

Charter School Market Dynamics and School Quality

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Charter Schools Touted as Key to Reforming Urban Schools

- Relaxes operational constraints
- Potentially circumvents union influences
- Expanded parental choice strengthens market pressures

Empirical Findings Mixed

- Strong evidence that some oversubscribed charter schools (e.g. KIPP Academies) outperform public school alternatives
 - Charter school effects, similar to Catholic school effects, appear to be larger for lower-income, urban students
- Little or no evidence that charter schools outperform traditional public schools on average in a state
- Mixed evidence on the effects of charter school competition on traditional public school quality
 - small charter market share

Limited evidence on charter school market dynamics

- Evidence that school quality is positively and significantly related to the probability of reenrolling in a Texas charter
- CREDO (2013) finds improvement in the charter sector, explained in large part by disproportionate closure of less effective schools
 - Finds little improvement in Texas

Alternative policy implications

- Charter school quality distribution will remain dispersed
 - lucky lottery winners will enjoy much higher school quality
 - other charter school attendees will not enjoy much higher quality in terms of raising achievement (may be other valued outcomes)
- Over time competitive forces will shift charter school quality distribution to the right

We investigate the evolution of charter school quality in Texas

- Initial charter school quality distribution depends on supply of applicants, decisions of state chartering authority, and benefits of relaxed operational constraints
 - state administrators vary in objectives and skills
 - difficult for chartering authority to predict quality on basis of application

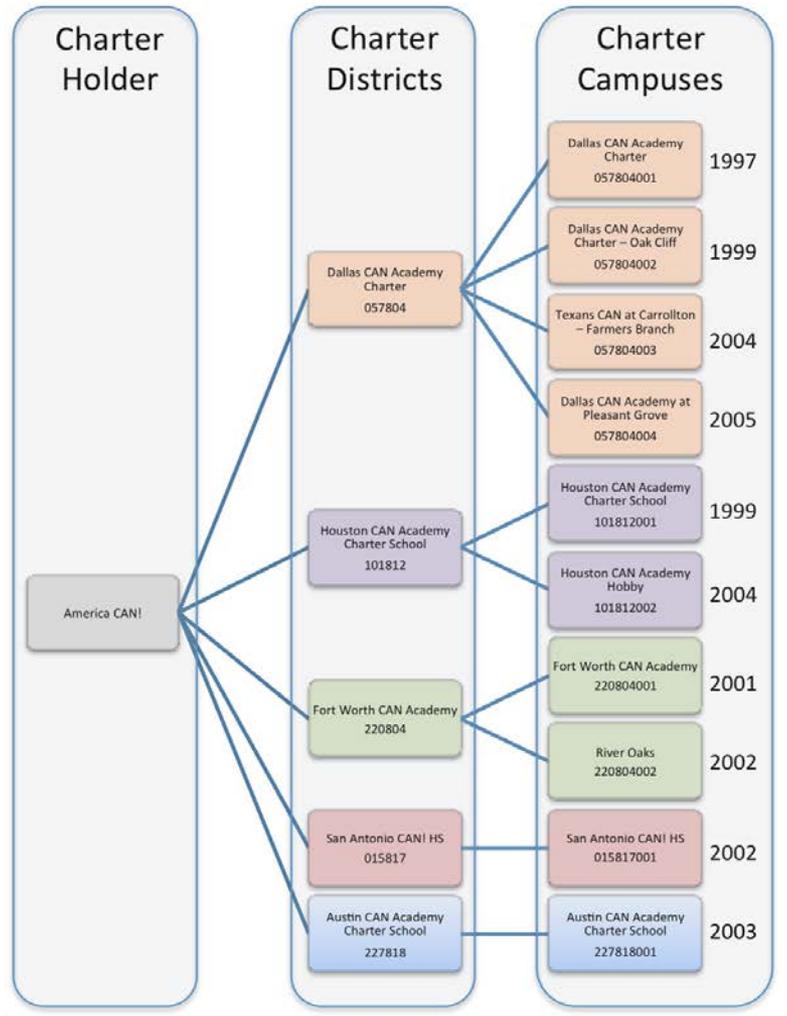
Strength of market forces key to evolution of school quality

- Accountability system disseminates information, as does word of mouth
- Will charter schools that are more successful at raising achievement be favored?
 - depends in large part on parental preferences
- Key aspect of Texas law is that there are limited barriers to opening additional schools for existing charter holders

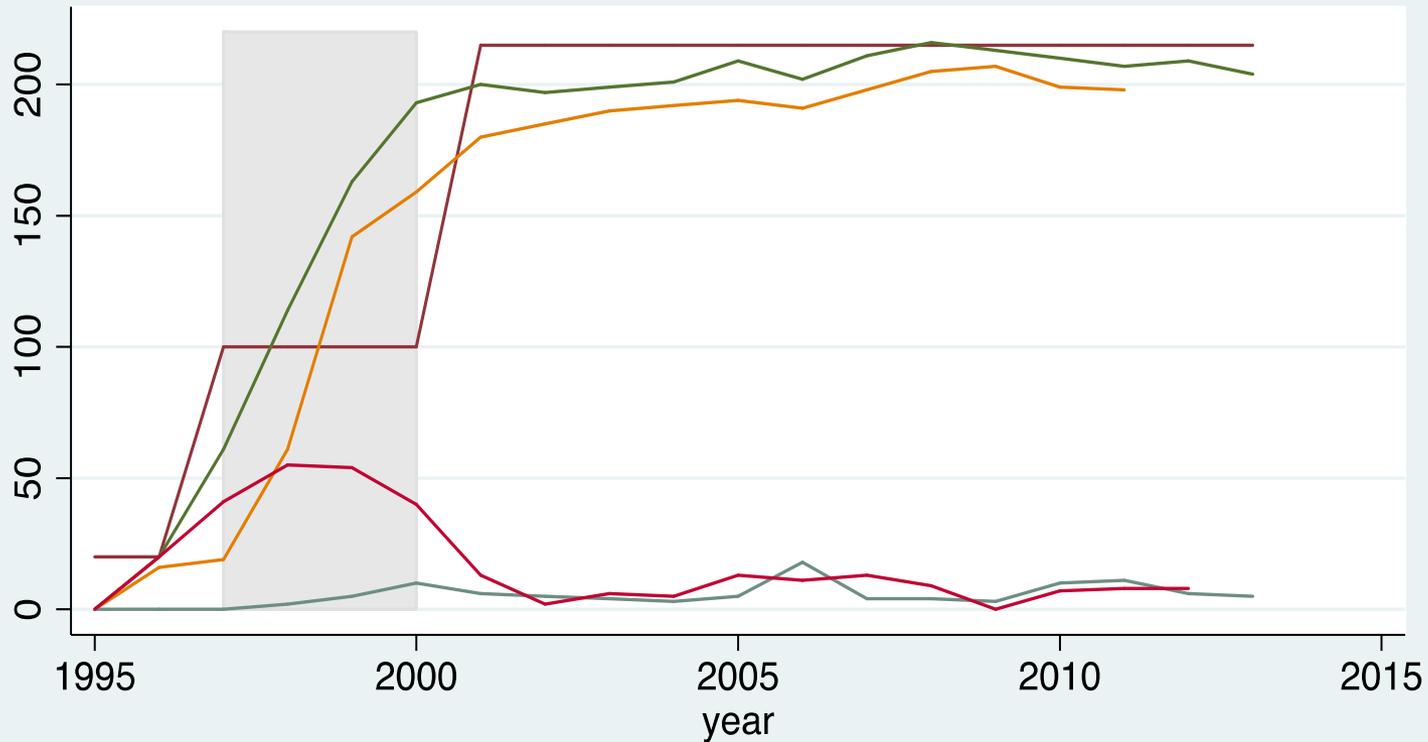
Talk Outline

- Describe the Texas Charter Sector
- Discuss estimation of charter school quality
- Illustrate changes over time in the distribution of charter school quality
- Present evidence on the effects of charter school and CMO quality on the probability of reenrollment, school expansion and school closure
- Conclusion

1. Texas Charter School Structure



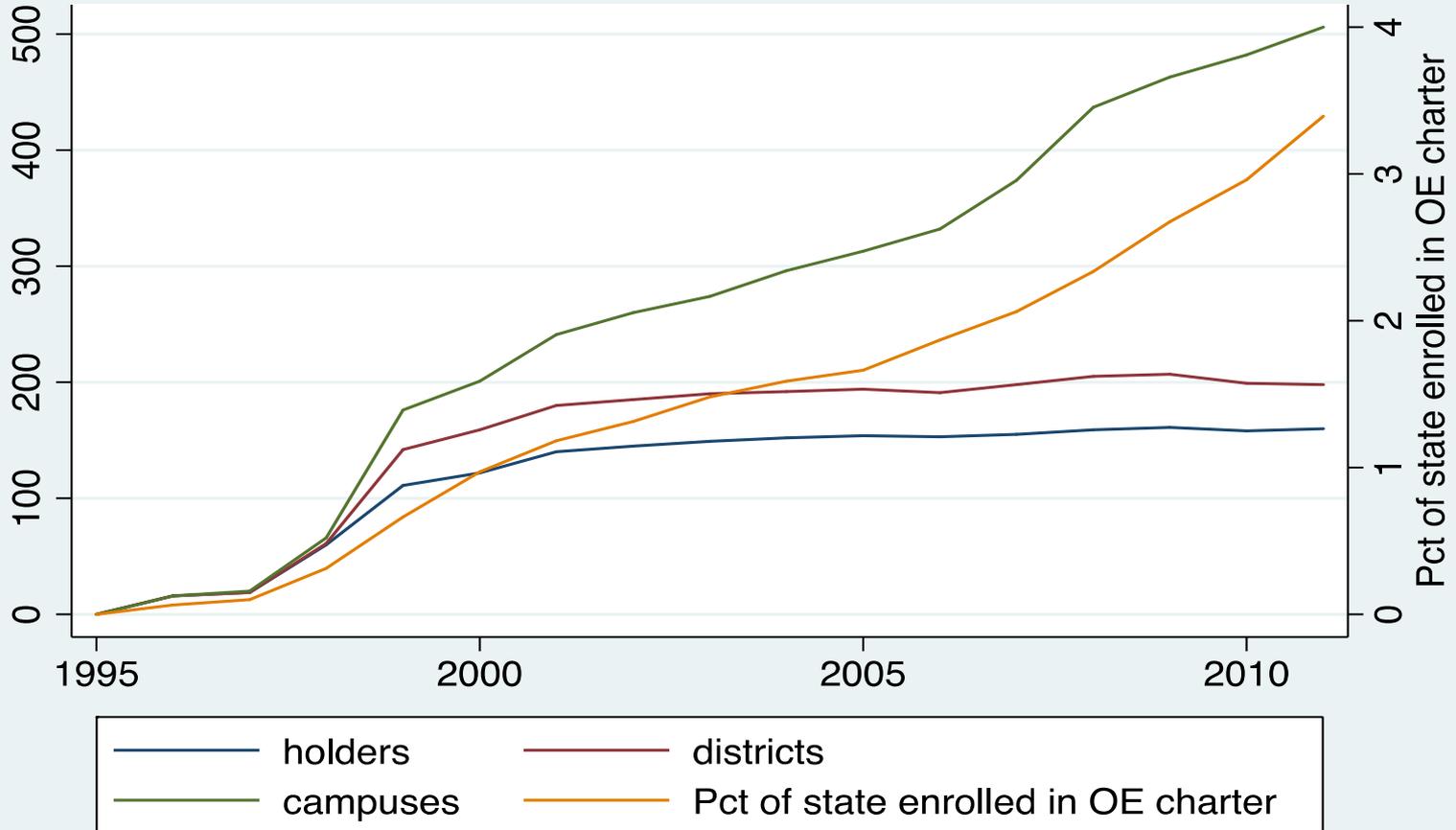
Charter School Stock and Flows



Data from the Texas Education Agency

Charter Expansion

Active Holders, Districts, Campuses, and Students



Texas Administrative Data

- 2000 to 2011 micro-data on elementary and middle school students and schools
- follow students that switch schools
- mathematics and reading tests administered each spring
 - test change from taas to taks in 2003
 - trends over time robust to focusing on shorter time period entirely within taks regime

Measures of school quality

- state accountability rating
 - widely known
 - based largely on test pass rates, so favors higher SES schools
- value added to mathematics and reading achievement
 - Control for lagged achievement and demographics
 - Assumes lagged achievement accounts for unobserved confounding factors

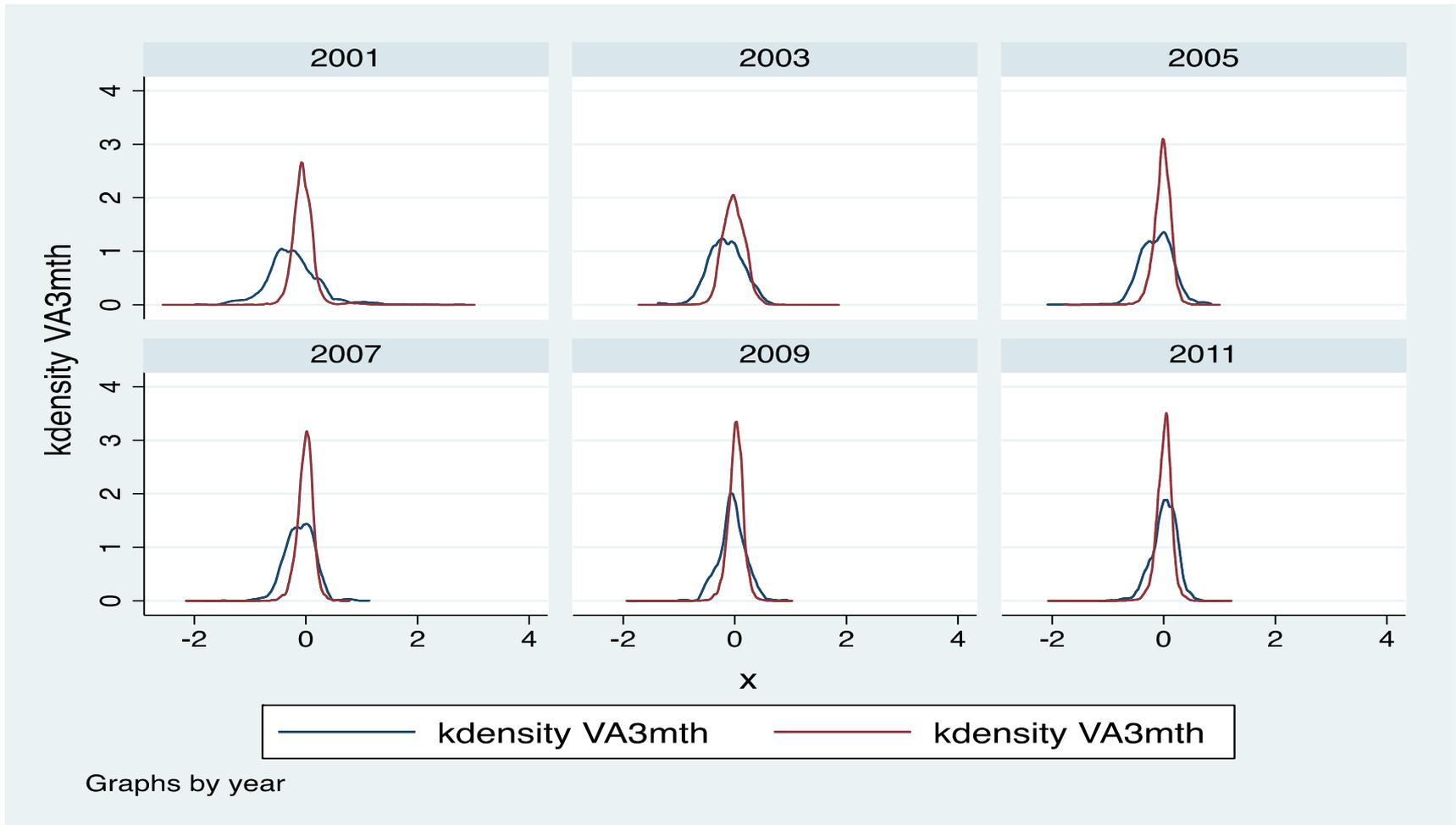
Alternative VA Estimators

- Matching on distribution of traditional public schools of transitioning students
 - Accounts for unobserved differences in prior school quality and community factors
 - Potentially biased by unobserved family factors related to charter school enrollment decision
- Lottery-based random assignment
 - In absence of non-random attrition accounts for unobserved and observed differences

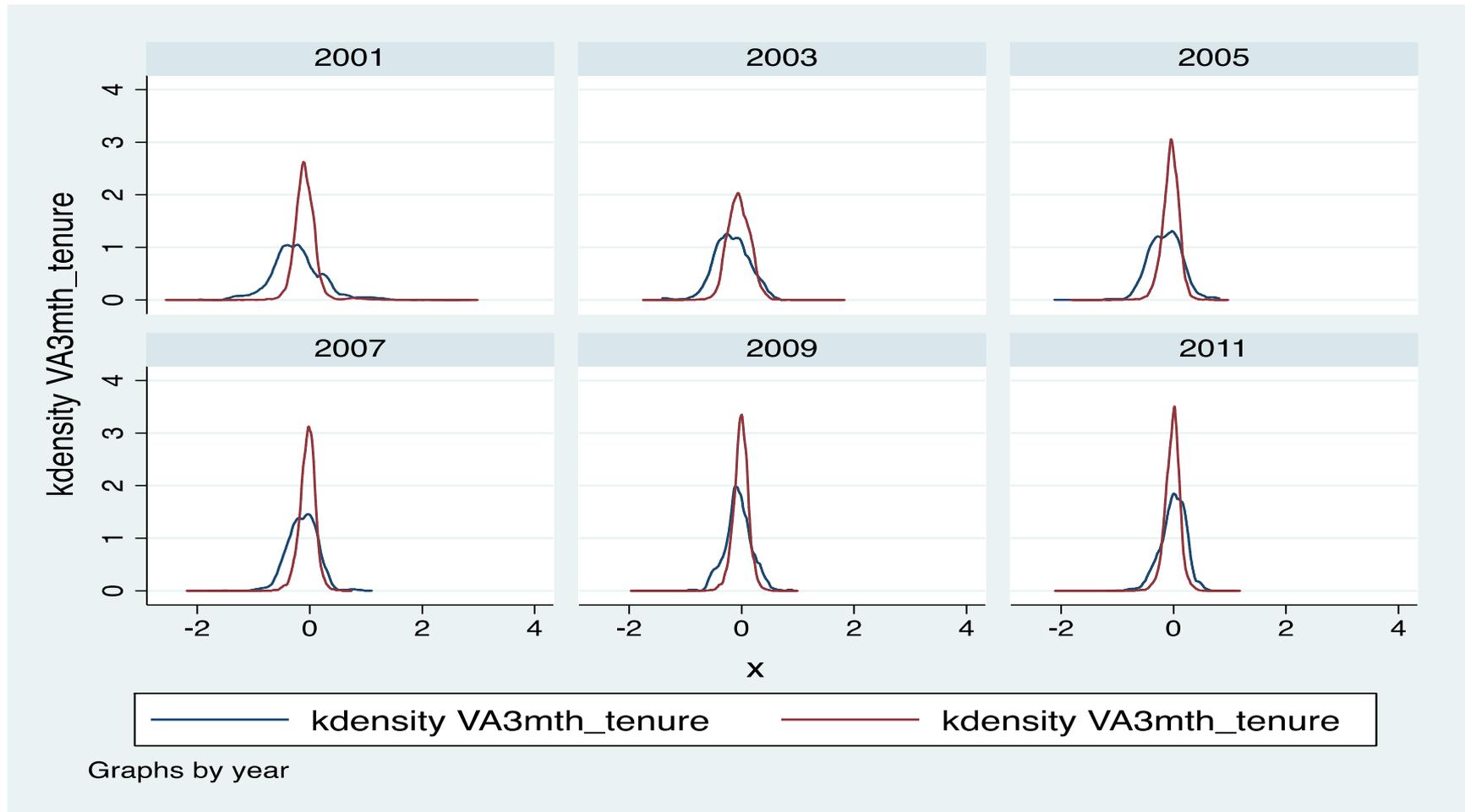
Identification of changes over time in relative charter school quality

- All models assume no charter school effects on traditional public school quality
 - Strong accountability system in place
 - Assumption “stronger” for lottery-based and matching estimators
- Improvements in charter school quality leading to improvements in the traditional public school quality distribution of transitioning students attenuate estimates of charter school improvement
- VA and matching estimators assume character of bias from confounding factors is stable over time

Distributions of Charter (blue) and Traditional Public School (red) Value Added in Math



Distributions of Charter and Traditional Public School Value Added in Math, Conditional on Years of Operation



1. Charter School Math Average Value-added in 2001 and 2011, by School Operation Status in 2001 and 2011

| | operates in 2001 and 2011 | operates only in 2001 (exits) | operates only in 2011 (entrants) |
|----------------------|---------------------------------|-------------------------------------|--|
| average VA 2001 | -0.179 | -0.397 | |
| average VA 2011 | 0.008 | | 0.013 |
| enroll share 2001 | 0.789 | 0.211 | |
| enroll share 2011 | 0.241 | | 0.759 |
| number of schools | 105 | 59 | 318 |

Estimation of Quality Effects on Enrollment, School Closings, School Openings, and Quality of Sending Schools

- Control for demographic differences
- Include fixed effects in some specifications to focus on within school or CMO variation in quality and avoid influence of unobserved differences between schools and CMOs
 - Charter school fixed effects to study reenrollment
 - CMO fixed effects to study school openings and closings

4. Estimated Effects of Charter School Quality on the Probability of Re-enrollment (N=221,956)

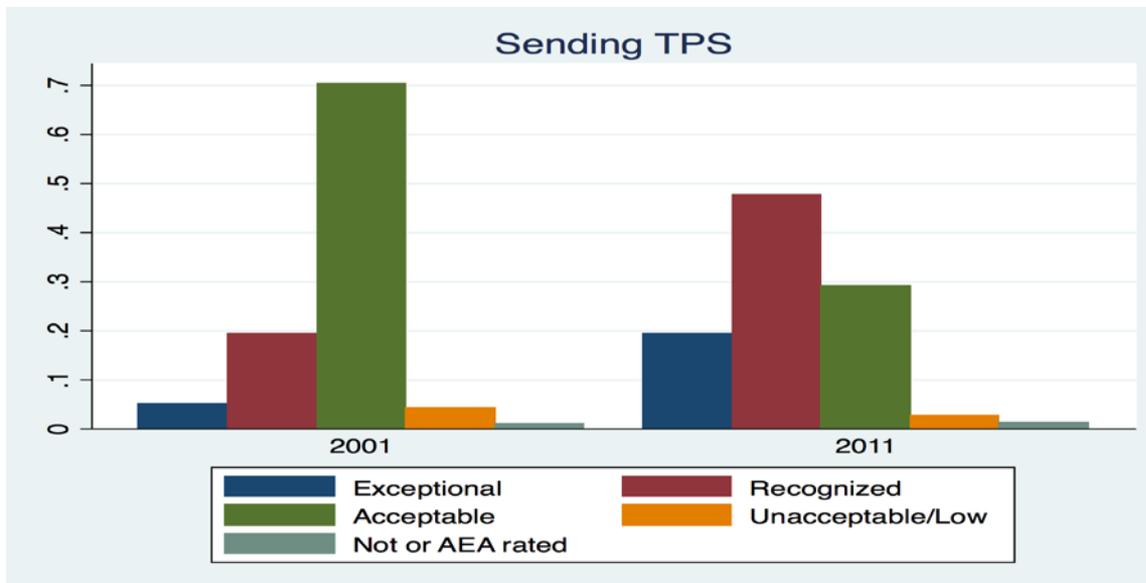
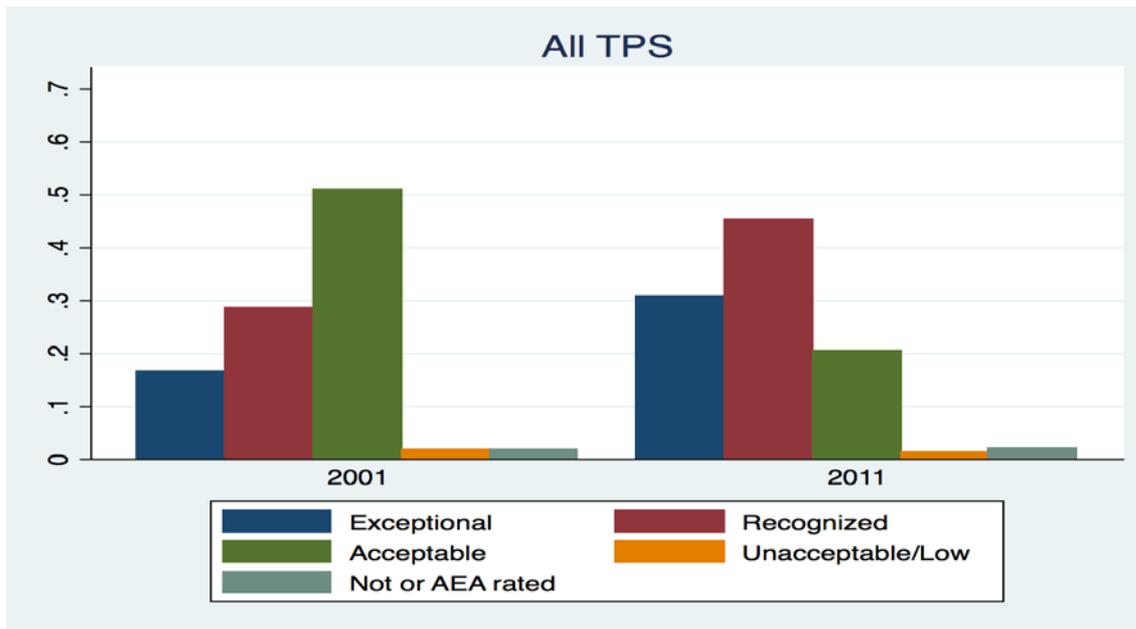
| | | |
|------------------------------|-------------------|-------------------|
| Value Added | | |
| Math | 0.163 (0.022) | 0.022 (0.010) |
| Reading | 0.155 (0.028) | 0.014 (0.009) |
| Accountability Rating | | |
| exemplary | 0.095 (0.054) | 0.003 (0.021) |
| recognized | 0.070 (0.014) | 0.014 (0.011) |
| | | |
| unacceptable | -0.085 (0.029) | -0.032 (0.016) |
| school fixed effects | no | yes |

Does sending TPS quality change with charter school quality?

- Hypothesis: If information on quality is readily available improvements in charter school quality should induce students from higher quality traditional public schools to transition into the charter school
- Alternative hypothesis is that higher quality charter schools induce larger improvements in affected traditional public schools

6. Relationship between Traditional Public School VA and Charter School VA for Students Transitioning to Charter School

| | | | | |
|-------------------------------|---------|---------|---------|---------|
| Math | 0.130 | 0.178 | 0.023 | 0.001 |
| | (0.016) | (0.022) | (0.005) | (0.002) |
| N=120,761 | | | | |
| Charter school F.E. | No | Yes | No | yes |
| Average VA over entire period | No | No | Yes | Yes |



5. Estimated Effect of CMO Average Value Added on the Change in the Number of Schools in the Subsequent Year

| Dependent Variable | | |
|--|-------------------|-------------------|
| indicator for net increase in number of schools run by CMO | 0.080 (0.019) | 0.070 (0.020) |
| indicator for net decrease in number of schools run by CMO | -0.043 (0.013) | -0.046 (0.014) |
| CMO fixed effects | no | yes |

Conclusions

- Evidence of substantial improvement in the relative VA of charter schools
 - Improvement of schools
 - Disproportionate closure of ineffective schools
 - Entrants of much higher relative quality

Market forces appear to favor higher quality schools

- Higher school or CMO quality appears to increase
 - Probability of reenrollment in charter
 - Probability a school does not close
 - Probability a CMO opens a new school
 - Average traditional public school quality for new entrants to charter schools

- Evidence as a whole is consistent with the notion that
 - the creation of a charter sector initially introduces high quality variation with no increase in average performance
 - BUT over time market forces tend to improve the distribution of school quality
 - How much is specific to the structure of the law in Texas?