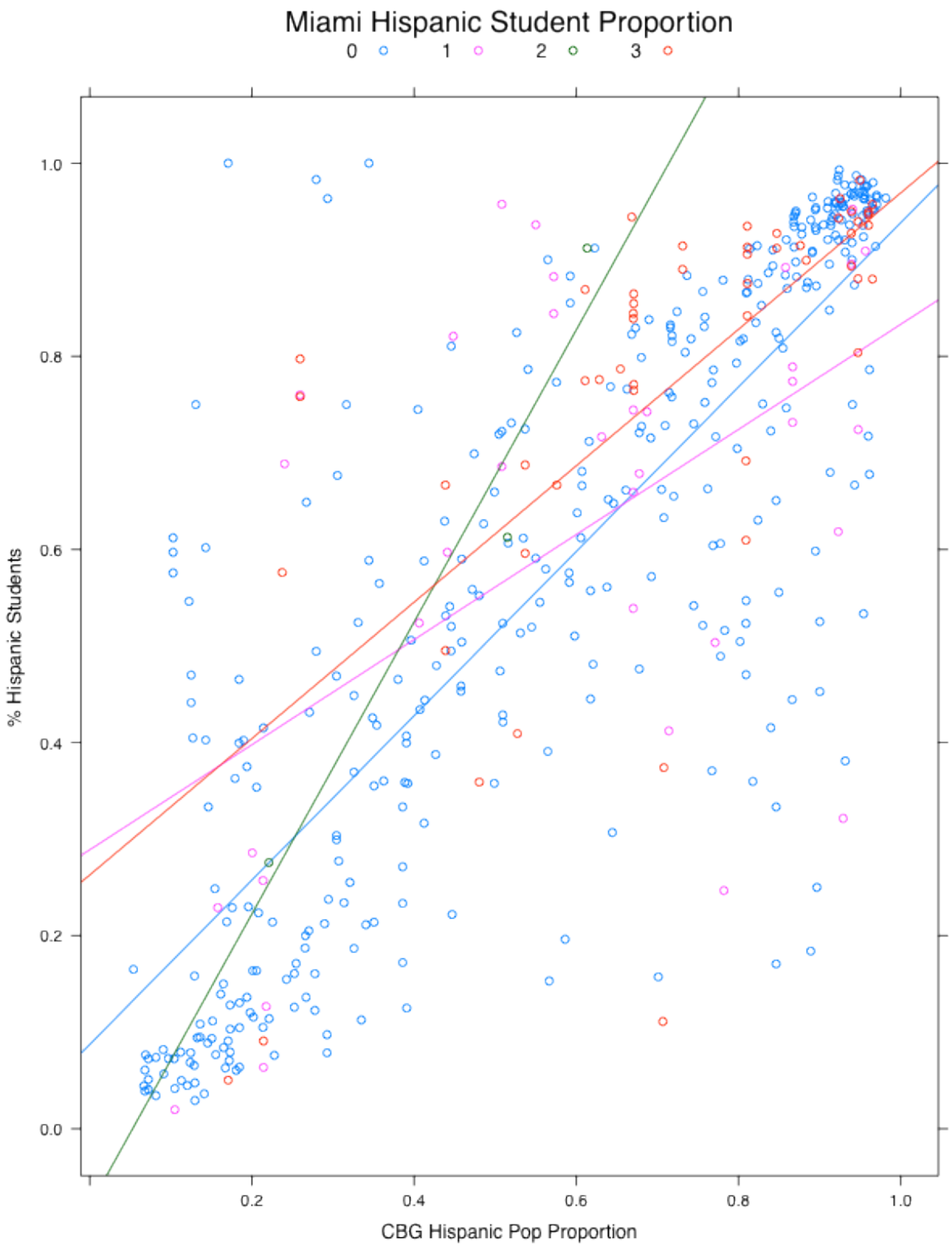


**Table A3.14: Miami Race Results Disaggregated By Student Population and Location**

| Miami School Racial Comp. | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. Pop. | Intercept | 0.075 | 0.005 | 14.350 * |
| | Charter | 0.027 | 0.012 | 2.284 * |
| Hisp. Stud. Pop. | Intercept | 0.574 | 0.016 | 36.544 * |
| | Charter | 0.129 | 0.036 | 3.614 * |
| Black Stud. Pop. | Intercept | 0.334 | 0.017 | 20.117 * |
| | Charter | -0.154 | 0.038 | -4.066 * |
| Miami CBG Racial Comp. | | | | |
| White CBG Pop. | Intercept | 0.644 | 0.016 | 39.499 |
| | Charter | 0.063 | 0.037 | 1.721 |
| Hisp. CBG Pop. | Intercept | 0.574 | 0.015 | 37.758 |
| | Charter | 0.087 | 0.034 | 2.536 * |
| Black CBG Pop. | Intercept | 0.289 | 0.016 | 17.681 * |
| | Charter | -0.082 | 0.037 | -2.225 * |

In Miami, charters are more likely to be located in CBGs with 8.7% higher Hispanic populations and 8.2% lower Black populations. Charter enroll 3.5% higher white student proportions, 12.9% higher Hispanic student proportions, and 15.4% lower Black student proportions than non-charters.

**Figure A3.19: Detroit FRL Rates By CBG Income and School Type.**

**0=Non-Charters, 1=Ind. Charters, 2=Non-Profit Charters, 3=For-Profit Charters**

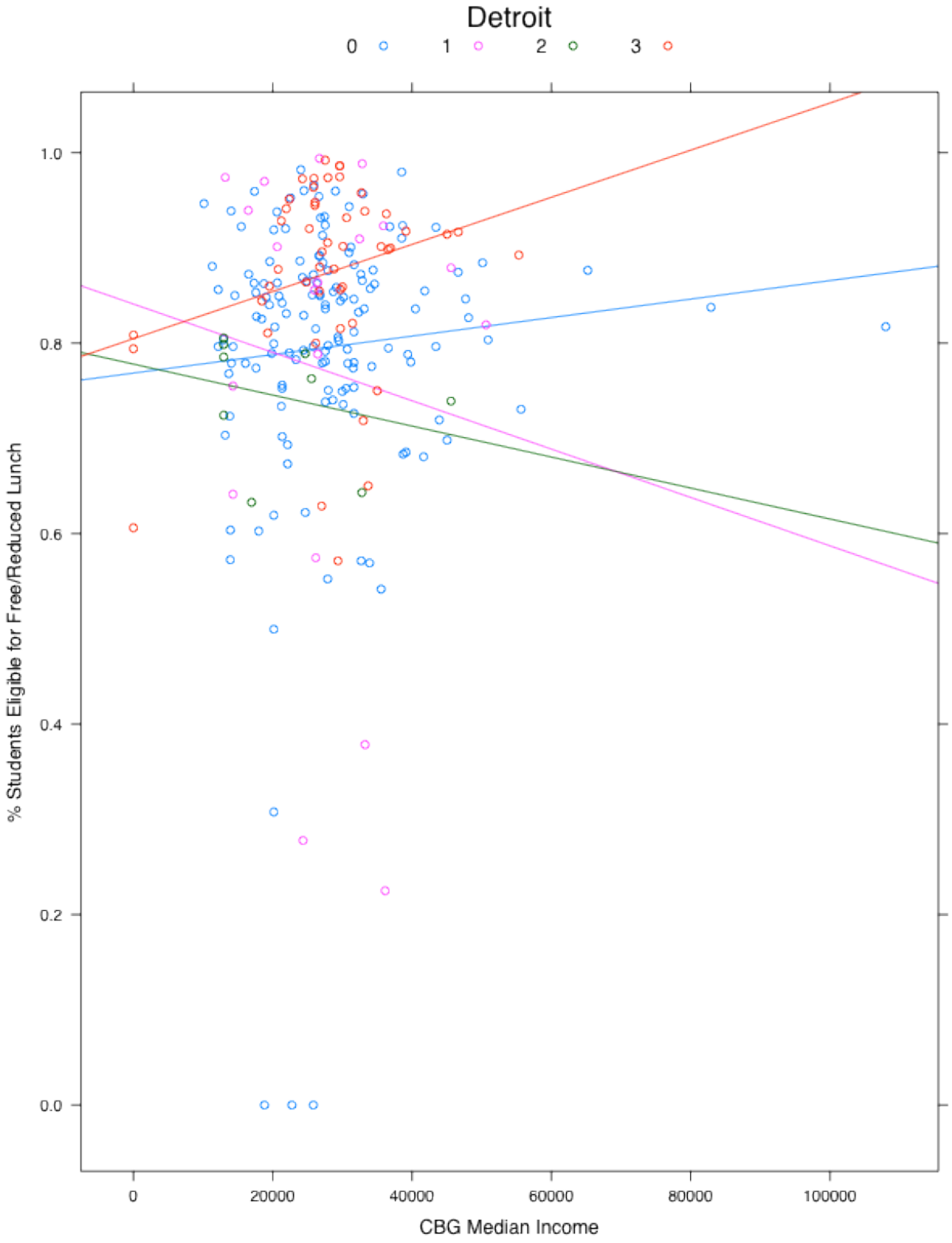


**Figure A3.20: Detroit Black Student Proportion By School Type**

**0 = Non-Charter , 1 = Ind. Charter, 2 = Non-Profit Charter, 3 = For-Profit Charter**

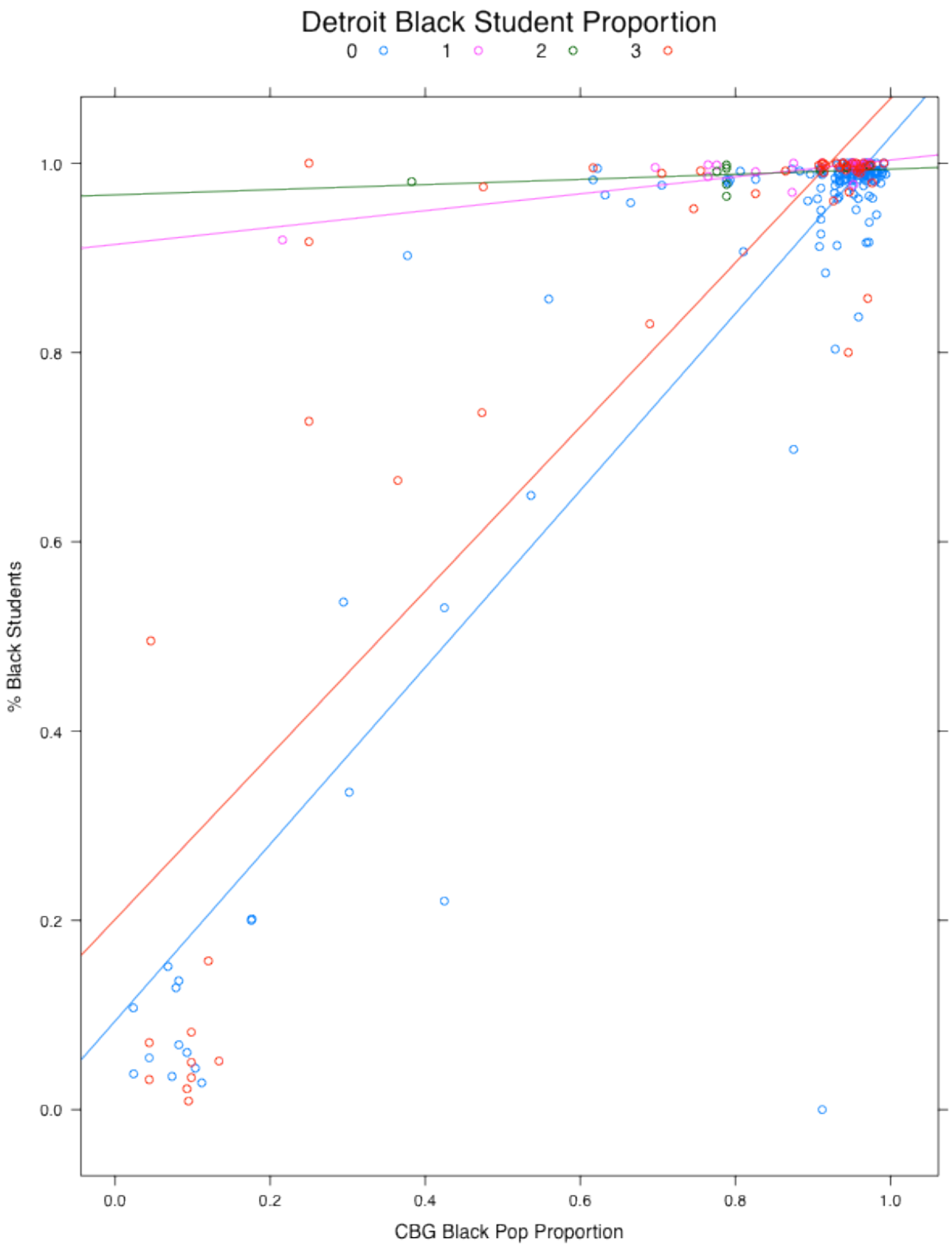


**Figure A3.21: Detroit Hispanic Student Proportion By School Type**

**0 = Non-Charter , 1 = Ind. Charter, 2 = Non-Profit Charter, 3 = For-Profit Charter**

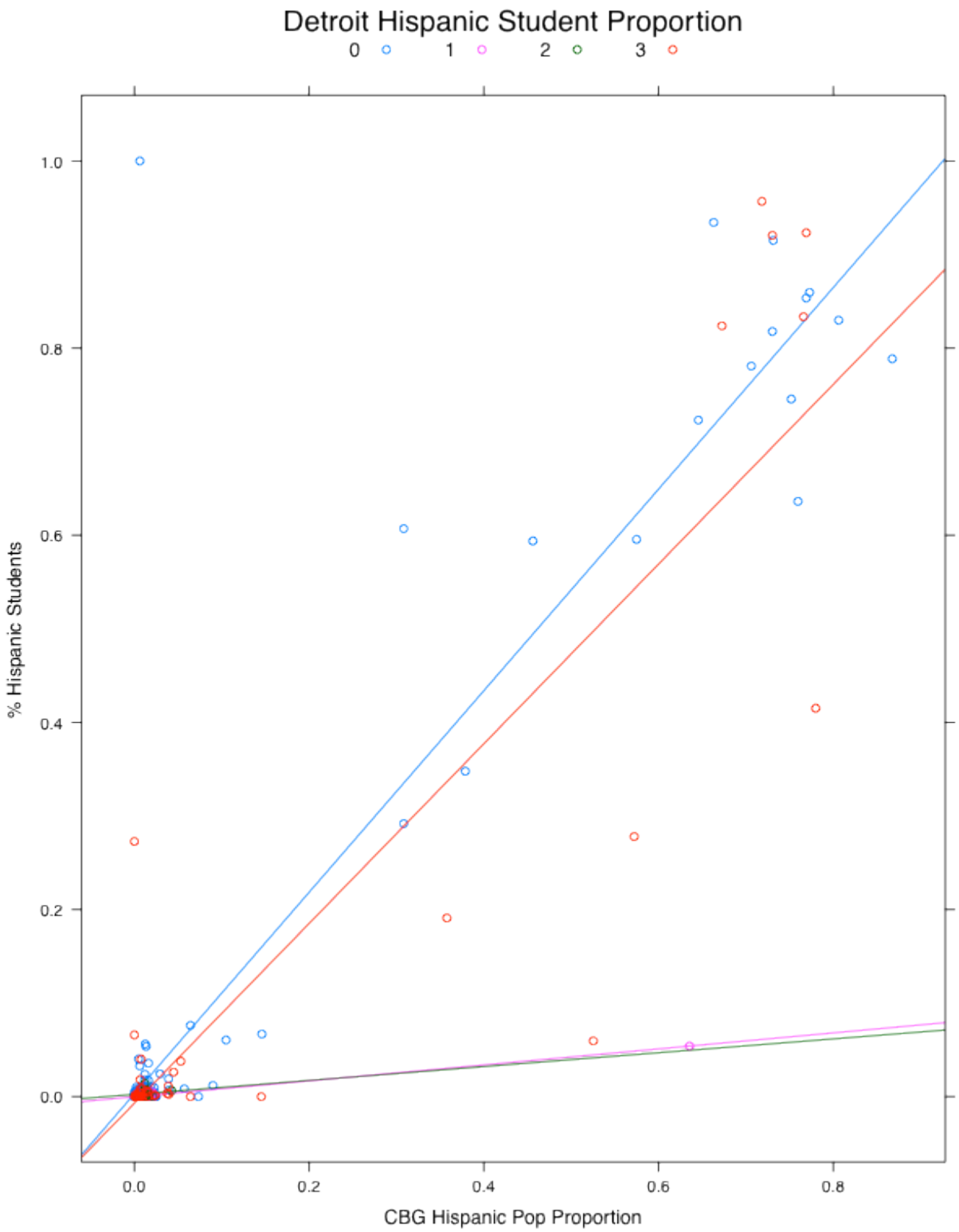


**Table A3.15: Detroit Race Results Disaggregated By Student Pop. and Location**

| Detroit School Racial Comp. | | Estimate | Standard Error | t-value |
|---|---|---|---|---|
| White Stud. Pop. | Intercept | 0.027 | 0.011 | 2.499 * |
| | Charter | 0.035 | 0.018 | 1.902 |
| Hisp. Stud. Pop. | Intercept | 0.090 | 0.019 | 4.615 * |
| | Charter | -0.011 | 0.033 | -0.341 |
| Black Stud. Pop. | Intercept | 0.873 | 0.024 | 36.908 * |
| | Charter | -0.016 | 0.040 | -0.397 |
| Detroit CBG Racial Comp. | | | | |
| White CBG Pop. | Intercept | 0.098 | 0.015 | 6.627 * |
| | Charter | 0.078 | 0.025 | 3.076 * |
| Hisp. CBG Pop. | Intercept | 0.080 | 0.017 | 4.619 * |
| | Charter | 0.018 | 0.030 | 0.593 |
| Black CBG Pop. | Intercept | 0.834 | 0.023 | 35.538 * |
| | Charter | -0.104 | 0.040 | -2.605 * |

In Detroit, charters are located in neighborhoods that have 7.8% more white people and 10.4% fewer Black people. Despite this, the racial proportion of students at charters and non-charters are statistically indistinguishable. Thus Blacks are proportionally over-represented based on the CBGs where schools are located (as seen above after controlling for racial CBG).