ROCKETSHIP EDUCATION:
AN EXPLORATORY PUBLIC POLICY CASE STUDY

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Vladimir Gresham Ivanović

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by

Vladimir Gresham Ivanović

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SAN JOSÉ STATE UNIVERSITY

Roxana Marachi, Ph.D. (chair)
Professor, Teacher Education, San José State University

Noni Reis, Ph.D.
Professor Emerita, San José State University

Eminence Gris, Ph.D.
The Horatio Nelson Professor of Kinetics, A Drift University

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Abstract

This dissertation is an exploratory case study of the finances of the Rocketship charter school chain. Where appropriate, an educational public policy lens will be applied. Rocketship is a popular not-for-profit charter management organization and is one of the oldest in the United States. This study seeks to determine if Rocketship yields profits for investors, despite it being a non-profit entity, and if it does, how and where does it do so. In order to characterize fairly and completely Rocketship's profitability, this study analyzes publicly available documents in order to track money flowing in and out of Rocketship. Using initial and renewal charter petitions, annual budget documents, filings with the California Department of Education and with the federal government, plus data from publicly available datasets, this study derives an estimate of Rocketship's profitability. [Result #1 TBD]. [Result #2 TBD.] [Discussion TBD.] [Conclusion TBD]. These results, it is hoped, will inform local, state, and federal legislatures when they establish public policy for charter schools. *Keywords*: Rocketship Education, charter management organization, privatization, charter finances, education public policy

Acknowledgments

My debts are many.

It goes without saying that I am solely responsible for any errors or omissions in this dissertation.

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Abbreviations

ARUSD Alum Rock Unified School District
BAN Bond anticipation note
CAFR Comprehensive Annual Financial Report
CDE California Department of Education
CMO Charter school management organization
COE County Office of Education
COVID-19 Corona Virus Disease 2019
CSBA California School Boards Association
DOE U.S. Department of Education
EC Education Code of California law
EMO Education management organization
GO bond General obligation bond
LASD Los Altos School District
LCAP Local Control and Accountability Plan
LCFF Local Control Funding Formula
LEA Local education agency
SACS Standardized Account Code Structure
SARC School Accountability Report Card
SARS-CoV-2 Severe Acute Respiratory Syndrome Corona Virus #2
SCCBOE Santa Clara County Board of Education
SCCOE Santa Clara County Office of Education
SCC Santa Clara County
SEDA Stanford Educational Data Archive
TPS Traditional Public School
TRAN Tax revenue anticipation note

Introduction

If, in Harold Lasswell's words, politics is about who gets what, when, and how (Lasswell, 1936), then education is surely one of the most consequential — and fascinating — of public policy issues. At stake is the future well-being of 56.4 million students on whose behalf federal, state, and local governments spend upwards of three quarters of a trillion dollars annually. The number of stakeholders is huge: every parent and every child is a stakeholder, as are teachers, administrators, legislators, employees of fifty state departments of education, the federal Department of Education, the President of the United States, the U.S. Supreme Court, and state and local courts. Stakeholders exist throughout the United States, in states, counties, cities, towns, villages, and in almost 100 thousand schools in thousands of school districts. The COVID-19 pandemic of the last 2+ years has revealed just how important public education is to stakeholders.

Education is the arena in which parents, legislators, unions, political parties, billionaires, technologists, scholars and educators clash, all vying for influence and reward. Education is where religion, politics, free market neoliberalism, and social justice — all of them beliefs — intersect. One topic in particular has, in the last fifty years, generated a disproportionate share of discord: the privatization of public education, i.e. school choice.[1]

Formerly sleepy school board elections have attracted national interest, and with that interest, a flood of money. The 2020 Los Angeles school board election cost over $14M for just four seats and generated articles in the national press. Likewise, a November 2016 statewide proposition in Massachusetts that sought to expand charter schools was covered extensively by national newspapers with one advocacy group spending more than $15M (not including a $425,000 fine for violating campaign law). Betsy DeVos, U.S. Secretary of Education under the twice impeached President Donald Trump, drew fierce criticism from the start of her tenure, criticism which was endlessly reported on. What caused these uproars? Why was so much money spent on these and other elections? The answer is charter schools.

Schools and Charter Schools

Schools in the United States take three basic forms: the traditional public school (TPS), charter schools, and private schools. Only two states, Nebraska and North Dakota, have resisted some form of school choice; all have private schools and an extensive public school system. By definition, school choice encompasses

[1] "School choice" is an Orwellian name designed to mislead, to dress up an otherwise unpalatable reality: privatization takes something that used to be available to all and restricts it to only those who can afford to pay.

charter, private, magnet, and homeschooling, i.e. every kind of school traditional except public schools. But, because school vouchers in particular are becoming more common, school choice now increasingly refers to school vouchers in addition to charter schools (Enlow, 2022). In this dissertation, I will use school choice to refer to charter schools.

Schools, under this definition of school choice, take a number of forms: they can, like TPSs be in-person, but unlike TPSs, they can also be online (virtual), or even a blend of the two. How school choice is financed varies as well. School vouchers, education savings accounts, and tax-credit education savings accounts, tax-credit scholarships, individual tax-credits & deductions, have all been used, often augmented by tax dollars. The phrase "school choice" is also associated with 529 savings accounts, student income loans, social impact bonds, and philanthrocapitalism.

Regardless of how school choice is financed, school choice complicates what used to be a system of mostly public schools plus a few private schools that had been in place for over 150 years. This new kind of financing has raised some fundamental questions: Who benefits from this new financing? Do the children for whom education is the difference between poverty and flourishing benefit? Is education is being turned into a low-risk, profitable investment for hedge funds, private equity firms, investment banks, and the 1%?

The various forms of school choice have waxed and waned, but charter schools were present at the creation of the privatization movement in education and have continued to enroll more and more students, diverting more and more dollars out of the public school system (Lafer, 2018, p. 18; Lafer et al., 2021, p. 9). School choice has spawned an entire industry devoted to marketing school choice: academic departments and institutions, educational associations, think tanks, astroturf[2] advocacy groups, and political action committees, all of which are examples of the marketing of the privatization of public education.

According to the National Center of Education Statistics in the U.S. Department of Education, there were 7,547 elementary and secondary charter schools in the United States enrolling 3,431,230 students in 2019–20 school year (de Brey et al., 2022, Table 216.90, p.144). This represents 7.7% of the total number of elementary and secondary schools and 6.8% of the total number of students in the United States. The state with the greatest charter school presence was California which had 1,321 schools (12.7% of the total) and 674,652 students (11.0%). Within California, in the 2019–20 school year, charter schools in Santa Clara County enrolled 31,584 students (13.6% out of 231,865) (California Department of Education, n.d.).

[2]Wordnik definition: "The disguising of an orchestrated campaign as a "grass-roots" event – i.e., a spontaneous upwelling of public opinion."

These are notable patterns, and the COVID-19 pandemic has accelerated the growth of charter schools, in contrast to recent years of slowing growth. This recent growth appears to be almost completely due to the expansion of virtual charter schools (Strauss, 2021). Despite continued growth, charter schools remain controversial and have generated heated debate. Reports and studies from charter school opponents have been answered by reports and studies from charter school advocates. Both sides claim their methodology to be superior and consider the other side's fatally flawed.[3]

What the research indicates is that *some* charter schools, under *some* circumstances, for *some* students, seem to do *somewhat* better than traditional public schools. (Garcia, 2018, p.119) Charter schools are, on average, not surprisingly, just average. If charter schools are on average not better than public schools, why are they so fervently touted as the answer to the perceived ills of American public education? Why are eye-popping sums (10× the usual amount) spent supporting public school board candidates who favor charter schools? Why are charter schools still growing in both enrollment and in number? Is the profit motive is the overriding goal of charter schools, or are they instead driven by a genuine desire to radically improve the educational outcomes of children who could most benefit from a quality education? My goal in this dissertation is to offer some answers to questions like these by looking closely at the finances of a single charter school chain, Rocketship Education.

I will use the term *charter school chains* to refer both to for-profit and to non-profit organizations that manage more than one charter school since both take financial control away from the school and centralize outside of schools. Charter school chains are essentially franchise operations like McDonald's or Hertz, but in education instead of hamburgers or rental cars. For-profit charter school chains have traditionally been called *educational management organizations (EMOs)* and non-profit charter school chains *charter management organizations*, but since there is little difference between the two, I will use *charter school chains* when the distinction is unimportant.

The remainder of this chapter provides some context for why I conducted this study. The chapter A Review of the Literature discusses the voluminous literature on charter schools. The following chapter, *Research Design and Methodology*, details what data will be collected, how it will be collected, and how it will be analyzed. The chapter *Findings and Results* provides the results of analyzing that data in context of this study's research questions. The last chapter, *Discussion* considers the public policy implications of my study

[3] Jeffery Henig in *Spin Cycle: How Research is Used in Policy Debates: The Case of Charter Schools* (J. Henig, 2009) offers a fascinating look at the war of words that resulted from just one report and one newspaper article.

and its conclusions, and makes some suggestions for how current public policy should be changed to achieve some of the seven goals that the California Legislature set out in *The Charter School Act of 1992*.

What is the Purpose of this Study?

The goal of this case study is to analyze carefully and fully as possible the finances of Rocketship Education and associated entities. I chose Rocketship Education[4] to study because its popularity has led to core aspects of its model being adopted by other charter school chains such as the Caliber Public Schools or the Navigator Schools in California.

Charter schools, Rocketship included, offer themselves as better alternatives to traditional public schools. Rocketship claims that its pedagogical model of blended learning

- is more efficient than that of traditional public schools,
- offers personalized learning[5] through computer-mediated instruction, and
- offers a human connection (at least part of the time) that is similar to traditional public schools.

These are claims that can be tested in other studies by comparing individual Rocketship schools to independent charter schools and to TPSs in the same district. The Rocketship chain can be compared to other charter school management organizations, to portfolios of charter schools, as well to traditional public school districts, but such studies need to be done with care to avoid methodological errors that would reduce the validity of their conclusions.

Many studies have looked at the outcomes of charter schools and charter chains, including one specifically on Rocketship's effect on Milwaukee's public schools if proposed legislation were to have been passed. But Rocketship's finances have not been studied in detail until now.

Several themes run through this study. The first is Rocketship's relationship to the privatization movement in education. The second is how Rocketship's finances drive its need to expand. The third is how Rocketship needs continued marketing and public relations to survive.

[4] Rocketship Public Schools is the new name of Rocketship Education, but since it has been known as Rocketship Education for much longer than it has been as Rocketship Public Schools, I've chosen to retain the former name. Also, I shall use just Rocketship to mean either the charter management organization (CMO) or a generic Rocketship school, depending on context.

[5] Note that personalized learning is not the same differentiated instruction. All students follow the same path with personalized learning, albeit at different rates, instead of following different paths at different rates, as with properly implemented differentiated instruction.

Research Questions

These themes lead to the following research questions:

Research Question #1 Has Rocketship structured itself and its finances, to earn a return to investors, and if so, how?

Research Question #2 How are Rocketship's finances similar or different to those of traditional public schools?

More broadly, there are additional reasons for studying charter school finances. Are we (the states, the federal government) misallocating the money we spend on charter schools? Could we be spending our tax dollars more wisely? What did taxpayers get for these expenditures?

The Importance of This Study

This case study is the first to examine in depth the finances of a single charter school chain. Up to now, there have been studies of the finances of independent charter schools or charter school chains, but only in aggregate (i.e. all known charter school chains in the United States,[6] or a selected group of charter school chains). Other studies have looked at the effects of charter schools on segregation or on academic achievement, but again, only in aggregate. None have studied the finances of just a single charter school chain.

It is hoped that the lessons learned from this case study will be used by policy makers to strengthen charter school law in California and elsewhere in order to increase desired outcomes and to minimize unintended consequences.

Theoretical and Conceptual Frameworks

According to Grant and Osanloo (2014), creating and understanding the theoretical framework for one's dissertation is "one of the most important aspects in the research process." (p.12) They liken the theoretical framework of a dissertation to the blueprints that define a house. That framework both defines the organization and the structure of a dissertation, as well as what counts as elements and their relationships. A theoretical framework articulates "the researcher's understanding of how the research problem will best be explored, the specific direction the research will have to take, and the relationship between the different variables in the study." (Grant & Osanloo, 2014, pp. 16–17)

[6] See Miron et al. (2021) for a list of currently known charter school chains.

Further, a "conceptual framework offers a logical structure of connected concepts that help provide a picture or visual display of how ideas in a study relate to one another within the theoretical framework" (Grant & Osanloo, 2014, pp. 16–17). This dissertation uses a case study approach as its theoretical framework within a public policy framework, its conceptual framework.

A Case Study Approach as a Practical Framework

Broadly, social science research falls into one of two categories. The research may make many observations with a narrow focus, or may instead adopt a broader focus, but with a correspondingly smaller number of observations. Gerring calls these "large C" or "small C" studies, respectively (Gerring, 2017, p. xvii). Of course, the boundary between large C and small C studies is not sharply defined.

Gerring calls small C studies *case studies*. In this dissertation I look at one entity, Rocketship Education, and at only one aspect of Rocketship, its finances. But I look at its finances broadly, examining as many different kinds of financial transactions as are publicly available for the subset of Rocketship schools that are in Santa Clara County. I discuss the elements of what makes a case study a good case study in chapter *Discussion*.

McCombes (2019) says that case studies are a "detailed study of a specific subject, such as a person, group, place, event, organization, or phenomenon". They are 'good for describing, comparing, evaluating and understanding kdifferent aspects of a research problem" and are "an appropriate research design when it allows you to explore the key characteristics, meanings, and implications of the case." Two papers go into detail about using the case study approach: Crowe et al. (2011) and Rashid et al. (2019). Yin (2018) provides a detailed methodology for doing case study research well.

A case study framework for public policy research is ideal because the theory and practice of case studies is well-known and has been used both for public policy research and in public policy analysis for years. A case study framework formalizes an in-depth examination of a single topic, in this case, Rocketship's finances.

Public Policy as a Theoretical Framework

A public policy framework provides a rich set of tools and techniques with which to analyze Rocketship's finances. Three factors support using a public policy framework to guide understanding and evaluating Rocketship's finances. First, charter school finance is constrained primarily by public policies set by state legislatures, the creators of charter schools. These laws regulate taxes, grants, borrowing capacity,

and reporting requirements of charter schools and charter school chains (Aguinaldo et al., 2020), and by definition, whatever falls within the purview of legislators is public policy. Second, Brighouse et al. (2018), in *Educational goods*, provide a succinct definition of what public policy analysis is which matches the purpose of undertaking this case study. They use a values, evidence, and decision-making framework "to make judgments about how well specific policies are likely to realize valued outcomes" (Brighouse et al., 2018, p.1). Last, these three concerns — values, evidence, decision-making — are considered the key concerns by academics and researchers in the public policy field (Bueno de Mesquita, 2016; Clemons & McBeth, 2021; Fowler, 2013; Gupta, 2011). Using a public policy framework is appropriate when examining charter school finances.

The discipline of public policy sanctions a wide variety of tools and techniques when analyzing issues. Public policy has been studied for years (there are public policy departments in many universities) and it is a mature area of academic research. As in most academic fields, there are fierce debates about the merits and robustness of a particular approach compared to alternatives, but at a high level, what to do is generally agreed upon. Most identify the following five steps (or variants thereof) that are used when creating public policy:

1. Define the issues and set the agenda.
2. Formulate one or more policies that address the issues identified.
3. Evaluate those policies using tools and techniques like cost-benefit analysis, value analysis, political feasibility, game theory, and economic analysis.
4. Implement those policies by passing legislation, changing practices, or by using the courts.
5. Evaluate the effectiveness of the policy changes.

Two keys to identifying alternatives during policy formation and later when evaluating consequences are choosing or creating a model, and forecasting. Models identify what is going to be studied and their relationships, and forecasting is a prediction of the future whose consequences are (hopefully) identified in a model. Page (2018) lists 26 major models that have been used in science, business, and medicine.

This dissertation relies on two excellent guides to public policy: Fowler (2013), which offers a broad and complete treatment of public policy specifically in the field of education, and Clemons and McBeth (2021) which offers a number of well-tried tools and techniques useful in analyzing public policy. An additional comprehensive treatment of public policy can be found in Gupta (2011).

This introduction makes the case that public education is important to many stakeholders, but that there is also discord around larger issues like values, ideology, and implementation. Charter schools have been offered as way of disrupting American public education from its hide-bound, archaic, and sclerotic present, driving it, despite opposition, into a dynamic future where education is tailored to each child's real needs. Establishing whether financial gain plays a key or even a primary role in American educational reform by carefully examining Rocketship's finances is both timely and important: Rocketship is growing and has served as a model for other charter school chains.

The next chapter reviews what other researchers and scholars have said about the origins of charter schools, their history, and their ostensible goals before characterizing first the finances of all public schools in California and then the unique aspects of charter school finance. Lastly, it reviews the history of Rocketship Education because it is an exemplar of a popular charter school and has had an outsized influence on public education in Santa Clara County.

A Review of the Literature

American public education has – allegedly – been a failure, and hence, in desperate need of reform ever since the idea of free public education took hold in the early 1800's[7]. Since then, a succession of educators and reports have documented the abysmal[sic] state of American education. Prior to the Civil War, Horace Mann introduced widely copied reforms (Pulliam & Van Patten, 2007, p. 147) into a system which was not free, not open to all, and not compulsory. Those schools had hardly changed since the founding of the Boston Latin School on April 23, 1635. In the early 1900s, John Dewey, an educational leader of the Progressive Era (1896–1916) preached reform, but it really was not until the publication of *Nation at Risk* in 1983 that the modern zeal for education reform took form. Pulliam and Van Patten (2007) list 29 major education reform reports from 1982 to 2005 (p.252). That American public education needed reform was repeated constantly, mainly by conservatives, despite underwhelming evidence of its veracity and substantial evidence to the contrary. Through repetition, the need for reform has become accepted wisdom. The answer to this need was to take the government's "monopoly in education" (Milton Friedman's characterization) out of the hands of faceless bureaucrats and subject it to the rigors of free markets which would, it was asserted with scant evidence, increase efficiency, choice, and quality. Thus vouchers and charter schools were legitimized.

No amount of research, it seems, can dispel the *idée fixe* that American education was in dire straits, and further, piecemeal changes were simply not enough to make substantive changes. No matter what J. R. Henig (1994) or Berliner and Biddle (1997) or Nichols and Berliner (2007) or Glass (2008) or Berliner and Glass (2014) wrote, the idea that American education needed fundamental, pervasive reform persisted.

To be clear, it is not the case that every American school is a model for the rest of the world: systematic and persistent, pervasive inequities and injustices abound and have been powerfully written about in Kozol (1992) and again in Kozol (2005), Valenzuela (1999), Heitzeg (2009), and Roithmayr (2014). But it is also clear that those schools have been systematically underfunded for decades; their dismal performance is more likely the result of the poverty of their neighborhoods and their lack of funding than it is the other way around. For example, the California School Boards Association's (CSBA) Education Legal Alliance Adequacy Committee found that there exists a "substantial gap in funding between what K-12 education [in California] receives and what K-12 education needs even to meet the standards prescribed by the state (Bray, 2015, *iii*). B. D. Baker et al. (2018) in their aptly titled report *The Real Shame of the Nation*, develop a *National Education*

[7]Wikipedia has an excellent summary article on *Education in the United States* `https://en.wikipedia.org/wiki/Education_in_the_United_States`

Cost Model (B. D. Baker et al., 2018, p. 5) which accounted for regional cost differences as well different funding levels to show that inadequate funding is present throughout the United States. Garcia (2018) says in *School Choice* that the "existence and importance of the issues that reformers believe plague public education are based as much on tradition and reputation as they are on tangible research evidence" (Garcia, 2018, p. 54). Finally, and tellingly, grossly inadequate funding is a characteristic of communities that are racially segregated and which are not white (Darling-Hammond, 2012; Rothstein, 2017).

J. R. Henig (1994)'s book, *Rethinking school choice*, which came out a mere three years after the passage of the nation's first state charter school law in Minnesota[8] and two years after the second in California[9] lays out a key argument against charter schools. Henig says, "[T]he real danger in the market-based choice proposals is not that they might allow some students to attend privately run schools at public expense, but that *they will erode the public forums in which decisions with societal consequences can democratically be resolved*." (emphasis added) (J. R. Henig, 1994, *xiii*). Translated this means that the decisions about public education's form and content are not going to be made by parents and teachers, but by people who do not have a stake in the outcome. It's a matter of badly misaligned incentives.

But even before that, in 1982, Earl Craig, Jr. attached a minority report to *Rebuilding Education to Make It Work* which advocated for vouchers. He says in a paragraph that is as accurate today as it was in 1982:

> In conclusion, this report is part of a national movement toward privatization of public services and responsibilities. I believe this movement will have the eventual result of a complete retreat by this society from a societal responsibility for the powerless who are difficult or expensive to educate, house, protect, etc. I believe the committee and board majority when they say that they are committed to equal access and equity. They say, trust that we will do the right thing. I do trust them, I do not trust the societal momentum of which vouchers is a part. It is a very destructive wave that has caught up many good people. It scares me to death. (Citizens League, Education Alternatives Committee, 1982, p. 48)

The belief that that American schools were in crisis is simply not supported by the evidence. But the idea that American schools are in crisis has been relentlessly promoted, and sheer repetition has turned fiction turned into fact; charter schools then became an idea whose time had come. Charter schools didn't actually take off until "education reformers across party lines realized that charter school laws could be crafted in

[8] Laws of Minnesota 1991, chapter 265, article 9, section 3

[9] Education Code, Title 2, Division 4 Part 26.8, §47600 *et. seq*

ways that made it possible to open nonunion public schools, or even allow public schools to be managed by for-profit companies" (Goldstein, 2015, p. 172).

This literature review will first examine charter schools, their origins and the early research, before reviewing the types of charters which exist. Then it looks at the various models of charter schools like virtual charter schools, charters which use blended learning, and charter management organizations before taking a closer look charter schools in Santa Clara County and in Rocketship in particular. It ends with a consideration of the finances of charter schools.

A History of Charter Schools

Charter schools (privately run, but publicly financed schools) had an ugly racist origin in the post-*Brown v Board of Education* era as a method of evading the U.S. Supreme Court's mandate to educate both black and white Americans equally and not separately. Fifty years later, charter schools turned segregation academies into the preferred vehicle for privatizing public schools for profit while maintaining segregation.

The Origins of Charter Schools in Segregation

The first charter schools were not founded for educational or economic reasons. Charter schools had their origin in the aftermath of "Brown v. Board of Education". "[*Brown*] was the genesis of school choice as a public policy mechanism." (Garcia, 2018, p. 8) In the Deep South, academies sprung up as part of the massive resistance to the U.S. Supreme Court's unanimous 1954 ruling which answered the question

> Does segregation of children in public schools solely on the basis of race, even though the physical facilities and other "tangible" factors may be equal, deprive children of the minority group of equal educational opportunities? (Warren, 1954, p. 9)

with "We believe that it does." (p.9)

In order to circumvent *Brown*, white parents in eleven states formed thousands of private schools, and until the early 1970's, these segregation academies received public funds (Rooks, 2017, p. 81). These origins of charter schools have been amply documented, in Frankenberg et al. (2010), Frankenberg et al. (2011), and especially in Suitts (2019) and Suitts (2020). Alexander (2011) in *The new Jim Crow* (Alexander, 2011, p. 223) quotes Rosenberg (1991, p. 52) "The statistics from the Southern states are truly amazing. For ten years, 1954–1964, virtually *nothing happened*." [emphasis in Alexander (2011)] She goes on to say,

> Not a single black child attended an integrated public grade school in South Carolina, Alabama, or Mississippi as of the 1962–1963 school year. Across the South as a whole, a mere 1 percent of black school children were attending school with whites in 1964—a full decade after *Brown* was decided.

In the years after *Brown*, some localities went further than merely forming segregation academies. Prince Edward County in Virginia closed all of its schools for five years rather than integrate. Others closed pools, parks, zoos, and recreational facilities instead of integrating. This deliberate evasion of racial equality continued until a 1968 Supreme Court ruling put a stop to the practice of closing public facilities to avoid integrating them (Brennan, 1968).

The irony is that while charter schools started life as 100% white, they now serve intensely segregated students of color. Frankenberg et al. (2019) noted that

> Nearly three out of four students in the typical black student's charter school are also black. This indicates extremely high levels of isolation, particularly given the fact that black students comprise less than one-third of charter students. Latino isolation is also high, but not as severe as for blacks or whites across all charter schools. (p. 47)

Unfortunately, these segregation academies still exist, but instead of excluding children of color the way segregation academies did, they disproportionately target and enroll children of color. While these schools are no longer referred to as segregation academies, they make up a sizable subset of charter schools and often include the word "Academy" in their name. In Santa Clara County, for example, 11 out of 21 charter schools authorized by the county currently include "Academy" in their name (SCCOE, 2021).

Nikole Hannah-Jones, in her keynote speech at the Network for Public Education's Fourth Annual Conference, said that it has never been the case that a majority of African-Americans have attended majority white schools ("Keynote at the Network for Public Education's 4th Annual Conference," 2017). She then added ruefully, that this was quite a feat considering that African-Americans make up roughly one seventh of the population of the United States. Orfield and Frankenberg (2014) note that the percent of African-Americans in majority white schools rose from 0% in 1954 to a peak of 43.5% in 1988 before steadily declining to 23.2% in 2011. (Table 3: Percent of Black Students in Majority White Schools, 1954–2011 Orfield & Frankenberg, 2014, p. 10). Hannah-Jones also commented that American public education doesn't even live up to the Separate but Equal doctrine espoused in *Plessy v Ferguson* and overturned by *Brown v Board of Education*: Schools are still segregated and are still unequal.

Charter Schools, Free Markets and Privatization

Just a year after *Brown*, Friedman (1955) published his article "The Role of Government in Education" in *Economics and the Public Interest* (Friedman, 1955) that reframed charter schools as an economic problem in education instead as a way of evading court-ordered integration. That paper ensured that charter schools would no longer be morally tainted by their association with virulent racism, but rather would take on the honorable task of breaking up what was called a monopoly. Charters, operating in a free market[10], would allow parents to choose the best alternative from an array of competing choices. Tellingly left unspecified was exactly how the free market would ensure that the array of competing choices actually offered valuable educational alternatives rather than merely alternatives in different locations.

In 1981, Ronald Reagan ran and became President of the United States based on a platform of less government is better government. This platform included eliminating the U.S. Department of Education ("The Republican Party platform of 1980," 1980). True, eliminating the Department of Education is not the same as shutting down an entire school district the way white parents did in 1964, but the thought is there. Haney-López (2014) expertly dissects how it's possible to voice racist thoughts without actually using racial words, a practice perfected by President Ronald Reagan (Haney-López, 2014).

Now, only liberty and freedom matter, in education, as in other fields. It's school choice or bust; school choice is proffered not only as *the* panacea for all that ails America's schools, but is even touted as the morally right thing to do. With trace of irony, the twice impeached President Donald Trump framed school choice as the "civil rights issue of our time" in a garbled statement at the signing of an executive order on Safe Policing for Safe Communities:

> School choice is the civil rights statement of the year, the decade and probably beyond. Because all children have to have access to quality education. A child's zip code in America should never determine their future.
>
> (as quoted in Lennox, 2020)

Education reformers have latched on to the notion that schools need to be privatized and freed from bureaucratic control for reasons of efficiency, increased flexibility, and accountability (Garcia, 2018).This

[10] No one really wants a free market because a market completely free of regulation would have unenforceable contracts, rampant monopolies, and constant and ruinous market failures. What people really want when they use the phrase "free market" is a heavily regulated market which allows them to profit, unfettered, while restraining or excluding others.

claim is made despite educational management organizations (EMOs) themselves being high overhead, opaque bureaucracies with scant accountability.

B. Baker and Miron (2015) identified four major policy concerns with the privatization of public education:

1. A substantial share of public expenditure intended for the delivery of direct educational services to children is being extracted inadvertently or intentionally for personal or business financial gain, creating substantial inefficiencies;
2. Public assets are being unnecessarily transferred to private hands, at public expense, risking the future provision of "public" education;
3. Charter school operators are growing highly endogenous, self-serving private entities built on funds derived from lucrative management fees and rent extraction which further compromise the future provision of "public" education; and
4. Current disclosure requirements make it unlikely that any related legal violations, ethical concerns, or merely bad policies and practices are not realized until clever investigative reporting, whistleblowers or litigation brings them to light.

(p.3)

In California at least, these policy concerns have not been addressed in the six years since B. Baker and Miron (2015) wrote about them[11].

Charter schools are now just one of the many forms of *privatization*, when public functions are performed by private parties for profit. Privatization is a manifestation of the corporate takeover of the world. More than fifty years ago, Domhoff (2014) published the first of eight editions of *Who rules America?* in which he argues that corporations and the corporate elite really run the United States, and by extension, the world. Kahn and Minnich (2005) make much the same point in their book *The fox in the henhouse: How privatization threatens democracy* (Kahn & Minnich, 2005). They list "[s]chools, prisons, welfare, Social Security, water and sewer systems, buses, trains, subways, highways, waterways, sanitation systems" (p. 30) as examples of formerly government run functions that are in whole or part privatized. They could have also listed postal mail, space travel, and now every facet of education, as being wholly or partly privatized. Cohen and Mikaelian (2021) lay out in detail how privatization has infiltrated American life and the consequences of this takeover of public goods by private firms run for profit (Cohen & Mikaelian, 2021). Black in *Schoolhouse*

[11] Changes in policy to address some of these concerns have been strenuously opposed by charter school advocates. For example, the California Charter Schools Association opposed an accountability bill, *AB1316 School accountability: financial and performance audits: charter schools: contracts. (2021–2022)*, which merely sought to make charter school finances more transparent.

Burning (Black, 2020) focuses on the less tangible but arguably more important consequences of privatization of public schools, the loss of democratic control.

Privatizers make money by turning goods or services that used to be publicly available into private goods and services that must be paid for before they can be used. The canonical example of privatization is the enclosure of the commons in Britain in the 16th and 17th centuries whereby land which had previously been owned collectively by a village was now owned by an individual who charged villagers for the use of that land (Simon Fairlie, 2009). But modern privatizers have many more ways of turning a profit. They can:

- Obtain tax benefits
- Invest in other firms with public monies
- Invest in financial instruments with public monies
- Obtain a monopoly
- Engage in fraud, corruption, or outright theft
- Engage in self-dealing
- Obtain grants or loans on favorable terms
- Sell what doesn't belong to them
- Avoid paying for externalities
- Pay below market rates for goods or services
- Skew public-private partnerships to create unearned profits
- Engage in pay-for-success contracts
- Offer social impact bonds

Charter school opearators have even more options. They can inflate enrollment, charge excessive management fees, mis-characterize expenses, omit or inaccurately report financial data, fail to open a school or close one soon after receiving a grant, and sell their facilities to investors and lease them back, both at inflated prices. Many charter schools have a long history of duplicitous or fraudulent actions (In the Public Interest, 2018; Burris & Bryant, 2020; B. Baker & Miron, 2015).

School choice has been relentlessly marketed and promoted by billionaires who do not send their children to public schools.[12] The Walton family, Eli Broad, Bill Gates, the Koch brothers, the Zuckerbergs, and Laurene Jobs, are all on the list of the 500 richest people in the world. Their collective wealth exceeds half a trillion dollars, and they are busily engaged using that wealth to fix the very problems that their accumulation of wealth caused. Giridharadas (2018) whose book, *Winners Take All*: *The Elite Charade of*

[12] Ravitch (2010) lumps these billionaires together, calling them the "Billionaires Boys Club", an epithet first used in *The Death and Life of the Great American School System*.

Changing the World, says that it's a "Trying-to-Solve-the-Problem-with-the-Tools-That-Caused-It" issue (Giridharadas, 2018, p. 142).

The effects of billioniaire spending on education cannot be over emphasized. Bill Gates made $2B in grants aimed at creating smaller schools (Gates, 2009, p. 11), despite a lack of evidence that they were educationally valuable. The grants were eventually discontinued when the initiatives didn't produce the intended results. Gates was also instrumental in funding and promoting the Common Core State Standards and associated assessments whose premise was that if we only had high enough academic standards, student outcomes would improve, again without evidence that the reforms were educationally valuable.

Types of Charter Schools

Charter schools can be broadly classified along three axes:

authorizer/oversight What entity approved their charter and who will exercise oversight?

profit/non-profit Are the schools intended to generate a profit, or are they ostensibly non-profit?

in-person/blended/virtual Are their classes in-person, virtual, or a blend of the two?

Charter School Authorizers and Oversight Charter schools in California are potentially subject to a three step process to gain authorization to operate. The first step is to submit a petition to the school district in which the charter wishes to reside. This petition must contain a number of required elements, all of which are specified in Education Code §47605(c)(5)(A–O), the so-called "15 Required Elements (A-O elements)" (Aguinaldo et al., 2021, p. 89). Besides some technical details, the petition must contain a description of the charter's annual goals which must align with state priorities, for all pupils and for various subgroups; how these outcomes are to be measured; how the charter is to achieve a racial and ethnic balance similar to its district, its governance structure, and its finances. All of these elements are captured in "Charter Petition Evaluation Matrix" by FCMAT, a document intended to provide a legally sound checklist for authorizers.

If a petition contains all the required elements, then the public school district may approve the petition, possibly with additional stipulations. If the public school district denies the charter school's petition, the charter school may appeal that denial to that County's Board of Education (CBOE), and if the CBOE denies the charter school's appeal, under certain circumstances, the charter school may appeal to the State Board of Education (SBE). A denial by the SBE terminates the process, and the charter school is not permitted to open.

Public school districts (LEAs, local education agencies, in the parlance of the California Department of Education (CDE)) may authorize one several kinds of charter schools. A district may sponsor a charter school directly, in which case the LEA exercises oversight. These dependent charter schools are authorized by the local public school board and are subject to the board's jurisdiction. It also is possible for all the schools in a district to convert to charter schools, and then the public school board becomes the charter school board. The table *Attributes of Private, Charter, and Public Schools in California* below is a summary of the attributes of the types of schools in California.

Table 1
Attributes of Private, Charter, and Public Schools in California

	Private	**Charter**	**Public**
Funding	parent tuition	tax dollars	tax dollars
Governance	self-appointed	self-appointed	elected board
Duration	unlimited	time-limited	unlimited
Ed. Code	no	no	yes
Taxation Powers	none	none	limited
Facilities Bonds	no	no	yes
Facilities Grants	no	yes	no
Enrollment	limited	limited	unlimited
Unionized	rarely	rarely	often
Curriculum	completely flexible	very flexible	flexible
Standardized Testing	no	yes	yes
Accountable	no	authorizer	state & parents
Teacher Certification	no requirement	yes	yes
Teacher Pension	perhaps	perhaps	yes

Profit-Making Status Until the 2019–20 school year, charter schools in California could be run directly or indirectly by a profit-making organization. California now prohibits profit-making organizations, either a single school or a charter management organization, from submitting an initial charter school petition or a renewal.

Even though profit-making charters are banned, there are many ways of getting around this restriction. Charter operators can contract with outside firms to provide all or just some services, and those firms may be profit-making firms. Charter operators are able to lease, buy, or sell their facilities, and those transactions might generate a profit. Charter operators can sell their facilities and lease them back from the buyer. This kind of financial transaction converts an illiquid asset (buildings) into a liquid asset, cash, and

also generates a revenue stream from the rental income, all of which is ultimately paid for by taxpayers. Charter operators may also charge schools a management fee or an expansion fee. Charter operators are not restricted in the salaries they pay administrators.

However, charter school board members in California have recently become subject to the conflict-of-interest laws specified in Government Code §§1090–1099 and §§87100–87314 (Becerra & Medeiros, 2018). Generally, government officials are prohibited from benefiting financially from their positions as public servants, but it remains to be seen if these conflict-of-interest laws will prevent profiteering by school board members, administrators, or relatives of either.[13]

Type of Instruction Charter schools, unlike almost all public schools, vary in their instructional format. In-person instruction is similar to that in traditional public schools. On the other hand, virtual charter schools have no face-to-face instruction; everything is mediated by some sort of technology, typically, computers running specialized software, paid for by taxpayers. Blended instruction is a mixture of in-person and virtual instruction.

Virtual charter schools have been studied extensively by Alex Molnar, Gary Miron and others and at the National Education Policy Center, University of Colorado, Boulder since 2013. (*Virtual Schools in the U.S. 2013*, 2013; *Virtual Schools in the U.S. 2014*, 2014; *Virtual Schools in the U.S. 2015*, 2015; Miron & Gulosino, 2016; *Virtual Schools in the U.S. 2017*, 2017; *Full-Time Virtual and Blended Schools: Enrollment, Student Characteristics, and Performance*, 2018; *Virtual Schools in the U.S. 2019*, 2019; *Virtual Schools in the U.S. 2021*, 2021) Their annual reports are depressingly consistent: virtual school not run by a public school district significantly underperform public schools. Their conclusions are echoed by Woodworth et al. (2015) and Garcia (2018). Yet, despite being clearly academically inferior to public schools, the number of students attending virtual schools has risen year after year. Their pre-pandemic growth seems to be slowing, but their performance, compared to TSPs, has not measurably improved.[14] (*Virtual Schools in the U.S. 2019*, 2019, p. 11).

[13] The law is necessarily complex. Two useful guides are Chaney et al. (2010) and Kevin Ennis et al. (2016) (which run to nearly 300 pages). A more general guide to local government ethics is "Understanding the Basics of Public Service Ethics" from California's Institute for Local Government.

[14] Although *Charter Schools in Perspective: A Guide to Research* is otherwise an excellent summary of the research on charter schools, they incorrectly state (p.117) that there is little research of online or virtual charter schools. The authors must not be aware of the NEPC series on virtual charter schools. However, according to *Virtual Schools in the U.S. 2019* (2019, p. 117), there is only one study on blended charter schools.

Pre-pandemic, charter schools in California were legally deemed classroom-based (e.g. not virtual) if students spent no more than 20% of their time in front of a computer.[15] Blended charter schools, on the other hand, offer some sort of face-to-face interaction with a teacher along with online activity without face-to-face interaction. But they too offer only marginally better educational outcomes than fully virtual charter schools (*Virtual Schools in the U.S. 2019*, 2019, p. 52). Rocketship schools use a blended instructional model.

Charter Schools in the United States

Charter schools are one of several different kinds of school choice that are or have been available in the United States. Vouchers, private schools, home schooling, educational savings accounts, freedom-of-choice plans, magnet schools, and open enrollment are all forms of school choice. Home schooling accounts for less than 5% of all the students in United States. Private schools enroll about 12% of the total. Magnet school account for a few percent. Roughly, the various form of school choice, including charter schools, account for just under a quarter of all American students.

The characteristic that home schooling and private schools share is that they are agnostic about public schools. Not so for charter schools, voucher, and freedom-of-choice plans. Charter schools, voucher programs, parent trigger programs, and freedom-of-choice plans explicitly want to supplant or replace public schools (Garcia, 2018).

The first charter schools, other than segregation academies, were founded in Milwaukee, Wisconsin in 1991, followed by California starting in 1993. Conceptually, charter schools were based on an amalgam of ideas from Milton Friedman, Albert Shanker, and Ray Budde. Milton Friedman came at it from an ideological point of view couched in economic terms. Albert Shanker, in 1988, in a speech at the National Press Club, proposed that *teachers* in conjunction with *parents* be allowed to form a school *within* a school district. Shanker made no mention of competition, or free markets, or even of charter schools. Shanker's speech emphasized curriculum and learning, not governance or finance. Ray Budde first thought of charter schools in the early 1970s, but his proposal generated no interest and it was not until 1988 that he published his ideas (Budde, 1988).

[15] The California Education Code §47612.5(e)(1) doesn't mention computers, but bases its definition on students being physically at the schoolsite with a certificated teacher in charge. Under that definition, a roomful of students behind computers with a teacher in attendance would qualify as classroom-based and not virtual. California's Education Code does not recognize the blended category.

Charter Schools in California

Charter schools, in California as elsewhere in the United States, enter into a contract (the charter) with a chartering authority that specifes what they are to do and how, and in return, are exempt from the entirety of California's Education Code (with the exception of five technical provisions). The California Legislature, when it enacted the *The Charter School Act of 1992*[16] (Ed. Code §47600), spelled out its intent. The Act has been amended many times in its nearly 30 years of existence, but its intent has remained the same. Charter schools should

a) Improve pupil learning.
b) Increase learning opportunities for all pupils, with special emphasis on expanded learning experiences for pupils who are identified as academically low achieving.
c) Encourage the use of different and innovative teaching methods.
d) Create new professional opportunities for teachers, including the opportunity to be responsible for the learning program at the school site.
e) Provide parents and pupils with expanded choices in the types of educational opportunities that are available within the public school system.
f) Hold the schools established under this part accountable for meeting measurable pupil outcomes, and provide the schools with a method to change from rule-based to performance-based accountability systems.
g) Provide vigorous competition within the public school system to stimulate continual improvements in all public schools.[17]

It is important to keep these seven goals in mind because charter schools have contractually agreed to meet these goals in return for funding, independently of whatever other goals they explicitly specified in their charter. Note, in particular, that nothing has been said about profitability, and in fact, California enacted a prohibition against for-profit charter schools (Ed. Code §47604 et seq.) in 2018.

Surveys of Charter School Research

It's been about 30 years since the first charter school law was passed. In the last decade, researchers have published several surveys of the research on charter schools. The first two decades (1990–2010) were somewhat experimental and different enough that the research that came out of that period is less relevant than more recent research. The first survey of the last decade, "Beyond ideological warfare: the maturation

[16]Current California law can be accessed at `https://leginfo.legislature.ca.gov/faces/home.xhtml`. California Regulations are at `https://ccr.oal.ca.gov`. California's Education Code (Ed.Code) is at `https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=EDC&tocTitle=+Education+Code+-+EDC`

[17]This goal was added in 1998.

of research on charter schools," is by Smith et al. It is a systematic review of charter school research as it existed in 2011. Smith et al. (2011) are interested, not so much in the conclusions of the studies they looked at, but how the research was performed, how was it structured, what facets of charter schools were looked at, and what was the subject of the research in order to "separate empirical evidence from politicized conjecture" (p. 460). They reviewed a total of 323 peer-reviewed articles and research center reports and found that student and school outcomes were the most commonly studied topics. They noted many studies were unable to generalize their findings because variations in policy between states and localities. Smith et al. also noted that there was a lack of longitudinal studies which is not surprising due to policy variations. Furthermore, they found that "acceptance into a peer reviewed journal does not always ensure that qualitative research adheres to the standards of providing substantiation that findings are credible and trustworthy or that quantitative research provides evidence of the studies' validity, reliability and generalizability." (p.466) Finally, the authors noted that many studies could not draw causal connections. They conclude that more research is needed.

Four years later, Berends (2015) chose as his focus the various theories that researchers used when looking at the social organization of charter schools. In "Sociology and School Choice," Berends (2015), found, like Smith et al., that most studies concentrated on student achievement and neglected educational attainment such as high school graduation, college admission, and the granting of a degree. He notes that "the effects of charter schools on student achievement are mixed (some positive, some negative nd some neutral)" (p. 170) Berends thinks the context in which charter schools operate is important to understand the magnitude of any effects and to understand what we can expect from school reform. He identifies longer school days, a focus on achievement, behavioral policies, teacher coaching and feedback, and data-based decision-making as characteristics most often associated with effective charter schools. Lastly he looks at innovation and distinguishes between curriculum and class-room based changes, and organizational changes and finds that charter schools mostly innovate on the structural side rather than the academic side. He concludes that more research is needed.

Next, Epple et al. (2016), in *Charter schools*, did much the same as Berends, but concentrated on the technical aspects of study design (Epple et al., 2016). They observed that which the research question being answered by a particular study was often much narrower or significantly different than the research question authors set out to answer or thought they were answering. The heart of their review is an analysis

of "the methodological challenges in evaluating charter effectiveness" (p.141), and the strength and weaknesses of the various approaches that have been used. They find that researchers used one of five statistical methods: lottery-based design, fixed-effect approaches, matching procedures, ordinary least squares (OLS) regression, and instrumental variable approaches (p. 165), and they evaluate each approach. Epple et al. also discuss the much scrutinized virtual control record method of matching charter school students to public school students that came out of Stanford's Center for Research on Education Outcomes (CREDO) which was criticized on purely statistical grounds in Andrea Gabor (2015). Epple et al. concluded that more research is needed.

In 2015 and then updated in 2018, Public Agenda released a guide to charter school research for non-academics, a review of current charter school research that was written in a way that is accessible to the public. The chapter on finance focused on four questions related to how charter schools are funded, comparisons between per pupil funding between charter and traditional schools, financial effects on traditional public schools, and differential spending patterns between traditional public and charter schools (Public Agenda, 2018, pp. 78–89).

This must have been a difficult chapter to write because the 48 states with school choice programs have 48 different methods of funding public schools and charter schools. In addition, each state has likely gone through several iterations of models charter school funding if only because they have gone through several iterations of public school funding.

Their answer to their first question is to point to compilations of state funding. Their answer to the second question is yes, and in some cases, by 40% to nearly 60% less. Their take on whether it matters is hedged because studies differ in their conclusions for a variety of reasons. Not mentioned is B. D. Baker (2018) which emphatically says that money does matter, perhaps because it was published after *Charter Schools in Perspective: A Guide to Research* was. They answer their third question with an unambiguous yes. More recent research, Lafer (2018), B. D. Baker (2019), and Miron et al. (2021) validates their conclusion. Finally, they conclude that charter schools do spend their revenues differently, in part because spend more on administration than public schools do and sometimes more on facilities. The authors conclude that more research is needed.

The last of the four academic surveys, Zimmer et al. (2019), considered who was served, racial segregation effects, both academic and non-academic outcomes, management structure, and financial

effects of charter schools. Since Zimmer is a co-author of both this survey and of the previously cited Epple et al. (2016), the kinds of study designs analyzed are similar. Zimmer et al. intend to synthesize "the best research to inform the debate [about the value of charter schools]" (p. 2). They go beyond the 2016 study and survey studies on racial segregation, cream skimming[18], and student pushout[19]. They conclude that charter schools lead to greater segregation for African Americans, but not necessarily for whites or Hispanics. They find that charter schools do engage in sometimes subtle forms of cream skimming and student pushout. After summarizing three different kinds of research (fixed effects, lottery-based, and match and other regression), they turn their attention to research on non-cognitive outcomes. Their penultimate chapter looks at research on indirect effects. They conclude in their last chapter that more research is needed.

Although Garcia (2018) is not explicitly a survey of the existing literature, Garcia (2018), in Chapter 3 (pp. 91–146), contains much material on the research evidence which guides (or should guide) school choice policies. His goal is to present general trends that "reflect the weight of the evidence" (p. 93). The weight of the evidence, Garcia finds the research points to the conclusions that "school choice policies are more likely to separate, rather than integrate, students from different racial/ethnic and socioeconomic backgrounds" (pp. 159–60), "how countries and states structure school choice policies can have a profound impact on how school choice functions at a practical level" (p. 160), "low-income students face obstacles to participating in school choice plans" (p. 161), lastly, "one should expect student achievement gains under school choice plans to be modest at best and inconsistent across subjects and years" (p. 161), and "a major reason for the inability of school choice to have an impact on the academic core of schools—teaching and learning—is that school choice came of age at the same time as high-stakes accountability policies that encourage standardization" (p. 162)

Garcia makes a point that hasn't been made before: Since both public schools and charter schools are measured the same way (standardized tests), "the incentives to implement innovative pedagogical strategies are curtailed because the methods by which students are able to demonstrate their learning are uniform across all schools and restricted to the format of the tests." (p. 163) He does not conclude that more research is needed, but instead predicts that school choice in its many forms will continue to expand.

[18] selecting the best students from TPSs

[19] pushing out their lowest performing students

Research on Charter School Finances

Charter schools have been much studied, and the last decade has produced a number of reports examining charter school finances based on carefully collected evidence. For example, in 2014, Lafer (2014), now at In the Public Interest, published an analysis of a proposed law in Milwaukee, WI (Lafer, 2014) that was specifically tailored to benefit a to-be-opened Rocketship school. Lafer went on to author two other studies on charter schools, public policy, and finance: *Spending blind: the failure of policy planning in california charter school funding* and *Breaking point: The cost of charter schools for public school districts*. Carol Burris, Executive Director of the Network for Public Education, and several co-authors have produced three reports on charter schools: Burris and Pfleger (2020), Burris and Bryant (2020), and Burris and Cimarusti (2021). The National Education Policy Center is a research center based at the University of Colorado, Boulder, with over 150 scholars and academics from institutions across the U.S. whose goal is "to produce and disseminate high-quality, peer-reviewed research to inform education policy discussions" ("National Education Policy Center," n.d.). The NEPC has produced hundreds of reviews of research, policy and legislative briefs, some of which are annual surveys of charter schools. The series on profiles of EMOs have been produced annually for fifteen years; the series on virtual charter schools, for ten years.

Bruce Baker's contributions to the NEPC are especially noteworthy. He is an author or co-author of 28 reviews of reports, studies, or articles on school finance, in addition to six policy, legislative, or research briefs. Baker co-wrote with Gary Miron *The business of charter schooling: Understanding the policies that charter operators use for financial benefit.* B. Baker and Miron (2015) which introduces many of the tools and techniques for evaluating how charter schools operate for profit. It will serve as a key resource for this dissertation.

Lafer (2017)'s report, *Spending blind: the failure of policy planning in california charter school funding* is particularly scathing. He says, "Any time there is a low bar of entry for firms seeking to access government funds, one can expect to find corruption, and the charter industry is no exception." (p.18) But even absent corruption, there is ample opportunity to make lots of money. Lafer documents $2.5B of Californian taxpayer money spent over fifteen years on charter school facilities, in many cases where there is no documented educational need and where the charter school is of lower quality that nearby public schools. Lafer says, "It's as if legislators turned on a faucet of money and then just walked away." (p.12) It is saddening that in the four years since Lafer's report came out, nothing has fundamentally changed.

Rocketship

Rocketship is well-known in the charter school world. It even has been the subject of a "biography", *On the rocketship* (Whitmire, 2014).[20]. Rocketship's leaders and supporters routinely describe it as "high performing", "deserving of huge credit", "dynamic", and "nationally lauded". Rocketship schools, it is claimed, outperform some of the best public schools in the country. Rocketship "believe[s] that every student deserves the right to dream, to discover, and to develop their own unique talent". Rocketship, charter school advocates, and privatizers excel at choosing names and tag lines that are impossible to argue against.

Rocketship is one of the largest non-profit blended charter school management organization in the United States. They operate 21 schools in three states and Washington, D.C.; thirteen in California, three in both Nashville, TN and Washington, D.C., and two in Milwaukee, WI. In Santa Clara County, CA, they have eight TK-5 elementary schools authorized by the county that served 4,254 students in the 2019–20 school year plus 1240 students in two district authorized schools, for a total of 5494 students.

Founders and Supporters

Rocketship was founded by John Danner, Don Shalvey, Jennifer Andaluz, and Eric Resnick in 2007. Danner had significant teaching experience (Nashville, TN public schools) prior to Rocketship, as did Shalvey (Aspire Public Schools) and Andaluz (Downtown College Prep). Resnick, the fourth member of the founding group was a hedge fund manager who had a "a deep understanding of financial management and real estate transactions" (Danner, 2006, p. 13). The inclusion of Resnick, an expert in real estate transactions, at the very beginning of Rocketship, is interesting because one of the preferred ways for charter school investors and founders to generate profits is via real estate deals. John Danner eventually left Rocketship in 2013 to found Zeal, an online math tutoring tool, and was replaced by Preston Smith who became CEO.

Not mentioned in the first charter petition, nor in the Articles of Incorporation of Rocketship Education, the owners of the first Rocketship school, were Preston Smith, Matt Hammer, and Reed Hastings, CEO of Netflix. Smith became the first principal of the Rocketship's first school, Mateo Sheedy, and was subsequently listed as a Rocketship co-founder in the charter petition for Rocketship's second school. Hammer brought Danner and Smith together, and has relentlessly promoted charter schools through his

[20] Just two other charter schools share this distinction: Geoffrey Canada's Harlem Children's Zone (Tough, 2009) and the KIPP schools (Mathews, 2009; Horn, 2016)

advocacy non-profit, Innovate Public Schools.[21] Hastings proselytized Rocketship to the larger charter school community and when he promised Rocketship $250K for each of the first eight Rocketship schools they opened his donation caught the attention of philanthropic venture funds (Whitmire, 2014, p. 50).

Rocketship History

The first Rocketship school, Mateo Sheedy, opened in Santa Clara County in 2007. Rocketship's initial petition to the San José Unified School District was denied, so they appealed to the Santa Clara County Board of Education, which granted their petition. Over the years, Rocketship opened ten schools in Santa Clara County. Of those ten, only two were authorized by a public school district. The remainder were either countywide charters or charter schools whose petitions were denied by the local public school district, but subsequently approved by the Santa Clara County Board of Education. Table 2 *Rocketship Schools in Santa Clara County, California* lists the eleven Rocketship schools that were approved and the ten that opened. Note that only two were approved by the school district in which there were expected to locate. This lopsided result suggests that current charter school laws are tilted in favor of charter schools.

Table 2
Rocketship Schools in Santa Clara County, California

School	Type	Opened	Renewed	Notes
Mateo Sheedy	District appeal	2007	2009,2015	Denied by SJUSD, approved by SCCOE
Sí Si Puede	District appeal	2009	2011, 2017	Denied by ARUSD, approved by SCCOE
Los Sueños	Countywide	2010	2015	SCCOE countywide
Discovery Prep	Countywide	2011	2016	SCCOE countywide charter
Mosaic	District	2011	2016	Approved by ARUSD
Brilliant Minds	Countywide	2012	2017	SCCOE countywide charter
Alma Academy	Countywide	2012	2017	SCCOE countywide charter
Spark Academy	District	2013	2018	Approved by FMSD
Alum Rock	District appeal	—		Denied by ARUSD, approved by SCCOE, but withdrawn 2015
Fuerza	Countywide	2014	2018	SCCOE countywide charter
Rising Stars	District appeal	2016	2021	Denied by FMSD, approved by SCCOE

[21] https://innovateschools.org/

Rocketship Finances

Charter schools have a number of unique financial needs. They need startup funds, operating funds, and often funds to expand, funds that public schools do without. Rocketship is no exception. The *operation* of charter schools are funded by federal, state, and local governments, but funding *expansion* may or may not be funded with tax dollars, depending on the laws of a particular state. The difference between what's funded at taxpayer expense and what's not must somehow be funded with outside money. Startup money is needed for facilities, desks and chairs, teacher and administrator salaries, legal fees, curriculum materials, etc.,all of this before even one student registers. Startup facilities cost vary widely. If the charter school chooses to use public school district facilities under Proposition 39[22], their need for funds will be less. Regulations drawn up by the State Board of Education further define the phrase "sufficient to accommodate the charter school's students" (California Code of Regulations, Title 5, §11969.), then startup facilities cost might be small; if they choose not to avail themselves of Proposition 39, then startup facilities costs might involve the purchase of land and the construction of school buildings, or might just involve lease payments. But since state funding is tied to attendance, some startup funding is necessary. Thus the federal government provides grants, administered by the states, for this purpose.

Rocketship has indicated from the beginning its intent to expand. In 2009, Rocketship announced plans to open six new schools (Cook, 2009). It submitted a petition to Santa Clara County to open countywide charters and within three years had actually opened four. Like many other CMOs and EMOs, Rocketship must expand in order to increase revenue enough to be worth the while of investors. A single school's profit is not enough to satisfy investors, but by using economies of scale, a "portfolio" of charter schools might suffice. A portfolio of charter schools is a collection of schools – almost always charter schools – managed as a whole.

The idea of a portfolio of schools comes from finance where a carefully chosen portfolio of investments can have lower collective risk for a given level of return than a mere collection of individual investments. (See "Markowitz model," 2021, for an overview of the mathematics of modern portfolio theory). Hill et al. claim to have invented the term *portfolio school district* (Hill et al., 2009, p. 1) and with it a strategy to implement such a district. Just a year later, J. R. Henig et al. define portfolio strategy for schools as

[22] Proposition 39, passed by California voters in November 2000, contains a provision that requires public school districts to provide charter schools facilities "sufficient to accommodate the charter school's students" (Secretary of State, California, 2000, pp. 38—41) (Smaller Classes, Safer Schools and Financial Accountability Act, 2000)

> ...a loosely coupled conglomeration of ideas held together by the metaphor of a well-managed stock portfolio and its proponents' *unshakable belief* that the first step for successful reform must be to dismantle the bureaucratic and political institutions that have built up around the status quo. [emphasis added] (J. R. Henig et al., 2010)

Hill et al. acknowledge, in dry, understated language, that overcoming the objections and criticisms of educators and scholars to their unshakable belief will be difficult: "It is hard to imagine that a portfolio strategy could be introduced into a major city without significant conflict." Portfolio strategy is most often associated with Paul Hill and The Center for Reinventing Public Education, which is now located at the Mary Lou Fulton Teachers College at Arizona State University.

Rocketship Expansion Funding

California, startup charter school funding has waxed and waned, in part because federal funding has varied. Currently, the U.S. Department of Education provides startup funds to states under the Charter Schools Program State Educational Agency (SEA) grant program[23]. The federal charter school funding programs are listed in National Charter School Resource Center (2020). *The federal charter schools program: 2020 annual report* notes that

> At the core of the Charter Schools Program are the Grants to State Entities (SE Grants). The State Entity program offers competitive grants to states, which then make subgrants within their states to *open new charter schools and replicate or expand existing charter schools*. [emphasis added] (National Alliance for Public Charter Schools, 2020)

Funds like the New School Venture Fund[24] and the Charter School Growth Fund I & II[25] exist to fund the development and expansion of charter schools and charter management organizations. In 2007, when Rocketship Mateo Sheedy was started, Rocketship used lines of credit and loans to fund its beginning (Danner, 2006, p. 260). Now, charter schools have many more options for funding startup or operations.

Charters have at least three other sources of facilities funding: bonds, tax credits and foundation or individual contributions. Betsy DeVos, who served as Secretary of Education for Donald Trump, has donated $12.6M to Rocketship. Reed Hasting, a founder and now CEO Netflix has donated more than $2M.

[23] https://www2.ed.gov/about/offices/list/oii/csp/funding.html

[24] https://www.newschools.org/

[25] https://chartergrowthfund.org/

In addition, charter schools can avail themselves of the New Market Tax Credit if they meet certain investment criteria, and if they do, they can get back 39% of their investment in tax credits in seven years. If their investment returns, say, 20%, then combined, they are looking at nearly a 60% return on their investment. A sixty percent return is fantastic. Charter schools and charter school operators can also issue revenue bonds. Revenue bonds are guaranteed by a revenue stream instead of by property tax revenues the way general obligation bonds are. Note that both are tax-exempt. As of 2015, charter schools issued over $11B in revenue bonds according to Clark-Herrera et al. (2019).

Rocketship Expansion Difficulties

In 2014, the Santa Clara County Office of Education and Rocketship were sued by four Santa Clara County public school districts: Alum Rock, Mount Pleasant, Franklin-McKinley and Evergreen. At issue was the SCCOE's bulk authorization of twenty countywide Rocketship charter schools. Sixteen months, 17,500 pages of evidence, and an estimated $435,000 later, Rocketship, the public school districts, and Santa Clara County settled (Noguchi, 2015). As part of the settlement, Rocketship agreed to withdraw 13 of the 20 countywide charters thus far authorized. Since one of the remaining countywide charter had already been withdrawn, that left six potential charters still authorized but as of yet, unopened. So far, it appears that Rocketship has attempted to expand in locations beyond Santa Clara County: San Pablo[26] and Concord in California, Nashville in Tennessee, Milwaukee in Wisconsin, Washington, D.C. and Fort Worth in Texas.

Charter School Accountability

In California, all K–12 schools, including privately managed charter schools like Rocketship, must submit annual budgets, Comprehensive Annual Financial Reports (CAFR), and since 2014, Local Control and Accountability Plans (LCAP). LCAPs are three year plans updated in years two and three and which in detail how a school will use its funds

- to address state priorities, and
- to improve educational outcomes for foster youth, English learners, and low-income students

along with the metrics which will be used to show progress (Aguinaldo et al., 2021, pp. 66–84). These characteristics make LCAPs particularly interesting from both a financial point of view and from an educational point of view.

[26] unsuccessfully

Rocketship and Privatization

Some contend that the central purpose of charter schools is to disguise a money-making operation (Saltman, 2018). Whitmire, who now sits on the board of Rocketship Education and who in 2014 published *On the rocketship*, makes note of the role that private venture funds played in Rocketship financing (Whitmire, 2014, pp. 25, 65), and it is instructive to remember that private, for-profit venture funds exist to make money. True, they often are "double bottom line" grantors (Clark et al., 2004). As Ball (cited in Tewksbury (2016, p. 75)) makes clear

> … particularly with the added case of Rocketship, a blended learning chain of charter schools, is that the NSVF [New Schools Venture Fund] is using its clout to further blur the lines between for-profit and nonprofit educational projects and organizations, thus smoothing the groves [grooves?] for marketizing educational policy and practices. Ball (2012) makes the connections and rationalities clear: "Symbolically, philanthropy provides an 'acceptable' alternative to the state in terms of its moral legitimacy. It has also provided a kind of rehabilitation for the form of capital hat were subject of 'ill repute' in the public imagination. Strategically, philanthropy has provided a "Trojan horse" for the modernizing move that opened the 'policy door' to new actor and new ideas and sensibilities." (Ball, 2012, p. 32)

Privatizers use investment banks, hedge funds, and private equity firms as their vehicle for investing (Stowell, 2018). These investment vehicles are called *alternative investments*, in contrast to *traditional investments* like stocks and bonds. Investment banks provide the financial expertise that hedge funds and private equity firms need.

Privatization

Charter CMOs and EMOs appear to be following the lead of prison and health care privatizers. They lobby legislators intensively. They position themselves as being more efficient than the "wasteful" public sector, and they claim to to be able to do better that public schools, prisons or hospitals at a lower cost. Since charter schools have positioned themselves as being in competition with TPSs, they need to do at least as well as TPSs, or failing that, appear to do so. This calls for creative marketing, and so to that end, pro-charter advocacy organizations, some university-affiliated institutions and some think tanks have been harnessed to churn out pro-charter puff pieces that are regularly debunked.[27] Evidently even creative marketing is not

[27] The National Educational Policy Center (`https://nepc.colorado.edu`) in the School of Education at the University of Colorado (Boulder) currently has over 150 NEPC Fellows who aim "to produce and disseminate high-quality, peer-reviewed research

enough to prod the free market to supply the educational choice that charter school advocates feel is necessary, so pro-choice advocacy organizations also lobby state representatives and fund pro-charter board candidates.

Charter school marketing is extensive. Organizations like The 74 Million, a reference to the 74 million children in America, or Innovate Public Schools, an advocacy organization, produce reports, news items, briefs and what claims to be research that is slanted toward charter schools and away from public schools, teachers, unions, school boards, and anything and anyone who doesn't buy into the notion that American education is in desperate need of reform. One technique that is used is to fund media outlets to write allegedly unbiased and non-partisan articles and blog postings that promote "successes" while dismissing any harm that charter schools might cause.

These influence techniques are reminiscent of how OxyContin was marketed by the Sackler family, which is not surprising since Jonathan Sackler, now deceased, founded or funded charter advocacy groups like 50CAN, ConnCAN, Families for Excellent Schools, the Northeast Charter School Network, Education Reform Now, Partnership for Educational Justice, and The 74 Million. Dubb (2017) describes the similarities in marketing strategies used to sell oxycontin and those used to promote charter schools, where the focus of all communications was to highlight benefits while ignoring or erasing harms. While this is the standard playbook of corporate marketing, we now have public education dollars being spent on such tactics. When a national exposé published by National Public Radio (NPR) documented serious concerns about Rocketship's practices, the 74 Million immediately published a response accusing the NPR reporting to have been a "hit piece" on the charter network.

Unlike many other forms of privatization, charter schools have competition. When a local government turns over the task of supplying water to a town, for example, there is not another, public water company serving the same customers to serve as a comparison. Privatization is often an all-or-nothing proposition. Charter schools, on the other hand, can be and are often compared to the public schools in the same school district. The presence of very visible competition has an interesting consequence: charter schools view public schools as an existential threat, precisely the opposite of the cooperative, synergistic relationship that state legislators envisioned.

to inform education policy discussion" on a wide variety of topics. They often review pro-charter school publications which have been presented as academic research even though those publications have not been peer-reviewed and often have serious methodological problems which weaken or negate their conclusions.

Given that charter schools in California get the same per pupil funding as do public schools, there are a limited number of ways that charter schools can generate "excess" funds. They can lower operating costs. They can tap into state or federal facilities grants. They can collect and sell student data. They can contract out to a for-profit management company. They buy technology from business partners. In all these cases, the net result is always the same: money flows out of the public school system into private hands.

Charter schools employ fewer and less experienced teachers than public schools do. A teacher with 10 or 20 years of experience can easily command a salary that is twice that of a newly minted teacher. Rocketship has a student-to-teacher ration that's as high as 36:1 (SCCOE, 2021, pp. 23–30). The combination of fewer and less expensive teachers can reduce the cost of teacher salaries to one-third of what public schools pay for teachers. This reduction is significant because teacher salaries typically account for from one-third to three-quarters of the total expense of running a school. Charter schools that employ a blended pedagogy can further reduce the cost of salaries, with virtual schools dispensing entirely with teachers, effectively reducing the single largest component of running a school to zero.

Philanthrocapitalism

Philanthrocapitalism is the term used to describe the approach to philanthropy that prioritizes operating non-profits as businesses, i.e. making money while "doing good". The epigraph to Giridharadas's book *Winners Take All* is a quote taken from Leo Tolstoy's *Writings on Civil Disobedience and Nonviolence* which captures the absurdity of making money while "doing good":

> I sit on a man's back choking him and making him carry me, and yet assure myself and others that I am sorry for him and wish to lighten is load by all means possible … except by getting off his back.

For philanthrocapitalists, the techniques and vehicles used to extract a profit from public education can be impressive. Saltman (2018) lists the following in *The swindle of innovative educational finance* (pp.*xii–xiii*):

- social impact bonds,
- higher education lending and student income loans,
- charter school real estate, tax credit, and municipal schemes, and
- so-called philanthro-capitalist educational technology schemes.

Marachi and Carpenter (2020), Burris and Cimarusti (2021), Scott (2009), B. Baker and Miron (2015) all make the same point: education has been captured by big business, and a lot of people are making a lot of money out of it.

Research Design and Methodology

This dissertation is an *exploratory case study* using a *public policy* lens to examine the *finances* of Rocketship Education. Exploratory means that the precise data that will be collected and the precise methods used to analyze those data are not fully known in advance and will depend on this study's findings as the inquiry evolves. Case studies are in-depth examinations of single topic that are limited in space or time. Public policy is the set of rules, laws, regulations, and mores that affect the actions of an element of society. It is "the decisions, measures, programmes, strategies and courses of action adopted by the government or the legislative body" (Knill & Tosun, 2020, p. 3). Public policy mandates and constrains Rocketship Education's actions and how it structures its finances to meet its goals. Finance, as it pertains to Rocketship Education, encompasses all transactions of monetary value which involve the legal entity called Rocketship Education, its principals and executives, and other entities with which it has significant relationships. Not only are the finances of Rocketship itself included in this definition, but also those of its founders who, perhaps went on to found a company which sold software to Rocketship, and also any entities focused on real property from whom Rocketship might have bought, leased, or sold real property. Included as well are financing transactions like bonds, tax credits, loans, and grants.

The next section, *Process Overview*, describes at a very high level the four steps of inquiry this dissertation will follow. The first step in that process is to gather Rocketship financial data that will be analyzed in the last three sections of this chapter. Since understanding how schools are financed is essential to understanding Rocketship's finances, the next section, *An Overview of California School Financing*, will give an overview of school financing in California by describing the normal, common financial disclosures and reports made by all districts and schools, including charter schools. It is important to remember that budgets reflect the future, and audits reflect the past. Budgets are estimates, guesses, projections, whereas audits are a definitive, fixed record of the past.

Appendix A, *School Financing in California*, uses data from the Los Altos School District (LASD) to further illustrate what kind of information is in standard public school financial reports. The high level view is given in Figure 5, *LASD 2019–20 All Funds Summary*. That view is further broken down in five more tables. The last table is a projection of LASD's of financial numbers for the current year (2018–19), the year whose budget is being presented (2019–20), and five years into the future. The first half of the table contains the assumptions used to generate the amounts in the second half.

Once the overall financing landscape has been described, the study can start to examine actual data from Rocketship. There are three such groups of data: petitions, financial reports, and other data that does not originate from Rocketship, and each will be covered in the third section, *Charter School Financing* of this chapter.

Once all the data have been gathered, analysis can begin. These are three steps remaining and each are discussed in a section. The fourth section, *Are There Gaps or Anomalies in the Data?*, discusses how potential gaps or anomalies in the financial data might be discovered. This is where triangulation can be used to cross-check the validity of that data. Does everything add up? Are there important, missing documents? How much do these gaps or anomalies matter? Are the oddities long-standing or fleeting?

The next section, *How Does Rocketship Compare?*, will shift to how Rocketship can be compared to other demographically similar public school districts. Assuming that there are few financial oddities, this section will compare Rocketship's finances to other demographically similar public schools. Norms and context do matter if the goal is to make fair comparisons. For example, paying a superintendent an annual salary of half a million dollars may be the norm in a large urban district of 200,000 students, but wildly inappropriate for a small rural district of 1000 students. Are Rocketship Education's schools (financially) like traditional public schools? If not, how are they different?

Lastly, the sixth section, *What About the Flow of Money Through Rocketship?*, describes how this dissertation will study the flow of money in and out of Rocketship. Until now, this study has treated Rocketship's finances statically, i.e. at points in time. Just as important are the dynamic flows of money. Where do they come from, and where do they go?

Process Overview

Explaining the finances of Rocketship Education is the heart of this dissertation. Where do Rocketship's revenues come from? Where are they spending that revenue? And, critically, if Rocketship takes in more money than it spends on education, where does that money go?

To respond to these questions, the basic analyses for this dissertation will include the following:

1. Gather financial data for the Rocketship schools being studied. The initial set of data being analyzed is discussed in the section *Charter School Financing* later in this chapter.

2. Identify any gaps or anomalies in the data. This is where triangulation is useful and is discussed further in the section *Triangulation*.
3. Compare Rocketship's financial processes to public schools or districts, looking especially for differences.
4. Analyze the flow of money in and out of Rocketship. Section *What About the Flow of Money Through Rocketship?* tries to determine where Rocketship funds come from, where is that money being spent, and what public policies (or lack thereof) account for Rocketship's actions.

Analyzing the finances of Rocketship Education means, for example, determining if general obligation or revenue bonds are purchased by entities that are related Rocketship in some fashion, i.e. they are not arm's length transactions. All bonds are risky to some extent, some more than others, and purchasers of those bonds are compensated for taking on that risk by being paid interest on the amount borrowed. An immediate question comes to mind: Is the interest rate appropriate for the risk being taken on? Answering that question entails comparing Rocketship Education to other, similar borrowers. If the interest rate is higher than expected, then Rocketship Education is effectively giving some of its revenue away. Another question one might ask is, "How is Rocketship Education spending its bond proceeds?" Are those expenses in line with what other charter school chains or public school districts are spending their bond proceeds on?

Answering questions like these accurately, completely, and rigorously requires understanding not only Rocketship Education's finances, but also the finances of other schools or school districts in order to make valid comparisons. In addition, one must also dig deeply into how entities associated with Rocketship Education, might or might not benefit that association.

An Overview of California School Financing

Primary and secondary schools (grades K–12) and charter schools in California are financed with a combination of federal, state, and local monies as seen in Figure 1, *California 2019–20 K–12 Funding by Source*. Since federal funds account for only 8.01% of total funding for California's elementary school children (Legislative Analyst's Office, 2021), the federal contribution will not be considered further. Note that federal facilities grants to charter schools are not part of this 8.01%.

In June of every year, the California Legislature passes a budget for the next fiscal year (July 1 – June 30) and the Governor signs it into law. This is called the enacted budget. This version of the budget describes the

Figure 1

California 2019–20 K–12 Funding by Source

K-12 Funding by Source

(Dollars in Millions)

	2017-18 Final	2018-19 Revised	2019-20 Enacted	Change From 2018-19 Amount	Change From 2018-19 Percent
Proposition 98					
General Fund[a]	$47,194	$48,327	$49,322	$994	2.1%
Local property tax	19,644	20,645	21,921	1,276	6.2%
Subtotals	$66,839	$68,973	$71,243	$2,270	3.3%
Other State					
Other General Fund	$6,879	$9,749[b]	$10,503[b]	$754[c]	7.7%
Lottery	$1,382	$1,305	$1,304	-$1	-0.1%
Special funds	$75	$79	$228	$149	189.0%
Subtotals	$8,336	$11,133	$12,036	$903[c]	8.1%
Other Local[d]	$12,023	$12,712	$11,814	-$898	-7.1%
Federal	$7,435	$8,190	$8,284	$94	1.1%
Total	**$94,633**	**$101,008**	**$103,377**	**$2,369**	**2.3%**
Students[e]	5,960,120	5,944,769	5,933,407	-11,362	-0.2%
Proposition 98 funding per student	$11,214	$11,602	$12,007	$405	3.5%
Total funding per student	$15,878	$16,991	$17,423	$432	2.5%

[a] Consists of funding for K-12 education, preschool, and other agencies serving K-12 students.

[b] Includes $3.9 billion in additional retirement payments authorized in the 2019-20 budget package ($2.8 billion attributed to 2018-19 and $1 billion attributed to 2019-20).

[c] These year-to-year comparisons are notably affected by how the administration attributed the additional retirement payments authorized in the 2019-20 budget package across fiscal years.

[d] Includes revenue from local fees, property taxes collected in excess of the Local Control Funding Formula allotments, parcel taxes, and reimbursements.

[e] Reflects average daily attendance.

Note: Legislative Analyst's Office (2021). Public record.

intent of the Governor and the Legislature, but does not fund anything. The real work is done in what are called *trailer bills* that are passed piecemeal in the months following the adoption of the budget. During the course of the fiscal year, revisions are made to this enacted budget either because of circumstance or because of changed priorities, and at the end of the fiscal year, this is now called the revised budget. After the budget year has passed, technical adjustments are still made: Exactly how much money was spent, or what was misclassified and improperly allocated will change the revised budget numbers. This then becomes the final budget. The upshot of this is that there are actually three versions of California's education budget: the one for next year (enacted), the one for the current year (revised) and the one for the prior year (final). Normally, the enacted budget is the one that is meant when people speak of the budget.

Figure 1, *California 2019–20 K–12 Funding by Source*, shows what money California has to fund its primary and secondary educational system, i.e. grades K–12. This money is then allocated to local educational agencies (LEAs), through a formula known as the Local Control Funding Formula (LCFF). LEAs include individual charter schools, county offices of education, and local public school districts. The total amount of money for K–12 funding is allocated using a formula that was enacted by voters in 1988 (LAO, 2017): Proposition 98. Prop. 98 was originally meant to be a minimum guaranteed funding level, but has evolved into a ceiling. The Legislative Analyst's Office (LAO), which serves as an independent, non-partisan research arm of the California Legislature in much the same way that the Congressional Research Service serves the U.S. Congress, calls Prop. 98 "A Tale of Complexity" and says that "A Plethora Tests and Rules Govern the Minimum Guarantee", and that "State Has Made Myriad Adjustments to the Proposition 98 Calculations". Undoubtedly LCFF is complex, but LCFF is more transparent, has fewer rules, is more equitable, and is more responsive than the Revenue Limit System which came before it. The Revenue Limit System was also complex, but in a completely difference way; it had many separately funded programs, called categorical programs, each with their own set of requirements, rules, durations, and funding levels. Each passing year saw more programs being added to the set of categorical programs until the collection of categorical programs became so unwieldy it threatened to soak up all of a district's financial resources.

As seen in Figure 1, *California 2019–20 K–12 Funding by Source*, Proposition 98 funding accounts for nearly 70% of California's K–12 funding, the remainder coming from local property taxes and fees, and from various state sources. This money gets distributed to county offices of education which then distribute it to public school districts. Districts then distribute funds to charter schools.

Some districts are funded outside of the LCFF system. These are called "basic aid" districts, or now the preferred term, "community funded" districts. Districts whose annual property tax revenue is greater than their annual LCFF entitlement are community funded since they get only "basic aid", i.e. the constitutionally required minimum funding (the greater of $120 per pupil or $2,400 in total) from the state. For non-community funded districts, the state contribution is the difference between a district's LCFF entitlement and its share of district property taxes. In other words, the state ensures that each district gets at least its LCFF entitlement, an amount which is determined by Prop. 98.[28]

Budgets & Interim Reports

Budgets, in California, are the first of four important financial documents that schools produce during a fiscal year. For any given fiscal year, which runs from July 1 to June 30, the first financial document produced is the annual budget, a forward looking financial statement, which is approved before the end of the prior fiscal year.[29] Next are two (unaudited) interim reports, one in December, and another in March, which track how well the school or district is adhering to the approved annual budget, and finally, after a certified public accountant has audited the school or district, a comprehensive annual financial report (CAFR). State law requires that an independent auditor certify this retrospective account of the school or district's financial activity as being an accurate representation of the school's finances for the previous fiscal year.

Local Control Accountability Plans (LCAPs)

An important, recurring, non-financial report of schools is the Local Control Accountability Plan (LCAP). Although the LCAP is a three year plan, it is updated annually. The focus of an LCAP is on the programs that the school (public or charter) is going to implement, finance, and monitor that will allow it meet the goals that the state has set. These are goals that the California Department of Education sets periodically, primarily to ensure that students with the greatest needs are in fact served and are in addition to the seven goals that the Legislature set for charter schools in general. Furthermore, the school's community must be offered the opportunity to provide input to a school's LCAP and this is why a separate meeting specifically and only on the LCAP is a requirement.

[28] A detailed description of K-12 funding in California, for both public school districts and charter schools, can be found in Aguinaldo et al. (2021). It is an annual publication.

[29] Since a school's budget needs to be approved before the state budget is finalized, it is guaranteed that a school's budget will need to be modified after it has been approved.

Typically LCAP goals remain the same, but their financing may change if the metrics used to measure progress toward achieving those goals isn't showing progress. In unusual circumstances, how the goals are to be achieved might change. LCAPs are the State of California's way of ensuring that all public schools, including charter schools, meet the same set of priorities or goals. LCAPs contain specifications for how a school or district will meet all eight of the state's goals and how achievement will be measured. Apparently, some LCAPs have been on the order of 500 pages long, although the norm is much less.

For each activity or group of activities, schools indicate what goal is being met, if the goal includes increased services for disadvantaged student, how well the school or district has met that goal, and the money that has been allocated to achieving and reporting those goals. (The reality of what the Department of Education wants is an order of magnitude more complicated than this description, but it is accurate as far as it goes.)

Unlike budgets and CAFRs, LCAPs don't have to "add up", nor do they have to offer a complete financial picture, but they do have to be consistent with other data. Expenditures have to be budgeted, and the amounts in a school's budget must agree with what's in the LCAP.The charter or public school's board must approve an LCAP at the same time as it approves its annual budget.

CAFRs

A major source of financial data are the annual, independently audited, comprehensive financial statements of Rocketship Education. Comprehensive Annual Financial Reports (CAFRs) are sent to the California Department of Education (CDE) and to a charter's County Office of Education (COE) annually. They cover the previous fiscal year and are similar to annual budgets because they report the same information, perhaps in a different format. CAFRs are retrospective whereas budgets are prospective. The major difference is that CAFRs are independently audited and budgets are not.

Similarly to bond underwriters, financial auditors are liable for "omitting, misstating, or obscuring [items which] could reasonably be expected to influence decisions that the primary users make on the basis of those financial statements" (Cayamanda, 2020), and this requirement tends to increase the diligence of the auditors. However, potential liability doesn't always result in truly comprehensive financial statements; sometimes the lure of accounting fees overwhelms any misgivings, as was the case with Enron and Arthur Andersen in 2001, and apparently with Donald Trump in 2022. In general, however, fraud is thankfully rare,

in part because fraud on the part of auditors would likely result in the loss of the auditor's license, effectively ending their business.

In order to make what's being analyzed more concrete, I present in Appendix A on page 69 some examples drawn from the Los Altos School District (LASD) for the 2019–20 school year. These LASD documents make good models because they have consistently won the Meritorious Budget Award for Excellence from the Association of School Business Officials International for the quality and comprehensiveness of its financial statements for each of the last 15 years.

Charter School Financing

Charter schools are financed the same way as public schools are, from the same pot of money, using the same set of rules, except for one significant difference: how they finance facilities. Charter schools have no taxing authority unlike public schools, so they cannot pass bonds or parcel taxes. This lack of a taxing authority means that charter schools are either forced to use public school facilities under Proposition 39, or to seek grants and donations. The federal government provides significant amounts of facilities grant money and relies on the states to administer the program.

The topic of charter school finances is broader that of public schools because, in addition to all of the financial dealings of traditional public schools, almost all of which also apply to charter schools, charter schools have large and immediate needs for facilities that TPSs typically don't have. This brings into the picture bonds, loans, grants, leases, construction, and the purchase and sale of real estate. TPSs do issue several kinds of bonds, levy parcel taxes, and buy real estate on which they build schools. Public schools have usually done this years ago, but charter schools have an immediately need for facilities, and one which reoccurs every time they enroll more than a classroom of students. The need for charter schools is more pressing, more immediate, and more common than the corresponding needs of TPSs.

Once a charter has been granted the right to operate, it must file annually with the California Department of Education, just like public school district, certain forms that detail its revenues and expenses. State law also mandates an annual audit by an independent accounting firm which charter schools must file with their County Office of Education. All together, these forms should provide a complete picture of a charter school's finances, and crucially, everything should be in agreement. Charters must approve and publish at a public meeting their annual budget, and they, just like TPSs, cannot spend – at least in theory –

unbudgeted money unless the governing board approves at a public meeting any changes.

Charter Financial Documents

There are numerous publicly available sources of the same charter school financial data. These are, in roughly chronological order, petitions/renewals, budgets, LCAPs, interim financial statements, and finally, audited Comprehensive Annual Reports (CAFRs). Table 3, *Charter School Financial Documents*, summarizes the financial reports which are available about charter school finances. The first two documents are specific to charter schools and have no public school equivalent.

Table 3
Charter School Financial Documents

Name	Description	Frequency	When
Initial Petition	Comprehensive description	Once	Before opening
Renewal Petitions	Similar to initial petition	Every 5 years	Years 5, 10, 15, ...
Budget	Complete financial plan	Annually	Before June 15th
LCAP	How to meet state priorities	Tri-annually	With budget
Interim Reports	Current spending	Twice yearly	December, March
CAFR	Audited financials	Annually	In the following year

Viewed chronologically, the first financial statement from a charter school is contained in their initial petition. Although petitions are not submitted under penalty of perjury, any material change to a petition would likely be cause for a re-evaluation of the petition, something that is undesirable. Petitions are presented at the start of a charter school's life and whenever a charter needs to be renewed.

Next are budgets which are defined by four reports. First is an annual budget which defines how a charter school will spend its revenues in the following fiscal year. Along with the budget, all schools need to approve a Local Control and Accountability Plan (LCAP) that explains how a school's expenditures over a three year period will address all state priorities plus any locally developed priorities. Although the LCAP is a three year plan, it contains annual goals, the metrics that will be used to measure progress, and the expenditures associated with meeting those goals. After a budget is approved, actual spending is capture twice during a school year in the 1st and 2nd Interim Reports. The final budget-related report, issued in the following fiscal year, is the retrospective, independently audited CAFR.It is worth noting here that budgets are frequently modified during a school year, but only after they have been approved by the governing board at a public meeting.

Furthermore, schools are required to present with the 1st and 2nd Interim Reports any transfers between funds that schools use to track revenues and expenditures. For example, one might see a transfer out of the general fund into a facilities maintenance fund to pay for some facilities' repair.

Petitions & Renewals

Chronologically the first category of financial data that's publicly available is what's in a charter school's initial petition. Renewal petitions occur at five year intervals and are very similar to the initial petition. One of the required elements of any petition is a financial projection. Although no one expects a charter school (or any school for that matter) to prepare and adhere to a budget that exactly matches what's been projected, budgets are expected to be similar to actual expenditures, for some meaning of "similar".

Before a charter school is allowed to begin operation, every charter school in California is required to present to a chartering authority a petition which must contain certain required elements. The absence of one of these elements is grounds for denying the charter's petition to operate. For example, what is the intent of the charter school? How is the charter school going to measure its success or failure? What population is it targeting? And, what are its financial projections?

These petitions run anywhere from a hundred or so pages to over a thousand. They contain a wealth of data on curriculum, demographics, pedagogy, discipline, teacher recruitment, and, of course, on the charter school's finances. Only a few financial statements are needed to get a good overall picture of a school's or district's finances. These are the enacted annual budget and interim reports, the audited Comprehensive Annual Financial Report (CAFR), parts of the Local Control Accountability Plan (LCAP), and for charter schools, the financial portions of their petitions.

Since Rocketship schools are all operated by a single entity, Rocketship Education, Inc., their financial statements and those of their affiliates are rolled up into a single document, the Consolidated Financial Statements and Supplementary Information. Every school is included as are separate Launchpad Development LLC's which own the facilities that are leased to individual schools.

The primary questions that these financial data analyses are seeking to answer involves a clear mapping of the financial flows tied to Rocketship's ten schools in Santa Clara County. That mass of data needs to be organized and interpreted, and using an interpretive framework will make the analysis easier. Some examples of potential frameworks are:

- The six year forecast spreadsheet that LASD uses, an example of which is reproduced in Figure 11 *LASD 2019–20 Multi-Year Projection* on page 74. Most of the elements of a forecast are combinations of SACS[30] codes. The main drawback of using this framework is that each school would have to have its elements extracted from their SACS submissions. 'The main benefit is that these elements have been used for years and so are known to be useful in budgeting.
- A spreadsheet of the 9 high-level SACS object codes. This option is has the advantage that these sums can be calculated automatically using reports available on Annual Financial Data web page[31] maintained by the California Department of Education. These reports go back to FY2003–4. The main disadvantage is that any gaps or anomalies may not show up in the aggregate numbers.
- A third way of approaching the problem of making sense of large amounts of data is to use a model. Some possible models are
  - Bruce Baker's *National Education Cost Model* (B. D. Baker et al., 2018, p. 5)
  - the Operating Resource Flow model from B. Baker and Miron (2015, p. 16) and Figure 4
  - the resource cost model (RCM) or the education cost function (ECF) as developed by B. D. Baker (2018, pp. 188–197)
  - ratio analysis or index analysis as in B. D. Baker and Richards (2004, pp. 70–86)

Of the four models mentioned, only the last is likely to be useful in this study's analysis because that method can identify quickly what's different in a particular budget or petition. Ratio and index analysis compares the relationship between financial data elements. In addition to B. D. Baker and Richards (2004) cited above, National Forum on Education Statistics (2007, pp. 35–44) lists a dozen or so ratios and indexes that have proven useful when analyzing school finance.

Other Data and Datasets

IRS filings

There are federal forms that non-profits need to file that provide some financial data. The most relevant are the IRS Forms 990, [Tax] Return of Organization Exempt from Income Tax. (The tax returns of for-profit organizations are not public documents and their contents do not have to be disclosed; however, in order to sell stock to the public, i.e. on a stock exchange, firms are required to publish various financial documents, which like bond prospectuses, are required to be informative and complete.)

[30] The Standardized Account Code Structure (SACS) is the chart of accounts (cost centers) used by the California Department of Education. These are defined in "California School Accounting Manual: Definitions, Instructions, and Procedures." The function (activity) codes are on pp.149–151 (§325–3 *et seq.*)

[31] `https://www.cde.ca.gov/ds/fd/fd`

Bond prospectuses

Bond prospectuses are also a source of financial information. When bonds are issued, they are described in detail in a prospectus. These documents, in addition to specifying the terms (e.g. interest rate, repayment schedule, collateral) of the bond, contain information relevant to assessing the risk associated with purchasing that bond.

Bond prospectuses can be mined for data that might not appear in petitions and financial statements because bond underwriters are "potential liability for any material misrepresentations or omissions contained in a registration statement or prospectus" (Block et al., 2008). This liability, of course, is not unlimited. If bond underwriters exercise due diligence or the misrepresentation is not material, they are probably not liable. Crucially, the definitions of *material misrepresentation* and *due diligence* depended on both statute and case law, so a bond underwriter can only make a reasoned guess at their exposure to liability. The result is that bond underwriters are likely to be more diligent that is absolutely necessary.

Unlike many studies, there is not a paucity of data on Rocketship, rather there is a surfeit. The data collected so far is voluminous. The current number of pages of initial and renewal petitions runs to 7371 pages. Three bond prospectuses total over 1000 pages. And there are many financial data documents yet to obtain. For example, of the six categories of financial data listed in Table 3, only half have been collected.

The challenge for this inquiry will be to organize the data so that gaps and anomalies can be identified, interesting and valid comparisons can be made with public schools and other charter schools, and the flows of money in and out of Rocketship can be identified. One approach would be to create a common framework and recast all the financial data from each school into that common framework. But, until the data have actually been collected and analyses started, choosing one particular framework within which to work is likely to lead to work which will need to be redone using a different framework.

The raw data will be collected from

- Materials and recordings (when available) of authorizer approval meetings
- Marketing material, print and online, created by Rocketship
- Checks written, a record of money that has been paid out, if available

These documents are all in the public domain and with the exception of the last, should, if they have been filed, be available from the California Departments of Education and Finance, or from the Santa Clara County Office of Education. A record of checks written is only available from Rocketship, although

independent auditors have examined Rocketship's books and have determined that there are no material omissions or misrepresentations.

Non-financial Data Sources

A comparison of Rocketship schools with public schools will require more than just financial statements. For example, answering a question like, "Do Rocketship schools have higher administrative costs compared to nearby public schools?" requires not only financial data, but also knowledge of student demographics to ensure that a like comparison is being made. For example, one district may send its special needs children to an adjacent district that is known to serve special needs children particularly well. The sending district will spend less on administrators and the receiving district more, skewing a straight up comparison.

Vast amounts of educational data are available, unfortunately collected in different formats, in different time periods, more or less carefully. Picking a subset of this non-financial data to use and then normalizing it is a significant endeavor. Some of the following sources may be consulted depending on what is being compared or analyzed.

- Demographic data from counties, states, and the federal government
  - The County of Santa Clara (232 datasets)
  - The California Open Data Portal (2,668 datasets)
  - The United States Government (335,221 datasets)
- Data from many hundreds of studies of public education or charter schools
- National Center for Education Statistics (NCES) at the Institute for Education Sciences (IES)
- American Community Survey (U.S. Census Bureau)
- California Department of Education and the State Board of Education
- Santa Clara County, Charter Schools Department
- Stanford Educational Data Archive (SEDA)
- School Finance Indicators Database
- EdSource, Ed-Data, and other aggregators of educational data specific to California

It is likely that data from the state and county, from the Stanford Educational Data Archive, and from EdSource and Ed-Data will prove to be the most useful.Although many of these datasets are not in and of themselves financial, they will likely prove useful in calculating ratios of where Rocketship's spending differs from spending at other charter or public schools.

Indirect Profits

It is not necessarily the case that all profit be derived from Rocketship itself. Other people or entities could profit indirectly from Rocketship's activities. For example, Rocketship bought from Dreambox the software it uses in blended learning. Creating software for blended learning is not hard. In fact, there are a half-dozen or more free, open-source learning platforms that can be re-skinned (i.e. given a new look-and-feel). Some of these platforms have been around for decades and are therefore quite robust. They are also extensible, either with plugins or via an API, and at worst, the source code itself can be modified. So, the per-pupil cost of blended learning software should be low compared to bespoke software. If this is not the case, then Rocketship would be overpaying and the amount of overpayment is profit which accrues to the software vendor, not Rocketship.

Leases are another area where profits can be made. Some charter schools receive a per-pupil rent subsidy which reduces their effective net rent (gross rent - government subsidy). The profit is the difference between the (market) rent charged and the net rent. That profit is not visible because the net rent is a calculation, whereas the market rent is visible and known.

Furthermore, if the rent (paid by the charter to a third party) is actually a mortgage payment by the owner (the third party) to a bank, then the sale of of the property can result in a profit because the sale price is mostly the present value of an income stream (the gross rent) whereas the cost is the present value of the stream of net rent. I.e. the charter needs to borrow (or forgo investing) the net rent, and the interest payments represent the cost of borrowing the net rent. Since the net rent is much lower than the market rate, the owner makes a tidy profit. In addition, the risk associated with the purchase is significantly lower than usual.

Tax credit are another source of profit. The New Markets Tax Credit is a 39% tax credit, usable over seven years, available to those who make an investment in specified economically depressed neighborhoods. This tax credit is quite valuable because it lowers both the cost of investing and the investment risk.

Are There Gaps or Anomalies in the Data?

All of the sources mentioned above should be in basic agreement, i.e. the LCFF funding received by a Rocketship charter school should match what the state thinks it's sending to the school, what the school reports to the state it received and spent, what independent auditors report the school received and spent,

and what it actually spent. Further, bond prospectuses and Security Exchange Commission (SEC) filings should be in agreement with themselves and with budgets. If these figures are not in agreement, something is amiss and should be investigated.

In some fashion or another, all profit must originate from Rocketship's revenue. In the case of the sale-leaseback of facilities, for example, the rent over and above market rates constitutes profit to the property owners, and this is an operational expense ultimately paid for by tax payers. If facilities are bought with public dollars (i.e. federal grants) and subsequently sold, the net proceeds are profit that might accrue to an organization other than Rocketship. If technology is being used and the contracts are not at arm's length, then someone or some organization is making more than the usual profit. If student data is being sold by a for-profit entity that operates non-profit charter schools, that's revenue that rightfully belongs to the students or to the non-profit schools.

Determining whether there are gaps or anomalies in a charter school's financial data is time-consuming but not very complex. Reviewing the data is not difficult – usually there a no advanced algorithms to apply; basic arithmetic may be used to check if all the numbers add up.

When looking at financial statements, one should look for:

- Unusually large (or small) entries
- Unusual changes year-to-year
- Unusual ratios
- Totals which do not add up or which exceed their component parts
- Entries that are not supported by detail elsewhere
- Complex third-party transactions which do not seem to add value
- Unusually large management compensation or management fees.

There are several financial analysis models which might be applied to Rocketship. These are:

- The Beneish M-Score combines eight variables to get an indication that an entity is manipulating its earnings or assets.
- The Altman Z-Score Plus may be used to measure how financially stable an entity is.
- The F-Score which tries to identify likely material accounting misstatements.

The issue is that these scores are designed for a typical business with daily sales, order backlogs, accounts receivables, assets, common stock, etc. Perhaps they can be adapted to the business of charter school chains.

Triangulation

Another technique for determining if there are gaps or anomalies is to use triangulation. Triangulation is the use of multiple sources of data. While triangulation in the social science research often refers to the mixed methods use of quantitative and qualitative methodologies, the common definition refers to the analysis of multiple forms of corroborating evidence in the form of financial and media documentation. For example, Bhandari (2022) notes that one of the forms of triangulation is "[u]sing data from different times, spaces and people" and also that "[t]riangulation in research means using multiple datasets, methods, theories and/or investigators to address a research question. It's a research strategy that can help you enhance the validity and credibility of your findings."[32]

In the search of gaps or anomalies, one might ask questions such as:

- Are the data accessible, or even present? Charter schools are notorious for simply not filing required documents or filing horrendously late, or submitting incomplete filings. Petitions are not usually a problem because without a petition, or with a materially incomplete petition, the petition will not be granted. However, once a school is operational, late or missing filings will not bring everything to a halt. Although Rocketship was fined for failing an attendance audit, it was allowed to continue to operate.
- Have the data been fudged? There are forensic techniques (e.g. Benford's Law) that can point to suspect data (Zhu et al., 2021). There is also triangulation which involves comparing one source of data with another to see if they match. For example, charter petitions make forecasts of revenue and expenses. How accurate were those forecasts? Were the reasons given for anomalies plausible? foreseeable? reasonable? One mistake is not usually a sign that something is being covered up, but several large mistakes usually are.
- California requires that LEAs meet the numbers they previously forecast or explain why they didn't meet those numbers, and certify they can meet their financial obligations the current year, and for the next two years. If an LEA cannot certify that they did and that they can, they might receive a visit from the California Department of Education's Financial Crisis & Management Assistance Team (FCMAT), and in the extreme case be subject to a state takeover or to involuntary closure.

[32]Triangulation does not imply exactly three concepts or ideas; often, as is in this dissertation, more than three concepts, ideas, data are combined in the analysis.

After the documents and data have been collected and cleaned[33], this study will look at comparing Rocketship's financials to traditional public schools and districts, and to other charter schools and charter school chains.

Are There More Serious Problems?

Unfortunately, charter schools and charter school chains have a long history of various kinds of fraud. Lafer (2017), In the Public Interest (2018), Burris et al. (2020), and Burris and Bryant (2020), are just a few of the reports that detail fraud and waste in charter schools. Although Rocketship has engaged in some questionable activities, it has not been implicated in anything illegal.[34] But with billions of dollars allocated to charter schools for facilities in the last 15 years in California alone (Lafer, 2017, p. 4), coupled with lax or no oversight, the temptation to misappropriate funds must be strong. It is also instructive to note that Californian charter schools have fought tooth and nail to prevent any laws that would increase transparency or hold charter operators to the same conflict-of-interest standards that public schools and other government entities are held to. While the charter sector has for the most part been successful in warding off demands for accountability, the Attorney General of California issued an official ruling in 2018 stating that the Brown Act, the CPRA, and Government Code §1090 apply to charter schools as well as to other LEAs (Becerra & Medeiros, 2018).

However, it's not necessary to misappropriate funds to make money off of charter school facilities. As the report *Fraud and waste in California's charter schools* from In the Public Interest details,

> While charter schools constructed with general obligation bonds cannot be sold or used for anything other than the authorized school, schools constructed with tax-exempt conduit bonds become the private property of the charter operator. Even if the charter is revoked, neither the state nor a local school district can take control of this property. Additionally, schools constructed with private funding subsidized by New Market Tax Credits or acquired with

[33] Raw data needs to be prepared so that entries are uniform across all elements of a dataset: Missing data might have to be synthesized, units made uniform, outliers removed, etc.

[34] Rocketship has been associated with some questionable practices. Rocketship schools in Santa Clara have had ties with a virtual charter school serving special education students hundred of miles away. Rocketship has also collected pandemic-relief funds intended for businesses and not available to public schools. Rocketship has misstated their enrollment numbers.

> private funds but whose mortgage payments are reimbursed through the Charter Facilities Grant Program (known as "SB740") are typically owned without restriction.
>
> (In the Public Interest, 2018, p. 6)

Rocketship has issued just shy of $90M of tax-exempt bonds to "finance and/or refinance the acquisition, construction, expansion, remodeling, renovation, improvement, furnishing and equipping of the land and facilities" (California School Finance Authority, 2015b, 2015a, 2017b, 2017a). These conduit bonds are exactly the kind referenced in In the Public Interest (2018). The properties owned or leased are partially paid for out of public funds but are privately owned.

Red Flags

When looking at financial statements, there are a number of indicators that something might be amiss (N.Orrell, personal communication, December 23, 2021):

- Absent strong financial controls
- Loose controls on accessing banks accounts
- Absent anti-fraud statements
- Misplaced or misaligned incentives and goals
- Performance just above target multiple times
- Working on weekends
- Single person oversees an account
- Repeated contracting with a "supplier" for a fixed amount
- Hidden bank accounts
- Repeated transactions just below materiality
- Transactions not at arm's length

Analyzing Bond Financing

Bond financing can be both complicated (a hard problem, but solution methods exist) and complex (many unknowns and interrelated factors). Illustrating this are two examples of the analysis from just a single prospectus, that of Rocketship's $43M bond offering. That offering is described in the 536 pages which comprise "$42,160,000 Charter School Revenue Bonds (Rocketship Education - Obligated Group)." The $43M

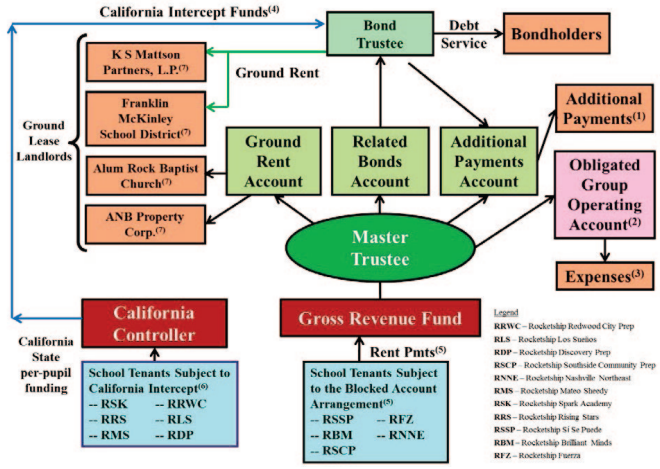
offering is complicated because there are many moving parts which are described in the offering in the well-known language of bond finance. Terms, rates, contingencies, amounts, dates, and required performance are all specified in a fashion that has withstood legal onslaught many times over. But the offering is also complex because it must also convince others that its predictions are reasonable. The most important of those predictions is that the issuer can pay the interest and repay the principal when they due.

Figure 2 *Flow of Funds: Overview* gives the overall picture and shows how rents from schools (blue) are "intercepted" by the California Controller (red) and paid directly to landlords, or paid into the Gross Revenue Fund (red) from which the Master Trustee pays lessors (orange) and bond holders and expense accounts (orange). What is not shown is the $750 per ADA (in 2017, rising to $1,211 in 2020–21) that Rocketship will apply to lease payments. Since money is fungible, the State of California is giving Rocketship between $2.4 and $3.7M depending on the year, money they would otherwise not have. This is effectively profit.

Figure 2

Flow of Funds: Overview

TABLE 1
FLOW OF FUNDS – OVERVIEW



(1) Includes trustee fees, issuer fees, arbitrage rebate fees, Capital Maintenance & Operating Fund deposits and other periodic fees related to the issuance of the Bonds.
(2) Funds in this account will be held by the Borrower, subject to provisions in the Master Indenture.
(3) Any other operating or non-operating expense of the Obligated Group (including property management fees, operating costs and other expenses), excluding interest, depreciation and amortization expense.
(4) The California State Intercept Funds related to Rocketship Redwood City, Rocketship Los Sueños and Rocketship Discovery Prep (as well as those related to Schools financed through the Series 2016 Bonds) will be paid directly to the Bond Trustee and will be used to make ground lease payments for the respective Schools, debt service payments and additional payments on the California Bonds. Intercepts with regard to Rocketship Discovery Prep will not begin until after the NMTC Loan Agreement Discharge Date.
(5) Paid through Blocked Accounts established pursuant to the Leases. See "THE LEASES – Certain Covenants of Rocketship Education under the Leases."
(6) After California State Intercept Funds for the applicable Schools are sent to the Bond Trustee, the remaining funds will go through the Blocked Account mechanism discussed in note (5) above.
(7) Franklin-McKinley School District, Alum Rock Baptist Church, ANB Property Corp. and K S Mattson Partners are the ground lessors, respectively, for Rocketship Spark Academy, Rocketship Brilliant Minds, Rocketship Fuerza, and Rocketship Redwood City Prep.

Source: Rocketship Education.

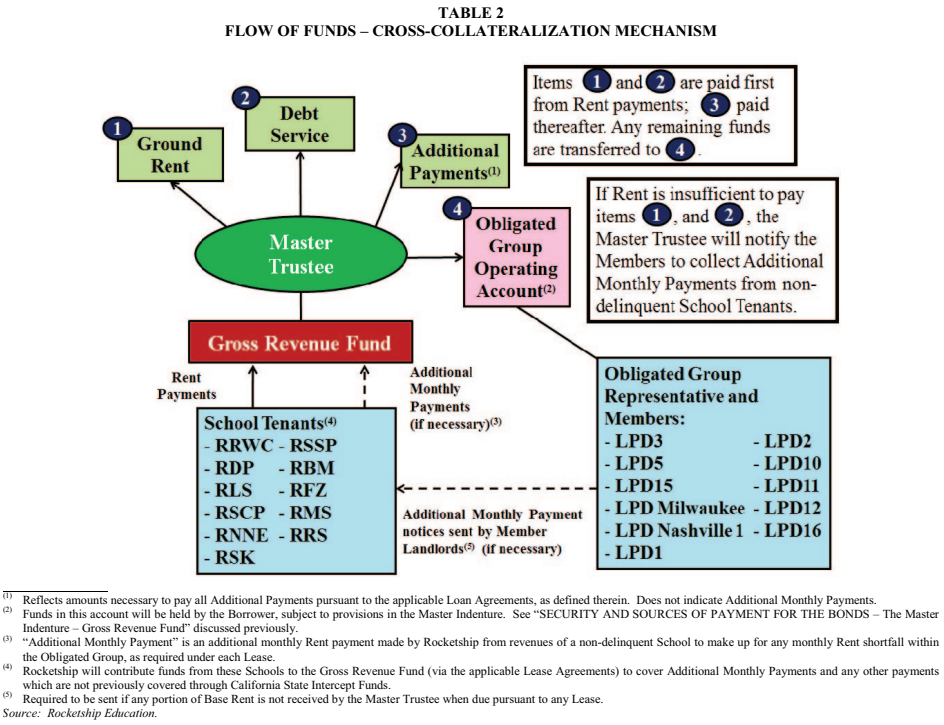
53

Note: California School Finance Authority (2017a, p. 53). In the public domain.

The next figure, Figure 3 *Flow of Funds: Cross-Collateralization* adds an important detail: how Rocketship uses its assets as collateral more than once.[35] In this case, if the payments of "School Tenants" are insufficient, the Master Trustee may require additional monthly payments from the "Obligated Group Representatives and Member" to supplement those from "School Tenants".

Figure 3

Flow of Funds: Cross-Collateralization



Note: California School Finance Authority (2017a, p. 55). In the public domain.

These two examples show the kind of analysis that is needed to characterize a bond offering.

How Does Rocketship Compare?

Demographic Data

When searching for anomalous data, Rocketship schools, individually and collectively, need to be compared to traditional public schools and districts, but only after making any needed adjustments to account for the

[35] *Cross-collateralization* means using an asset as collateral for two or more obligations, here lease and bond payments.

demographic contexts in which the schools operate. It makes no sense to compare the finances of, say, Rocketship Mateo Sheedy in San José with the finances of the Westside Union Elementary School in Los Baños, less than 65 miles away. One is a medium-sized charter school in a large urban school district, the other is a much larger public school in a rural public district. This means that demographic data must be used along with financial data to obtain valid and useful comparisons.

Raw demographic data is hard to use and impossible to visualize. In 1983, Edward Tufte self-published *The Visual Display of Quantitative Information*, which revolutionized how we present data, especially quantitative data. Since then, not only have there been five other Tufte books, but there has been an explosion of high quality books on data visualization. Currently, the most useful guide to presenting data is Schwabish's *Better Data :Visualizations: A guide for scholars, researchers, and Wontk*. In it he offers more than 50 different kinds of charts and graphs, all with the goal of helping the reader make sense of the raw data. The chapters *Findings and Results* and *Discussion* will make extensive use of these data visualization tools. The data demographic data itself will come from the following datasets that specialize in education:

- Data from the United States Department of Education, primarily the National Center for Education Statistics (NCES). These datasets (500) are searchable online using the Open Data Platform `http://nces.ed.gov/`. Of particular interest is the massive Digest of Education Statistics, produced annually from 1990 onwards. The Digest for 2019 runs to 651 pages.
- The NCES Open Data Platform can analyze over 15,000 data sets in its collection.
- The Institute of Education Sciences, which is part of the NCES, maintains DataLab, a tool to analyze a very large number datasets, some of which span years, thus enabling longitudional studies to be undertaken
- The Stanford Educational Data Archive (SEDA) is a carefully cleaned and curated dataset that includes

> … a range of detailed data on educational conditions, contexts, and outcomes in schools and school districts across the United States. It includes data at a range of institutional and geographic levels of aggregation, including schools, districts, counties, commuting zones, metropolitan areas, and states. It includes measures of academic achievement, achievement gaps, school and neighborhood racial and socioeconomic composition, school and neighborhood racial and socioeconomic segregation patterns, and other features of the schooling system. (Reardon et al., 2021)

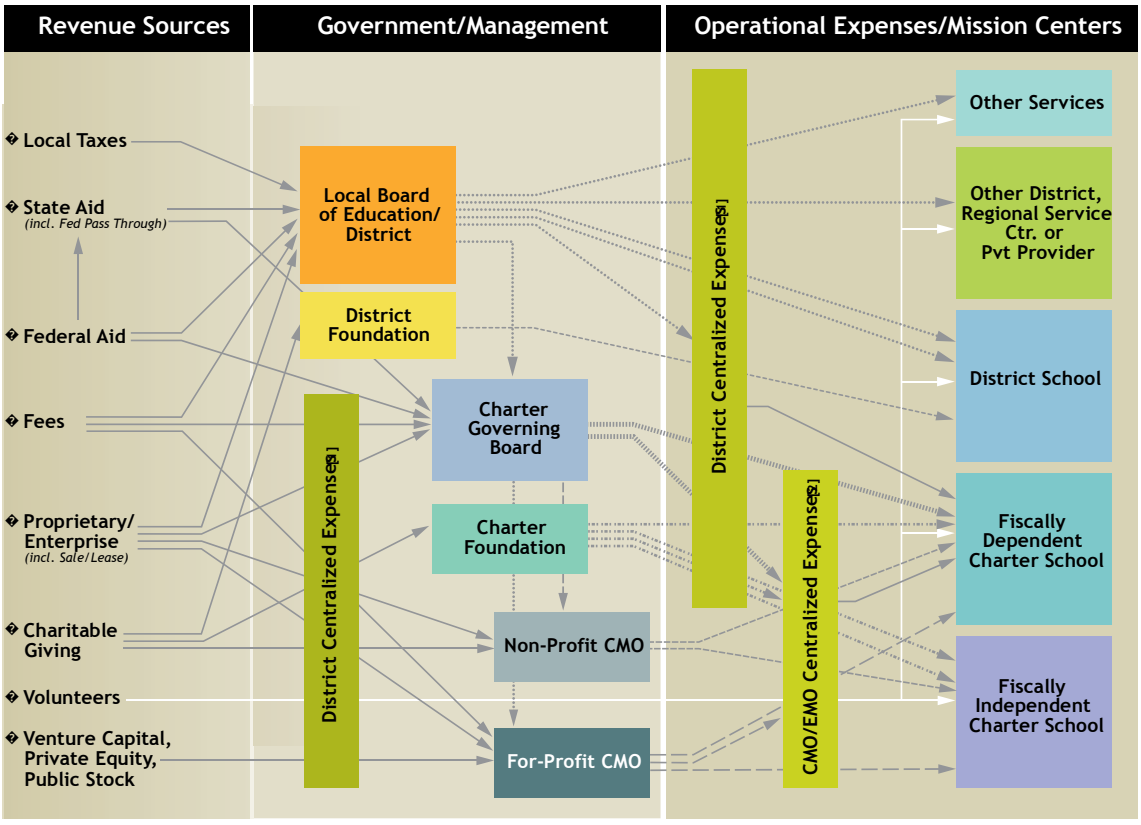
- The National Assessment of Educational Progress (NAEP), both the current results and the long-term trend results.
- The Early Childhood Longitudinal Studies (ECLS), kindergarten cohorts of 1998 & 2011.

What About the Flow of Money Through Rocketship?

Since a goal of this dissertation is to map the flow of money into and out of Rocketship, I will use diagrams similar to the one used by B. Baker and Miron (2015), which is reproduced here as Figure 4. In this example,

Figure 4

Operating Resource Flows



Note: B. Baker and Miron (2015, p. 16). Used with permission.

money flows from left to right, and there are no loops. Colors are used merely to distinguish the various blocks.

Findings and Results

This chapter discusses my findings and results.

Discussion

This chapter discusses my results and their interpretation.

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School Financing in California

Public school districts and charter schools receive funding from the state and the federal governments which most often goes into the district's or school's General Fund. A small portion of funding is restricted to particular programs, and sometimes that money goes into a specialized and restricted fund, but the norm is for the General Fund to account for the majority of transactions.

The first table to look at is the aggregate of all funds as shown in Figure 5 on the following page, *LASD 2019–20 All Funds Summary*. It is a very high-level summary of a school's or a district's budget. It's a snapshot of what the district's revenues are expected to be, roughly where that revenue is expected to come from, what the district's expenses are expected to be, and whether revenue and expenses are expected to be in balance. It is the rough equivalent of a business income statement.[36]

Because Figure 5 on the next page, *LASD 2019–20 All Funds Summary*, is a snapshot, detecting unusual changes year-to-year is not possible. Changes are detectable using Figure 6 on page 71 which compares fiscal two years. However, with just a budget summary, one can nonetheless note some interesting ratios, for example, the percentage of expenses spent on salaries and benefits. For LASD in 2021–20, this is 80.18% which is in line with what is typical of elementary school districts in California. One can calculate the state-wide average for all districts for 2019–20 using the Data Table at `www.ed-data.org/state/CA`, and that comes out to 83.71%. So, LASD spends a little less on salaries and benefits than the average elementary school district in California does.

Calculating this ratio brings up a general issue: What is an appropriate comparison group? In this particular case, the Ed-Data web site does not have county-level financial data, so the only comparison which can easily be made is at the state level. But should the state-level comparison group be all districts, or just elementary school districts? Should "basic aid" districts, also called "community-funded" districts, districts whose property tax revenues exceed their LCFF entitlement, be included or not? Again, the Data Table tab on `www.ed-data.or/state/CA` does not filter by type of district (although the Graph tab does), so, in this case, using just the Ed-Data data, our choices are forced since we cannot use state-level data.

The other common financial business report is the balance sheet, which identifies assets and liabilities. In the educational world, this is the statement of net position. Figure 6 on page 71 shows LASD's assets and liabilities at the end of the 2019–20 school year. Note that unlike a balance sheet, a statement of net position for schools (and other governmental entities) does not balance; assets are not exactly equal to liabilities.[37]

As an example of a number which stands out and is therefore worth investigating, is the large increase in Capital Assets, year over year, an increase of $132M (line 3 of 6 on page 71, *LASD YE 2020 Summary of Net*

[36] Schools group their finances by funds. Most of their revenue goes into the general fund, and most of their expenses come out of the general fund. Some transactions must by law be accounted for in different funds. The three largest are the General Fund, the Special Revenue Fund, and the Capital Projects Fund, and together they account for virtually all of the financial activity of LASD.Other schools may have a different set of funds, but all contain a General Fund that is the primary fund for their day-to-day financial activities.

[37] Business accountants achieve this seemingly low probability equality by adding a fudge factor, *owner's equity*, so that `assets = liabilities + equity` always, exactly.

Figure 5

LASD 2019–20 All Funds Summary

	General Fund	Special Revenue Funds	Capital Project Funds	Total All Governmental Funds
REVENUES				
LCFF/Revenue Limit Sources	43,551,141	300,174	-	43,851,315
Federal Revenue	1,155,694	-	-	1,155,694
Other State Revenue	3,417,200	-	-	3,417,200
Other Local Revenue	16,387,903	22,500	1,243,180	17,653,583
TOTAL REVENUES	**64,511,938**	**322,674**	**1,243,180**	**66,077,792**
EXPENDITURES				
Certificated Salaries	25,965,289	-	-	25,965,289
Classified Salaries	10,606,613	-	-	10,606,613
Employee Benefits	16,904,698	-	-	16,904,698
Books & Supplies	1,526,084	-	-	1,526,084
Services & Other Operating Expenditures	8,453,291	300,000	1,428,474	10,181,765
Capital Outlay	162,342	-	43,000	205,342
Other Outgo	341,064	-	-	341,064
TOTAL EXPENDITURES	**63,959,381**	**300,000**	**1,471,474**	**65,730,855**
Excess (Deficiency) of Revenues Over Expenditures	**552,558**	**22,674**	**(228,294)**	**346,938**
OTHER FINANCING SOURCES/USES				
Interfund Transfers In	-	-	-	-
Interfund Transfers Out	-	-	-	-
TOTAL OTHER FINANCING SOURCES/USES	**-**	**-**	**-**	**-**
NET INCREASE/(DECREASE) IN FUND BALANCE	**552,558**	**22,674**	**(228,294)**	**346,938**
BEGINNING FUND BALANCES	**107,727**	**3,603,040**	**1,745,439**	**5,456,206**
ENDING FUND BALANCES	**660,284**	**3,625,714**	**1,517,145**	**5,803,144**
	$1 dollar difference in General Fund Ending Fund Balance due to rounding error.			

Note: Kenyon (2019, p. 38). In the public domain.

Position). In "Comprehensive Annual Financial Report FY 2020," six notes appear immediately after Figure 6, and these provide an explanation for the increase: LASD purchased a property whose cost was $134.9M net of $2.7M in depreciation. This purchase shows up again in line 1 of Figure 9 on page 73 and explains the enormous 9052% increase in the value of LASD's largest asset in FY2019, land.

In addition, the "Comprehensive Annual Financial Report FY 2020" contains a section, on pp. 19–45, called *Notes to the Basic Financial Statements*. Theses notes are an integral part of the certified, audited annual statement, just as they are in audited financial reports in the business world; they cannot be omitted, and must be accurate and complete. Note 7B of Kenyon (2021a, p. 7), General Obligation (GO) Bond Anticipation Notes (BANs), explains how LASD uses a common technique to convert general obligation bonds into cash: issue BANs, backed by general obligation bonds, and payable when those GO bonds are issued.[38]

[38] One reason this makes sense is that interest rate on BANs is less than the interest rate of GO bonds, so LASD makes money by issuing BANs to pay off GO bonds. In a different situation, school districts issue tax revenue anticipation notes (TRANs) because property taxes are paid by taxpayers semi-annually and salaries are paid monthly, so districts often and predictably do not have the

Figure 6

LASD YE 2020 Summary of Net Position

Table 1: Summary of Net Position				
	June 30, 2019	June 30, 2020	Change	Percentage Change
Assets				
Current and Other Assets	$ 20,044,318	$ 65,493,755	$ 45,449,437	227%
Capital Assets	89,045,541	221,076,448	132,030,907	148%
Total Assets	$ 109,089,859	$ 286,570,203	$ 177,480,344	163%
Deferred Outflows of Resources	$ 22,094,579	$ 19,321,134	$ (2,773,445)	13%
Liabilities				
Other Liabilities	$ 2,665,639	$ 22,680,079	$ 20,014,440	751%
Long Term Liabilities	141,558,936	269,006,215	127,447,279	90%
Total Liabilities	$ 144,224,575	$ 291,686,294	$ 147,461,719	102%
Deferred Inflows of Resources	$ 5,549,865	$ 9,680,588	$ 4,130,723	74%
Net Position				
Net Investment in Capital Assets	$ 37,623,977	$ 64,225,229	$ 26,601,252	71%
Restricted	7,726,718	6,825,216	(901,502)	12%
Unrestricted	(63,940,697)	(66,525,990)	(2,585,293)	4%
Total Net Position	$ (18,590,002)	$ 4,524,455	$ 23,114,457	124%

Note: Kenyon (2021a, p. 6). Public record.

It's important to remember is that although changes in finances can be complicated, they should also be adequately explained in a transparent and complete CAFR. When the documents are incomplete or opaque is when serious concerns should be raised.

Within a CAFR are five summaries of financial tables that go one level deeper than the All Funds Summary. These are

- Summary of Net Position (Figure 6)
- Change in Net Position (Figure 7 on the next page)
- Net Costs of Services (Figure 8 on the following page)
- Capital Assets (Figure 9 on page 73)
- Long-term Liabilities (Figure 10 on page 73)

cash on hand to pay their employees. The solution is to issue TRANs backed by anticipated revenue, and are paid off when the school or district receives the funds.

Figure 7

LASD YE 2020 Change of Net Position

Table 2: Change in Net Position				
	June 30, 2019	June 30, 2020	*Change*	*Percentage Change*
Revenues				
Program Revenues:				
Charges for Services	$ -	$ 446,710	$ *446,710*	*100%*
Operating Grants and Contributions	10,052,323	7,968,769	*(2,083,554)*	*-21%*
Capital Grants and Contributions	-	23,000,000	*23,000,000*	*100%*
General Revenues:				
Property Taxes	63,216,247	65,285,688	*2,069,441*	*3%*
Grants and Entitlements - Unrestricted	3,933,401	2,511,734	*(1,421,667)*	*-36%*
Other	7,347,728	7,498,513	*150,785*	*2%*
Total Revenues	84,549,699	106,711,414	*22,161,715*	*26%*
Program Expenses				
Instruction	52,349,163	54,025,994	*1,676,831*	*3%*
Support Services:				
Instruction-related services	7,219,873	7,282,281	*62,408*	*1%*
Pupil services	4,381,022	4,334,692	*(46,330)*	*-1%*
General administration	4,658,051	4,519,337	*(138,714)*	*-3%*
Plant services	8,526,753	8,569,628	*42,875*	*1%*
Payments to other agencies	-	7,036	*7,036*	*100%*
Interest and Fiscal Charges	2,893,333	4,857,989	*1,964,656*	*68%*
Total Expenses	80,028,195	83,596,957	*3,568,762*	*4%*
Change in Net Position	4,521,504	23,114,457	*18,592,953*	*411%*
Beginning Net Position	(23,111,506)	(18,590,002)	*4,521,504*	*20%*
Ending Net Position	$ (18,590,002)	$ 4,524,455	$ *23,114,457*	*124%*

Note: Kenyon (2021a, p. 7). Public record.

Figure 8

LASD YE 2020 Net Cost of Services

Table 3: Net Cost of Services				
	Net Cost of Services for the Fiscal Year Ended June 30, 2019	Net Cost of Services for the Fiscal Year Ended June 30, 2020	*Change*	*Percentage Change*
Instruction	$ 43,345,309	$ 24,008,344	$ *(19,336,965)*	*-45%*
Support Services:				
Instruction-related services	6,608,564	6,681,271	*72,707*	*1%*
Pupil services	4,033,498	4,019,853	*(13,645)*	*0%*
General administration	4,568,746	4,444,973	*(123,773)*	*-3%*
Plant services	8,526,422	8,162,012	*(364,410)*	*-4%*
Payments to other agencies	-	7,036	*7,036*	*100%*
Interest and Fiscal Charges	2,893,333	4,857,989	*1,964,656*	*68%*
Total Expenses	$ 69,975,872	$ 52,181,478	$ *(17,794,394)*	*-25%*

Note: Kenyon (2021a, p. 9). Public record.

Figure 9

LASD YE 2020 Capital Assets

Table 5: Capital Assets				
	June 30, 2019	June 30, 2020	*Increase (Decrease)*	*Percentage Change*
Land	$ 1,488,885	$ 136,262,476	$ *134,773,591*	*9052%*
Site improvements	1,225,056	1,225,056	-	*0%*
Buildings and improvements	129,573,748	130,339,280	*765,532*	*1%*
Equipment	4,636,939	3,871,407	*(765,532)*	*-17%*
Total	136,924,628	271,698,219	*134,773,591*	*98%*
Less: Accumulated Depreciation	47,879,087	50,621,771	*2,742,684*	*6%*
Net Capital Assets	$ 89,045,541	$ 221,076,448	$ *132,030,907*	*148%*

Note: Kenyon (2021a, p. 10). Public record.

Figure 10

LASD YE 2020 Long-term Liabilities

Table 6: Long-term Liabilities				
	June 30, 2019	June 30, 2020	*Increase (Decrease)*	*Percentage Change*
Long-term Debt:				
General obligation bonds:				
Current interest bonds	$ 40,665,000	$ 95,850,000	$ *55,185,000*	*136%*
Unamortized bond premium	4,596,243	9,376,755	*4,780,512*	*104%*
Bond anticipation notes	10,000,000	79,000,000	*69,000,000*	*690%*
Lease-leaseback obligations	2,405,645	2,185,036	*(220,609)*	*-9%*
Subtotal long-term debt	57,666,888	186,411,791	*128,744,903*	*223%*
Other Long-term Liabilities:				
Net pension liabilities	64,535,048	65,113,381	*578,333*	*1%*
Net OPEB obligation	18,914,928	16,922,035	*(1,992,893)*	*-11%*
Compensated absences	442,072	559,008	*116,936*	*26%*
Subtotal other long-term liabilities	83,892,048	82,594,424	*(1,297,624)*	*-2%*
Total Long-term Liabilities	$ 141,558,936	$ 269,006,215	$ *127,447,279*	*90%*

Note: Kenyon (2021a, p. 11). Public record.

LASD rolls up its detailed financial data into a single multi-year summary, as shown in Figure 11 on the next page. In addition to purely financial data, the multi-year summary includes the key assumptions that were behind the numbers. In fact, the first section of Figure 11 is only assumptions, and it is those assumptions which drive the numbers in Sections 2–4. The value of this summary is that it captures in one table the key data needed to make budgetary decisions and thus might serve as a template for what data is important.

Figure 11

LASD 2019–20 Multi-Year Projection

	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
% Change in Prop Tax Collections	7.06%	4.00%	4.00%	4.00%	4.00%	4.00%
Enrollment	3,574	3,669	3,725	3,761	3,792	3,813
In-district students @ charter school	1043	1061	1061	1061	1061	1061
Total Enrollment, LASD + BCS	4,617	4,730	*4,786*	*4,822*	*4,853*	*4,874*
Transfer of Prop Tax to BCS	9,187,469	9,926,004	10,210,982	10,494,976	10,785,723	10,450,068
Cost-of-Living Adjustment (COLA)	0.00%	4.05%	2.98%	3.05%	3.00%	3.00%
Foundation Funding	2,400,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Parcel Tax	820	820	820	820	820	597
Class Size, K-3	19	22	22	22	22	22
Class Size, 4-6	25	25	25	25	25	25
Class Size, 7-8	25	26	26	26	26	26
Teachers, FTE	226	220	222	223	225	226
Raises (across-the-board)	2.00%	2.00%	0.00%	0.00%	0.00%	0.00%
Cost of Step/Column Movement	355,034	355,276	357,641	358,823	361,188	362,370
Step/Col (converted to % salary inc.)	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
Health Benefit rate increases	5.0%	7.5%	7.5%	7.5%	7.5%	7.5%
Health Benefits (converted to % salary inc.	0.9%	1.4%	1.4%	1.4%	1.6%	1.7%
STRS rate increases	-1.0%	0.8%	1.1%	0.0%	0.0%	0.0%
Total Comp (as % of salary)	3.2%	5.4%	3.7%	2.6%	2.8%	2.9%
LCFF Sources	47,831,288	48,960,469	50,930,778	52,994,478	55,150,308	58,023,166
Federal Sources	2,966,976	1,128,389	1,162,015	1,197,456	1,233,380	1,270,382
Other State Sources	7,460,221	3,799,074	3,848,990	3,863,445	3,874,123	3,881,107
Other Local Sources	14,942,614	15,253,502	15,910,684	15,977,729	16,049,330	13,308,736
Total Revenues	**73,201,099**	**69,141,434**	**71,852,467**	**74,033,108**	**76,307,141**	**76,483,390**
Certificated Salaries	28,473,085	26,804,421	27,081,223	27,286,386	27,563,386	27,771,946
Classified Salaries	12,146,432	11,964,000	12,072,253	12,178,439	12,284,470	12,390,750
Employee Benefits	16,708,058	17,877,672	19,185,547	19,853,541	20,542,397	21,163,633
Retiree Benefits	934,490	960,791	1,001,625	1,044,194	1,088,572	1,134,836
Books & Supplies	3,926,089	1,508,677	1,542,077	1,573,747	1,607,611	1,640,136
Contract Services	9,782,495	8,879,712	8,999,752	9,143,511	9,308,868	9,477,329
Capital Outlay	251,893	235,312	240,835	246,658	253,080	259,653
Other	8,262	8,262	8,262	8,262	8,262	8,262
Total Expenses	**72,230,804**	**68,238,847**	**70,131,574**	**71,334,737**	**72,656,646**	**73,846,545**
Net Change	**970,295**	**902,587**	**1,720,892**	**2,698,370**	**3,650,495**	**2,636,845**
Adjusted Beginning Balance	4,469,801	5,440,096	6,342,683	8,063,576	10,761,946	14,412,441
Ending Balance	5,440,096	6,342,683	8,063,576	10,761,946	14,412,441	17,049,286
Encumbrances	5,000	5,000	5,000	5,000	5,000	5,000
General Fund Reserves	5,435,096	6,337,683	8,058,576	10,756,946	14,407,441	17,044,286
Reserves, Special Reserve Funds	3,590,562	3,630,562	3,690,466	3,760,585	3,839,557	3,920,188
Total Reserves	**9,025,657**	**9,968,245**	**11,749,042**	**14,517,531**	**18,246,998**	**20,964,474**
% of Expense	**12.50%**	**14.61%**	**16.75%**	**20.35%**	**25.11%**	**28.39%**

Note: Kenyon (2021b, p. 137) Public record.

Index

Glossary

arm's length transaction A transaction, usually financial, where all parties are independent and are self-interested.

blended learning A method of teaching where both in-person instruction and virtual instruction are used.

charter school A quasi-private school that is publicly funded but privately run.

chartering authority A governmental entity that grants charter schools the authority to operate and which provides oversight. In California, a chartering authority could be a public school district, a county office of education, or the California Department of Education.

charter management organization (CMO) "A non-profit organization that operates or manages a network of charter schools (either through a contract or as the charter holder) linked by centralized support, operations, and oversight." ((CA Dept of Education), 2021)

cross-collateralization A term from bond financing which indicates that an asset has been used as collateral in two different obligations.

education management organization (EMO) "A for-profit entity that operates or manages a network of charter schools (either through a contract or as the charter holder) linked by centralized support, operations, and oversight." ((CA Dept of Education), 2021)

general obligation bonds General obligation bonds are tax-exempt bonds backed by an LEA's property revenues. State law limits bond debt to 2.5% of total assessed valuation for unified school district and 1.25% for elementary and high school districts.

public school Public schools are funded by taxes and are governed by a publicly elected Board of Trustees. Public schools accept any and all students who wish to enroll, at any time of year, regardless of race, national origin, sexual orientation, gender, religion, or citizenship.

revenue bonds Tax-exempt bonds guaranteed by a schools revenue instead of by an LEA's property tax revenue.

typical or neuro-typical children Children without special needs.

unduplicated pupils The State of California augments school district revenue on a per pupil basis for every pupil that qualifies for free or reduced price lunch, or is an English language learner, or is a foster youth, but only an unduplicated basis. Notably, children with special needs are not considered *unduplicated pupils*. Neither are homeless children.

Colophon

This dissertation was created almost entirely[39] with free, open source programs. The fonts, the text editor, the markup language, the reference manager, the operating system, and many utilities are all FOSS (free, open source software).

The body and headings were set in 12pt Alegreya. The Alegreya family of serif & sans serif typefaces was designed by Juan Pablo del Peral of Huerta Tipográfica in 2011 and immediately won praise and awards. It is a classic Renaissance typeface, a kind that was first developed in the fourteenth and fifteenth centuries in northern Italy. It comes in Regular, Medium, Bold and Black weights, all of which are available in Roman and Italic styles. There is a full set of Greek and Cyrillic letters as well as Latin small caps. All have a full set of ligatures, and Old Style, and Lining numerals. Notably, all the numeral share the same width so they line up regardless of which style is being used. (Multiplication using Roman numerals, anyone?) If any criticism can be leveled against the Alegreya superfamily, it is that they don't come in display sizes and don't contain swash characters. Otherwise it is nearly perfect.

The programs TEX & LATEX and the document class `memoir` were used to format this dissertation. LATEX was created by Leslie Lamport as a user-friendly version of one of the first digital typesetting systems, TEX . TEX is one of the masterpieces of computer programming whose author, Donald Knuth, won the Turing Award in 1974. It is a testament to Knuth's brilliance as both a mathematician and a programmer that TEX is still in use more than four decades later and arguably has no peers when it comes to typesetting complex mathematics and scientific material. It is, however, awkward to use and hard to learn. Fortunately, Leslie Lamport wrapped TEX in a macro system, LATEX , which was orders of magnitude easier to use than TEX itself.

LATEX is extraordinarily flexible because there are thousands of packages which implement specialized tasks. Currently, CTAN (the Comprehensive TeX Archive Network) has just shy of 6000 packages which can be downloaded. One of those packages implements the class `memoir` that was used here. It was written by Peter Wilson, and released in 2001. (I'm listed as a contributor to `memoir`, but in truth I really just corrected some minor typos.)

Wilson's muse is Robert Bringhurst, author of *The Elements of Typographic Style*, the definitive book on typography and book design. The package `memoir` would undoubtedly meet with Bringhurst's approval. The class `memoir` provides in one package nearly everything a person needs to produce "beautiful books" (Knuth's words). Although creating a bibliography, glossary, and an index are possible in `memoir`, specialized packages are normally used instead of the built-in ones supplied by `memoir`.

Zotero is a program to manage and maintain a bibliographic database and to provide citations on demand. It, along with the editor Emacs ("an operating system disguised as an editor") and the package `reftex`, cooperate with `memoir` to provide a complete system for writing scholarly papers, theses, reports, and dissertations.

[39] Two closed source, proprietary programs were used to manipulate PDF files. They could have been replaced with FOSS programs, but the results would not have been as high quality.

All of these program run on Linux, a version of Unix. The particular distribution being used here is called Arch Linux. It is notable that Linux, Emacs, and TEX are all programs that are decades old, have never been replaced or superseded, are constantly being improved, and are actively used. They share a common set of characteristics: their fundamental architecture is sound, extensibility is a core feature, and they and thousands of specialized packages are freely available. I predict that iPhones will barely be a faint memory before Unix, Emacs, and LATEX fade from view.