

Research Note: Resource Equity & Student Sorting Across Newark District & Charter Schools

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In December of 2014, the U.S. Department of Education made available to states its most recent (2011-12) collection of data on school level student populations, resources and teacher attributes.¹ The data also include information on disciplinary actions, including those specifically applied to children with disabilities. These data were made available to assist states in developing their plans for evaluating equity in the distribution of staffing resources across children and schools, a new initiative of the Department.²

Having conducted substantial research in recent years on the distribution of teacher attributes,³ the distribution of school level resources⁴ and each at the intersection of charter school expansion,⁵ these data present some new opportunities, with potential limitations for exploring a handful of intriguing new policy questions.

An issue addressed in a forthcoming article in the journal *Education Finance and Policy* is the extent to which student sorting and resource variation in portfolio systems of

schools – mixing charter and district options under district governance – creates a tension between equity objectives and liberty (choice) objectives. As my coauthors and I explain in our forthcoming article (based on analyses of New York and Texas):

In large part, the portfolio approach, without sufficient consideration of resource equity, substitutes preferences for individual liberty (or choice) in place of preferences for equity. This approach is problematic in that it conflates liberty with equity, assuming the former necessarily leads to the latter, regardless of resource distribution. This is simply untrue. This conception fails to acknowledge these two core values often operate in tension with one another, with individual choices collectively leading to substantial inequities.”⁶

Put simply, the provision of unequal choices does not yield equity.

To reiterate, the reason that the Department of Education has released these data is in an effort to get a better handle on the extent of inequity in the distribution of resources across children. Yet, the administration has also taken a largely supportive position on the expansion of charter schooling, which may compromise equity goals.

¹ <http://www2.ed.gov/programs/titleiparta/resources.html>

² <https://www.federalregister.gov/articles/2014/11/10/2014-26456/agency-information-collection-activities-comment-request-state-plan-to-ensure-equitable-access-to>

³ Baker, B. D., & Dickerson, J. L. (2006). Charter Schools, Teacher Labor Market Deregulation, and Teacher Quality Evidence From the Schools and Staffing Survey. *Educational Policy*, 20(5), 752-778.

⁴ Baker, B. D. (2012). Rearranging Deck Chairs in Dallas: Contextual Constraints and Within-district Resource Allocation in Urban Texas School Districts. *Journal of Education Finance*, 37(3), 287-315.

⁵ Baker, B.D., Libby, K., Wiley, K. Charter School Expansion & Within District Equity: Confluence or Conflict? *Education Finance and Policy*

⁶ Baker, B.D., Libby, K., Wiley, K. Charter School Expansion & Within District Equity: Confluence or Conflict? *Education Finance and Policy*

A recent University of Arkansas Department of Education Reform report asserted that in nearly every circumstance, across states, the most egregious resource disparities are those that persist between the financing of traditional district schools and charter schools, due to unfair charter school funding formulas. These assertions however were built on deeply flawed, oversimplified, and in many cases simply wrong assumptions about how charter schools are financed.⁷ Specifically, regarding Newark, NJ my own re-analysis of (still incomplete) data on charter versus district school funding found:

“Here we see that on average, Newark Charter Schools had a “budgetary per pupil cost” of about 80.4% of the district. While still a deficit, this deficit is only half the size of the reported deficit in the Charter Funding report. More striking are the disparities among charter schools, an issue barely touched upon in the Charter Funding report. While charters spend on average 80% of what the district spends, their shares of low-income children are lower (many are much lower and only a few are higher), their rates of ELL children are much lower, and their rates of special education students much lower, with few if any having severe disabilities.”⁸

More importantly, I also explain in my critique, as in my previous research, that generalizations are very difficult to make when it comes to charter school funding, student populations, or outcomes. Charter schools vary, from state to state and city to city, and they tend to vary

more than their district counterparts in the same locations.

The question posed by new Federal Regulations is somewhat different, and arguably far more relevant than the aforementioned revenue equity comparisons. The question is whether across schools and districts in any state children have access to comparable schooling resources – specifically teaching related resources, including total financial resources dedicated to staffing in general and instructional staffing in particular, shares of teachers in their first and second year of teaching, shares of courses taught by teachers not “highly qualified” to teach those courses,⁹ and teacher salaries.

In this brief, I present preliminary findings that are part of a larger, national analysis of newly released federal data, a primary objective of which is to evaluate the extent to which those data yield findings consistent with findings arrived at using state level data sources. In this brief, I specifically explore variations in student characteristics and resources across schools in Newark, NJ.

I begin by reflecting on my most recent policy brief on charter and district school performance outcomes – growth percentile data from 2012 and 2013 – noting that on average, Newark Charter schools remain

⁷ Baker, B.D. (2014). Review of “Charter Funding: Inequity Expands.” Boulder, CO:National Education Policy Center. Retrieved [date] from <http://nepc.colorado.edu/thinktank/review-charter-inequity>.

⁸ Baker, B.D. (2014). Review of “Charter Funding: Inequity Expands.” Boulder, CO:National Education Policy Center. Retrieved [date] from <http://nepc.colorado.edu/thinktank/review-charter-inequity>.

⁹ **Classes taught by teachers who are not highly qualified:** In general, a “highly qualified teacher” is one who is: (1) fully certified or licensed by the State, (2) holds at least a bachelor’s degree from a four-year institution, and (3) demonstrates competence in each core academic subject area in which the teacher teaches. When used with respect to any teacher teaching in a public charter school, the term “highly qualified” means that the teacher meets the requirements set forth in the State’s public charter school law and the teacher has not had certification or licensure requirements waived on an emergency, temporary, or provisional basis. Teachers participating in alternative route programs that meet basic conditions may be considered fully certified for purposes of this highly qualified teacher requirement for up to three years provided they are making satisfactory progress toward completing their program [34 CFR 200.56(a)(2)]. Classes taught by teachers who are not highly qualified are core academic classes taught by teachers who do not meet all of these criteria. Core academic classes are: English, reading/language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography.

relatively average in student achievement gains given their student populations. But as noted on previous occasions, Newark Charter school student populations are anything but average.

Next, I use longitudinal data from the NCES Common Core of Data, public school universe (the source of underlying demographic data for the newly released federal data) characterizing changes in Newark Charter market share (share of children served in Charter Schools) and the share of low income children served in Newark Charter schools.

Next, I explore what the newly released (albeit already dated) federal data say about Newark Charter school demographics, compared to district schools serving similar grade distributions.

Next, I explore resource distributions and teacher characteristics across Newark schools, charter and district. The question at hand here is whether across district and charter schools, those schools serving needier and more costly student populations also have more (or fewer) resources with which to serve those children. Further, whether among schools serving similar student populations, resource levels are similar.

Forthcoming analyses of charter schools in New York City found that those schools tended to serve less needy populations (than district schools) and were able to do so with substantially more resources than district schools serving similar populations. Because the share of children in the district served by charters remained small, their disruptive effect on equity remained small. By contrast, in Houston, charter schools both served more comparable student populations, and did so, on average, with more comparable resource levels, resulting in less disruption of equity. In each case, the more interesting story, however, was the extent of variation among charter schools, both in students served and in resource levels.

Here, I explore similar questions in the City of Newark, first with the newly released Federal data and then with the most recent four years of available state data (2010 to 2014).

Revisiting Newark Charter Performance

As I've opined on numerous occasions, and cannot reiterate enough, the interesting question is not whether the charter sector on the whole or by location "outperforms" district schools, but rather, what's going on behind the variation.

In my October 2014 policy brief, I explored the growth percentile data of New Jersey charter and district schools, including those specifically in Newark.¹⁰ Here again are those findings.

Figure 1 looks specifically at schools in the city of Newark in 2013. These findings are based on models which account for a) student populations, and b) aggregate resource levels (total staffing salaries per pupil). These are, in effect, relative efficiency comparisons – estimates of the extent to which each school – district or charter – showed better than expected growth given the students served and the resources available, where student population and resource measures explained 19% to 38% of the variation in growth across schools.

Again, charter and district schools are scattered, with some district schools performing quite high on both Language Arts and Math. Higher (on both) performing charters, in terms of resource and need adjusted growth, include Discovery, Maria Varisco Rogers and Newark Educators charter, and low performing charters included University Heights and Greater Newark.

TEAM academy was average on Math and slightly above average on LA. Robert Treat was average on LA and slightly below average on Math. North Star was slightly above average on both.

¹⁰ <https://njedpolicy.files.wordpress.com/2014/10/research-note-on-productive-efficiency.pdf>

Figure 1

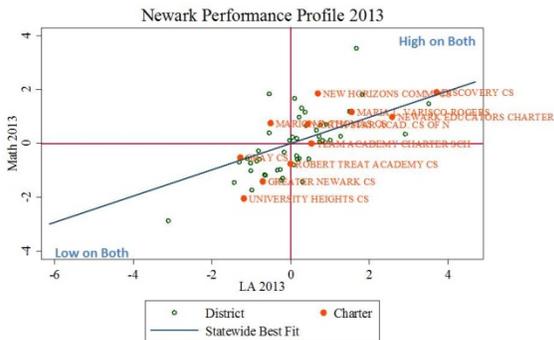
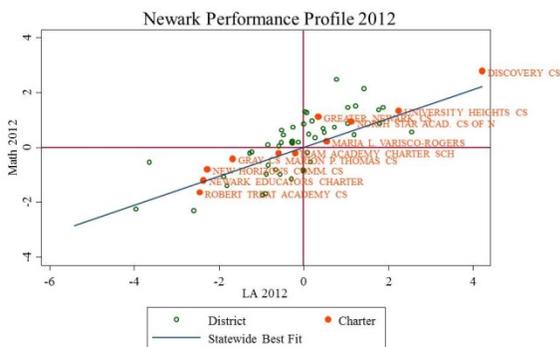


Figure 2



Patterns are similar for 2012, with Discovery being the standout, and University Heights being in positive rather than negative position. North Star again showed better than average growth on both tests, but TEAM showed slightly below average growth adjusted for resources, students, enrollment size and grade range.

Charter advocates in New Jersey most often point to the findings of the Center for Research on Education Outcomes (CREDO) at Stanford University as evidence that achievement gains for Newark charter schools far outpace gains of matched students in district schools.¹¹ However, as I have pointed out, the CREDO methods fail to account for whether and to what extent student sorting

(peer effect) alone explains those gains.¹² Further, and a more serious methodological concern, the variables used for matching charter and district students in the CREDO report are insufficient.¹³

Newark Charter Market Share over Time

Here, to provide some context in time, I present 12 year trends in charter school enrollments in Newark. Figure 3 shows that charter schools have increased enrollments over time, while total citywide charter and district student populations have remained relatively constant around 45,000. But charter share overall remained in 2013 well less than a majority.

Figure 3

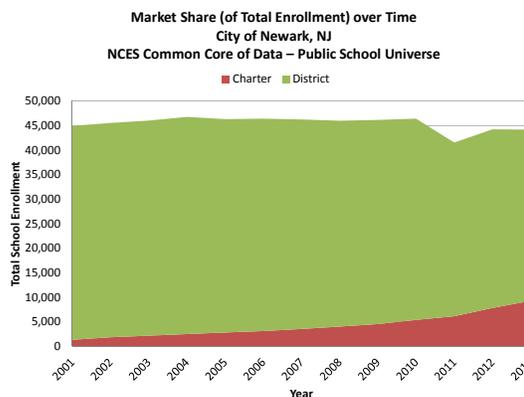


Figure 4 shows that as charter overall enrollment share has increased, so too has the share of children who qualify for ‘free’ lunch under the National School Lunch Program (<130% income threshold for poverty).

Figure 5 shows that charter schools underserve low income children, on average, resulting in the district having to serve more of these children. The ratios in Figure 5 represent the ratio of the percent of all low income

¹¹ See: <http://njcharters.org/index.php/understand-charter-schools/special-reports>, for the CREDO report, see: http://credo.stanford.edu/pdfs/nj_state_report_2012_FINAL11272012.pdf

¹² <http://schoolfinance101.wordpress.com/2012/11/27/the-secrets-to-charter-school-success-in-newark-comments-on-the-nj-credo-report/>
¹³ <http://schoolfinance101.wordpress.com/2012/12/03/when-dummy-variables-arent-smart-enough-more-comments-on-the-nj-credo-study/>

children served in charter schools, to the percent of all children served in charter schools. In 2013, Charter schools underserved low income children by about 10% (they served 90% as many low income children as they served all children). That said, because the overall charter market share was not large, the resulting rate at which districts “over-served” low income children was only about 3% (they served 103% as many low income children as they served all children).

The extent that charter schools continue to underserve the lowest income children presently has marginal adverse effect on district schools, mitigated by the fact that market share remains modest. However, it is important to understand that as charter market share grows in Newark, if disproportionality persists, the adverse effects on district population will increase.

Figure 4

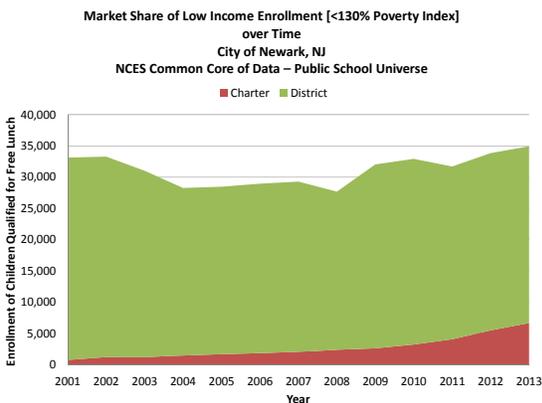
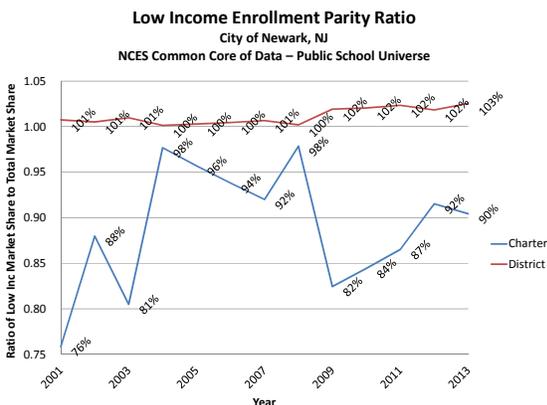


Figure 5



Student Characteristics (Federal Data)

Here, I begin to explore student population characteristics from the recently released federal data, which are largely compiled from the NCES Common Core of Data, and the Civil Rights Data Collection.¹⁴ The goal here is to compare the demographics of each school – percent low income, percent ELL, percent special education – to the demographics of schools serving similar grade range distributions among all schools in the same city. This analysis is part of a nation-wide analysis, applying a uniform method across all schools.

To make these relative comparisons, I estimate a regression model where the dependent variable is the population measure in question, and the independent variables are a) the percentages of total enrollments within each grade range specified, and b) a fixed effect for each city that is home to at least 1 charter school.

$$Pct_x = f(\text{prek_5_pct } g6_8_pct } g9_12_pct } SCH_CITY)$$

I use this model to create predicted values of the student population characteristics for each city – in effect, the citywide (charter and district) average student population characteristics for schools serving specific grade distributions. I then calculate the deviations (residuals) between each school’s actual population and the citywide average (for schools serving similar grade distributions).

Figure 6 shows the findings for Newark revealing that but for New Horizons free lunch population, Charter schools that appear in the data set tend to underserve the lowest income children, children with limited English language proficiency and children with disabilities (under IDEA).

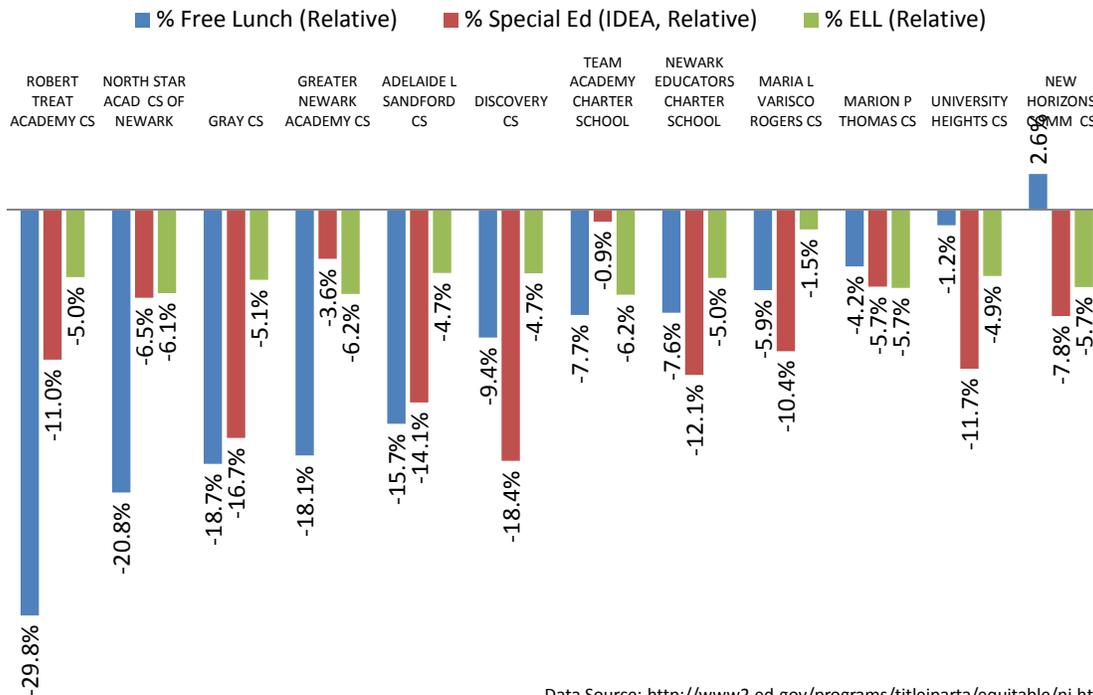
Put simply, these Federal data indicate that charters in Newark continue to serve far

¹⁴ <http://ocrdata.ed.gov/>

less need populations than district schools serving similar grade distributions of students.

Figure 6

Student Populations Relative to Similar Schools by Grade Level Enrollment Distribution (2011-12)
U.S. Dept. of Education Equity Profiles Data



Data Source: <http://www2.ed.gov/programs/titleiparta/equitable/nj.html>

Fiscal Resources (Federal Data)

Here I begin to explore financial resources as reported in the new Federal teacher equity data collection. Teacher resource measures included in this data collection are gathered from states, which typically use their statewide staffing files as a basis for the data they provide. This is especially the case in states where there exists no system-wide reporting of school site financial data.

The upper two panels of Figure 7 show the relationship between special education population shares, low income population shares and total salaries per pupil across Newark district and charter schools, wherein

variation in special education population shares tends to be the strongest predictor of school level variation in spending.¹⁵ We would expect, for example, school site expenditures to increase with special education population shares. And in Newark they do. Certainly, other factors also play a role. One would hope to see increased spending also with respect to low income concentrations. This pattern is less

¹⁵ Baker, B. D. (2012). Rearranging Deck Chairs in Dallas: Contextual Constraints and Within-district Resource Allocation in Urban Texas School Districts. *Journal of Education Finance*, 37(3), 287-315.

Baker, B.D., Libby, K., Wiley, K. Charter School Expansion & Within District Equity: Confluence or Conflict? *Education Finance and Policy*

clear, but partly because of the role of variation in special education populations.

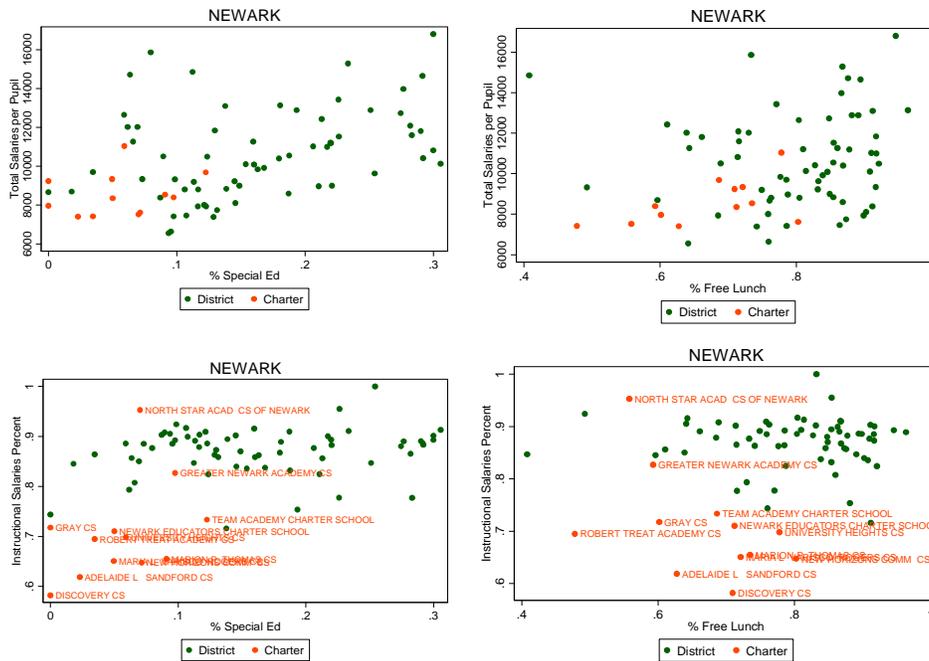
What we see in Figure 7 is that in Newark, Charter schools appear to have relatively modest total salary expense per pupil, but at the same time have low shares of special education or low income pupils. Thus, it would appear that they fall generally in line with where they should be in order to maintain equity across the system. This finding is in contrast with findings in New York City where charters also served low need populations but did so with substantially higher resources (a finding confirmed by the recently released

federal data used here). In other words, given the students served, Newark Charter schools appear neither over nor under-resourced in terms of staffing expenditures.

The bottom panels show the percent of staffing expenditure that are identified as “instructional” staffing, where the Civil Rights Data Collection uses the Census Fiscal survey definitions of “instruction.” Here we see that for NPS district schools, instructional staffing share is relatively consistently between 80% and 90% of total staff salaries. For most charter schools that figure is much lower.

Figure 7

Total Salaries per Pupil & Instructional Salaries as % of Total



Data Source: <http://www2.ed.gov/programs/titleiparta/equitable/nj.html>

There is a bit of apples to oranges comparison embedded here. Charters may have depressed instructional share in part due to costs associated with their own centralized administration (which often includes facilities related expenses). This finding is not uncommon.¹⁶

Other authors have pointed out that introducing charter networks under district governance (where financing occurs by a pass-through model in which the district retains certain financial responsibilities for charters) can create administrative redundancies. Bifulco and Reback (2014) explain that “operating two systems of public schools under separate governance arrangements can create excess costs.”¹⁷

But, it is also important to note that many administrative expenses associated with the centralized governance of charter organizations, are not even included here or in most similar analyses, as they are not typically reported in public fiscal or personnel data systems. For example, Uncommon Schools network which operates North Star Academy reports 2012 (on form IRS 990) compensation for its systemwide CEO approaching \$270k, CFO at \$207k, Senior Director of Real Estate at \$130k, and their Newark managing director at \$213.9k. None of these salaries are accounted for in state professional staffing reports.¹⁸

To summarize, Charter school total staffing expenditures per pupil fall in line with expectations, given the student populations served, but there remain unpredictable inequities both across district, and across charter schools in access to resources.

Staffing Resources (Federal Data)

Total salary expenses per pupil are a function of a) the quantities of staff employed and b) their wages. Wages of staff depend largely on the experience levels of staff, in both district and charter schools, where in recent years, the largest charter operators in Newark (Uncommon [North Star] and TEAM) have tended to pay higher wages (than district schools and other charters) especially across early years of experience.¹⁹

Quantities of staff determine class sizes and special education case-loads. As such, we should expect to see greater staffing intensity (teachers per pupil) in higher need settings – those schools with higher shares of low income children or children with disabilities.

Figure 8 confirms that the expenditure distribution shown in previous figures is at least in part driven by staffing ratios, with respect to special education populations. Again, charter schools serve very few children with disabilities (and even fewer with severe disabilities).²⁰ As such, it makes sense that their overall staffing intensity is lower. As with total staffing expenditure, it appears that staffing ratios in Newark charter schools fall relatively in line with expectations.

¹⁶ Arsen, D., & Ni, Y. (2012). Is Administration Leaner in Charter Schools? Resource Allocation in Charter and Traditional Public Schools. *education policy analysis archives*, 20(31), n31.

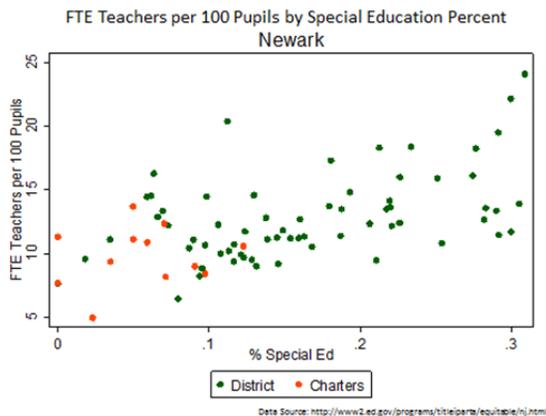
¹⁷ Bifulco, R., & Reback, R. (2014). Fiscal Impacts of Charter Schools: Lessons from New York. *Education Finance & Policy*, 9(1), 86-107.

¹⁸ For example, the highest salaried employee of North Star Academy listed in the NJDOE Fall Staffing report (2013-14) is paid \$136k and is listed as the high school principal (Job Code = 201). The Newark-based Managing Director’s compensation is noticeably absent from this report.

¹⁹ <http://schoolfinance101.wordpress.com/2012/11/27/the-secrets-to-charter-school-success-in-newark-comments-on-the-nj-credo-report/>

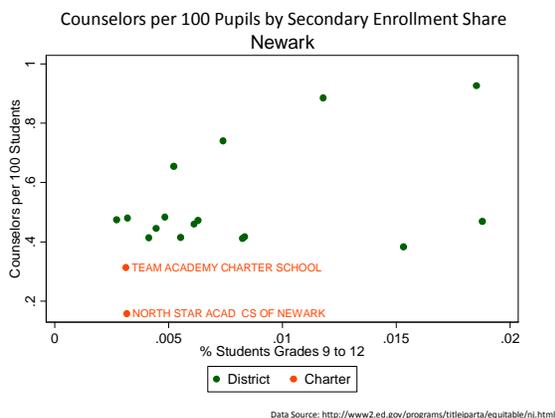
²⁰ <http://schoolfinance101.wordpress.com/2012/12/03/when-dummy-variables-arent-smart-enough-more-comments-on-the-nj-credo-study/>

Figure 8



The recently released Federal data collection also includes information on the number of counselors available. Figure 9 shows the number of counselors available by the percent of school enrollments that are in 9th grade or higher. Among Newark Charter schools, this restricts our sample to TEAM Academy and North Star, both of which seem to employ far fewer counselors per 100 pupils than their NPS counterparts. But again, these schools (North Star more so than TEAM) do also tend to serve less needy student populations.

Figure 9



Teacher Characteristics (CCD & CRDC)

I close out my discussion of the recent Federal data collection with an analysis of the distribution of 1st and 2nd year teachers and the

distribution of courses taught by teachers who are “not highly qualified” to be teaching that specific course.

Because demand for teacher qualifications, and matching of teachers with courses differs by grade level, and also potentially by student needs, I take the step here of comparing charter schools to district schools serving similar student populations, in schools of similar grade distribution. I regress the teacher characteristics as a function low income, special education and ELL shares, and as a function of percent of children enrolled in each grade range below to compare schools against the average among schools in the same city.

$$Tch_Char = f(pct_free\ pct_idea\ pct_lep\ prek_5_pct\ g6_8_pct\ g9_12_pct\ SCH_CITY)$$

I then calculate the difference between the actual values for each school and the average for all schools in the same city.

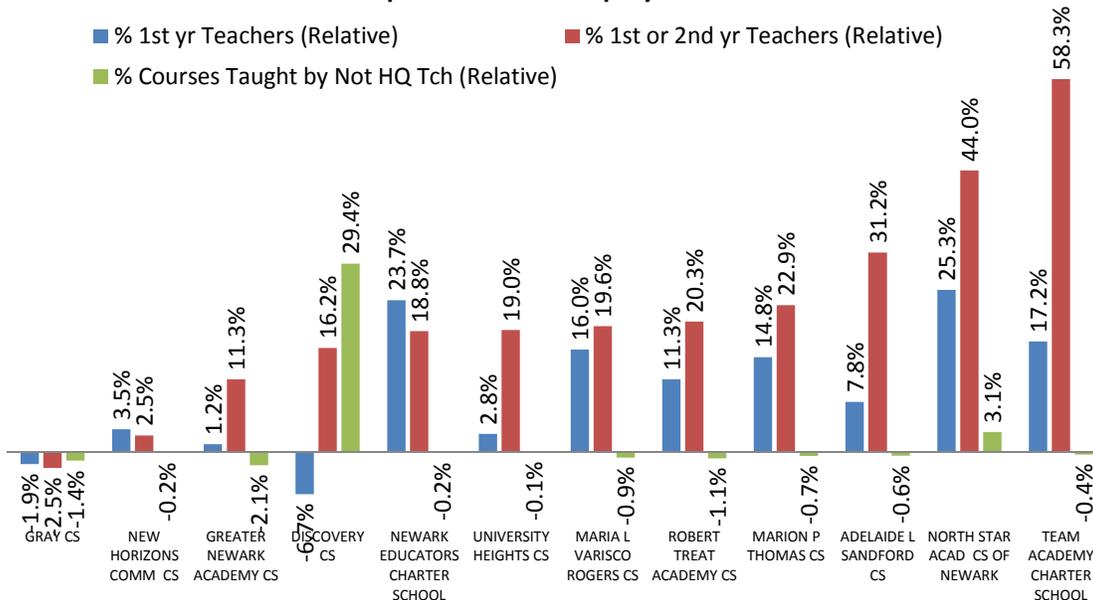
Figure 10 conveys the findings. Gray and New Horizons each have comparable shares of 1st or 2nd year teachers to district schools, as reported to the Federal Data collection in 2011-12 and also have comparable shares of courses taught by teachers not highly qualified. At the other end of the spectrum, North Star Academy and TEAM Academy have very high shares of 1st and 2nd year teachers compared to district schools serving similar grade ranges. However, neither has significantly higher share of courses taught by teachers labeled as “not highly qualified,” though the usefulness of this classification is questionable.²¹ Only Discovery charter school (the standout in my previous performance analysis²²) shows elevated shares of courses taught by non-highly qualified teachers.

²¹ http://www.aei.org/wp-content/uploads/2012/10/left-out-of-no-child-left-behind-teach-for-americas-outsized-influence-on-alternative-certification_145912598416.pdf

²² <https://njedpolicy.files.wordpress.com/2014/10/research-note-on-productive-efficiency.pdf>

Figure 10

Teacher Characteristics Relative to Similar Schools by Grade Level Enrollment Distribution & Student Population (2011-12)
U.S. Dept. of Education Equity Profiles Data



Data Source: <http://www2.ed.gov/programs/titleiparta/equitable/nj.html>

Comparison with Updated NJDOE Data

Here I review the past 4 years of data on student population characteristics and teacher characteristics from New Jersey State data sources in order to a) discern whether there have in fact been substantive changes in either since 2011-12 and b) discern whether state data sources and the Federal data collection tell substantively different, or largely similar stories.

Recently released Federal regulations do not require that states use the Federal data collection, but provided the data as a convenience and for purposes of providing guidance on relevant measures. States will most likely use some combination of Federal collected data and their own data which were

used in part to support the Federal data collection.

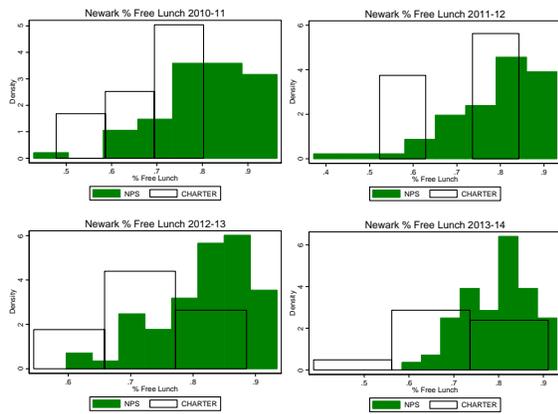
I begin with a brief review of the distribution of school enrollments by student characteristics. I then explore staffing data in greater detail, using Fall Staffing reports to construct measures of total salary expense per pupil, evaluating relative salaries of teachers, and evaluating experience distributions for Newark Charter and district schools.

Students

Figure 11 summarizes the distributions of school level % free lunch for district and charter schools, with district schools in green and charters hollow with black outline. Figure 11 shows that each year, charter schools continue to have lower average shares of

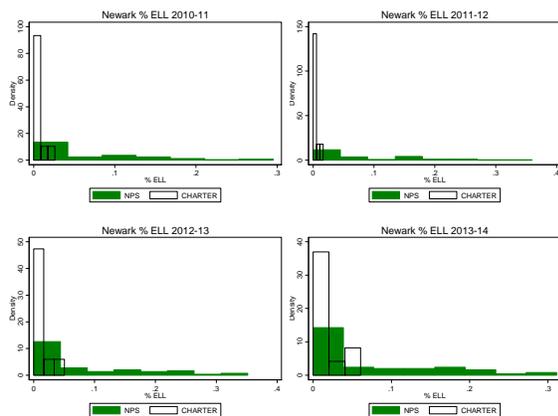
children qualified for free lunch, but that distribution is spreading out over time. Such a shift would be expected as charter market share expands. Put simply, in the context of Newark, there is a finite supply of children not qualified for free lunch (<130% income threshold for poverty). With charter market share expansion, more charters will have to take on larger shares of the lowest income children.

Figure 11



Data source: <http://www.nj.gov/education/data/enr/>

Figure 12



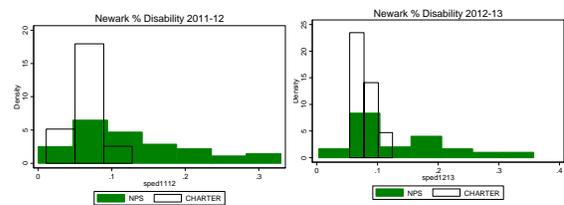
Data source: <http://www.nj.gov/education/data/enr/>

Figure 12 shows concentrations of English Language Learners, revealing that the vast majority of charter schools in Newark continue to serve few or none of these children, whereas district schools vary significantly in this regard. That said, this finding remains a

function of charter schools largely operating in the city's black rather than Hispanic neighborhoods in a city that remains highly segregated along racial/ethnic lines.

Figure 13 shows the distribution of special education rates for 2012 and 2013. Again, charter schools continue to serve low average rates of children with disabilities, where further decomposition (only possible at district level) typically reveals much lower rates of children with more severe disabilities attending charters.²³

Figure 13



Data source: By request to NJDOE [available school by school in PDF format at: <http://education.state.nj.us/pr/>]

Resources

Figure 14 uses state staffing files to replicate the analysis presented in Figure 7 – relating total staffing expense per pupil to school level special education concentrations. Here, I take this analysis from 2010-11 (year prior to CRDC Federal Collection) through 2013-14 (most recent available NJDOE Fall Staffing Report).

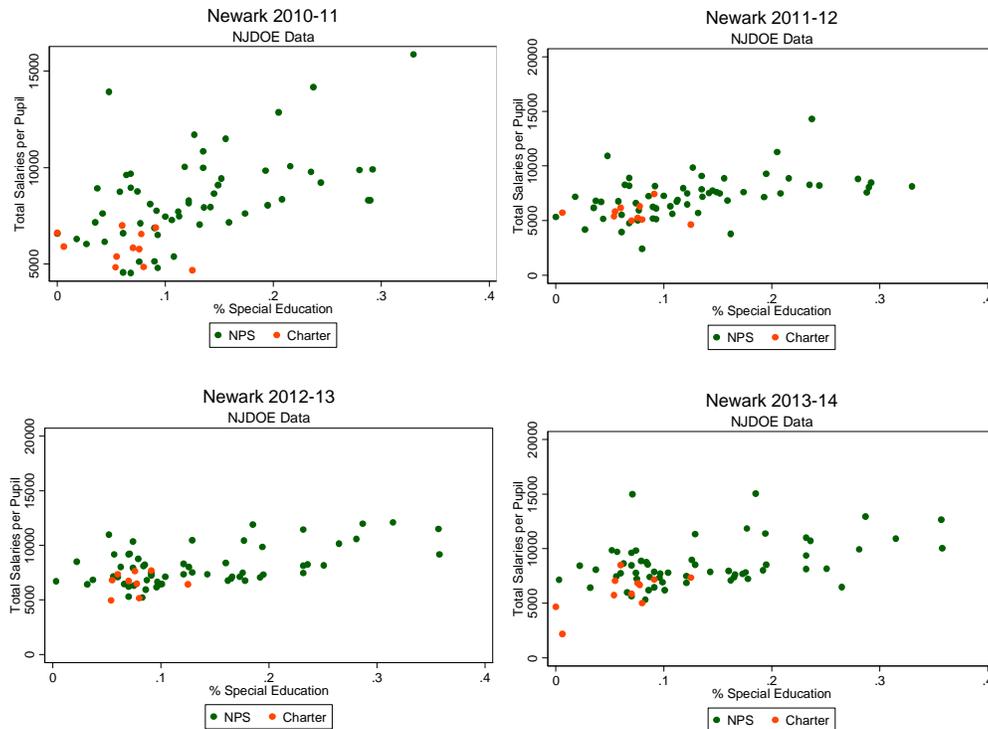
The patterns displayed in Figure 14 are similar to those in Figure 7, though the average level of staffing expense compiled from the Fall Staffing Report comes in lower (base-lined around \$5,000) than that from the CRDC collection (base-lined around \$8,000). This implies that data provided for the CRDC collection by NJDOE are somewhat more comprehensive than those included in the Fall Staffing Report. Nonetheless, the pattern we see here is that charter schools, while serving

²³ <http://schoolfinance101.wordpress.com/2012/08/06/effects-of-charter-enrollment-on-newark-district-enrollment/>

relatively low shares of children with disabilities, tend to do so with staffing expense per pupil comparable to that of district schools also serving low shares of children with disabilities (Charter schools in 2010-11 appear slightly less well off, but note that the vertical axis range differs from the subsequent charts).

Also, in 2013-14, two charter schools (Discovery & Gray) appear to have very low staffing expenditures, where these same schools previously fell in line, raising concerns about the completeness of the staffing file data for these schools in 2013-14.

Figure 14



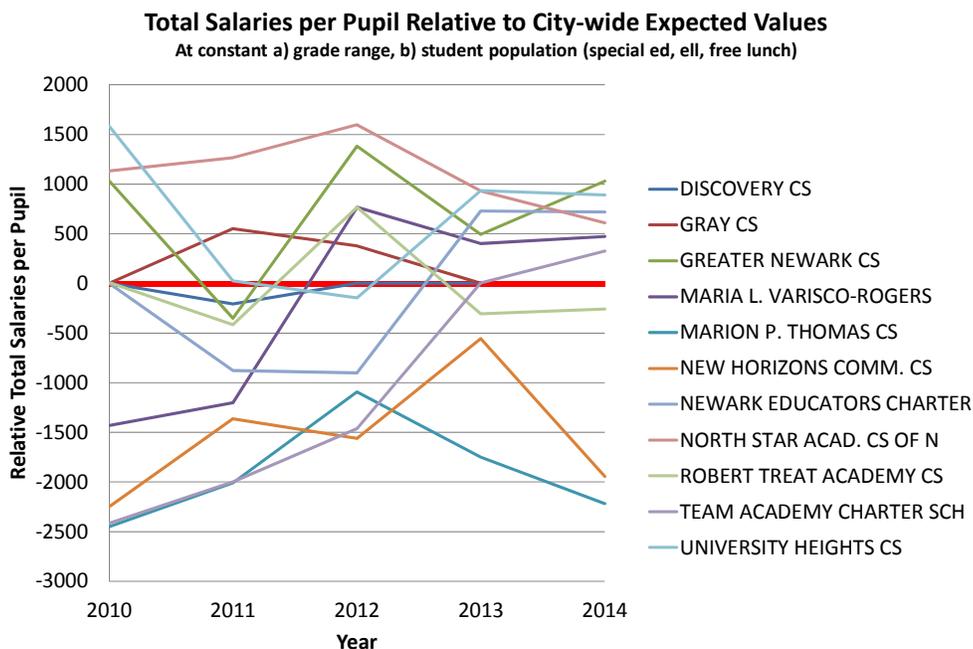
To construct Figure 15, to compare total salaries per pupil for charter schools and district schools serving a) similar grade ranges and b) similar student populations, I estimate a regression model

$$\text{Total Salaries per Pupil} = f(\text{Grade Range, \% Free Lunch, \% ELL, \% Special Education})$$

In the regression, the “average” charter school has a salary expense per pupil lower than the otherwise similar district school, but that average is brought down by particularly low spending (at least as compiled via staffing data) charters (New Horizons and Marion P. Thomas).

Figure 15 reveals the variation among charter salary expenditure per pupil when compared with otherwise similar district schools. The majority of Newark Charters spend marginally higher than otherwise similar district schools in recent years, with Greater Newark, University Heights and Newark Educators being highest in 2014. North Star was about \$600 per pupil and TEAM about \$327 per pupil over otherwise similar district schools in 2013-14.

Figure 15



Data Sources: Salary data summed to school level from NJDOE Fall Staffing Reports. Salary data regressed as a function of year, grade range, student population. Plotted values are “residuals” from the regression.

Figure 16 explores the relative wages of teachers at similar qualifications between district and charter schools, against school total salaries per pupil. That is, to what extent are wage levels for similar staff driving differences in total salary expense. Total salary expense can be driven by quantities of staff, or their average salaries. Variation on those average salaries can be driven by differences in average experience or degree level, but also by differences in wage structure and level between district and charter schools. Here, the goal is to isolate the extent that similar teachers are paid more or less, given their job assignment, years of experience and degree level. After controlling for these factors salaries of teachers in district schools should fall in a relatively narrow band, since they are under a common contractual agreement driven largely by these factors.

Figure 16 shows the competitiveness of teacher wages (compared to teachers in similar job codes, with similar experience and degree levels) for the average teacher in each school, to the average teacher citywide (0 on the

vertical axis). While there exists some unexplained variation in district school teacher wages, average school level wage competitiveness for NPS schools generally falls between -.5 and +.5 standard deviations of the citywide mean. Notably, by 2014, the average wage competitiveness for district teachers has declined somewhat, as larger shares of teachers become employed in higher paying charters (including TEAM and North Star).

2012-13 is blank because data provided lacked a “degree level” indicator for estimating the model.

TEAM Academy in particular pays a much higher than average wage for a teacher of specific credentials, with North Star also above average. This pay differential is driven in part by longer hours and longer yearly contract months.

However, despite the relatively high wages for teachers of specific characteristics, these schools maintain only marginally higher than average total salary expense per pupil (against similar district schools), as noted previously. Further, their quantities of staff are

relatively in line with expectations, as per previous discussion of the Federal data collection. Where these schools in particular cut total staffing costs is in the experience distribution of their staff, as shown previously with the Federal data. While their early career teachers are paid more than early career

teachers a) in district schools and b) in other charter schools, these schools have very high shares of teachers in their first and second year of teaching.

Figure 16

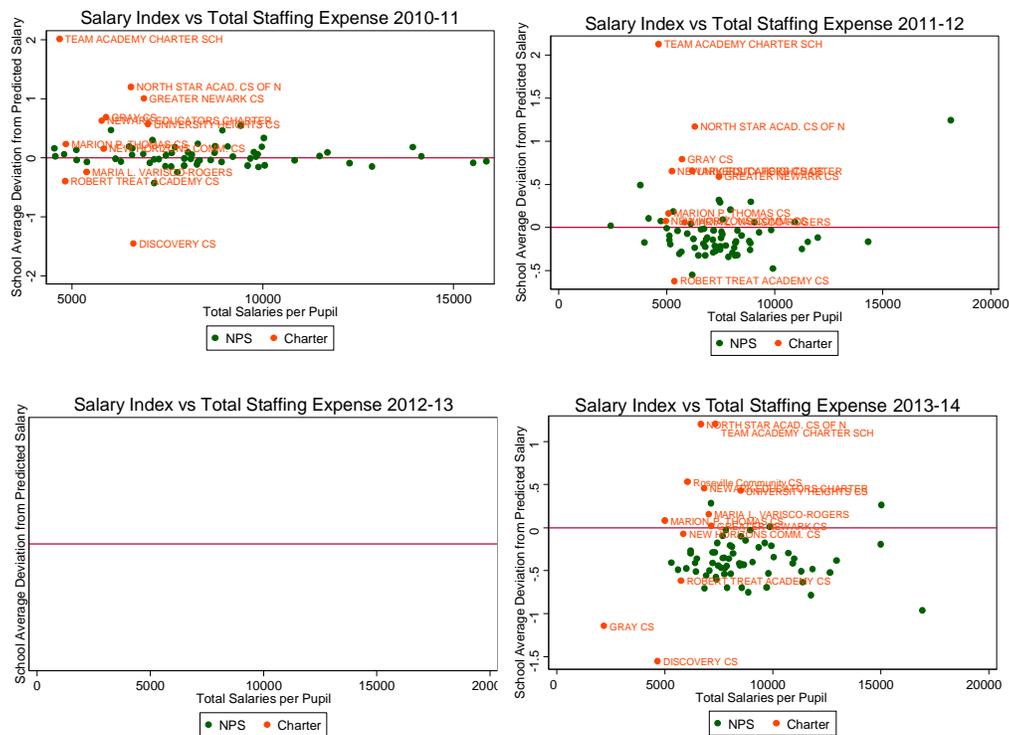


Figure 17 explores the experience distributions over time of Newark Charter and district schools, using teacher level data from the Fall Staffing reports. Figure 17 shows very high proportions of 1st and 2nd year teachers in charter schools, consistent with findings for select, larger charter schools in the Federal data collection.

District schools also appear to have elevated levels of novice teachers, but also have sizeable proportions of teachers with approximately 10 years of experience.

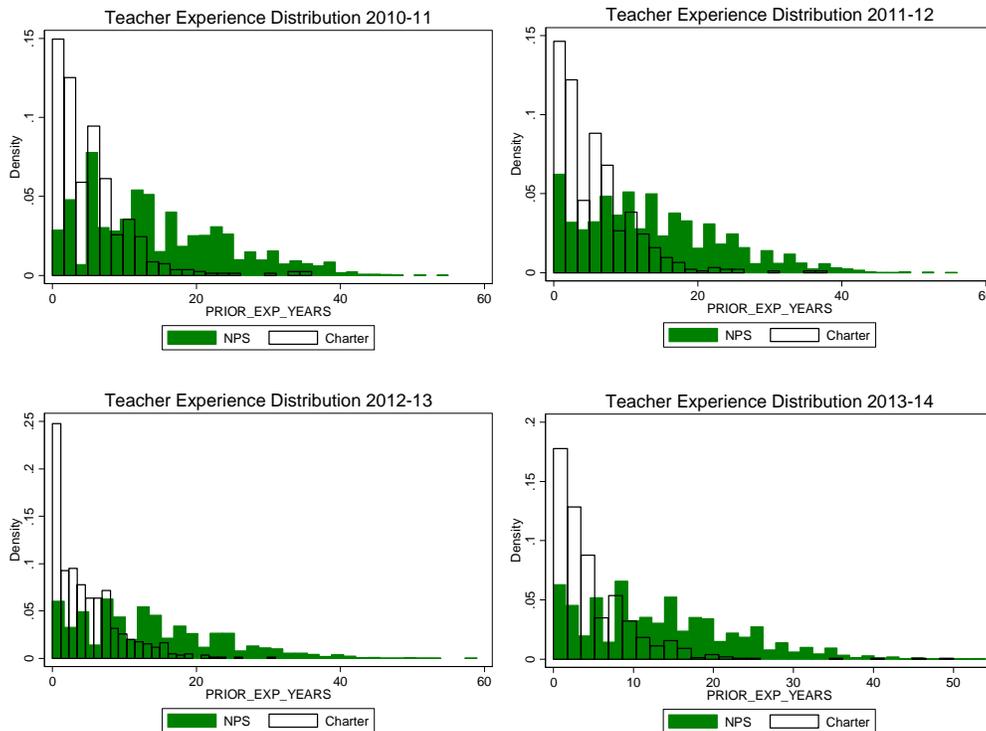
Notably, over the four year period observed, charter schools do not appear to be accumulated more experienced teachers.

However, there are counterbalancing forces at play here. The growth of charter enrollments necessitates new hiring which likely involves hiring of novice teachers.

It will be interesting to explore how or if these patterns change as enrollment growth levels off over time. To the extent that charter schools begin to accumulate more experienced teachers they will experience the associated budget pressure, especially those that have chosen to pay such high relative wages for teachers with specific qualifications. Charter operators may find that their current competitive wage structure is not sustainable, that they may have to further trim staffing

quantities, or that they may have to rely on novice teachers and elevated early career tradition as a feature of their model.

Figure 17



Data Source: NJDOE Statewide Fall Staffing Reports

Conclusions & Policy Implications

To summarize:

- Recently released federal data, confirmed by more recent state data indicates that student population differences between Newark district and charter schools persist.
 - Newark charter schools continue to serve smaller shares of children qualified for free lunch, children with limited English language proficiency and children with disabilities, than do district schools serving similar grade ranges.
 - While charter school market share has remained relatively

- small (through 2013), the effect of charters underserving lower income students on district school enrollments has remained relatively modest.
- Charter school total staffing expenditures, either as reported in federal data or as compiled from state data appear to fall in line with student needs in charter schools.
 - Charter schools serve less needy populations and do so with relatively low total salary expense per pupil.
 - But, there exists significant variation in resources among charter schools, with some outspending otherwise similar district schools and others

significantly underspending otherwise similar district schools.

- Charter school wage competitiveness varies widely, with some charters paying substantially more than district schools for teachers of specific experience and degree levels. But these wages do not, as of yet, substantially influence total staffing costs.
- Charter schools have very high concentrations of 1st and 2nd year teachers, which lowers their total staffing expenditure per pupil but only to the point where those staffing expenditures are in line with expectations (not lower, as one might expect for schools with so many novice teachers).

Finally, comparisons between the newly released Federal data collection and updated state data sources appear both relatively stable over time and relatively consistent across sources even as the charter sector rapidly grows and evolves and as the district continuously morphs.

Two issues require consideration by policymakers and local officials if reliance on charter schooling and expansion of charter schooling are to play a significant role in the future of schooling in Newark. The first is the active management of the potential deleterious effects of student sorting on district schools – that is, as market share increases and the tendency remains for charters to enroll (or keep) fewer of the lowest income children, district schools may be more adversely affected.

An appropriately designed centralized enrollment system can partially mitigate these issues. But (at least) two factors can offset the potential benefits of such a system. First, individual choices of differently motivated and differently informed parents influence who signs up to attend what schools, leading to uneven distribution of initial selections. Second, centralized enrollment affects only how

students are sorted on entry, but does not control who stays or leaves a given school.

Perhaps more importantly, however, it may be the case that some charter schools are simply not cut out to best serve some students (as with the district's own Magnet schools). It would likely be a bad policy choice to create a centralized enrollment system that requires schools to serve children they are ill-equipped to serve.

The second issue requiring consideration is whether the staffing and expenditure structure of charter schools is sustainable and/or efficient. As I've shown in my previous report, charter schools are a relative break-even on state achievement growth outcomes, given their resource levels and student characteristics.²⁴ But, the current staffing expenditure levels (which are merely average, not low) of charters in Newark depend on maintaining a very inexperienced workforce. Again, current novice teacher concentrations may be a function of recent enrollment growth.

As growth slows, these schools will either have to a) shed more experienced teachers to maintain their low-expense staff, b) lower their wages, potentially compromising quality of recruits, c) reduce staffing ratios, potentially compromising program quality or d) increase their spending levels. If charter operators choose "a" above – relying on high attrition, it remains questionable whether the supply of new teachers, even from alternative pathways, would be sufficient to maintain the present model at much larger scale.

²⁴ <https://njedpolicy.files.wordpress.com/2014/10/research-note-on-productive-efficiency.pdf>

