UNIVERSITY OF CALIFORNIA,
IRVINE

LOCAL AGENCIES IN GLOBAL MARKETS:
FINANCIALIZATION OF THE ECONOMY AND PUBLIC WATER GOVERNANCE

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Sociology

by

Christopher Wayne Gibson

Dissertation Committee:
Professor Nina Bandelj, Chair
Professor David A. Smith
Professor Evan Schofer
Associate Professor Valerie Olson

2020

DEDICATION

To

Grandpa Acie

Grandpa Bill

and my Nana, Inocencia

my elders who departed us recently but left enduring legacies

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

It is impossible to overstate how much I have benefitted from my academic community and mentors at UC Irvine (UCI) and beyond. First off, I am extremely grateful to The John Randolph Haynes and Dora Haynes Foundation for supporting my dissertation work with the 2019 Haynes Lindley Doctoral Dissertation Fellowship. Their support of scholars contributes immensely to creating more equitable, healthy, and sustainable futures in Los Angeles and the surrounding areas.

I appreciate everyone in the Department of Sociology for maintaining a collaborative spirit with their openness and approachability. I know I benefited from countless interactions that go unmentioned here, but I'll attempt to highlight a few.

I must express enormous appreciation to Nina Bandelj for serving as my dissertation chair and for advising me for 6 years as I progressed through the PhD program. Her mentorship was vital to my intellectual development as a scholar of sociology and my professional preparation as an academic. Thank you for being a dependable advocate on my behalf, for providing essential opportunities for my growth, and for pushing me in ways that consistently enhanced the quality of my work.

Additionally, I am also deeply grateful for the advice and mentorship of David A. Smith. Thank you for being on my dissertation committee and for always pushing me to write clearer and to make connections I had not considered. Additionally, thank you for encouraging me to come to UCI when I reached out to you during the course of applying to PhD programs.

Thank you to Evan Schofer for being on my dissertation committee, for being a reliable source of methodological and conceptual advice, and for running the Irvine Comparative Sociology Workshop. Thank you to Dave Snow for being on my dissertation proposal committee and sharing your wealth of insight on effective ethnographic research. I hope you're enjoying retirement!

Thank you to Charles Ragin and Katie Faust for teaching me statistics and being patient with those of us who were quantitatively inexperienced at the onset but who eventually came to thrive under your guidance. Extra thanks for Charles Ragin, along with Edwin Amenta, for the tremendous seminar on comparative historical research methods. The term paper I wrote for this class was my first formal exploration in studying water management as a sociological topic. And thanks to you two, I will always return to the question, "What is this a case of?" Thank you to Rocío Rosales for teaching a stellar ethnographic methods class and to Francesca Polletta for teaching an excellent interview methods course. The discussions in these methods seminars were essential for sharpening my ability to apply my sociological imagination in the process of working on this dissertation. And, thank you to Valerie Olson for crossing departments and offering excellent advice on studying the social aspects of water management.

I also thank Matt Huffman for being a great and reliable department chair and for leading a fantastic seminar on inequality. I am also extremely grateful for the efforts of Ekua Arhin, Maryann Zovak-Wieder, and Alysha Brianna Casado, all of whom dependably kept the department moving forward. Also, thank you to John Sommerhauser, who made navigating the institutional bureaucracy and filing paperwork with the mostly smooth and pleasant. I hope you're enjoying retirement too! And a heartfelt thank you to Gregory Gallardo, Mario Nuñez, and everyone else involved in maintaining the facilities, cleaning up after everyone else has gone home, preparing food for the UCI community, and performing the essential services that rarely receive their due recognition.

I also thank UCI's School of Social Sciences and the Department of Sociology for funding my work at various times during my graduate tenure. Additionally, the Center for Organizational Research (COR) provided funding that supported this project two times, including a summer grant that allowed me to begin preliminary, exploratory research on the topic of water governance when this project was barely beyond a few jottings in a notebook. I also thank the Center for Global Peace and Conflict Studies for summer grant funding that contributed to my early research as a PhD student, which paved the way for me to develop the training and insight necessary to take on this dissertation.

I am also grateful to a number of elements of the UCI campus community beyond the social sciences as well. My career path benefitted tremendously from UCI's Division of Teaching Excellence and Innovation, especially from the Pedagogical Fellowship program and the dedication and efforts of Danny Mann. And I would also like to thank Water UCI and David Feldman for consistently providing thought-provoking programming and making UCI a hub for discussions on the management of water resources.

I would also like to extend a huge amount of gratitude to my 2014 PhD cohort and to the friends and colleagues who progressed through the years at UCI alongside me. I appreciate every single one of you for all the study sessions, workshops, coffee chats, celebratory drinks, and many other good times.

I would be remiss to not also mention the water directors and the staff members at water districts for welcoming me to observe public governance in practice and especially to those who generously gave me a moment of time for interviews and to help me learn how water supply management unfolds.

And last, but definitely not least, thank you to my family for always supporting whatever crazy ambition sparks my next endeavor. Thank you to my partner, Joy, for joining me in a state-sanctioned, institutional partnership between co-committed equals and for always taking the time to read my rough drafts. Thank you to my parents for teaching me, through example, the importance of determination and hard work. I dedicate this dissertation, as a product of 6 years of my labor, to the memories of my recently departed grandparents. Nana, Grandpa Bill, and Grandpa Acie, thank you for the inspiration and life lessons. This one is for you.

VITAE

Christopher W. Gibson

Department of Sociology
University of California, Irvine
Irvine, CA

2005 A.A., General Education Transfer, Folsom Lake College

2007 B.A., English, California State University, Channel Islands

2008 Clinton Foundation & Orfalea Foundation Global Studies Fellowship

2008 Critical Language Scholarship, US Department of State

2009 M.A., Global and International Studies, University of California, Santa Barbara

2009 Critical Language Scholarship, US Department of State

2015 Center for Global Peace and Conflict Studies Summer Research Grant

2015 Clifford C. Clogg Scholarship, ICPSR Summer Program, University of Michigan

2016 Center for Global Peace and Conflict Studies Summer Research Grant

2017 M.A., Sociology, University of California, Irvine

2017 Center for Organizational Research Summer Research Grant

2017 Pedagogical Fellowship, Division of Teaching Excellence and Innovation

2019 Outstanding Paper in International Relations, UCI School of Social Sciences

2019 Center for Organizational Research Summer Research Grant

2019 Haynes Lindley Doctoral Dissertation Fellowship, Haynes Foundation

2020 Ph.D., Sociology, University of California, Irvine

ABSTRACT OF THE DISSERTATION

Local Agencies in Global Markets:

Financialization of the Economy and Public Water Governance

by

Christopher W. Gibson

Doctor of Philosophy in Sociology

University of California, Irvine, 2020

Professor Nina Bandelj, Chair

This dissertation examines water supply management in the arid American West, focusing on water suppliers in Southern California, and asks, how does the growing reach of financial markets into varied domains of political institutions and social life—a process known as financialization—impact public governance of natural resources? Water utilities are part of an expansive network of hydrological infrastructure and municipal organizations, which undergirds urban growth and economic development but also interferes with natural ecologies and reshapes socio-environmental relations. Additionally, water officials manage financial assets worth billions of dollars and issue billions in municipal debt. To unpack the relationship between the macroeconomic phenomenon of financialization and meso-level outcomes for municipalities and environmental governance, this dissertation presents three empirical studies. Using quantitative and qualitative archival data on the largest provider of drinking water in the nation, Chapter 2 examines financial investing by water officials, finding that, following the period of financial

deregulation in the 1980's, public money became deeply entangled in financial markets and that investments in such markets are increasingly used as a source of revenue for public agencies. Chapter 3, using archival data, investigates how debt accumulation affects water districts, finding a drastic increase of revenue-backed debt as the primary source of funding for water agencies and a corresponding decline of tax-backed municipal debt. As a result, financial gatekeepers, especially credit rating agencies, push finance-oriented objectives on water managers that include commodifying water to maximize revenue, avoiding expenditures, and flouting climatological realities of scarcity. Chapter 4, using data from interviews and participant-observations with water managers, analyzes how they navigate overlapping and conflicting policy domains, like legal and environmental domains of activity, finding that financialized institutional logics are prominent drivers of action across all policy domains, even the non-financial ones, like those oriented on environmental and legal matters. Ultimately, this dissertation shows that contemporary public governance is dependent upon and shaped by the interests of private capital, which are often at odds with environmental and social objectives. Theoretically, this dissertation interrogates the financialization of natural resources to identify *positive* and *negative financial feedbacks*, whereby negative feedbacks result in the *financial pathology of institutions*, a phenomenon in which public governance organizations are systematically drawn away from their substantive charges (such as environmental stewardship) in pursuit of financial objectives in a cyclical, self-reinforcing process. As such, this dissertation advances an economic sociology of the environment and contributes to understanding how financialization affects public governance.

CHAPTER 1

INTRODUCTION: WATER, FINANCE, AND THE ENVIRONMENT

This dissertation examines the relationship between the expansion of financial markets throughout economic and social life—a process known as financialization—and the public governance of water supplies. Specifically, through three empirical studies, it investigates how water supply organizations (WSOs) in Southern California use financial instruments, as both a capital investor and as a debt-issuer, and how financial considerations factor as elected officials and upper-level management navigate multiple, overlapping policy domains. Together, this work offers a nuanced understanding of how modern public water governance systems function under a global economy in which financial markets are expansive and underpin nearly every sector and many seemingly non-financial aspects of social life. As the effects of anthropogenic climate change increasingly descend upon municipalities around the world, local officials, like those in water districts, will face mounting pressures to adapt with new infrastructure, new planning models, updates to existing systems, and encouraging changes in consumer behavior, all of which are likely to add costs and strain revenues of municipal budgets. Thus, "How are we going to pay for these things?" is a principal question to consider because, as this dissertation will ultimately argue, the current primary financial instruments for funding capital-intensive infrastructure projects often contribute to commodifying environmental resources for financial gain, prioritizing economic objectives over environmental sustainability, and marginalizing low-income communities.

As this dissertation pertains to climate change, extreme weather events and environmental anomalies associated with the effects of anthropogenic climate change are challenging governance institutions in unprecedented ways. Examples within the geography of

this case study include devastating fires at wildland-urban interfaces—such as Ventura County and Malibu—and multiyear droughts that impact the entire state. Other concerns include the effects that rising sea levels have on groundwater in coastal communities (Loáiciga, Pingle, and Garcia 2009) and trends of diminishing annual snowpack measurements that threatens future water supplies (Rhoades, Jones, and Ullrich 2018). According to the UN's Intergovernmental Panel on Climate Change (IPCC) 2018 report, anomalous weather events and long-term patterns like these are increasingly studied and understood by scholars in the physical sciences, with experts largely agreeing on the relationship to anthropogenic climate change (IPCC 2018). The IPCC affirms in the 2018 report and elsewhere, that the management of water in urban centers is a critical issue going forward. Due to the natural aridity of the area and a reliance on promethean infrastructure networks for moving water hundreds of miles, members of the public, policy makers, and scholars alike in Southern California are well aware of the importance of effective water management, but less are attuned to the intricacies of municipal finance. For this reason, there is insufficient scrutiny of how municipal bond markets push local officials to act in certain ways or how public agencies hold investment portfolios counted in the billions of dollars. This dissertation presents cautionary lessons and conceptual developments that can inform policymaking and advocacy, arguing that sustainable governance agendas need to couple technical and environmental reforms with financial reforms. This will be necessary to ensure that even the most well-intended planning is not throttled by the lack of access to financial capital or the drive to extract revenues at the cost of administering the public good.

We entrust WSOs—from water districts pumping modest amounts of groundwater to large regional wholesalers importing water hundreds of miles—with the vital task of managing and delivering our supplies. Experts in utility pricing refer to "the conservation conundrum"

(Beecher 2010), pointing out that financial viability is often discordant with sustainable conservation practices. In a related vein, others discuss the problem of "institutional inertia" facing environmental agencies (Brown and Farrelly 2009), which encapsulates the notion that large public bureaucracies are extremely slow to change. This dissertation offers an analysis of concepts that are underappreciated by scholars more attuned to technical concerns, engineering problems, or policy matters, which will ultimately help to overcome the conundrums and inertia currently in the way of long-term environmental reform and urgent climate change adaptation. My research is primarily concerned with how WSOs are affected by financialization (Krippner 2005; Epstein 2005). For instance, in 1970 MWD held an investment portfolio worth $44.3 million and earned $11.4 million in investment income the same year. However, in 2017, they held over $1.2 billion in investments but earned only $6.2 million in investment income. This enormous increase of investment activity is the focus of the case study in Chapter 2 and, I argue it is part of a pattern of financial behavior consistent with the accumulation-centered view of financialization (Krippner 2005) because the water district evolved to embrace financial speculation as a mode of accumulating wealth. But the modern water district acting as a major financial investor is only one aspect of the finance-governance nexus, dynamics associated with municipal debt are more closely linked to social and environmental outcomes.

Public municipal organizations, like a large water district, manage capital-intensive infrastructure projects. There are essentially three ways to pay for things. First, pay-as-you-go (PAYGO) financing refers to paying with cash that is saved by the district and requires no issuance of debt. This is uncommon for most water districts, but some water districts' board members have strong preferences for this usually due to ideological leanings. Second, regional water districts can participate in projects that are funded by higher levels of government, like the

state or federal government. However, as Hackworth (2007) points out, the neoliberal turn in urban governance left municipalities with more responsibilities, privatized public assets, and reduced the redistributive elements of the federal government. Water districts were not exempted from this pattern. While, the early and middle of the 20th century saw the federal government funding many large-scale water infrastructure projects, like the dams behind which the water supplies for millions are stored throughout the Western states and the aqueducts and pipelines to move rivers across deserts and over mountains. In the current era, projects like these are uncommon, leaving regional governing bodies responsible to contribute greater amounts of funding through their ability to issue debt.

The third mode of paying for things is debt. To avoid the challenges associated with saving huge sums of cash to fund projects through PAYGO financing, municipal organization finance construction, maintenance, and operations by issuing debt.[1] In the US, public municipal debt has a long history, as bond debt in simple forms has been fundamental for infrastructure projects like roads, bridges, railroads, and ports. Emphasizing the point, *The Wall Street Journal* reports the first recorded general obligation bond was issued by New York City to build a canal in 1812 (Malanga 2010). But, the deep reliance on revenue-backed debt, as opposed to tax-backed debt, is relatively new and presents challenges to the administration of public goods and public services. General obligation (GO) bonds refers to debt that is backed by the taxing power of a jurisdiction and must be approved by voters. Revenue bonds, on the other hand, refer to debt that is backed by the future revenues of a municipality. Bonds enable municipalities to avoid paying upfront for the costs of capital-intensive infrastructure. GO bonds can also be issued by

[1] Feldman (2012) provides essential background and adroit summation of the structures of public utilities, private enterprises, and "mixed" arrangements common to water delivery in the US. Chapter 4, "Who's in Control" (pp 92-123) is particularly helpful in this regard.

the state government, and once the line of debt is secured, the state can distribute GO bond proceeds to regional agencies as grants or as low interest debt. Since revenue bonds are backed by a specific revenue stream, like water sales, rather than by the potential to tax, they are not subject to voter approval. Revenue bonds typically imply more risk for the investors, rendering the credit ratings of the issuing agency an important piece of information that influences access to capital. As such, when agencies issue revenue bonds, credit rating agencies look very closely at revenue streams and anything that might compromise steady and predictable revenues, like reduced sales due to drought and water conservation.

The use of bond financing is nothing new for municipalities, so this alone does not prove anything about financialization. However, there are characteristics of the modern-day bond markets that do indeed suggest ways that financial interests have come to control and dictate non-financial areas of life. For a sense of scope, it is worth noting that in 2018, all of MWD's bond debt, including general obligation, revenue, and other special issue bonds, totals over $4.05 billion[2] and is expected to grow in light of their recent declaration to fund the majority of the California WaterFix initiative in the Bay Delta region in Northern California. Most significantly, the desire by agencies to obtain the lowest interest rates on borrowed capital creates internal contradictions for the municipal agency. This is formalized through the credit rating agencies whose primary function is to identify the traits that are favored by investors and apply these standards through a system of categorical ranks accompanied by a negative or stable outlook prediction. In short, this financial system leans on agencies to serve the interests of investors,

[2] Total derived by summing all debt listed in, *2018 Fitch Ratings In-Depth Report*. Reports are available in the tab "Financial Reports" on the MWD website and updated regularly: http://www.mwdh2o.com/WhoWeAre/Management/Financial-Information

through favorable credit ratings, at the expense of serving by following moral principles or technical calculations.

Credit ratings are a central component to the financial processes that allow the holders of private capital to identify the municipal bonds in which they desire to invest. The development of credit ratings enabled the expansion of the capital markets for municipal bonds and continues to motivate them today. From the perspective of investors, credit rating agencies are sources of information about risk. From the perspective of debt-issuers, the credit rating agencies are effectively gatekeepers to financial capital and can increase or decrease this vital flow of resources with the modification of a single metric. Credit ratings embody the general commensuration processes that are essential to a variety of social actions (Espeland and Stevens 1998, 2008), distilling qualitative and quantitative information about an organization's credit worthiness into discrete categories that investors use to judge the desirability of an investment. Although it is the dominant tool for investors to manage and interpret financial uncertainties, The credit rating agencies have a questionable track record of predicting risk, especially at important moments like the 2008 financial crisis (Rona-Tas and Hiss 2010; Altman et al. 2011; Carruthers 2013). Due to their implications for local governance and financing costs, municipal bond ratings have drawn criticism. In the 1960's New York City experienced a rating downgrade that resulted in a dramatic increase in financing costs, which were subsequently passed on to citizens (Poon 2015: 11). For investors, municipal bond ratings simply provide information, but for critics, ratings can upset and undermine democratic politics. Bond ratings give a small group of firms—the three main rating agencies: Moody's, Standard and Poor's, and Fitch—the power to effectively determine the cost of funding public services outside the reach of electoral politics (Goodman 1968; Appadurai 1996; Sinclair 2008). Even if they strictly adhere to their intended

purpose—to signal credit worthiness to the market—this signal may have powerful repercussions for the debt issuers. Moreover, the judgements of rating agencies have been written into regulatory laws of nations cementing their position as the gatekeepers to capital (Kerwer 2002; King and Sinclair 2003; Thomas 2004; Sinclair 2008; Altman et al 2011; Carruthers 2013). However, under the current conditions where governance must meet the challenges of adapting to climate changing, conserving non-renewable resources, and mitigating our impact on the environment, it is important to analyze how the influence of credit ratings not only impacts the pocketbooks of citizens and undermines democratic institutions, but also influence our collective impact on the environment.[3]

Overtime the complexity and variety of municipal bonds has increased dramatically, as well as the frequency of their trading and the size of the markets on which they are exchanged. According to the Federal Reserve, the total size of the U.S. municipal bond market at the end of the second quarter in 2018 was $3.853 trillion (Reuters 2018).[4] Since, municipal bonds are vital to public governance, which is in turn, key to sustainable resource governance and the provisioning of public goods, we arrive at the imperative question motivating the empirical inquiry in chapters 3 and 4: Do the economic practices of the municipal bond market constrain the operations of municipal governance, and if so, where are the primary tensions and how are they being addressed?

The Municipal Securities Rulemaking Board (MSRB) reports that between 2010 and 2016, state and local governments issued about $3 trillion in municipal bonds, averaging an

[3] See Poon's (2012) book chapter for a comprehensive history of rating agencies.
[4] Data reported by Reuters: https://www.reuters.com/article/us-usa-fed-municipals/u-s-muni-bond-market-rises-to-3-853-trillion-in-second-quarter-fed-idUSKCN1M02LG

annual volume of $430 billion (2019).[5] This amounts to the vast majority of all infrastructure projects in the US. At this size and scope, the market receives a fair amount of scrutiny. There are two broad competing perspectives on municipal bonds. Proponents argue that municipal bonds bring much needed capital investment to municipal governance (Platz 2009) and for investors, municipal bonds are consistent, low-risk investment opportunities. However, critics of municipal bonds view them as instruments of the neoliberal capitalist state that serves accumulation over public good (Panitch and Gindin 2014). In other words, the modern bond market is a state-enabled tool through which capitalists extract interest payments from communities and local governments.

The competing perspectives from proponents and critics of municipal bonds and rating agencies rest on divergent fundamental assumptions. Rather than attempting to adjudicate between them or attempt to reconcile the differences, this dissertation seeks to expand our thinking about how the structure of municipal bond markets affects the bond issuer and the operations of local governance. This perspective rests on the notion that economic markets and transactions are embedded in social contexts and political institutions (Polanyi [1944] 2001). Furthermore, in a financialized economy, municipal bonds are one of a number of channels through which financial markets and financial logics come to influence seemingly non-financial activities and organizations (Krippner 2005; Davis 2011) and the everyday lives of individuals (van der Zwan 2014; Fligstein and Goldstein 2015). The municipal bond market creates a situation that limits the ability of local governance agencies to address environmental issues and reduce society's ecological footprint.

---

[5] Second paragraph, page 4 of report: http://www.msrb.org/~~~/media/Files/Resources/MSRB-Infrastructure-Primer.ashx

This project takes up issues fundamental to broad sociological questions. For instance, Weber argued that modern capitalist society is predicated upon rationally organized groups with highly formalized processes and procedures (Weber [1905] 2002). He argued that the great strides in efficiency and order obtained through bureaucratic rationalization came at the cost, suggesting that oppressive regimes of calculation and order can dehumanize and force society into a disenchanted "iron cage" (Weber [1905] 2002). In this dissertation, I observe how financial quantification regimes, those crafted under a banner of efficiency and rational calculation, effectively discipline elected officials and their technocratic staff to filter nearly all considerations through a lens of financial logics in a process reminiscent of welding another bar onto Weber's iron cage.

Marx called on us to consider the multiple ways in which inequality of the classes and unequal access to political power and economic resources shaped social relations throughout society (Marx and Engels [1887] 1978). This dissertation analyzes systemic processes that enable financial elites and those who control capital to accumulate wealth through public governance institutions. Furthermore, it also picks up the notion of commodification, building on Marx's ideas about subordinating objects to the market through the imposition of monetary values. The setting of public municipal governance is a particularly compelling site to examine the commodification of an object like water. This is because commodification is generally associated with privatization, like in the case of the Cochabamba "water wars" in Boliva (Assies 2003), with the antithesis to privatization and commodification being the management of public goods by democratically run public agencies. However, this dissertation shows that due to the reliance on private capital and revenue-backed debt, public institutions effectively engage in a form of commodification as they seek to maximize the amount of capital that can be extracted

from each unit of water for financial advantages. As public institutions are coopted by the interests of private financial capital, society is left with political institutions that are stewards of the markets before they are stewards of public goods.

Building on the macro-structural political economy of Marx, in *The Great Transformation*, Polanyi ([1944] 2001) argues that the supply versus demand price equilibrium that motivates most marketplace activities relies on the assumption that commodities are produced for sale on a market. He adroitly directs our attention to the reality that not everything that is commodified is actually produced for sale stating, "[t]he commodity description of labor, land, and money is entirely fictitious" (76). Additionally, the commodification of these realms, under our current economic conditions, is necessary for expanding production of other industries, thus magnifying their importance. This dissertation project focuses on the dual fictitious commodities of land and money and the interaction of the two. Close engagement with the Polanyi's text reveals that "land" is best understood as encompassing the physical landscapes and the natural resources that are extracted from them, as these are not produced for sale and fit with Polanyi's articulation of what makes a commodity fictitious. For Polanyi, "land" is not limited conceptually to the sale of real estate and land ownership. Rather, land encompasses "the natural surroundings in which it exists" and that "land is only another name for nature, which is not produced by man" (75). Thus, water and its many uses, from agricultural production to urban development, should be analyzed in light on Polanyi's notion of fictitious commodities.

Polanyi directly challenges the ideals of economic liberalism that remain in vogue within current political discourses, primarily the notion that significant government regulation and oversight of markets leads to poor economic results and undue state intrusion into the lives of individuals. He offers an image of an expanded state apparatus that is a requisite for regulating

and administering of economic markets, especially the markets for the fictitious commodities. Polanyi's double movement describes the push and pull between the encroachment of markets into all social life and the social protections enacted by the state that can slow or halt expanding marketization. The findings of this dissertation are consistent with the expectation of a Polanyian double movement in which state regulations push against the encroachment of financial markets into the field of water supply management. This dissertation elaborates on how economic exchanges, in this case those occurring on financial markets, are embedded in state institutions as Polanyi detailed. One aspect of this elaboration is how state institutions are simultaneously market actors—buying and selling debt—and agents of resistance to financial markets enclosing on public goods. In other words, the state is key to regulatory pushback that forms the side of Polanyi's double movement that resists the marketization of public goods, but other elements of the state are also advancing marketization, presenting a tension and challenge to characterizing the role of the state related to financialization. For instance, in Chapter 4, I discuss how the Political/Legal policy domain creates regulations that can enable or throttle activities across all other domains and stymie financial pursuits, and as a result, water officials attempt to influence the legislative process to create regulatory conditions favorable to their financially oriented objectives. The water agencies play a vital role of mediating between society and the natural environment, as they develop and implement policies that impact consumption of resources and the ecological wellbeing of habitats along watersheds. These organizations are "the protective covering of cultural institutions" described by Polanyi and without this covering he argues, "[n]ature would be reduced to its elements, neighborhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed"

(1944:75). However, as this dissertation argues, the "protective covering" is heavily influenced by financial logics that care little about social and environmental protections.

This dissertation also takes up the fictious commodity, money. At its essence, financialization describes the increasing frequency with which we treat money as a commodity rather than as a social necessity, or as Block and Sommers define Polanyi's conceptualization of money, "a unit of accounting and a way of storing value" (2016: 32). By leveraging money as a commodity—despite the falsehood of this as argued by Polanyi and others—through speculative investment activities, financial capitalists extract and accumulate wealth from borrowers. This process largely draws wealth upwards like a magnet, concentrating it among those who are already wealthy (Lin and Tomaskovic-Devey 2013; Nau 2013). By examining financialization in the context of public governance, this dissertation highlights a unique, and under-studied, dynamic of the fictitious commodification of money, the fact that state actors invest public funds on capital markets akin to the actions of private investors. Polanyi's conceptualization of how market activities are embedded in social relations and political institutions, generally views the government as a force that establishes conditions and constraints for market activity, but not so much an active participant—a buyer or seller—in market activities associated with fictitious commodities. However, in this dissertation I observe that public governance agencies hold sizable investment portfolios that serve a range of objectives including generating revenue and storing funds with liquidity that helps to secure the issuance of revenue-backed debt. Ultimately, this distinction is significant because it blurs the boundaries between "public" and "private," as public agencies rely upon private capital while the same public agencies are also engaging in investment activity with public funds on capital markets alongside private investors. By analyzing the haziness of these boundaries between public and private money, this dissertation

can extend how scholars conceptualize and characterize society-economy embeddedness in the context of the financialized global economy.

Lastly, this dissertation shows that the financial entanglements of public governance organizations are capable of structuring socio-environmental relations and prefiguring the policies of public organizations that society counts upon to resist the marketization of public goods and necessities. With recent research like Lin and Neely's *Divested* (2020), on how the financial sector deepens inequality, and Quinn's *American Bonds* (2019), that takes up the government's multiple roles in financial markets pertaining to real estate and housing policy, this dissertation is the foundation of a research agenda that will contribute environmentally oriented critiques and policy-focused analyses to a growing and vibrant sociological discussion on the co-constitutive relationships between financial markets, social life, and political institutions. Additionally, I argue that the material environment upon which all of this rests needs to be included in this web of fundamental considerations as climate change and the environment increasingly occupy more space in the collective sociological imagination. Along these lines, this dissertation offers three distinct empirical studies.

Chapter 2 presents an empirical study asking, "How does financialization of the economy impact public governance of natural resources and public services?" The answer proffered in this chapter is that municipal organizations have transformed into financial institutions. They act as a fiscally independent investors that marshal economic resources to pursue strategic objectives that align with financial logics. Using a case study of the Metropolitan Water District of Southern California (MWD), the largest supplier of drinking water in the nation, this article examines how the use of financial investments by a major public resource agency evolved since it first established a policy to hold investments in US Treasury bonds in midcentury, purchased with

what it deemed “surplus money.” Today, this WSO controls assets and cash worth billions of dollars and maintains an investment portfolio worth over one billion dollars. Analysis of archival documents suggests that financial investment activities, even if yielding dwindling returns over time, are counted upon as a source of revenue and are deployed to obtain favorable bond ratings, reduce costs and maximize access to earmarked funds, and acquire land in water-strategic locations. Considering the ubiquity of these financial practices among medium to large municipal governing bodies, the results of this study are suggestive and potentially generalizable across substantive governing fields (i.e. sanitation and waste, school districts, coastal commissions, city and county governments) and in other locations under comparable structure conditions. Ultimately this study interrogates the public/private dichotomy and the influence that financial markets have over of public policy, showing that elected governance officials engage in the commodification of money, encouraging further commodification of environmental resources.

Chapter 3, also using quantitative and qualitative archival data on the case study of MWD, assesses how water governance organizations raise money to perform their functions of building infrastructure, distributing resources, and providing essential services. This study argues that the financialization of water governance is a channel through which financial markets and interests structure socio-environmental relations. WSOs collect revenues through sources that include water sales and tax collections, but they also raise significant volumes of funding with a variety of debt instruments, which fall in a category known as, municipal bonds. In this chapter, I analyze historical trends on the usage of debt to fund the water district since the mid 20th century, attempting to establish the financial conditions in which WSOs fund their work. Next, I analyze patterns in the judgements of credit rating agencies to identify the structural incentives and

penalties placed upon WSOs by financial intermediaries. The credit rating agencies are private, profit-seeking corporations and effectively function as gatekeepers to capital investment markets, which grew increasing important to WSOs as federal support of local governance and infrastructure declined in the later decades of the 20th century. The consequences for environmental sustainability, conservation, social inequality, and effective democratic representation are discussed in concluding remarks. Overall, this chapter offers evidence that financialized public governance presents challenges to democratic accountability and potentially undermines long-term environmental sustainability.

Chapter 4 examines how public officials in the field of municipal water supply governance navigate overlapping policy domains, including increasingly complex financial arrangements, in the process of governing water resources. Using the theory of strategic action fields (Fligstein and McAdam 2012) and the institutional logics perspective (Thornton, Ocasio, and Lounsbury 2012) to understand the maintenance of social order in multilevel political institutions, this research interrogates how financial and institutional structures prefigure the governance of natural resources and thereby shape society's relationship with natural and built environments. Using data from interviews and participant observations with water officials, I identify five primary policy domains that capture the vast majority of actions in the field of water governance— Political/Legal, Financial, Technological, Environmental/Ecological, and Developmental. I define and discuss dominant patterns in each category to characterizes the discursive contours of how water managers engage with and seek influence within each domain. While policy domains describe the space in which strategic actions unfold, institutional logics describe the socio-cultural motivations that encourage one act over another. The analysis focuses on two primary logics: regulatory compliance logics and financial logics. The data shows that

regulatory compliance and institutional fragmentation, both stemming from the Political/Legal domain, essentially set the conditions under which actions in the remaining domains occur. Within this context, financial considerations tend to take precedence, all other matters are filtered through a lens of financial costs and benefits. In the discussion, I proffer that presence of *positive* and *negative financial feedbacks* rooted in the funding structures of contemporary urban governance contribute to advantages for districts with wealthier tax bases and systematic marginalization of districts with less economic resources. In closing, I suggest that the negative financial feedback can be conceptualized as the *financial pathology of institutions* and I underscore promising avenues for lasting and socially equitable environmental reform in public policy and governance.

CHAPTER 2

MUNICIPAL WATER AS A FINANCIAL INSTITUTION: A CASE STUDY IN THE ARID AMERICAN WEST

INTRODUCTION

Financialization of the economy refers to the expansion of financial logics and undertakings into previously non-financial areas of activity. Scholarship has yet to definitively establish how financialization affects the work of municipal water supply organizations (WSO) and other special governance districts that oversee environmental resources. To begin addressing this concern, this study examines the rise of financial thinking within public governance, focusing on the investing of cash and assets by governance agencies. Using a case study of a major WSO in California, this article examines how the use of financial instruments by public agencies evolved and expanded through the 20th century, setting a foundation for further analysis on what the rise of finance means for environmental stewardship and ecological sustainability. This study offers a theoretically oriented description that interrogates how, and why, a municipal water organization has come to operate in ways that resemble those of a financial institution.

WSOs are generally run by a board of directors that is democratically elected and accountable to the public, similar to a city council. WSOs also control assets worth billions of dollars, receive public funds through taxes and other means, and make far-reaching decisions that affect the economy and the environment. In this chapter, I argue that they also engage heavily in a variety of financial endeavors outside the scope of their operational activities. WSOs and other governance agencies often hold sizable accounts of money, earmarked for various purposes. They invest their cash, or so-called, “surplus moneys,” on financial markets. Analysis of archival documents of the largest municipal water wholesaler in the US suggests that financial

investment activities, even if yielding dwindling returns over time, are counted upon as a source of revenue. Additionally, this study examines how the accumulated cash and investments are deployed strategically in three ways, [1] in complicated financial earmarking arrangements, [2] leveraged in pursuit of receiving favorable credit ratings, and [3] in controversial land acquisitions schemes that extend the urban water district's tentacles far into rural and agricultural settings. With public agencies behaving as private investors and applying the financial logics typically associated with private enterprise, and all the while reliant on the flows of private capital, this research also offers the key theoretical insight that the demarcations between public and private are fluid and dynamic when considered from a financial perspective. This potentially calls into question categories and dichotomies such as, *commodity* and *public good* or *privatized* and *nationalized*, which are generally understood and applied by scholars as mutually exclusive and antagonistic.

Theorists long argued that modern society is largely defined by an irreversible rationalist order (Weber [1905] 2002). Dimaggio and Powell (1983) claim that rational bureaucratization drives organizations to behave similarly, but not necessarily more efficiently. As such, much of our contemporary existence relies upon rationally organized governance agencies that make important decisions regarding the collection of funds, allocation of public money, the distribution of natural resources, and essential infrastructure like water and sanitation among other things. Thus, I view public resource governance to be an important research site to understand broad social consequences of financialization. Accordingly, this study examines how accumulation-centered financialization is taken up by governance agencies as they engage with financial markets. It is imperative to develop a more nuanced understanding of how public agencies consider and weigh financial concerns like maximizing revenues and discretionary funds,

minimizing costs and liabilities, and managing risk. These oft overlooked nuances of governance frequently conflict with social and environmental considerations like democratic accountability, ecological preservation, and resource conservation.

Financialization has reshaped the global and domestic economies is significant ways, from the management strategies and make-up of firms (Fligstein 1993; Zorn 2004; Krippner 2011) to accumulation patterns (Krippner 2005, Foster 2007) and economic inequities (Epstein 2005; Nau 2013). Additionally, in the financialized corporate setting, bond rating agencies are shown to be powerful, yet often overlooked, social actors who exercise influence over governance (Apkarian 2018). This signals a growing influence from the debt holders over the activities of those who issue debt. The literature makes clear that financial markets shape the affairs of private firms and broader social relations. Considering that WSO potentially have significant impacts for social and environmental policies, as well as the functioning of democratic institutions, it is necessary to inquire if financial considerations have a similar influence in this organizational field.

Scholars demonstrate a variety of links between financialization and human interaction with the environment, for instance, land ownership (Gunnoe 2014) and agriculture food systems (Clapp 2014; Clapp and Isakson 2018). In these examples, the pursuit of accumulating revenue through financial speculation encourages detrimental outcomes to important social systems and environment resources. Research also shows that financialization is not limited to the private sector. For instance, higher education is heavily financialized with a growing reliance on finance as a source of revenue and an increasing cost associated with access to capital (Eaton et al. 2016). While others show that financial markets heavily influence municipal development policy (Pacewicz 2013). In the context of this literature on financialization and its impacts, the objective

of the present study is to explain how processes associated with financialization influence the policies and actions of public agencies that engage in municipal and environmental governance.

This analysis offers an in-depth historical case study of the Metropolitan Water District of Southern California (MWD), the largest water provider in the US and an organization that directly impacts environmental outcomes through water consumption, storage, conveyance, and management. The services and infrastructure provided by MWD are essentially "infrastructural preconditions for growth" (Kirkpatrick and Smith 2011, p. 478) for much of the coastal basin in Southern California, from Ventura County to San Diego county. This case study is especially significant, empirically and theoretically, due to the scope and prominence of the particular organization in question. MWD has expansive economic reach with over 1 billion dollars in annual revenue and consistently issuing several billion dollars in municipal bond debt. Its service area includes about 19 million people, serving the predominantly urban populations and industries in Los Angeles, San Diego, and surrounding areas. As the main organizing body and the sole provider of imported water for this very thirsty region, MWD is strategically positioned as an indispensable organization that is forced to negotiate the increasingly drought-prone conditions of the arid American West.

To understand how the financialization of municipal governance has unfolded and its consequences, this chapter examines primary source archival data and proceeds in two parts, a theory-oriented analytical description and an analysis of three key financial endeavors. First, I describe how MWD came to hold an investment portfolio worth over one billion dollars, explicating the role of the state in making this happen and the structural evolution of the organization with regards to policies on cash investments. Second, I examine how financial investments are [1] deployed by the organization in complicated earmarking arrangements

(Pacewicz 2016), seeking to maximize access to state funding, [2] used in presenting the organization's actions within dominant financial frameworks favored by credit rating agencies, and [3] utilized in controversial land acquisitions in rural and agricultural settings. In concluding remarks, I discuss the implications of financialization on the future of public municipal governance and environmental resources, and I suggest promising avenues for future research.

Ultimately, the broad theoretical contributions of this study are two key points. One, that what we understand as the modern "public" governance organization is heavily entangled with financial markets and private capital flows, thus blurring the lines between "public" and "private" monies and activities. And two, that financial activities and enduring financial structures established decades ago, dramatically impact governance in the modern nation-state and the development of social and environmental policy. In sum, this study argues that, under the conditions of the contemporary financialized economy, municipal governance organizations should be understood as financial institutions, and with that understanding, it is imperative to interrogate the internal contradictions and tensions that emerge between the various tasks of representing the public and administering municipal governance on one hand and engaging in a wide range of financial transactions on the other.

BACKGROUND

Financialization and Public Governance

Krippner (2005) defines financialization as "a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production" (174) with the concept of "financial" referring to activities in which capital is provisioned "in expectation of future interest, dividends, or capital gains" (174-75). This chapter

explicitly applies Krippner's *accumulation-centered* view of economic change to the realm of public resource governance by examining the evolving contribution of finance to total revenues. The alternative, activity-centered, perspective on economic change is taken up in coming chapters with an emphasis on debt, in Chapter 3, and strategic actions and institutional logics, in Chapter 4. Krippner highlights the challenge of observing economic changes in the government and public sector stating, "while public data is available for employment and contribution to GDP growth, there is no concept analogous to profits with which to gauge the 'accumulation' occurring in the public sector" (177). This study extends accumulation-centered financialization to the realm of municipal resource governance by examining the expansion of finance as a source of revenue for an agency that, on the surface, one would expect generates revenue from selling water and collecting taxes. The fact that a public water utility holds a billion dollar plus investment portfolio warrants investigation into how the patterns of financialization apply and explication of the consequences.

Davis and Kim (2015) argue that social institutions are shaped by how finance plays an intermediary role between savers and borrowers. For example, in a financialized economy mortgages and student loans are no longer held by banks until paid off; rather, they are securitized and resold, which effects the decision-making of the households that hold the debt (Davis 2011). Additionally, historical accounts show that governance and state capacity vary when funds are raised on financial markets rather than through taxes and banks (Carruthers 1996). And, Quinn (2019) details how the federal government, since the founding period, used credit markets as a political tool in multiple ways, including to avoid wealth redistribution while maintaining the appearance of economic opportunity. This history highlights a primary concern of this study, that *types* of funding matters as much as *amounts* of funding. Other social

consequences of financialization are well documented including the combination of stagnating wages and increased indebtedness (van der Zwan 2014; Carruthers and Ariovich 2010), greater inequality (Tomaskovich-Devey and Lin 2011; Nau 2013), and a growing wealth gap alongside a culture of risk-raking (Fligstein and Goldstein 2015). Additionally, scholars point to the 1970's as a decade in which growth slowed dramatically and inflation increased, a dynamic that created a political shift in the 1980's that embraced financial deregulation, paving the way for financialization to take hold (Crouch 2009; Krippner 2011; Streeck 2011). Drawing from these streams of literature that point to the rise of finance in seemingly non-financial spheres of social and political activity, combined with the insight that federal politics embraced financial deregulation through the 1980's, I derive the following research expectation:

Research Expectation 1: Analysis of annual financial statistics will offer evidence that, for MWD financial investments are used as a method of accumulation and that the practice increased in the wake of the deregulation of financial markets in the 1980's

The proliferation of financial markets and financial speculation also impacted urban living conditions, social policy, and environmental concerns. For instance, the rise of tax increment financing instruments has made financial actors particularly influential in determining urban development trajectories (Pacewicz 2014; 2016). The notion of the urban growth machine (Logan and Molotch 1987)—a pro-growth coalition of private and public interests that exercises strong influence over urban policy—is complicated by a detailed accounting of the role of finance. For example, fiscal crises are shown to limit financing options available to public works operations and, in turn, limits urban growth because infrastructural preconditions for growth are not realized (Kirkpatrick and Smith 2011).

Furthermore, studies demonstrate a number of other ways in which financial markets and speculative financial activities underpin living conditions and environmental outcomes. Predatory equity encourages tenant turnover and degrades living conditions in low income housing (Fields and Uffer 2014), leading to community mobilization (Fields 2016). Also, rural spaces including farmland and timberland is converted into financial assets by investors seeking short-term returns from property appreciation (Gunnoe 2014), ultimately destabilizing the industry and compromising those who depend on it (Gunnoe 2015). Furthermore, financialization also shapes the institutional practices in the sector of timberland ownership (Gunnoe and Gellert 2010). Finance also transformed agricultural supply chains by empowering financial interests while increasing the precarity of small-scale farmers and exploitation of workers (Isakson 2014). Additionally, this process makes food an abstract commodity (Clapp 2014) that serves capital accumulation while undermining food security and sustainability (Clapp and Isakson 2018). In sum, financialization has dramatic social consequences in many areas but only recently have scholars assessed how financialization impacts the environment.

This study will advance the financialization scholarship by showing how public governance organizations embrace financial activities and investments as a source of income and method of storing cash. Considering that governance organizations make crucial decisions regarding environmental resources, consumption, and economic development, the financialization of municipal organizations situates finance as a force that mitigates society's relationship with the environment and undercuts ecological sustainability. To recap, studies show that governance officials seeks to maximize discretionary funds (Pacewicz 2016), that institutions outside of the for-profit sector increasingly use finance to generate revenues as they simultaneously face pressures associated with increased costs to access debt financing (Eaton et

al. 2016), and that financial objectives tend to be discordant with environmental conservation (i.e. Gunnoe 2014; Clapp and Isakson 2018). Taking these notions together, I derive the following research expectation:

Research Expectation 2: Analysis of archival data will provide evidence that, MWD, as a large government agency with significant financial resources, leverages its financial position for maximizing access to discretionary funds, to accumulate revenues, reduces costs, and aggressively pursue long-term strategic objectives.

DATA AND METHODS

This article presents the findings of an in-depth case study that uses process-tracing (George and Bennett 2005) and qualitative analysis of archival documents to examine the financialization of the largest municipal water district in the USA, the Metropolitan Water District of Southern California (MWD). In his historical account of MWD, Erie (2006) points out that, in 2002, with a gross product of $788 billion, MWD's service area was the 8th largest economy in the world when compared to countries (9). Erie asserts that MWD "is arguably the nation's and even the world's biggest and most important public water agency of its kind" (5). Furthermore, the agency is also "hailed by many as a global leader in regional resource management and environmental stewardship" (5) and, according to Erie, "[h]ow Metropolitan manages conflict and cooperation over water in California will offer a glimpse into the future for shared riparian systems throughout the world" (24). Taken together, Erie's remarks emphasize two key features. One, that MWD is an exemplar in its class that is empirically significant due to geographic, economic, and political reach. And two, that MWD is a global bellwether for water management systems, making it a prime case study for analyzing interactions between natural

resource governance and finance. As a wholesaler of imported water, MWD sells to local providers and regional wholesalers in Southern California. MWD's conveyance systems reach the taps of about 19 million people. Its supplies come from Northern California via the 444-mile California Aqueduct and the Colorado River, where it is tapped at Parker Dam on Lake Havasu by the 242-mile Colorado River Aqueduct.

In the first part of this analysis, I use the method of process-tracing (George and Bennett 2005) to develop an historical explanation—using qualitative and quantitative data—for how financialization evolved within MWD, a case which speaks broadly to large-scale public municipal governance. Process-tracing is particularly useful for examining theories that offer probabilistic statements but do not specify precise causal processes (George and Bennett 2005, p 209).

The general goal of this study is to examine the congruence of an existing theory, to understand if the phenomenon of financialization transpires in this new sphere of activity. The theory under examination is the notion that financial considerations, logics, and instruments have expanded into previously non-financial areas of social activity and are, thus, encouraging behaviors and social patterns to grow more oriented towards financial markets. I bring the expectation that public governance organizations are impacted by this phenomenon, financialization, in ways that constrain and encourage financially focused behaviors that would be expected in most contexts of private enterprise but exist at odds with some of the objectives of democratically accountable governance institutions. In simplified terms, this theory predicts that financial processes and modes of thinking will expand into seemingly non-financial spheres of life.

With regards to data collection, investment income and most other financial matters fall under the domain of MWD's Finance and Insurance Committee. Thus, much of the qualitative data was gathered from publicly available documents pertaining to the activities of this committee, such as memos, board meeting letters, and presentation slides, as well as archived video and audio streams of board meeting presentations. These were collected from MWD's document archives and are contained in annual report documents that summarize the organizations performance each year and provide comprehensive financial records. Data were collected digitally from MWD's online database between 2018 and 2020 and in person during a visit to MWD's Los Angeles headquarters in 2018. In total, I estimate spending over 100 hours working with qualitative and quantitative archival data. Compiling quantitative statistics included skimming through thousands of files. I skimmed documents looking for financial records on expenditures disaggregated by categories, disaggregated revenues, investment portfolio size, and debt amounts disaggregated by bond type. All archival documents were in PDF format from the online archives and during in-person data collection I made digital photos of pages containing relevant data. As data points were identified, I manually entered them into a spreadsheet to organize variables for analysis. Ultimately, I built a dataset with data in years from 1960 to 2018, containing 12 variables, using for this chapter investment portfolio size and investment income. The primary documents used for quantitative data gathering were Annual Reports, Treasurer Statements, and Financial Reports presented at the end of each fiscal year. Archival items for gathering qualitative data were selected based on the identification of pivotal moments like the first board resolution pertaining to financial investments and meetings leading to major land acquisitions. Documents identified with relevant qualitative data were saved as PDF files and imported into Atlas.TI for coding and analysis.

The data on land and real estate acquisitions was collected from board meeting memos and presentation slides from MWD's Real Property and Asset Management Committee. Much of the quantitative data were gleaned from the "Financials" section of Annual Reports, Treasurer's Monthly Report at end of each fiscal year, Statements of Receipts, and Executive Financial Summaries. These are all terms derived from the data, as used by MWD in their document labeling. A summary list of key search phrases used in searching the document archives is provided in the appendix. Additionally, measures were taken to ensure as much precision as possible in quantitative data collection but over time the statistics and categories reported by MWD went through changes and iterations. Due to the historical contingency of accounting practices, MWD policies, and other financial standards, the year-to-year values in the resulting data set should be understood as approximations rather than exact amounts.

Investment activities are well documented in the agency's archive, especially in the more recent decades. In some respects, the decades old data are easier to understand because the investment activities were less complicated, in addition to the operations of the organization being more limited in scope. However, in other ways, the further back towards MWD's beginning one looks, the more difficult the data become to compare with recent figures and fit within more modern understandings of municipal agencies. Additional challenges arise from temporally contingent idiosyncrasies in accounting practices and changes in policy and categorization. For instance, portfolio valuation guidelines vary, and reporting practices change over the decades, rendering it difficult to identify consistent statistics that can be used to track change over long periods of time. The statistics used in the analysis were purposefully chosen to ensure consistency and valid comparability over time. For example, values of total investment portfolio are not always presented clearly in annual reports and include categories that vary

across periods. However, the amount of income from investments is reported consistently throughout the data and with much more clarity, rendering it a more reliable statistic for overtime comparisons.

WATER DISTRICT AS FINANCIAL INVESTOR

Historical Trajectory of Financial Investments by Water Agencies

This analysis of archival data will begin first with an examination of annual financial statistics before moving to qualitative data and other documentary records. Figure 2.1 shows MWD's portfolio size and associated investment income at three points in time, 1970, 1998, and 2017. The board of directors maintained a cap of $40 million on the investment portfolio until 1965. As the graph shows, the removal of this limitation preceded a massive expansion of investments through the 1970's and 1980's as the district officials added funds to the portfolio. Due to data availability and interpretation challenges associated with estimating the total portfolio size, the years on record for this value are irregular until reporting become more systematic in 2007. Nevertheless, there is enough information to take stock of broad trends and align the shifts with qualitative records in the MWD archives of board meeting memorandum and decisions. Appendix Table 2.1 supports Figure 2.1 with greater detail, offering snapshots of MWD's portfolio size and associated income in several years from 1970 to 2017.

Figure 2.1: MWD's Investment Portfolio Size and Returns

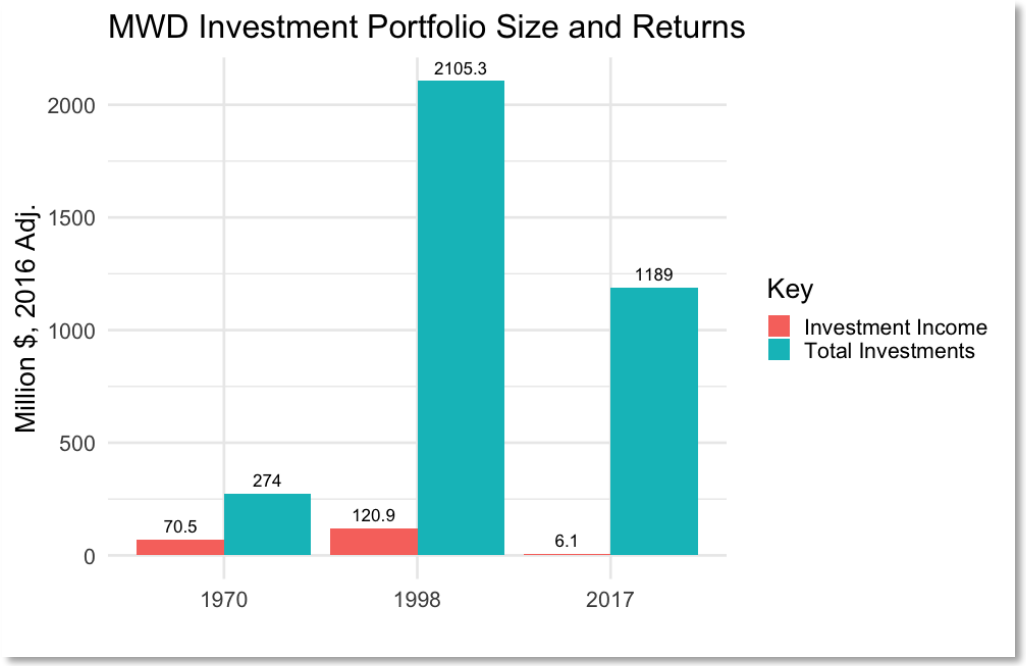
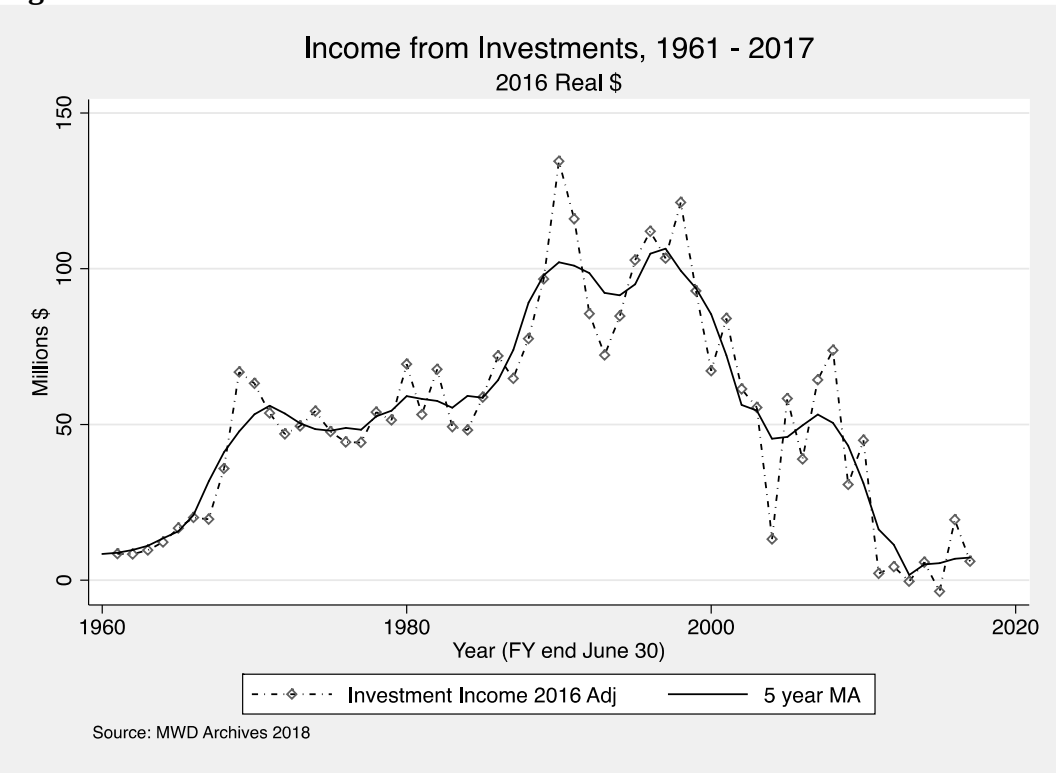


Figure 2.1 also shows that income from investments did not keep pace with the increase of portfolio size. Although the organization's investments expanded greatly, the returns were highly variable year-to-year—as visible in Figure 2.2—and did grow proportional to the amount invested. For instance, 2017 saw smaller returns that 1970, despite having a portfolio over 27 times larger.

Figure 2.2: MWD's Income from Investments



Further, Figure 2.2 reports the annual amounts of investment income, adjusted for inflation to 2016 value. This time-series graph displays a rise and fall of investment income over the decades with the peak in 1990. Because there are drastic fluctuations between years, a 5-year moving average helps to observe the broad trends taking place. Additionally, the graph shows two years of losses. In 2013 and 2015, income from investments was below zero, indicating that the district ended the year actually losing money on their investments. The observable increase in investment income in the late 1980's is consistent with Research Expectation 1, as the period of deregulation opened up more markets for speculative investments and accumulation that benefitted institutional investors. Additionally, the political environment of deregulation in federal and state governments likely encouraged the development of a financially oriented culture of economic risk taking and the prioritization of revenues among local governance officials, contributing to the increase in investment activities and the resulting income gains.

This quantitative examination of the agency's investment practices leads to the two main findings that, [1] portfolio size has grown immensely since caps were removed, suggesting an embrace of financial logics within organizational leadership, and [2] greater financial investments have not generated proportional income returns, calling into question whether or not this is a financially instrumental activity and signaling a cause for concern about the exposure of public funds to market volatility and risks. The consequences of these factors will be explored in the discussion. Next, qualitative analysis using historical board meeting statements can illuminate the growth of finance as an income source for MWD.

Board of Directors and Financial Investing

MWD entered financial markets slowly, doing so, according to board meeting documents, as a tool to generate supplemental funds when the organization found itself with surplus money in the budget. The earliest document in the MWD archives regarding the practice is dated May 14, 1948, which is a board meeting agreement authorizing the treasurer to invest "surplus money" in US treasury notes. It was deemed necessary to cap the investments at $2,000,000 and the board offered a glimpse into the rationale stating the following.

> The reason for making this recommendation is that at times we receive unusually heavy tax collections and the money may not be needed within one hundred days from the time of receipt. It is often impossible to have a Board meeting in time to authorize such purchase, and have the full 91-day period run after such authorization. … This recommendation would permit more flexibility in the investment of the District's monies that are not needed immediately and should result in the securing of more interest that under the present procedure. (Controller to Board of Directors, approved by board 5/14/1948)

This agreement effectively marks the beginning of the water district as financial investor. The agency now takes on a new role, as it temporarily redistributes public funds collected for use on local initiatives pertaining to water resources to federal government bonds. About one year later

in July of 1949, the agency controller authorized, in a one paragraph statement, an increase to the investment cap to $3 million. This would begin a pattern of expanding the cap and the scope of investment practices.

Also, in 1949, but beyond the MWD boardroom, the State of California signaled its support for local agencies taking on outside investments. The state passed legislation on the investment of public funds by governing bodies with the Government Code Sections 53600 - 53610.[6] The code states that local agencies and cities can invest funds, defined as "moneys in a sinking fund or moneys in its treasury not required for the immediate needs of the local agency." It provides a list of acceptable investments which includes a variety of local, state, and federal bonds and treasury notes, as well as, "[c]ommercial paper of 'prime' quality of the highest ranking or the highest letter and number rating as provided for by a nationally recognized statistical rating organization." With some minimum standards and criteria to meet, the state was essentially greenlighting local agencies to invest public funds in their care in a wide range of public and private investments. Interestingly, in 1949 the new law was much less restrictive than MWD's internal policy on investments, which MWD maintained for many more years.

In 1951, the MWD board approved an increase in the maximum investments from $3 million to $5 million and again in 1952, the cap was raised to $7 million. In both of the letters the justification begins with, "Under ordinary circumstances, this maximum amount is sufficient. However, …" and the request for more money is made. In both instances, the rationale of the request is that the controller observed that additional sums of money are occasionally available for investment, and it is assumed that making these additional investments is in the interest of the

---

[6] Government Code CA 53600 – 53610: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&sectionNum=53601.

organization. Quickly, a pattern is established wherein MWD leadership continually seeks to invest greater sums and expand their revenue-seeking investment activities.

In the early 1960's requests were made and granted that saw greater flexibility extended to the controller and treasurer with regards to the types of bonds in which they could invest. Notably, the cap had been raised to $40 million by 1965, and in that year the board agreed to remove the cap all together. A brief yet highly significant statement occurred in October of 1969 in which, MWD asserted that the treasurer would be delegated the authority to invest surplus money "pursuant to government code." This means that MWD would shed the internal policies created to limit most investments to US Treasury bonds and instead allow their investment policy to be guided by the more liberal California Government Code Sections 53600. Among the restrictions that remained is a maturity limitation of no longer than 18 months from date of purchase. However, this restriction was removed only a few months later by a board agreement in January 1970.

In 1977, the state further institutionalized its support of this mode of investing by forming the Local Agency Investment Fund (LAIF) under the umbrella of the state treasurer's office. The LAIF centralized the investment of public funds on behalf of local agencies into a state-run pool. Any local agency could opt into the pool, which enabled smaller agencies with less organizational infrastructure to seek financial returns by contributing to the pool. This signals that the state maintained a full-fledged embrace of investing public funds and acceptance of the associated risks. MWD embraced the LAIF and it continues to be a consistent, but relatively small, slice in MWD's overall pie of investments.

The investment activities of MWD continued to grow in size following the removal of the $40 million cap. After adjusting for inflation to 2016 equivalent value, the organization reported

holding investments, in 1992, totaling $1.364 billion with $86.9 million in investment revenue and up to $2.105 billion with $120.9 million in investment revenue in 1998. The trend displayed on Figure 2.2 demonstrates that the 1990's were a period of above average investment income. With a cap on investment amounts removed, investment activity increased massively between 1970 and the 1990's, consistent with Research Expectation 1.

These investments delivered substantial revenue gains to the agency in some years, but not all. It is apparent that the modern water district does much more than delivering water. They are involved in speculative financial transactions worth billions, utilizing a range of investment instruments, and, overtime, became a financial institution in their own right. What began in the 1940's as a rather unassuming endeavor to place unneeded funds in secure US Treasury bonds, grew into an extensive and sophisticated investing operation with a billion-dollar portfolio and tens of millions in annual returns. With the growth of financial markets and a greater willingness to take part, the organization increasingly grew exposed to risk and financial volatility, which can be observed during and in the wake of the 2008 financial crisis.

2008 Financial Crisis

The effects of the financial upheaval that occurred in 2008 are visible in MWD's annual investment income, as well as in other areas of MWD's accounting, including in the cost and volatility for interest rates on their debt.[7] As Figure 2.2 portrays, in 2008, MWD was beginning to see increases after a generally downward trend in the 2000's but experienced a steep decline in investment returns between the end of the fiscal year in 2008 to 2009, from $73.8 million, down

[7] Municipal bond debt is analyzed in following chapters. A detailed discussion on debt expenses is beyond the scope of this chapter.

42%, to $30.7 million. After increasing slightly to $40.6 million in 2010, MWD saw several years with single digit returns and even losses in 2013 and 2015.[8] Although there was scant mention of the 2008 financial crisis or ensuing economic recession in the MWD Annual Reports,[9] the archives reveal that the leadership reacted with at least one structural change. Beginning in August 2009, the Business and Finance Committee (later renamed Finance and Insurance Committee in 2011) gave regular presentations titled "Report on Investment Activity," which were also referred to as "Investment Performance" and "Oral Report on Investment Activities." Based on document availability, it appears that the board took a greater interest in receiving updates on investment activities in 2009. The sharp decline in income and two years of losses on such a sizable portfolio warrants concern about the exposure of public funds to the risks of capital markets, especially in light of the 1994 Orange County default, the Enron scandal, and the 2008 subprime mortgage crisis, to name a few cases that demonstrate the inability of credit rating agencies to validly predict and capture risk with their rating metrics that are used by MWD and every other investor. MWD's investment portfolio is referred to as "Cash and Investments" by the committees and board of directors in official documents, effectively considering *investments* to be synonymous with *cash*. This suggests the mindset that MWD's investments are a safe place to store cash. Moments like the 2008 financial crisis and the poor performance of the rating agencies in the lead up to the sharp declines that marked the start of the recession, potentially call into question the integrity of the credit ratings and the wisdom of viewing the investment markets as a generally safe place for a public agency to store funds. With

[8] It is noteworthy that these years of losses received no special discussion in MWD's Annual Reports. Although interesting, and the reason is unclear, investigating it is beyond the scope of this paper.
[9] There was only 1 reference to "economic recession" after 2008. It stated the economic recession was a reason for declining water sales.

the broad accumulation-centered financial trends established, I next turn to an analysis of qualitative data seeking to understand what holding these investments means for MWD and how they deploy their financial positioning strategically.

Earmarking and Financial Gymnastics

A major dynamic related to the use of complex financial instruments has to do with the earmarking of funds. Earmarking means that not all of the agency's moneys—debt or revenue streams—are equal, despite the common assumption that money is a simple, morally-neutral measure of value. In the case of the public water district, state and federal governments appropriate funds for use by regional agencies, thus, funds can be earmarked by the state when offered to the district and the district is required to adhere to the conditions of receiving the earmarked money. In many cases, money is earmarked for construction projection and the water district categorizes these funds as "restricted." Despite the conditionality of the earmarked funds, the district often benefits from receiving this restricted money because it has advantages like being tax and interest-free sources of income and loans.

Earmarked funds are deployed strategically to perform various forms of "financial gymnastics," in pursuit of maximizing access to capital and discretionary funds. I use the term, financial gymnastics, referring to nontraditional financing schemes, emphasizing the contortions and complexity of financial arrangements. For instance, in a hypothetical situation where one starts in Point A and seeks to land in Point B, one could simply walk from one point to the next. In financial dealings this could be appropriating funds (Point A) and spending funds (Point B). When financial gymnastics are applied, all sorts of flips, spins, transfers, and other maneuvers take place between the start at Point A and the arrival at Point B.

For example, earmarking is expressed in the organization's two broad categories of restricted and unrestricted funds. A common condition attached to restricted funds is that the funds must be spent on construction projects that contribute to growth and development in a particular area. Although restricted in this way, these funds are advantageous because they are not taxed in ways that other sources of revenue are taxed. In seeking to maximize access to low cost capital funds, MWD officials use its investment holdings to move money around to different categories, engaging in the financial gymnastics to navigate earmarking restrictions.

Board members and staff discussed an example of this in a Finance and Insurance Committee meeting dated September 10, 2018, during which a board member asked about why MWD buys "municipals," referring to investments in municipal bonds. The staff member presenting on the financial details responded, "we borrow tax-free money and invest it in short term portfolio before we spend it on construction." The "tax-free money" refers to a specific allocation of funds by the State of California. In other words, the tax-free money from the state must be used on construction, but since the district can access this line of credit without cost, they are motivated to borrow it even if there are no construction needs at the time of borrowing. While that tax-free, but restricted, money is waiting to be used, it is placed in short-term, low risk investments, like municipals.

In this act of financial gymnastics, the state's redistribution efforts—that is, the effort by the State of California to allocate state funds to governance districts where it is needed to benefit the public—are highly decentralized. This is likely to cause inefficiencies from the perspective of the national and state-level distribution of resources, but is strategic and instrumental for the regional water district receiving the tax-free, restricted funds. An alternative arrangement might be to circumvent the whole secondary investing process in which MWD engages, entirely. The

state might allow the restricted and tax-free money to go to the municipalities that need it immediately and will use it for the intended purpose, rather than offering it to MWD where it is used as investment capital to buy the debt of other municipalities, costing the debt issuer in interest and all parties in costs associated with financial services. This decentralization of how national, and state-level, resources are distributed creates a situation in which one municipality receives money from the state, invests it on the municipal bond market in the debt of another agency, eventually receives interest—a cost paid by other municipalities selling their debt—from holding the municipal debt, and then utilizes the principal when the use is consistent with the restrictions placed upon the funds. Throughout all of which, the municipality borrowing from the state was simultaneously issuing their own municipal bonds and paying interest to their investors. Scholars point out that, since the 1970's, infrastructure projects have moved away from centralized interventions and federally funded endeavors, consistent with a neoliberal ideology (Hackworth 2007), with regional municipalities taking on greater share of responsibilities (Mullin 2009). This example illustrates an effect of decentralization, that in the financialized economy, municipal organizations compete against each other for access to low-cost funds and engage in sophisticated financial maneuvering to receive money, even when it is not needed for the purpose intended by the state. The consequences of this institutional fragmentation, combined with financialization, are discussed further in following chapters.

Financial arrangements like this are common in modern governance agencies, as organizations with sophisticated financial infrastructure and expertise use every lever at their disposal to maximize returns to the organization and access to discretionary funds. In the case of MWD, being an active investor and embracing financial logics in organizational structures, functions to help the organization access cash and credit as they compete with other

municipalities for state and federal allocations under a highly decentralized system of governance funding. This occurs in ways that are consistent with the politics of earmarking theory (Pacewicz 2016), which emphasizes actors seeking to maximize access to discretionary funds. In the example of MWD's restricted funds, it is apparent that municipal actors will also seek restricted, or non-discretionary, funds and in doing so, leverage financial arrangements to navigate earmarking restrictions.

Investments as Tool to Borrow – Credit Ratings

MWD, like nearly all regional governance agencies, relies on issuing debt with municipal bonds to raise funds. Every agency that issues debt receives ratings from the three major credit rating agencies, Fitch, Moody's, and Standard & Poor's. These ratings are highly consequential because they create a signal of desirability to potential investors. This signal stimulates and deters demand for debt, which in turn affects the municipal agencies interest rates and ease of access to funds. Furthermore, credit ratings are also used in other institutional ways, including by state and federal bodies that judge the overall performance of municipal organizations and make decisions regarding the allocation of funds and resources. For instance, a water district with a better credit rating is considered by state officials as better equipped to receive grants and bond money from the state than a water district with a less favorable credit rating. In short, all water districts and other municipal bodies endeavor to receive favorable credit ratings. The broader role of credit rating agencies as financial gatekeepers is developed in much greater depth in chapters 3 and 4.

Another function of the investment portfolio is that it contributes to liquidity that helps receive positive credit ratings and thus secure the ability to easily sell their debt on the bond

market at the lowest possible interest rate. This is evident in Fitch's rating rationale where it states in a report dated May 17, 2011 following a downgrade of MWD's rating, "The 'AA+/F1+' rating... reflects the liquidity provided by Metropolitan's cash and investments." Or, in a 2018 Fitch report, it is similarly stated that, "Metropolitan's historically strong cash reserves (referring to "cash and investments") have provided a high degree of financial flexibility that has helped mitigate variable water transactions." This shows that holding investments is more than an added contribution to revenue, but it is also a strategic tool for securing bond money and reducing interest rates. Further, this structure encourages the organization to hoard surplus funds in investment, rather than engage in budgeting reductions or financial redistribution across other public goods. The approximate billion dollars in MWD's investment portfolio provides "flexibility" (a term applied by the rating agencies) that is desirable for the financial market because it is perceived as reducing the risk of MWD defaulting. As a public agency, one might question why MWD even has surplus money to be used for financial investment, and instead endeavor to have that money be redistributed to the people in the service area through reduced rates. However, we can see in this process that the financial structures directly encouraging the hoarding of surplus funds in investment reserves.

Moreover, as the credit rating reports demonstrate, the hoarding of surplus funds benefits the organization by mitigating "variable water transactions." Fluctuations in water sales is an ever-present issue for water districts that rely on revenue from water sales as an essential revenue stream. This is because consumers are often encouraged, or even forced, to reduce consumption during times of supply stress and drought. For instance, when Governor Brown declared a state of emergency in 2014, the State of California imposed mandatory cutbacks on water use for water districts throughout the state. Policies like these, while attempting to be environmentally

sensitive and reasonable, are at odds with the financial climate in which the districts operate. This is because reduced consumption also reduces revenues, which in turn negatively impacts the long-term financial positioning of water districts. This is due to the fact that credit rating agencies penalizing districts for things like "variable water transitions" (Fitch Report, 2018) and other synonyms for selling less water, even during times of drought. The effect of this financial arrangement and the municipality's reliance on bond financing encourages the water district to treat water as a revenue generating commodity, rather than as a public good.

Land Investments

Investing in geographically strategic land acquisitions, outside of the service area, is not a common practice but it can be observed with increasing frequency among the well-resourced water districts. However, many residents, businesses, advocacy groups, and commentators in California view deals like these with heavy skepticism. Situations of urban water interests using their large budgets and political strength to reach into the affairs of rural communities are quick to evoke contentious histories that include the drying of Owens Valley by an LA-based water organization (Walton 1993; Reisner 1993), the ecological decline at Mono Lake (Mazaika 2004), and the polluting of the Salton Sea (Sapozhnikova et al. 2004; Bradley and Yanega 2018). These contentious histories all link urban consumption of resources to negative impacts in rural environments. Nevertheless, MWD leverages their financial advantages and deep economic resources to actively pursues this strategy on two fronts, in the Palo Verde Valley in the south-east of California near the Colorado River and in the Bay Delta region in Northern California.

Palo Verde Valley and CO River Water Rights

About 170 miles from the eastern most boundary of MWD's service area, MWD used their deep cash and investment coffers to purchase tens of thousands of acres of agricultural land since 2001. The district is now the largest landowner in the Palo Verde Valley near the California/Arizona border, where the Colorado River flows. MWD's acquisitions in Palo Verde have a clear purpose, to secure and increase their access to Colorado River water. The first purchase in the area came in 2001, when they paid $41.4 million for 16,000 acres. As the new landlords of this farmland, they leased properties to farmers with the condition that MWD could require their tenants to fallow—let the farms go dry and transfer the conserved water elsewhere—their farmlands upon request. In 2004, MWD struck a deal with Palo Verde Irrigation District (PVID) in which MWD would be able to pay farmers to fallow other previously productive farming lots—with farmers receiving annual payments totaling over $100 million—to increase water supplies transferred to MWD, helping them meet the demands of their urban service area. And, in 2015, MWD purchased another 12,782 acres of land in the area that was part of the PVID fallowing program for $255.6 million. This move made MWD the largest landowner in the Palo Verde Valley.

The details of the 2015 purchase, as well as the earlier acquisition and fallowing deal, are summarized in a confidential board meeting memo that was obtained by a journalist through a public records request. This document is suggestive of MWD's key motivation, explaining that PVID is strategically important as it holds the most senior priority rights to use of Colorado River water, thus, purchasing land serviced by PVID allows MWD to benefit from the priority water rights. The memo states, "Land ownership provides Metropolitan with benefits that cannot be matched through alternative temporary arrangements." It also discusses MWD's competition in buying the land coming from parties interested in farming the land and arguing that owners

who "permanently utilize the land for crop production will limit future opportunities for Metropolitan to provide financial incentives for temporary fallowing." Additionally, owning the land is said to reduce potential financial risk, should temporary fallowing deals require renegotiation. Thus, MWD is using it financial advantages to pursue a strategy that maximizes access to water resources for urban consumption while in competition with rural and agricultural interests.

Delta Islands and Uncertain Futures

More recently, MWD became a significant landowner in Northern California when they closed the purchase of about 20,369 acres of land, on 4 islands in the bay delta, on July 18, 2016 for $196 million. According to a September 2016 board action document from the Finance and Insurance Committee, MWD used cash reserves to make the purchase and reimbursed the cash reserves with debt. The plan as stated in 2016, included initially issuing taxable debt to refund the cash expenditure and later refunding a portion or all of this with tax-exempt debt after final land-usage is determined and brought within the IRS regulations that permit the use of tax-exempt debt funding. Similar to the response when MWD increased their footprint in Palo Verde, MWD's new neighbors in Northern California were extremely skeptical of the district's motives and plans. However, their intentions were uncertain then, and remain so until the time of this writing in early 2020.

A November 2015 presentation during the Real Property & Asset Management Committee, as they prepared the organization for this purchase in the delta, offers a glimpse into the organization's decision-making. According to the presentation slides, the potential benefits of the land acquisition for MWD include water supply reliability by supporting water transfers,

flood storage and salinity-outflow, emergency freshwater pathway, and California WaterFix (terms used in slides). Another slide of potential benefits includes environmental management with the subpoints of waterfowl habitat, fish food supplies, fish take reduction/turbidity management, greenhouse gas reduction, and other habitat restoration and mitigation (terms used in slides). However, no further information about how this purchase actually supports things like ecological habitat or greenhouse gas reduction were offered. Based on discussions and presentations in following months, including a Real Property & Asset Management Committee presentation in February 2017, MWD views the real estate as particularly strategic because it lies in the path of the proposed California WaterFix tunnel project—a proposed, and in development, infrastructure project central to MWD's imported water supply from Northern California—and because it lies along a proposed emergency pathway for moving freshwater to MWD's intakes in a natural disaster emergency, like an earthquake, a plausible scenario in this region.

This 2017 presentation also lists the current tenants and their existing rent payments, which range from $12,000 per year for a house to $1 million per year for larger tracts of land. The district essentially functions as an "absentee landlord," a characterization deemed accurate by MWD General Manager (GM), Jeffery Kightlinger at a public forum in Sacramento[10], where he addressed questions from an audience of residents and activists concerned about MWD's acquisitions in Northern California. During this public forum, Kightlinger spoke candidly about MWD's concerns regarding climate change and MWD's role in preparing for potential futures that include sea-level rise, major changes to weather patterns, and reduced snowpack.

> Our conclusion is that, you're going to see greater and greater saltwater intrusion moving in to the Delta. You're going to see all the impacts of bigger storm surges and all these things coming from climate change,

[10] Video of forum accessible online: https://vimeo.com/174895102

> more volatile conditions as snowpack turns in to rain. All of these things, to our mind, point to you having to do a lot of things. You have to be a lot of more local reliant as you can, you have to develop your groundwater basins. That's one of the things you have to do, do things locally. *But you're going to have to build more robust infrastructure,* meaning larger size facilities to capture peak flows, tunnels that go further north out of the area of seawater intrusion. To my mind *you're going to have to build that infrastructure that climate change is going to call for, or relocate millions of people, those are your options.* [emphasis added] (Kightlinger to community forum, 07/15/2016)

Kightlinger's remarks in this particular forum suggest that MWD sees their newly acquired lands in the delta, as beneficial to MWD's aims of securing a consistent water supply for urban users in Southern California, although exactly how is unclear. One thing that is clear however, is that this controversial acquisition of land would not be possible if not for MWD's financial capacities. Furthermore, an audacious plan like this is rendered attractive because MWD exists in a financial environment in which water sales, revenues, stable supplies, and dominance over natural cycles and climatological variabilities is the normative mode of operation.

To recap, I examined empirical evidence suggesting that MWD uses its financial portfolios to [1] navigate the politics of earmarking, [2] amass large sums of stored money for financial flexibility, and [3] leverage financial wealth in controversial land acquisitions. Taken together, these three dynamics are consistent with Research Expectation 2 and offer empirical nuance to understand how municipal governance organizations leverage financial resources and structures.

DISCUSSION AND CONCLUSION

This article endeavors to provide a theory-oriented analytical description of how a major municipal water agency engages in financial investment markets and an examination of how this institutional investing enables [1] financial earmarking, [2] mitigating the effect of climate

variabilities on revenues at the behest of credit rating agencies, and [3] controversial land acquisitions. Additionally, I provide data to understand if the structural and organizational shifts associated with the financialization of the economy impacted public resource governance similar to its effects on other realms of social and economic activity. This case study shows how a public agency—one initially formed to manage a fundamental natural resource—evolved to be a powerful organizational investor, active in both, accumulation-centered investment activities and strategic non-traditional financial investments. On one hand, this research is significant because MWD is the largest water provider in the nation, serving 19 million people, providing the preconditions for economic activity throughout Southern California, and impacting hundreds of miles of watershed. On the other hand, this research is potentially generalizable and theoretically relevant because the activities documented in this account of MWD occur in varying degrees in public governance organizations around the nation and world. For instance, a quick glance at the finances of any medium-to-large water district, city government, or other sub-national governing body will confirm the ubiquity of investing cash and assets akin to the methods used by MWD.

This research complicates the categories of *public* and *private,* and other similar manifestations of this duality including, *privatized* versus *nationalized* and *commodification* versus *public good.* Indeed, there is not a clean and clear division between public sector and the private sector in the contemporary financialized economy. The story of MWD illustrates how an ostensibly *public* organization invests capital on markets, buys land, and maintains financial portfolios akin to how *private* financial actors behave. This study can help scholars consider how activities of the modern nation-state are shaped by private financial interests, as well as, theorize how governance bodies contend with competing interests, like the tensions that emerge between

democratic representation, environmental conservation, and seeking revenues and other financial advantages.

To recap, the growth of MWD's investment portfolio beginning midcentury, is a story of slowly moving a self-imposed regulatory bar until it was nearly dismantled completely in the 1960s by leveraging the more economically liberal state law. The practice began because of "unusually heavy tax collection" and sought low risk federal bonds. However, the investing practices of today have a much different intent and extend far beyond extraordinary cases of overtaxing, which was the initial rationale for investing. Tracking the investments from midcentury to recent years shows that greater financial investments have not generated proportionally larger income returns and that there were two years of losses in 2013 and 2015. This suggests that the municipal governance agencies that hold investments are exposing public funds, intended for the management of local and regional environmental resources, to the instability and volatility of global financial markets.

The district's current use of finance is deployed by the organization for financial revenues, consistent with an accumulation-centered financialization of the economy (Krippner 2005), and in pursuit of maintaining financial positions favorable to CRAs and bond investors (Poon 2012; Carruthers 2013) to limit the cost and increase access to financial capital open. In doing so, the district leverages its funds to specific ways that are examined in this study. First, the district engages in the politics of earmarking (Pacewicz 2016), maximizing access to discretionary funds while reducing costs. And second, the district uses its financial might to invest in controversial land acquisitions in rural and agricultural settings that secure resources for the district and its urban interests.

Additionally, finance is expensive and renders these public funds another domain for accumulation by capital investors and financial services providers. According to the 4th quarter 2017 financial performance evaluation, MWD pays 0.15% of assets in fees to third party asset management firms for financial services associated with the long-term portfolio. The estimated fee value for that year is $522,618.[11] Since fees are assessed as a percent of assets, it is reasonable to conclude that financial services providers are keen to see the size of portfolios held by municipal agencies grow. Additionally, there are other areas where costs associated with expansive financial engagement accrue, including maintaining the necessary internal personnel with the responsibility and expertise to manage large portfolios, contracting third-party firms involved in bond issuance and resetting variable rate bond debt, and mobilizing other necessary organizational accounting infrastructure. A complete analysis of how public resource agencies navigate complex financial environments and the role of service providers is beyond the scope of this article but would be a promising avenue for future empirical research. Considering that sociological research has yet to establish how financialization impacts public resource governance, it is necessary to constrain this analysis to a single organization to pursue rich detail and contextual depth. While cursory examination shows that the general processes that this article studies, investing and debt servicing, are common to most governance agencies in the US, theory development and empirical knowledge production would benefit from comparative analysis of the heterogeneity across organizations, geographic regions, types of resources governed, socio-economic factors, retail versus wholesale providers, and environmental conditions.

[11] Figures located on page 37 of "Fourth Quarter 2017 Investment Review" retrieved from MWD here: http://www.mwdh2o.com/WhoWeAre/Management/Financial-Information

This study applies a sociological perspective on economic markets that emphasizing the social and political embeddedness of market actions (Polanyi [1944] 2001). After assessing the rise of finance in a major governance agency, we see that the state plays a pivotal role in enabling and promoting the investment of public funds and that organizational actors and elected representatives continually pursue an agenda of financial expansion. The consequences of this move are multifold and will be explored in subsequent chapters. For this chapter, I argue that the rise of financial investments as a revenue stream, increasingly exposes public governance agencies—with focused and local charges to steward essential environmental resources—to the volatility of global markets and the whims and tastes of financial actors. Further research in this area would benefit from greater explication of the role of the state, at all levels from the local to the federal, in determining the financial trajectory of public agencies. This would aid scholars and policymakers in identifying effective integrated management goals that consider both financial and environmental implications.

Additionally, this study provides evidence that the decentralization of infrastructure development and governance since the 1970's produced an organizational landscape in which special districts and other fragmented policymaking authorities (see Mullen 2009 on decentralized politics of water) compete for various earmarked allocations from higher levels of government. In this competition, water districts deploy complicated financial arrangements to maximize access to funds; a system which costs each borrower in interest charges as actors on both sides of every transaction pay for financial services and expertise.

Lastly, analysis that uncovers the causal links between financial logics and environmental outcomes is critical to understanding how the environment has become financialized through public institutions. I contend that financial considerations, when given primacy to other

governing concerns, have the potential to instill a circular financial pathology in a governing institution that can perpetuate social problems like environmental degradation and poor living conditions. However, development of this causal mechanism is beyond the scope of the present paper. Thus, another promising area for theoretical contributions is uncovering the institutional pathologies rooted in financialization. The modern municipal governance organization now resembles a hybrid of a democratic policy body administering public needs on one hand, and a financial institution on the other hand. The consequences of this are not yet fully understood, but observations, from this paper, of the largest municipal water provider in the USA suggest that financialization, rather than commodification, may offer a more coherent explanation for the persistence of certain forms of ecological degradation and unsustainable consumption of natural resources.

Appendices:

MWD Archive search terms
Surplus Money
Surplus Monies
Surplus Moneys
Investment
Investment Activity
Investment Activities
Investment Policy
Investment Policies
Investment Performance
Treasurer's Authority
Treasurer's Report
Treasurer's Monthly Report
Financial Report
Annual Report
Credit Rating
Credit Ratings
Delta
Delta Islands
Palo Verde
Blythe
Real Property

TABLES AND FIGURES

Figure 2.1: MWD's Investment Portfolio Size and Returns

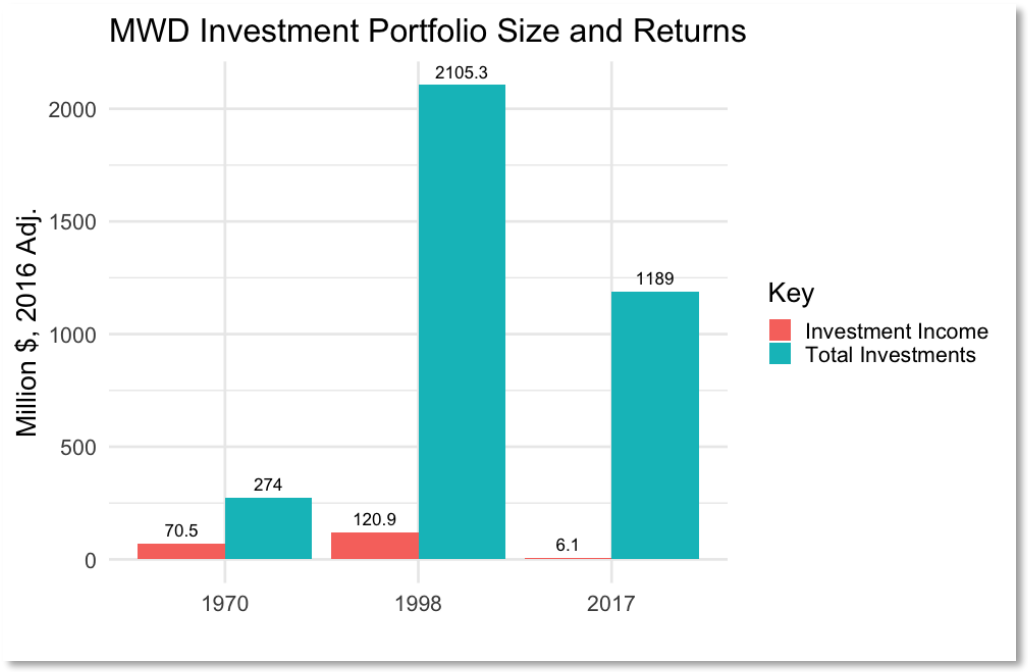
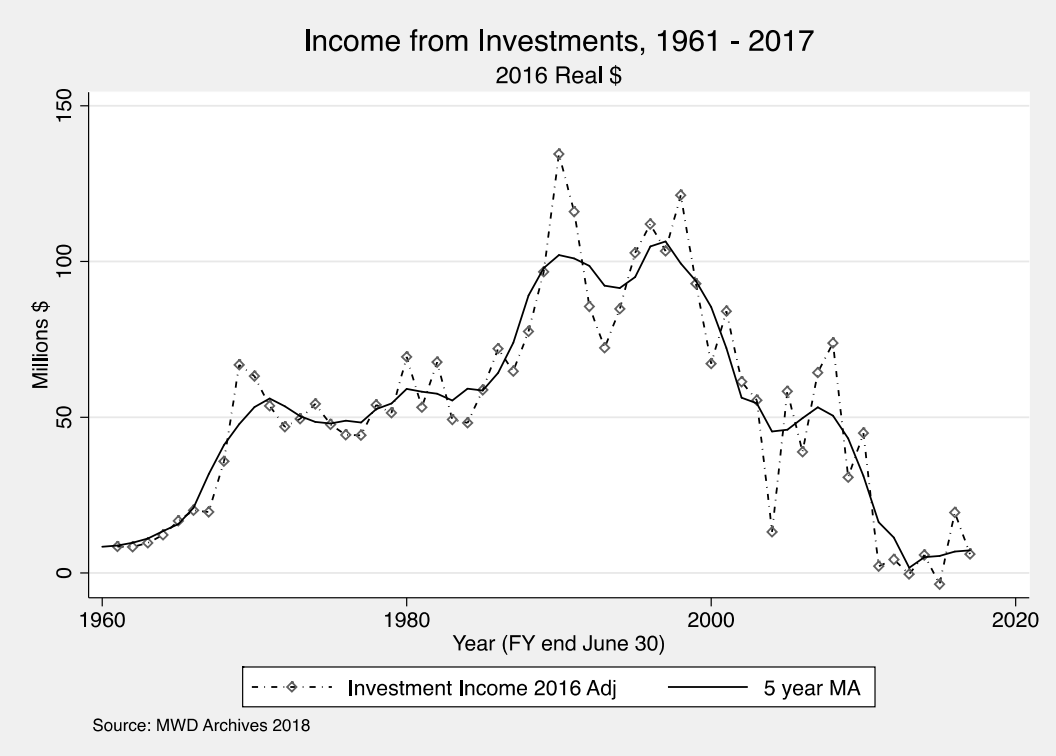


Figure 2.2: MWD's Income from Investments



Appendix Table 2.1: MWD's Investment Portfolio and Income Sizes in Annual Snapshots (Millions of $)

	Total Portfolio Size		**Income from Investments**		**% Returns**
End of fiscal year	*Nom.*	*2016 adj.*	*Nom.*	*2016 adj.*	
1970	$44.3	$274.0	$11.4	$70.5	25.7
1987	$506.6	$1,070.3	$31.9	$67.4	6.3
1992	$797.7	$1,364.6	$50.8	$86.9	6.4
1998	$1,429.8	$2,105.3	$82.1	$120.9	5.7
2008	$1,082.0	$1,206.2	$64.9	$72.4	6.0
2009	$902.7	$1,009.9	$33.7	$37.7	3.7
2010	$1,126.3	$1,239.7	$29.5	$32.5	2.6
2016	$1,496.0	$1,496.0	$19.4	$19.4	1.3
2017	$1,214.3	$1,189.0	$6.2	$6.1	0.5

Source: MWD Document Archives and Annual Reports 2018

CHAPTER 3

"HOW WILL THIS AFFECT OUR CREDIT RATING?": MUNICIPAL DEBT AND GOVERNING THE ENVIRONMENT

INTRODUCTION

In a summer 2018 meeting at a large municipal water wholesaler in Southern California, the director of the committee on financial issues presented a proposal for increasing water rates. The rate hike was supposedly needed due to increasing costs associated with the imported water supplies upon which the wholesaler relies. The deliberations among elected board members were brief and minimal. However, one director on the board motioned to ask a question and inquired, "How will this affect our credit rating?" (paraphrased from field notes, 6/28/2018). The finance expert explained that there was no reason to believe this would reflect negatively on the organization's credit rating, allaying the questioners concern. The meeting progressed to a vote of approval and on to other topics.

This exchange characterizes a dynamic of contemporary public governance agencies in a highly financialized economy; officials must juggle their substantive responsibilities—delivering water, maintaining supplies, environmental conservation—along with financial considerations—navigating complex financial arrangements and seeking fiscal advantages. This dynamic emerged as public infrastructure and regional governance revenues were made into a class of assets by global capital markets through municipal bonds (Leyshon and Thrift 2007; Halbert and Attuyer 2016; O'Neill 2017). As the support from the federal government diminished through the later decades of the 20th century, cities and other local governance bodies turned to capital markets for financing (Sbragia 1996; Weber 2010). This move made public governance, including the construction of infrastructure and the provisioning of social services and natural

resources reliant upon access to global capital investment markets. Since investors make investment decisions based upon the ratings and categorizations of three credit rating agencies—Standard & Poor's, Moody's, and Fitch—the reliance on bond markets make these agencies gatekeepers to capital (Poon 2012; Carruthers 2013). In short time they came to hold and exercise a powerful influence over the priorities of local officials and the organizations seeking capital (Sinclair 1994; 2008; Hackworth 2002), which continues despite a questionable record of contributing to crises and inaccurately predicting risk (MacKenzie 2011; Rona-Tas and Hiss 2010). All three rating agencies maintain headquarters in Lower Manhattan, so to say that this is a case of Wall Street exercising influence over Main Street is not only a symbolic description heard in various forms in political rhetoric and used by critics of the hegemonic political-economic structures, but it is frankly a literal description of the situation for cities with a principal thoroughfare called, Main.

The current research uses the case of imported water systems in Southern California, combining quantitative and qualitative archival data, to analyze how funding shifted away from tax collections to debt backed by revenues. This study also examines the role of financial gatekeepers in shaping municipal water policies and the priorities of policymakers. This study begins with the orienting question of, "How do we pay for public municipal governance, and does the source of money matter for policymaking?" One of the main findings from analyzing data in MWD's historical records is that this water supply organization did shift away from relying on tax revenues and moved to relying on water sales and debt issuance as the primary modes of funding their operations and financing infrastructure. The implications of this are multifold. First, public governance organizations are effectively engaging in the commodification of water, a process generally associated with privatization regimes and not a

structural financial process of public institutions. Secondly, the reliance on debt issuance gives financial intermediaries, the credit rating agencies, significant leverage over the affairs of democratically elected municipal organizations. The novel contribution of this study is uncovering the directions in which these intermediaries influence water managers. By qualitatively analyzing a series of reports at moments of bond rating downgrades, I present a table of incentives and penalties demonstrating that financial gatekeepers encourage water managers to prioritize water sales and other financial concerns over environmental stewardship and democratic representation. In sum, I argue that the financialization of public governance is one channel through which global capital investors and the intermediaries and gatekeepers who represent them erode the autonomy of local communities as they set priorities and extract value through interest payments and fees for financial services. Additionally, the rise of finance as a driver of municipal governance policies offers a reason why tackling environmental sustainability issues remains an intractable endeavor.

This argument proceeds in two parts. First, I examine quantitative archival data from the largest supplier of imported water in the nation, the key organization that distributes imported water wholesale to water districts in coastal Southern California, including Los Angeles and San Diego. Financial statistics since 1960 show a decline in taxes, coinciding with an embrace of commodification, which in turn benefits the organizations ability to issue revenue-backed debt, as evident in the anecdote about protecting favorable credit ratings. Examination of types of debt shows that not only has the organization become heavily indebted overall, but it shifted almost entirely to using revenue-backed debt (revenue bonds) and away from debt backed by taxing potential (General Obligation, or GO, bonds). With revenue bonds taking over a role previously filled by GO bonds, water supply organizations increasingly internalize financial objectives like

maximizing revenues, holding large investment portfolios, and minimizing expenditures. And lastly, I evaluate the affect that these financial processes have on policy by qualitatively analyzing why credit rating agencies downgrade or reaffirm their evaluations of municipalities. In concluding remarks, I argue that financialization is present in varying degrees in many governance settings and creates a situation wherein water supply organizations in upper-SES communities benefit while those in lower-SES places are trapped in a pathological financial process. I suggest that this should be understood as positive and negative *financial feedbacks* and I proffer a new generalizable notion of the *financial pathology of institutions* to capture and describe the systematic effects of the negative financial feedback. This image of financial pathology attempts to explain cases in which public agencies rely on private debt, which constrains their policy priorities in ways at odds with their substantive mission and objectives. This pathological financial structure result in compromised service provisioning, stunted ability to pursue environmental sustainability, and challenges to full the full democratic representation of constituents among elected officials. Further, it is best described as a pathology because this structure creates a self-reinforcing and cyclical pattern that is extremely difficult to overcome, similar to a disease or compulsive harmful behavior. As an organization's financial position and reputation declines, it grows more difficult for it to recover, either financially or by advocating for the public.

FINANCIALIZATION, URBAN INFRASTRUCTURE, AND THE ENVIRONMENT

Financialization describes the expansion of financial logics and the increasing influence of financial markets and actors in previously non-financial areas of activity (van der Zwan 2014; Davis and Kim 2015). Scholars have studied financialization's causes and consequences in a

variety of empirical sites including corporate governance (Fligstein 1993), accumulation by non-financial firms (Krippner 2005), the global economy (Epstein 2005); capitalist production patterns (Foster 2007), household behavior (Fligstein and Goldstein 2015), food politics (Clapp 2014; Isakson 2014); land ownership and forests (Gunnoe 2014; 2016), income inequality (Nau 2013), higher education (Eaton et al 2016), and city development policy (Pacewicz 2013). In addition to describing major shifts in a wide array of social, political, and economic settings, financialization extends our understanding of public governance by building on neoliberal conceptions of governance (Hackworth 2007). Drawing on the rich body of work that examines how financialization impacts, and is expanded through, various areas of social life and political institutions, I derive the following research expectation:

Research Expectation 1: Analysis of archival data will demonstrate an increasing embrace of debt-based funding instruments among the water district officials.

Theories of neoliberalism generally arrive at the expectation of a retrenchment of state institutions and funding. However, financialization in urban governance settings relies on localized state actors and government organizations as they are both object *and* agents of financialization (O'Brien et al. 2019; Peck and Whiteside 2016; Weber 2010). The tasks of public governance, from building infrastructure and administrative capacities to distributing resources and maintaining equipment, are expensive, yet essential undertakings of the modern state. These functions are generally provided by local and regional governing bodies that include cities, counties, special governance districts, and joint power authorities. However, the funding and financing of urban infrastructure and services is much more than a matter of accounting and bookkeeping; rather, the ownership and financing modes of urban infrastructure is highly consequential to a variety of social, economic, political, cultural, and environmental outcomes

(Pike et al 2019) as infrastructure either directly impacts communities—like access to quality water—or it is a precondition to growth—like roads that enable enterprise. As Pike et al. (2019) explain, the financial details underlying urban infrastructure impacts factors like the spatial distribution of services, how much they cost, and who gets a say in decision-making. This work and others (e.g. Hackworth 2002; Gotham 2006; 2013; 2016, Ashton et al 2012) detail ways in which, financialization of urban governance occurs through actions of state institutions and various levels of government itself and not necessarily through the retrenchment of the state as some neoliberal conceptualizations of how pro-capital policies unfold in city governments (Hackworth 2007). Studies of financialization also underscore a particular dynamic that deepens our understanding of urban political economy by showing how the *growth machine* (Logan and Molotch 1987:2010) relies on the expansion of a political *debt machine* (Peck and Whiteside 2016) with its own unique set of consequences.

Although it overlaps with neoliberal conceptualizations of local governance, the financialization of public governance has characteristics that are unique, particularly in that the influence of financial actors does not depend upon privatization and a hollowing out of the state. Rather, financialization is characterized as the state coming to promote and ultimately embody the priorities and policies championed by financial interests. For examples, discussions of Detroit's financial woes in the early 1990's present a case in which the rating agencies only rewarded the city with upgrades in 1996 after a major series of city-level austerity measures and slashing of budgets (Eisinger 1998). Scholars like Hackworth argue that credit rating agencies were, "[o]nce little more than market journalists" but have gained significant power in the municipal bond markets since the 1980's and early 1990's due to growing municipal defaults that unnerved investors (2002: 717). Hackwork asserts that, for city governments, rating agencies

are gatekeepers to financial markets and erode the autonomy of localities, as the "connection that cities have with capital markets is determined more than ever by the neoliberal standards enforced by rating agencies" (2002: 719). Drawing from literature focused on neoliberal urban governance, I derive the following research expectations regarding funding sources and financial gatekeepers:

Research Expectation 2: Analysis of archival data will show that the increasing use of debt financing coincides *with a decline in other funding sources, primarily from tax revenues.*

Research Expectation 3: Analysis of archival data and documentary sources will show that financial gatekeepers function to limit and expand access to financing for the water district.

Public Water Services and Finance

As an infrastructural precondition for economic growth and development (Kirkpatrick and Smith 2011), municipal water supply management is an extremely important site because waves in the water sector can ripple throughout society, politics, economics, and the environment (Worster 1992; Walton 1993; Espeland 1998). Taken together, the studies discussed in the previous section, show that a key aspect of financialization in urban spaces includes global capital seeking to make financial assets out of the future revenues in urban objects and urban actors. Leyshon and Thrift (2007) identify municipal water supplies as one of these objects, stating that this is because the yields are predictable with secure income streams and the quasi-monopolistic relationship between water suppliers and customers. Further, Pryke and Allen (2019) analyze the financial innovativeness in water supply management, showing how a specific piece of urban water infrastructure was structured financially in a way to capture added value for global capital investors, rather than to best serve the water users or the water district. In

another case study, Allen and Pryke (2013) examined how a major water supplier in the UK used the securitization of future household water payments to maximize fee income and pay higher dividends to investors.

These studies demonstrate that the financial entanglements of municipal water suppliers are driven by both the governance officials *and* the financial actors, while also calling into question if these financial arrangements actually help or harm the well-being of the local communities and environments that the municipalities serve. In a similar vein, evidence of local water policy serving as a site of wealth extraction for global financial capital include Loftus and March's (2016) study on the Thames Water Desalination Plant, calling it unnecessary and "an infrastructure-heavy solution to the demands of financialization" (Loftus and March 2016, p 46). Further, March and Purcell (2014) show that the financialization of water should be understood through "the network of services and infrastructures involved in its delivery" (p 11), rather than through the commodification or privatization of the object itself: water.

Knowing that environmental outcomes are tied to economic processes (Worster 1992, Foster 1999; Jorgenson 2003; Roberts and Parks 2006; Foster, Clark, and York 2010; Downey 2015), this article offers an historical analysis that provides insight to help understand how changing macroeconomic conditions associated with financialization intersect and impact public policy organizations and environmental governance. On the whole, the paper responds to a call for middle-range theory on drivers of urban environmental inequality (Sicotte 2016) and contributes a novel financial angle to the social barriers to environmental reform (Walton 1993; Hess et al. 2016; Caniglia et al. 2016), conservation (Espeland 1998), and climate change adaptation in water utilities (Baker, Ekstrom, and Bedsworth 2018). Bayliss (2014) explores the financialization of water on a global scale, arguing that privatization set the stage for a variety of

financial innovations that entrench water as a commodity and site for capital accumulation. However, a key contribution of the present paper is to show that financialization can circumvent privatization, giving financial interests a grip within public governance agencies. Moreover, the explication of financial structures in public water governance advances Bayliss's (2014) assessment and other political economy perspectives that critique the modern "hydraulic society" (Worster 1992; Swyngedouw 2004; Bakker 2010; Scoville 2019). Drawing from research on the political economy of the environment that demonstrates linkages between macroeconomic processes and environmental outcomes, I derive the following research expectation:

Research Expectation 4: Analysis of archival data and documentary sources will show that overall trend of financialization within water governance will encourage a focus on financial objectives at the expense of environmental well-being and social equity.

DATA AND METHODS

This article presents the findings of an in-depth case study that uses process-tracing (George and Bennett 2005) and qualitative analysis of archival documents to examine phenomena associated with the financialization municipal water delivery. The case study focuses on the largest municipal water district in the USA, the Metropolitan Water District of Southern California (MWD) and its members/buyers and partner agencies in the region. Erie authored an historical account of MWD (2006) in which he emphasizes MWD's size and scope stating that MWD's service area, the coastal basin in Southern California, rivals the economies of large countries and that if the region were a country it would be the 8th largest economy in the world (9). Erie considered MWD to be the largest and among the most important public water agencies. Furthermore, as an indication of the utility of this organization as a case study for analysis, Erie

also states that MWD is "hailed by many as a global leader in regional resource management and environmental stewardship" (5) and, according to Erie, "[h]ow Metropolitan manages conflict and cooperation over water in California will offer a glimpse into the future for shared riparian systems throughout the world" (24). Erie's remarks suggest that it is fair to consider MWD an exemplar in its class and that findings of studying this case are likely to be theoretically relevant to other settings. Additionally, MWD is empirically significant because of its geographic positioning, economic scale, and political reach. Essentially, MWD can be thought of as a global bellwether for water management systems. Municipal water distribution unfolds through a complex network of organizations that includes wholesale sellers, retail agencies, and other specialty districts. As a wholesaler of imported water, MWD sells to local providers and other regional wholesalers in Southern California. MWD's conveyance systems reach the taps of about 19 million people. Its supplies come from Northern California via the 444-mile California Aqueduct and the Colorado River, where it is tapped at Parker Dam on Lake Havasu by the 242-mile Colorado River Aqueduct.

Additionally, the tension between environmental interests and economic development, like the urban growth of Los Angeles and the expansive agricultural industries around California, has been an undercurrent throughout the modern history of California with which water managers have had to contend. Since I am interested in observing the interaction of financial considerations and environmental outcomes, it is important to study a case where environmental pressures exist. This controls for the possibility that the organizational behavior shows little environmental concern due to the lack of demand or need.

This analysis proceeds in two primary sections. In the first part, I use financial statistics on levels and types of indebtedness, as well as, statistics on income sources that are presented as

a percentage of total revenues in the same year. These were collected from MWD's document archives and are contained in annual report documents that summarize the organizations performance each year and provide comprehensive financial records. Data were collected digitally from MWD's online database between 2018 and 2020 and in person during a visit to MWD's Los Angeles headquarters in 2018. In total, I estimate spending over 100 hours working with qualitative and quantitative archival data. Compiling quantitative statistics included skimming through thousands of files. I skimmed documents looking for financial records on expenditures disaggregated by categories, disaggregated revenues, investment portfolio size, and debt amounts disaggregated by bond type. All archival documents were in PDF format from the online archives and during in-person data collection I made digital photos of pages containing relevant data. As data points were identified, I manually entered them into a spreadsheet to organize variables for analysis. Ultimately, I built a dataset with data in years from 1960 to 2018, containing the following variables: Investment portfolio size, bond interest expenses, total expenses, total long-term debt, GO debt, revenue bond debt, water sales, investment income, tax revenues, operating revenues, non-operating revenues, and total revenues. For this chapter, I used, total long-term debt, go debt, revenue bond debt, water sales, tax revenues, and total revenues. The primary documents used for quantitative data gathering were Annual Reports, Treasurer Statements, and Financial Reports presented at the end of each fiscal year. Archival items for gathering qualitative data were selected based on the identification of pivotal moments like the first issuance of a revenue bond. Key search terms used in identifying relevant documents in the digital archives are presented in the appendix. Documents identified with relevant qualitative data were saved as PDF files and imported into Atlas.TI for coding and analysis.

The second part of this analysis focuses on determining how financial intermediaries influence the work of the water district and its member agencies. The data to understand this include analysis reports published by the credit rating agencies to justify their evaluations of the water district. Since I focus on a particular moment of credit rating downgrade in 2011, I analyzed 8 specific items from this period, including a report by Standard & Poor's, a report by Moody's, and two reports by Fitch. I also examined three internal MWD presentations slide decks from board meetings and a letter to the board written by the GM for supplemental and contextual information at the time of the downgrade. The choice of this historical moment is analytically advantageous as the rating agencies reveal greater detail on their rational of their evaluation at a downgrade compared to the commonplace occurrence of upholding of an existing rating. Additionally, in the course of this research, I examined dozens of credit rating reports of other agencies and of MWD during rating affirmations, rather than downgrades. Insight from this contextual background knowledge supports the findings of this analysis. This is because during non-downgrade times and among other municipal organizations similar themes and patterns are present and point to dynamics that parallel the key findings regarding the influence of the rating agencies. To best observe the priorities and considerations of the credit rating agencies, I used an inductive coding strategy to derive qualitative patterns and overarching themes that are suggestive of the theoretical processes under examination. These patterns identify pressures and constraints that financial interests place upon water managers and develops theoretical insights from the data.

ANALYSIS

How We Pay and Why It Matters – Taxpayers or customers?

Municipalities have long engaged in marketing and selling their debt as a way to raise capital for expensive infrastructure projects, dating back to the first GO bond in 1812, issued to build a canal in New York City (Malanga 2010). Municipal bonds generally fall into one of two categories, GO bonds or revenue bonds. Alternatively, pay-as-you-go (PAYGO) financing refers to when municipalities opt to self-finance projects and avoiding the need to issue debt, but this is an increasingly rare occurrence. GO bonds are backed by a municipality's ability to tax the population it serves. GO bonds are the original form of municipal debt. In this financial structure residents are *taxpayers* and municipal officials collect funds and see to the adequate provisioning of services, with the ability to subsidize municipal costs if necessary. Since the tax base is the collateral on the debt, GO bonds require voter approval. Furthermore, tax bases are generally a stable and enduring financial stream, thus GO bonds tend to receive high quality ratings by credit rating agencies and they are sought after as a safe, low-risk investment.

An alternative, the revenue bond, is instead repaid by the revenue stream of a municipality. In this financial structure, residents are *ratepayers* and the municipalities are able to develop into an independent self-financing enterprise, as the bond does not involve a commitment of the taxpayers. For a water district, revenue bonds are repaid by the sale of water. Cities and municipalities face limits on how much debt they can issue that is backed by taxing potential, so revenue bonds sprouted from a desire by local officials to expand debt-issuance while working around these debt-limit constraints. Sbragia (1996) points out that the use of revenue bonds grew among US municipalities in the early decades of the 20th century. He observes that the courts "allowed municipalities to use the revenue bond to circumvent debt limits" and that, as they gave municipalities the ability to issue revenue-backed debt, courts came to view municipalities functionally as business proprietors in some circumstances, as opposed to

the traditional role of municipalities as elements of the government (112). The first instance of revenue bond financing occurred in 1895 in Spokane, Washington, doing so to circumvent established debt limits. In coming decades, officials in public utilities recognized that "[r]evenue bonds are more akin to private corporation bonds than they are to the standard municipal bond" (Knappen 1939: 87).

Slowly large cities, mostly in Washington, issued more revenue bonds and the practice expanded more in the 1920's. By 1937, 16 states authorized the use of revenue bonds for water and other services through legislation (Fowler 1938). Together, revenue bonds and GO bonds comprise the two primary sources of long-term municipal debt (see Sbragia 1996: 112-19 for detailed overview of "The Evolution of Debt Instruments" and a compelling argument that revenue bonds emerged as a tool to circumvent legal regulations on public debt).

MWD issued its first revenue bond in 1975, for $85 million. It is likely that they did not seek the use of revenue-backed debt earlier for two reasons: One, they received ample funding through tax collections and through payments from their member agencies to fund their internal operations. And two, the large infrastructure from which they benefit was funded by fiscally independent governing bodies. For instance, MWD is a primary benefactor of the California State Water Project (SWP), which, beginning in 1960, included the construction of a storage and delivery system consisting of reservoirs, aqueducts, power plants, and pumping stations covering two-thirds of California. To emphasize the scope and scale, the SWP is the largest single consumer of electrical power in the state and is the largest state-financed water project ever built. And all of this was funded through state actions, mainly the Burns-Porter Act (known also as the California Water Resources Development Bond Act), not directly through the organizations that sell the water which it delivers. Therefore, limiting the amount of debt and financial liabilities for

organizations like MWD. According to archival documents dated March 27, 1975, the district sought and received authorization by the electorate to issue revenue bonds in June of 1974. A report to the board of directors reads,

> One of the principal purposes of seeking such authorization was the desirability of providing a means, other than the pay-as-you-go approach, of financing construction work not included in the program presented to the voters prior to the authorization of general obligation bonds in 1966. (GM to Board, approved by Board, 5/13/1975)

This shows that, for the district, getting voter approval for GO bonds was too slow a process when seeking new construction and PAYGO was not considered a viable approach. A strong embrace of revenue bonds would follow in coming decades and by the early 2000's revenue bonds comprise the nearly all of the district's outstanding debt.

Figure 3.1 displays the outstanding debts that MWD is responsible for annually with a line for total long-term debts, debt from GO bonds, and debt from revenue bonds. This trend clearly demonstrates that overall outstanding debt increased significantly through the 1990's and remains between $4 to 5.5 billion dollars annually in the past 20 years. It is also apparent that since the 1990's revenue bonds comprise the vast majority of the district's total debt. Together this suggests a shift towards commodification and financialization, as the district grew reliant on revenues to raise capital from global investors, while drifting away from a model of governance based on taxpayers and the public stewardship of common good resources. The rise in overall debt and the fact that it comes to be comprised mostly of revenue-backed debt is consistent with Research Expectations 1 and 2. Hackworth (2002; 2007) and others identify the 1980's and early 1990's as the period when financial objectives associated with neoliberal governance rose to prominence in urban governance settings. For MWD, overall debt ramped up in the early 1990's and revenue-backed debt overtook tax-backed debt in this same period. The implications of the

growing reliance on revenue-backed debt over other modes of finance will be examined further in the discussion to follow.

Figure 3.1: MWD's Long-term Debts

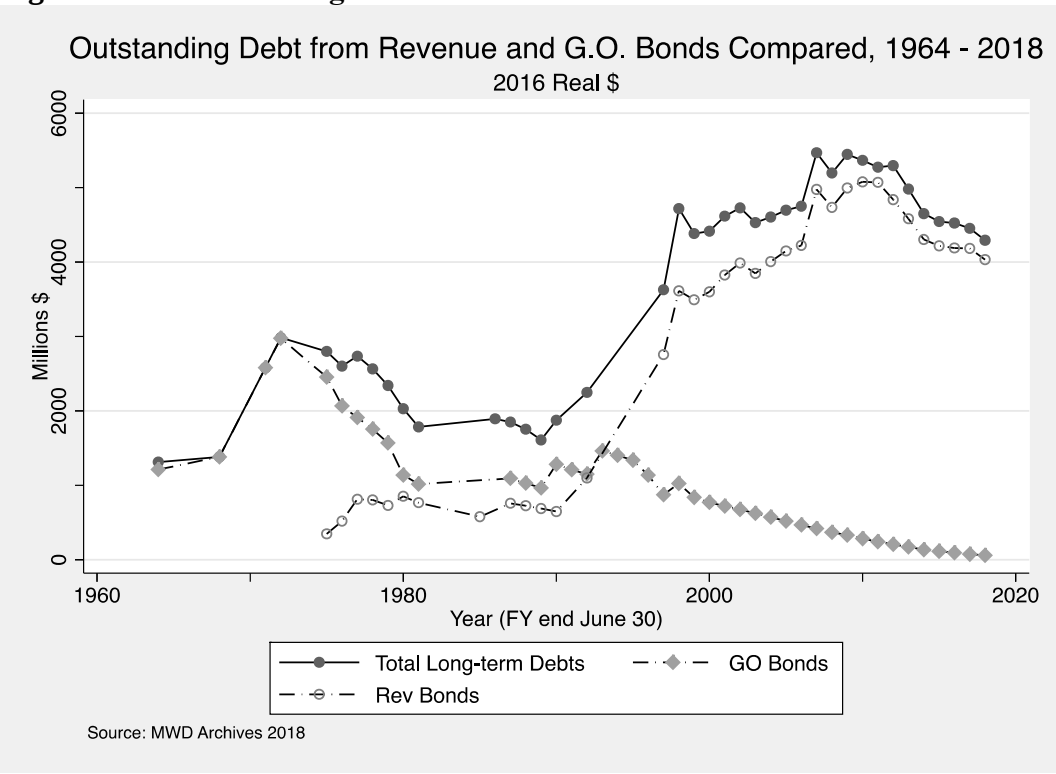
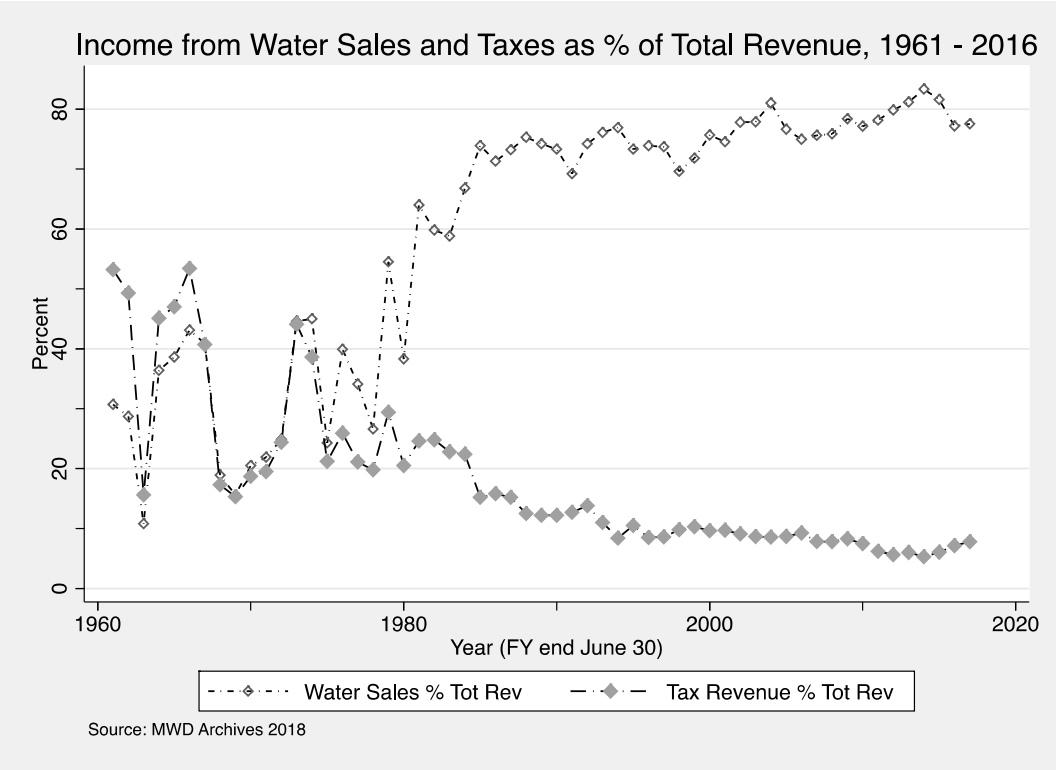


Figure 3.2 presents trendlines comparing revenues from water sales and revenues to taxes as percentages of total income annually since 1960. This graph shows that taxes and water sales counted similarly towards to total money coming into the district until the late 1970's. Quickly, in the early 1980's water sales as a portion of total revenues, increased rapidly and has remained on a slow upward trajectory since then. For instance, water sales make up about 80% of the district's income throughout the past 20 years. This shift in structure, wherein the district focuses on increasing water sales, is followed by the substantial rise in the use of revenue bonds occurring in the 1990's. Together this suggests that the steady and plentiful revenues contribute to the acquisition of capital—the ability to sell their debt—through revenue bonds. A reliance on

water sales over taxes is also suggestive of the district engaging in the commodification of water, rather than managing it as a scarce resource and in trust as a public good.

Figure 3.2: MWD's Income from Water Sales and Taxes as % of Total Revenue



The move away from taxes and the embrace of commodification, paired with revenue-backed debt, are consistent with the previous research claiming that financialization occurred due in large part to the deregulation of the financial markets in the wake of economic stagnation in the 1970's (Crouch 2009; Krippner 2011; Streeck 2011). Figure 3.2 shows that a model in which taxes take a backseat to commodification, began rising to prominence in the late 1970's, which in turn created conditions favorable to the embrace of revenue-backed debt that began a few years later, as observed in Figure 3.1.

Scholars adroitly articulate how financial markets are used by political institutions to supplant elements of the welfare state and quell distributional conflicts (Krippner 2011; Prasad 2012; Quinn 2019). Analysis of MWD, shows that the provisioning of water through public

governance organizations is also subject to similar patterns and dynamics. A key difference in this case is that water governance can be seen as a critical part of overall environmental governance and thus mediates important relationships between society and the natural environment. Considering that as borrowers grow increasingly reliant on financial markets, so does the influence of financial gatekeepers—the credit rating agencies—and in doing so they propagate the finance-oriented values of the investors to whom they provide their services (Sinclair 1994; 2008 Hackworth 2002). As such, the next part of this analysis examines the substantive influence that financial gatekeepers exercise upon the water district.

The Influence of Financial Gatekeepers

In May 2011, the credit rating agencies released their ratings for MWD's newly issued revenue bonds along with reports detailing the rationale behind the judgements. What is significant about this particular moment is that Fitch downgraded MWD's long term debt from AAA (highest rank) to AA+ (second highest rank). MWD stated in the 2011 Annual Report published months later that the downgrade was "due primarily to demand volatility." This assessment came on the heels of three years of drought conditions from 2007-2009, which included restrictions on water. The timing of this downgrade points to a linkage between financial interests, in this case the quantified perception of the financial gatekeepers, and the on-the-ground environmental conditions in which MWD operates. At the same time, the other rating agencies, Standard and Poor's and Moody's, reaffirmed their previous ratings of MWD's debt, citing concerns that parallel those that motivated Fitch's downgrade but considering them not to be worthy of a full downgrade at the time. The rationale and analysis offered by all three firms all point to the ways in which financial gatekeepers seek to influence the actions and policies of

municipal governments. The downgrade by Fitch is a particularly compelling moment as the firm must explain their decision and point to the conditions that generated this sanction. While, the reaffirmations by the other two agencies are also useful as they explain the reasons for maintaining their favorable ratings of MWD, pointing to the dynamics that the financial gatekeepers favor.

Thematic coding of the rating agency reports from this period reveal that there are seven key domains of concern pertaining to how the rating agencies evaluate MWD's performance. These categories are inductively derived by qualitatively coding the documents for reoccurring themes and patterns. This analysis reveals conditions or actions, for each domain, that are incentivized and penalized according to the evaluations of the rating agencies. All quotations in this section are from May 2011 credit rating reports by Fitch, Standard and Poor's, and Moody's explaining the rationale for issuing their respective ratings. I purposely focus on this period because of the downgrade, which is an uncommon occurrence. The downgrade implies the presence of pressures and characteristics that the credit rating agencies view unfavorably, causing there to be greater depth and revelation in their analysis, compared to the regular reports in which they reaffirm the current evaluation. Table 3.1 summarizes these findings and presents the analytic categorization schema. Each domain is in turn discussed individually. The findings of this line of inquiry are consistent with Research Expectations 3 and 4, as we see that financial gatekeepers do indeed function to limit or expand access to financing for water districts and the influence exerted upon water districts encourages the commodification and exploitation of natural resources in pursuit of financial objectives.

Table 3.1: Qualitative Criteria of Credit Ratings

Key Concerns and Practices		**Incentivized Conditions**	**Penalized Conditions**
Resource consumption		Water sales	Reduced demand
Decentralized governance		Monopoly of supply	Buyers with diversified supplies
Adaptability and resilience		Consistent demand regardless of conditions	Demand fluctuations with resource availability
Financial logics		Strong financial profile (growing and active)	Limited surplus and growth
Public interest		Willingness to raise rates	Hesitancy to raise rates
Environmental conservation		Limit capital spending on projects	Capital spending on long-term environmental projects
Legislative requirements		A regulatory environment with minimal pressure to conserve and recycle	Conservation and recycling that reduces revenue

Resource consumption

Resource consumption, as a domain of concern, refers to how the rating agencies view the sale and usage of the district's main product, water. Since water shortages are a nearly ever-present feature of the West in recent decades, there are occasionally compelling reasons for water users to reduce their consumption. MWD draws water from the Colorado River and the California Aqueduct that taps flows from Northern California. Both sources have a history of water-related environmental stress and contentious sharing arrangements across communities and industries. This further emphasizes the importance of mitigating consumption of MWD's water.

Despite this, Fitch downgraded MWD in large part due to "demand volatility," which led to less favorable "financial performance." Furthermore, in Moody's report they cite the potential for "weak financial performance… from reduced sales/supplies" as among a small number of factors that could lead to a rating downgrade. And, Standard and Poor's justified their very

strong rating of MWD due to the "very large scale of operations… accounting for about half of the total water consumed in the region." Standard and Poor's also provides rationale of their "stable" outlook determination asserting that it, "reflects our expectation that rate increases and improved supply conditions will allow coverage to return to their historically stronger levels." Together, examination of resource consumption as a domain of concern demonstrates that the rating agencies incentivize water sales while penalizing reduced, or volatile demand, even when fluctuations are accounted for by climatological factors. Ultimately, increases in water consumption is championed by the financial gatekeeps, despite being at odds with the general need to conserve water and navigate regional water supply realities.

Decentralized governance

Decentralized governance, as a domain of concern, describes the extent to which the regional governance of water is spread across diverse sources and multiple agencies, as compared to the alternative of highly monopolized distribution network with control over supplies existing in a single agency. All three rating agencies praise the fact that MWD is an essential supplier of water to highly dependent member agencies and together serve about 19 million people, underpin the economy of Southern California, and influence state-level politics. Statement as such in the credit rating analyses function to reiterate MWD's financial strength, which is based on having a near monopoly on the flow of imported water in the region. This dynamic is echoed by Standard and Poor's, stating:

> In our view, Southern California's dependence on MWD for water is likely to remain strong, and we believe that MWD's ability to supply needed water is critical to the health of the Southern California economy, creating a large political incentive to meet future water demand. (Standard and Poor's Report, 5/18/2011)

Furthermore, in discussing the reasons for their downgrade of MWD, Fitch points to MWD's members "investing in alternative supplies" and that the drought and associated state regulations "prompted Metropolitan and its members to work together to develop new local supplies that would reduce the regional demand in Southern California for imported water sold by Metropolitan."

Adaptability and resilience

Adaptability and resilience, as a domain of concern, refers specifically to the ability of the population to adapt to changing environmental conditions and to demonstrate resilience towards necessary changes in consumption patterns and habits. The analysis shows that the rating agencies are very much in favor of financial stability and revenue consistency regardless of other conditions, like water supply stress and below average precipitation. For instance, the expected sales decline during drought is pinpointed as a factor reflecting a lower credit rating category. Further, the Fitch praises MWD's "substantial storage facilities in the service territory, rate stabilization fund reserves, and other programs to mitigate supply variability." The financial gatekeepers are not interested in MWD's ability to understand the environmental constraints and to work within them; rather, there is a strong push to ensure consistent sales regardless of the uncontrollable variations in supply. Similar sentiments are expressed by Standard and Poor's and Moody's, as both point to significant water storage and financial methods in place to mitigate periods with reduced water demand as contributing positively to their judgements.

Financial logics

Financial logics, as a domain of concern, refers to organizational patterns that reflect decision-making and policies oriented towards finance. In this context, evidence of financial logics includes organizational processes that prioritize financial position, returns on investments, speculative capital endeavors, minimization of expenses, and maximization of returns. These features are commonplace among profit-seeking enterprises but are generally understood as taking a backseat in public governance where organizations are driven by a mission associated with democratic accountability, public good, and resource provisioning. The reports of the rating agencies demonstrate an expectation that MWD act according to financial logics, something that is made clear in the first line of Fitch's downgrade rationale. The section begins, "The downgrade reflects a weakened financial profile" and continues pointing to MWD reaching "a low point in fiscal 2011 with all-in debt service coverage around 1.0 times." This judgement fails to account for non-financial demands of the water agency, predominantly stewarding a water supply and being accountable to the public.

Similarly, in Standard and Poor's report on reaffirming MWD's strong credit rating, they state, "Water sales to its member represented 78% of MWD's total revenues in fiscal 2010, with other revenues such as standby charges, readiness-to-serve charges, and capacity charges together representing 10% of revenues." And, in the next paragraph they follow, "MWD's board policy is to maintain 2x annual debt service coverage (DSC) by net revenues, which we view as strong" demonstrating the link between MWD's shifting sources of revenue (i.e. water sales versus tax revenues) and maintaining a position favorable to receiving capital through revenue bonds. By leaning into the commodification of water, MWD earns a favorable rating by financial gatekeepers, and thus greater ability to issue debt through revenue bonds, without having to seek public approval as would be the case with GO bonds.

Public interest

Examining public interest, as a domain of concern, illuminates how rating agencies view the water districts engagement with the public and the democratic processes that empowers the board of directors. All three rating agencies strongly favor a demonstrated willingness to increase the cost of water in a timely manner in order to increase revenues and stabilize the district's financial position. For instance, Fitch praises MWDs rate hikes but questions the viability of continuing the trend, stating:

> Metropolitan's revenue flexibility has been substantial, as demonstrated by the Board's action to raise rates 75% cumulatively over a six-year period. However, the scale and pace of recent rate escalation and the continued economic downturn in the region could dampen future rate flexibility. (Fitch Report, 5/17/2011)

Moreover, Standard & Poor's remarks favorably on the interaction of MWD's scale and rate hikes, stating, "a very minor rate increase can generate several million dollars in water sales revenues." In the same report, the rating agency also views the "stable" outlook as resting on the fact that MWD "has prudently built up a large rate-stabilization reserve and retains strong rate flexibility." And, Moody's echoes this dynamic stating that despite a below average financial performance in recent years, Moody's refrains from a downgrade because, "the District has consistently demonstrated a willingness to raise rates to restore its financial health." The evaluations by financial gatekeepers incentivize the Board's willingness to raise rates on users while penalizing any hesitancy to raise rates even when faced with a broad economic downturn that affects large swaths of the economy. Considering that MWD's service area includes many low-income areas, the effects of water rate increases disproportionately burden residents in low-income communities.

Environmental conservation

Environmental conservation, as a domain of concern, captures how credit ratings are affected by the presence of environmental reform and conservation needs and policies. The analysts at Moody's at least acknowledge in their report the difficult reality of water in California, remarking,

> A few of the District's member agencies are pursuing alternate sources of new water supplies. These efforts, however, are integrated into the District's own long-term resource planning and, given the inherently tight water supply environment in Southern California, do not pose a threat to the District's fundamental water supply relationship with its member agencies or its likely future sales. (Moody's Report, 5/20/2011)

This statement suggests that the operative financial logic can tolerate some development of new supply, as long as it is limited. If communities who are MWD members were unusually successful in developing new supplies and reducing their reliance on imported water, then MWD would likely suffer a credit rating penalty. Additionally, in the same document, Moody's criticizes MWD's moderate debt service coverage, owing to below average sales due to "the weak economy and the lingering effect of prior years' conservation efforts." The effects of conservation efforts are viewed as a nuisance rather than efforts to be applauded, despite recognition of the region's water supply challenges and California's ongoing drought.

Similarly, Standard and Poor's remarks, "the largest hurdles to the district's main source of supply include drought and court decisions to protect fish in Northern California." The rating agency also remarks about MWD's efforts to develop "ways to mitigate fish impact so that future allocations are maximized." Additionally, among the key driving factors that Fitch cites to justify their downgrade of MWD is the following bullet point:

> Discussions continue regarding Metropolitan's participation in a long-term solution in the Bay-Delta, which will likely involve additional capital spending, paid for by state and federal water contractors, including Metropolitan. The improvement could put further pressure of Metropolitan's rates. (Fitch Report, 5/17/2011)

These statements make clear that the financial gatekeepers view the state-led efforts to protect an endangered species, not as a laudable endeavor or even a situational necessity, rather it is a "hurdle" in the way of revenues, an impediment to maximizing allocations, and a lamentable capital expenditure.

Legislative requirements

The domain of concern, legislative requirements, overlaps with environmental conservation because many of the legislative acts in question pertain to environmental issues. Prior to the downgrade in 2011, MWD's service area was subject to state-led conservation measures that included significant per capita water usage reductions. Fitch stated its concerns over regulatory changes to water pumping in the State Water Project (SWP), the aqueduct that links MWD to water from Northern California. Fitch notes that these pumping issues prompted MWD and its members to develop new supplies of local water, which will result in reduced demand and declining revenues for MWD. Fitch further demonstrates a disfavor for regulations by viewing mandated conservation as a threat to MWD's revenue stating, "Metropolitan's members are required to meet a legislative requirement to reduce per capita usage by 20% in 2020, so investments in recycling and conservation may continue to place longer-term pressure on Metropolitan's revenue base." These remarks by the rating agency are telling because in their analysis they treat MWD as if it were a profit-driven enterprise, solely focused on the bottom line. There is no room for the financial gatekeepers to be concerned about minimizing environmental degradation, reducing carbon footprints through developing local supplies, or building climate resilience into resource governance. Additionally, the framework applied by the rating agencies is at odds with smooth democratic functioning. A rating downgrade predicated on

a distaste for legislative policy equates to a financial penalty to the citizens of California for having responsive lawmakers.

The agencies that reaffirmed their high ratings of MWD also remark about legislative hurdles. For example, the contradiction between democratic representation and a distaste for regulation is apparent in Standard and Poor's report as they cite "increasing environmental regulations" as among the district's "challenges in completing its mission to supply its service area and members with adequate and reliable supplies of high-quality water." Moody's similarly views state regulations as a challenge to MWD's financial position and equates legal decisions to the immutable environmental realities of rainfall levels. This is evident in the remark, "The District's SWP [State Water Project] supplies will likely remain subject to significant regulatory constraints for the foreseeable future, notwithstanding a recent, modest easing of some constraints related both to legal decisions and increased rainfall."

DISCUSSION AND CONCLUSIONS

This chapter examines a case study of the largest municipal water provider in the US and scrutinizes quantitative financial statistics from the mid 20th century to present, including annual amounts of GO and revenue-backed debt, and a comparison of annual amounts of tax revenues and revenues of water sales as percentages of total revenues. I find empirical support for the four stated research expectations derived from literature on financialization, urban governance, and environmental political economy. The analysis of financial statistics extends previous research on financialization and neoliberal financial trends that largely focuses on other domains of activity like welfare spending (Prasad 2012), housing policy (Quinn 2019), city governments (Hackworth 2007) and corporate revenue (Krippner 2005) by demonstrating some of the ways in

which the rise of finance that followed political deregulation in the 1980's impacted the financial structures of municipal water organizations (Crouch 2009; Krippner 2011; Streeck 2011). Considering the important role played by financial gatekeepers identified in earlier research (Sinclair 1994; 2008; Hackworth 2002) on city governance, I also endeavor in this chapter to examine how financial gatekeepers evaluate the WSO and identify the directions in which they influence the behavior of the WSO. To do this, I conduct qualitative analysis, using inductive coding methods, of credit rating reports published during a strategically relevant historical moment. Together, the financial statistics along with examination of the rating agencies' influence, this chapter presents evidence that financialization shaped the policies of municipal water providers by encouraging the commodification of water and use of private capital over public funding and tax collections. And, through financial gatekeepers, global capital markets wield strong influence over the institutions that society counts on for environmental stewardship and the provisioning of natural resources. This chapter argues that the reliance on revenue-back debt encourages a myopic, finance-oriented strategy among officials and organizations engaging in environmental governance.

To recap, Figure 3.1 shows that the total amount of long-term debt grew significantly, signaling the growing influence of financial interests and an embrace of debt financing over PAYGO and other methods on the part of municipal decision-makers. Additionally, we see clear diverging trends with debt from GO bonds (debt backed by taxes and requiring voter approval) declining, while increasing debt from revenue bonds (debt backed by water sales and no voter oversight). A reliance on revenue bonds results in municipalities prioritizing steady and growing revenues from selling water and other aspects of financial logics, like holding large cash and investment reserves, maintaining steady demand despite environmental conditions, and reducing

expenditures on environmental projects, a set of institutional logics more commonly associated with profit-seeking private enterprises, rather than public governance organizations.

Figure 3.2 provides further evidence to support this by showing the stark contrast in trends associated with two different sources of income for water agencies, water sales and tax revenues. With water sales jumping from 20% to 40% of total income before 1980 to upwards of 80% of total income in the 2000's, the organization has embraced a financial structure that treats water as a commodity to be acquired and sold, rather than as a public good to be managed and distributed strategically. Taken together, the trendlines of the varieties of debt and income sources in Figures 3.1 and 3.2 point to a way in which a public good and natural resource is commodified, despite being managed and distributed by a public agency with elected board members. The commodification of environmental resources is generally associated with the privatization of a public good. However, as public municipalities grow increasingly reliant upon revenue bonds for access to capital, and as global financial markets increasingly look to municipalities for investment, commodification occurs as a feature of the financialization of urban municipal governance.

In light of what the financial statistics show—a strong dependence on financial markets to capitalize public governance organizations—the second part of the analysis qualitatively examines the influence wielded by gatekeepers to the capital markets. I analyze reports of credit rating agencies at a strategically relevant moment, at the time of a new revenue bond issues when one agency downgraded MWD's debt and the others affirmed their ratings. In doing so, I derive a typology of key domains of concern with associated conditions that are incentivized and penalized. Ultimately this illuminates how financialization led the agency to embrace financially

oriented policies, while democratic processes, public interest, and environmental concerns tend to take a backseat.

This case study attempts to illustrate how finance influences public policy and what it potentially means for municipal governance and environmental stewardship of public good resources, like water. The multi-method analysis suggests that there is a strong financial orientation within the municipal governance organization that developed prominently through the 1980's and 1990's. Drawing on the findings associated with how financial gatekeepers push municipal organizations to prioritize financial objectives over others, I argue that the financialization of municipal governance results in positive and negative financial feedbacks that shape and constrain decision-making that is systemic and structural. The positive financial feedback allows well-resourced agencies a substantial amount of flexibility as their access to capital is reliable, so long as they maintain a debt-to-revenue ratio that pleases the rating agencies. However, the negative financial feedback is likely to create the opposite effect, a taste of which is observed in the rationale for downgrading MWD. I expect that the negative financial feedback, where it is strong, will motivate democratically elected institutions to shirk substantive foci—for instance, water consumption during drought and long-term adaptability—while embracing a set of financial logics that include maximizing revenue, minimizing expenditures, and dodging legislative requirements among others.

I propose that the negative financial feedback is likely to create pathological institutional behaviors and suggest the term, *financial pathology of institutions* to describe this phenomenon in public governance settings. The financial pathology can describe settings in which public agencies rely on private debt and are thus constrained by the financial interests, as observed in the analysis of how the credit rating agencies judge municipal water suppliers. Furthermore,

these constraints result in the municipality being unable or unwilling to fully pursue its substantive mission and objectives, thus compromising service provisioning, environmental sustainability, and democratic representation. The pathology becomes self-reinforcing and cyclical because, if the organization struggles to perform, they will incur penalties that make it even more difficult for the organization to recover. For instance, in municipal water, a struggling organization will be less able to raise rates without major public distress, they will have a higher likelihood of management and board turnover, and access to financial capital will be more costly and cumbersome.

It is beyond the scope of the present analysis to fully develop the concepts of the financial pathology of institutions and financial feedback in municipal governance, as this chapter attempts the first necessary step of establishing the financial conditions of the modern water supply agency. In the next chapter, I develop these concepts further using interview and participant observation data to hear directly from key actors and elected leadership of water districts within the MWD service area. Furthermore, the financial processes documented in this case study are not limited to water utilities, nor are they limited to Southern California (Leyshon and Thrift 2007; Halbert and Attuyer 2016; O'Neill 2017). Under the conditions of a highly financialized global economy, a wide range of municipalities engage with debt similarly, especially among relatively large organizations with sizable financial portfolios and budgets. The concepts of financial feedbacks and financial pathology would benefit greatly from further research that explores how these processes unfold in other settings like in electrical power utilities, school districts, or forestry management and other land use organizations.

A concerning dynamic is that public policy actors and organizations are constrained by the hegemonic financial structures in which municipal governance functions. This structure is

highly dependent on markets to underpin a public administrative apparatus. It is not a story of state retrenchment, rather it is a fusion of the state with market interests (Hackworth 2007; Weber 2010; Peck and Whiteside 2016; O'Brien et al. 2019). The management of public goods depends upon the tastes of financial markets and their gatekeepers, rather than being driven by democratic processes or technocratic stewardship and distribution of resources (Sinclair 1994; 2008; Hackworth 2002).

Furthermore, in a changing climate that promises greater weather volatility, reduced snowpack in many watersheds, rising sea-levels, and increasingly intense droughts in already dry climates, the survival of communities will rely upon scientifically informed policymaking. Under swelling pressure and urgency, governance institutions will have to upgrade infrastructure, implement bold sustainability agendas, and distribute increasingly scarce resources. However, the financial structures in which governance institutions function may not be equipped for the challenges ahead. They are reliant upon financial markets that resist environmental conservation demands and encourage the consumption of scarce resources. Thus, climate adaptation will require consideration of financial reforms and rethinking how we fund our governance institutions. The financial pathology of institutions will likely prefigure the outcomes of the most well-intended social and environmental planning.

Financial patterns like those examined in this chapter are present in most city and municipal governments in the US (Monkkonen 1995; Hackworth 2007), as they all rely upon the same limited menu of funding options. Additionally, similar financial structures exist in varying forms around the world (Leyshon and Thrift 2007). Cities, public and private utilities, special governance districts, and joint-power authorities provide essential functions upon which society and environments depend and their reliance on global capital markets needs to be interrogated.

For instance, the once financially dependable and highly regulated power utility PG&E saw drastic hits to their financial standing in the wake of devastating wildfires which their equipment was deemed responsible for igniting.[12] This dynamic lends credence to the arguments of critics claiming that PG&E's eye on the bottom line contributed to poorly maintained and faulty equipment. Whether it is water, power, or other governance organizations reliant upon debt, financialization impacts a wide range of social settings and environmental spaces, potentially leading to pathological institutional behaviors worthy of our further attention. Further refinements of the financial pathology through empirical analyses across diverse governance settings may produce a conceptual tool to unite seemingly disparate cases of governance failures under a single concept to articulate the structural root of a variety of problems.

[12] "PG&E Stock, Bonds Plunge Anew as S&P Cuts Its Credit Rating to Junk." *Los Angeles Times*. Retrieved March 30, 2020 (https://www.latimes.com/business/la-fi-pge-credit-rating-cut-20190108-story.html).

APPENDICES:

Relevant MWD Archive Search Terms
Treasurer's Authority
Treasurer's Report
Treasurer's Monthly Report
Financial Report
Annual Report
Comprehensive Annual Financial Report
Annual Financial Report
Financial Statements
Credit Rating
Credit Ratings

TABLES AND FIGURES
Figure 3.1: MWD's Long-term Debts

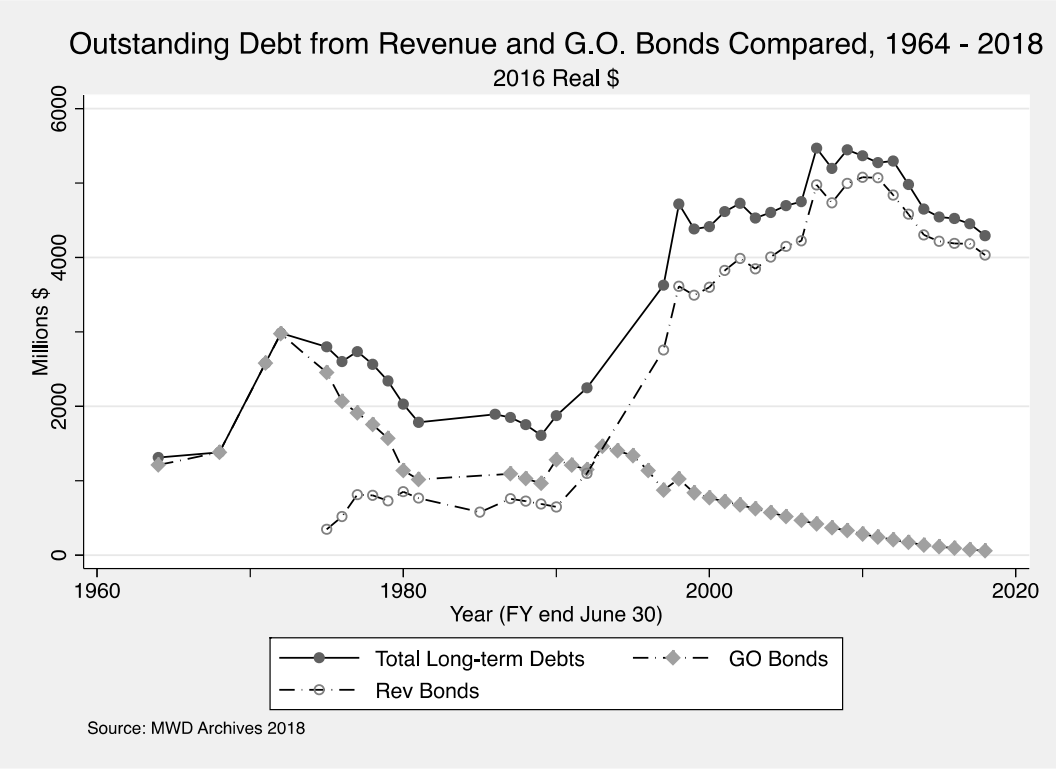
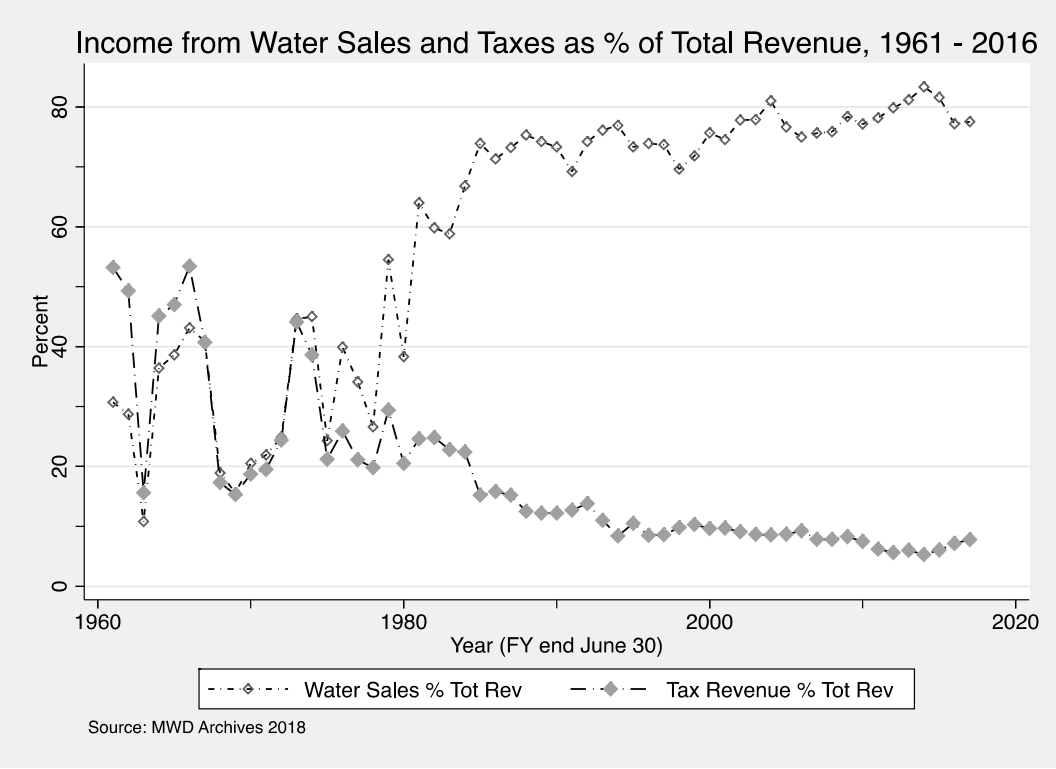


Table 3.1: Qualitative Criteria of Credit Ratings

Key Concerns and Practices		**Incentivized Conditions**	**Penalized Conditions**
Resource consumption		Water sales	Reduced demand
Decentralized governance		Monopoly of supply	Buyers with diversified supplies
Adaptability and resilience		Consistent demand regardless of conditions	Demand fluctuations with resource availability
Financial logics		Strong financial profile (growing and active)	Limited surplus and growth
Public interest		Willingness to raise rates	Hesitancy to raise rates
Environmental conservation		Limit capital spending on projects	Capital spending on long-term environmental projects
Legislative requirements		A regulatory environment with minimal pressure to conserve and recycle	Conservation and recycling that reduces revenue

Figure 3.2: MWD's Income from Water Sales and Taxes as % of Total Revenue



CHAPTER 4

FINANCIALIZED INSTITUTIONAL LOGICS AND STRATEGIC ACTIONS IN PUBLIC ENVIRONMENTAL GOVERNANCE: HOW WATER MANAGERS NAVIGATE COMPETING POLICY DOMAINS

INTRODUCTION

In a private meeting an elected official on a municipal water governance board asked a chief engineer on his staff, "…if there was no rain, how could we deal with that? So, we have to buy more [imported] water?" To which the engineer responded, "Yeah. That's a giant wild card: Climate change." (interview with engineer and board member, 5/20/2019) On another occasion the General Manager (GM) of a large water district called climate change an "historic game changer" (interview with GM, 5/28/2019). In this context, with the effects of anthropogenic climate change observable in the western US in the form of wildfires and droughts, and more dire effects on the horizon, this chapter asks: How do water governance officials navigate conflicts and tensions across the multiple, complex, and intersecting policy domains in which they operate? In other words, how do they traverse the "giant wild cards" and "historic game changers" like climate change-driven droughts while also balancing competing interests from financial markets (discussed in previous chapters), dynamic regulatory oversight, and fragmented multi-level governance institutions (Mullin 2009)? This chapter applies the theory of strategic action fields (Fligstein and McAdam 2011; 2012; Scoville and Fligstein 2020) and the institutional logics perspective (Thornton and Ocasio 2008; Thornton, Ocasio, and Lounsbury 2012) to understand the maintenance and reproduction of social order in this multi-faceted and consequential political field.

Water-related problems are a fixture in the history of the western US. In California, over half of the population lives in the southern region of the state, but most of the state's water is located elsewhere. Urban population centers, like Los Angeles and San Diego, and the vast agricultural industries throughout the state depend upon expansive water supply governance systems and the associated physical infrastructure that moves water hundreds of miles, over and through mountains, and reverses the natural courses of rivers (see Carle 2016 for a detailed accounting of California's overextended interstate water supply and Feldman 2012 for a concise overview of the social and political sides of freshwater delivery in general). Over 19 million people in Southern California receive water through the Metropolitan Water District of Southern California (MWD), making it the largest provider of drinking water in the nation. As a municipal water wholesaler, MWD sells water to retail water suppliers, who in turn sell it to the end users. MWD is the organizational lynchpin to Southern California's imported water regime. This chapter seeks to understand how water managers within MWD's service area wrestle with the complicated and multifaceted issues they must confront in making decisions and setting policies.

From an environmental standpoint, it is important to understand the regional and local level policy-making process for water because water consumption in California is linked to a number of environmental concerns, including the degradation of ecological habitat near water sources, concentrating pollutants in environmentally sensitive places within watersheds, the delivery of water that fails to comply with state and federal water quality standards, and land subsidence, among other issues associated with overdrawing aquifers in places reliant upon groundwater extraction. In addition to environmental impacts, water policy also affects social inequality as unequal access to quality municipal water across socio-economic status is a

persistent matter of concern throughout the state (Balazs et al. 2012), along with contentious politics and institutional relationships across rural—urban divides (Walton 1993).

Social science research on water policy points to economic aims and growth coalition politics (Logan and Molotch 2007) in urban governance as barriers to conservation (Hess et al. 2016; Brown and Hess 2017). Another study suggests that fragmented governance structures also present similar challenges (Caniglia et al. 2016). Some argue that the "modern hydraulic society" is an empire dominated by a cadre of political and economic elites that is maintained through the control of water resources (Worster 1985). Using the historical case of powerful interests from Los Angeles stealing water from rural farmers in the Owens Valley, Walton (1993) analyzes the highly antagonistic relationship between water organizations and the public. In a more theoretically oriented study, Scoville (2019) examines how the reengineering of waterways ironically lead to novel understandings of nature, that in turn are used to mobilize opposition to the commodification of nature (2019). Previous sociological research on water governance points to the saliency of political institutions, the multiple levels of policymaking, and economic growth in shaping social and environmental outcomes.

Another lesson from these sociological studies, although not always explicitly stated, is that water supplies are spatially dependent, as natural watersheds and humanmade aqueducts both transcend political and social boundaries. Accordingly, I consider water to represent an *integrated geography.* By using this term, I am emphasizing the incongruence between the *fragmentation* of governance institutions as they oversee an *integrated* geography. Fragmentation of governance institutions describes the structure of highly specialized organizations that work as fiscally independent entities (i.e. retail water districts, wholesale water districts, sanitation district, groundwater storage district, watershed-specific joint-power

authority, and other organizations that overlay or crosscut each other in geographical terms) on various pieces of an integrated geography. Mullin (2009) analyzed fragmented special district governance in California's water system arguing that specialized governance over water does indeed create unique effects but the effects are conditional upon local context. Among the potential downsides Mullin, posits, "questions that cross issue boundaries pose a challenge for specialized governance, and fragmentation of authority introduces new actors into the policy process who represent multiple political constituencies" (178). Particularly relevant to this chapter is the fact that policymaking institutions have amorphous and socially constructed boundaries that are, in the vast majority of instances, incongruent with the natural, preexisting geographical contours of watersheds and the ecology that water systems impact. To illustrate the point, one can consider how drinking water supplies for populations in the Los Angeles area are more dependent upon precipitation in mountains hundreds of miles away than they are upon rain that Los Angelinos can see with their eyes. Further emphasizing water as an integrated geography, decisions pertaining to the use of water in urban settings can have dramatic impacts to ecological habitats upstream, like in the case of the Salton Sea where the lake is considered an ecological disaster, or the San Francisco Bay Delta where contested water conveyance systems are responsible for compromising endangered species.

CONCEPTUAL FRAMEWORK

For this chapter, the orienting research problem asks, how do water managers in the contentious and dynamic field of municipal water delivery in California make decisions across competing and overlapping policy domains? And, further, how can we characterize the broad contours of the social order that emerges in this field? To pursue this research, I use the theory of

strategic action fields (Fligstein and McAdam 2011; 2012; Scoville and Fligstein 2020), a variation of field theory (Bourdieu and Wacquant 1992), as an orienting framework and theoretical vocabulary. Fligstein and McAdam define a strategic action field as, "a meso-level social order where actors (who can be individual or collective) interact with knowledge of one another under a set of common understandings about the purpose of the field, the relationships in the field (including who has power and why), and the field's rules" (2011:3). Additionally, Fligstein and McAdam affirm that "[a]ll collective actors" including "organizations" and "governmental systems" are made up of strategic action fields (3). So, I contend that municipal water supply management accurately reflects this description, making this a fitting theoretical framework for this case. Moreover, Fligstein and McAdam draw from institutional theory, pointing out that, "insight that action takes place in meso-level social orders is implied in the various versions of institutional theory" and they suggested that "in the case of government" the notion of "*policy domains*" (Laumann and Knoke 1987) is the variation of institutional theory that is commonly applied (2011:3). Thus, I proceed with the conceptualization that water supply management is a strategic action field and use the language of "policy domains" to categorize the varieties of actions and patterns of behavior that occur in the field. As a political field, water governance is embedded in a system of overlapping policy domains, in which actors, from the same field and others, engage to pursue agendas, seek influence, and react to events.

The empirical analysis in this chapter uses qualitative data from interviews and participant-observations to construct a typology of policy domains—Political/Legal, Financial, Technological, Developmental, and Environmental/Ecological—and I elaborate on how water policy is structured by these domains through exogenous events and strategic actions. These domain categories are inductively derived through coding qualitative data for reoccurring

patterns and themes. I argue that in most water governance settings these five categories are broad enough to encompass the vast majority of concerns taken up by actors in this field; thus, these can be viewed as an exhaustive list of policy domains. Additionally, in this analysis, I apply the institutional logics perspective (Thornton et al. 2012; Thornton and Ocasio 2008; Thornton et al. 2017) stemming from institutional theory (Meyer and Rowan 1977; Zucker 1977; DiMaggio and Powell 1983). Building on Jackall (1988) and Friedland and Alford (1991), Thornton and Ocasio define institutional logics as, "the socially constructed, historical pattern of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality" (1999:804). By conceptualizing actions within these terms, we can interrogate behavioral patterns and decision-making to identify elements that inform the hegemonic institutional logics, like the assumptions, values, and beliefs that motivate one course of action over other possibilities. Institutional logics are distinct from policy domains, as the institutional logic informs actions while the policy domain describes the arena in which actions take place.

Together, strategic action fields and institutional logics provide effective theoretical vocabulary to account for both, macro, structural phenomena and the role of individual actors and organizations in shaping policy and making strategic decisions. For instance, Thorton and Ocasio state, "By providing a link between institutions and action, the institutional logics approach provides a bridge between the macro, structural perspectives of Meyer and Rowan (1977) and DiMaggio and Powell (1983) and Zucker's more micro, process approaches" (2008:100). While, regarding field theory, Scoville and Fligstein assert that, "Fields structure actors' interests and influence them to think and act in accordance with the rules and expectations of the field. Nevertheless, field actors have the agentic capacity to accumulate

resources and/or seek advantages vis-à-vis others" (2020:81). In this context, this study understands water supply management to be a field in which actors engage across multiple, and overlapping, policy domains according to evolving institutional logics. The policy domains are where activity occurs and the institutional logics that structure action are shaped by broad, structural process, like the financialization of the global economy, which is the among the primary foci of this dissertation.

Lastly, in this analysis I use the term, *dominant,* to describe policy domains and institutional logics that are observed to supersede others when multiples conflict. For instance, if an aspect of the Technical policy domain, let us say the expansion of a water recycling initiative, is sacrificed because it would negatively impact standing in the Financial policy domain by leading to more costs and less revenue, this would suggest that the Financial domain is dominant over the Technical domain in this instance. And in this hypothetical, we can also observe that this decision, would likely be informed by financial logics rather than technical or environmental logics because the decision was informed by assumptions and values more closely aligned with the financial concerns of cost and revenues, rather than matters of technical or environmental concerns.

SUMMARY OF FINDINGS

I identify two prominent institutional logics that drive actions in all policy domains that I refer to as the regulatory compliance logic and the financial logic. The concept of the regulatory compliance logic describes the fact that, for water officials, there are many actions that are compelled by law. For instance, when the State of California imposed mandatory water restrictions during the drought in 2015, regional officials reduced deliveries to their end users are

motivated by the logic of regulatory compliance. I find that financial logic is closely behind because data shows that water managers apply financial logics often and across the board in all policy domains. In other words, nearly all concerns are filtered through a finance-focused institutional logic that applies assumptions and values pertaining to minimizing expenditures, maximizing revenues, and seeking other characteristics desired by financial gatekeepers. The data also show that water organizations actively seek to influence the Political/Legal policy domain through lobbying efforts, usually in attempts to pursue financial objectives. In the discussion, I distill these findings into a number of theoretical insights that can apply broadly to other domains of resource governance and public utility management. Lastly, I emphasize that, within the public utility sectors, regulatory compliance reigns supreme and as such, if one has the objective of influencing social and environmental outcomes, the legislative and legal process is likely to be a more effective site for reform and the efforts of collective action than targeting regional governance organizations or seeking to change the minds of local officials.

LITERATURE REVIEW AND RESEARCH EXPECTATIONS

Strategic Action Fields and Water Governance

Water governance in the western US is an extremely complex, expensive, and technical endeavor requiring engagement of every level of government. Further, water governance institutions are highly fragmented, with each organization functioning as a fiscally independent entity and there exists a deep web of vertical and horizontal relationships across agencies and organizations. This institutional makeup of this fragmented system has been shows to have effects on substantive outcomes in water supply management (Mullin 2009). In this context of multiple overlapping state and non-state actors, organizations, and interests, the strategic action

fields approach offers an effective conceptual vocabulary to understand the maintenance and reproduction of social order (Fligstein and McAdam 2011; 2012, Scoville and Fligstein 2020).

Rather than resting on questions related to the autonomy of the state, which risks misunderstanding the state as a unified entity that acts upon non-state actors, field theory understand the state as a broad collection of actors and interests that intersect and diverge in dynamic and complicated arrangements. Bourdeiu's initial use of the notion views the state as an "ensemble of fields" (Bourdieu and Wacquant 1992:112). Field theory, "focuses on the reproduction, emergence, and transformation of meso-level social orders that are engaged with the state and with other domains of society" (Scoville and Fligstein 2020:99). A field can be understood as shared channels of dialogue and discussion that focuses on a central and shared policy issue (Hoffman 1999; Hoffman and Ventresca 2002). In this framework, all states and state-structured endeavors are essentially a historical project that contains organized policy domains in which state and nonstate actors engage according to generally agreed upon rules with varying degrees of power and influence (Bourdieu et al 1994; Laumann and Knoke 1987). Fligstein and McAdam (2012) also suggest that fields can be embedded in systems of fields. Applying the framework of strategic action fields highlights that water managers and other representatives of municipal water providers engage in a number of overlapping, and occasionally conflicting policy domains.

It can be assumed from the onset that public water supply organizations will generally comply with the law and the regulations imposed on their work from higher levels of government. I refer to this as the regulatory compliance logic. Further evidence of this dynamic is observed by Brown and Hess (2017) in a study on water agencies and other city officials. They use interview-based research methods to show, in all the cases they study, the broad historical

driver of water conservation policies "ended up being intervention from higher levels of government, which often involved a combination of the federal government, the state government, and the courts" (319). While this chapter attempts to explain water policy decision beyond and including water conservation, I take Brown and Hess's findings to be suggestive of broader patterns of decision-making in this field. Accordingly, I derive the following research expectation regarding the policy domains and regulatory compliance:

Research Expectation 1: Analysis of qualitative data will reveal that there are multiple and overlapping policy domains in which water managers navigate events and seek influence in shaping policy, with the Political/Legal domain particularly influential over other domains due to regulatory compliance logic.

Hess et al. (2016) examine water supply regimes from an institutional theory perspective, focusing on institutional logics as the undergirding cause for changes in regime dynamics. They state that institutional logics, as a concept, "provides a way to think about the social meanings of the political conflicts over the transitions of water-supply regimes" (810). Drawing on the urban political sociology of Logan and Molotch ([1987] 2007) pointing to the strong influence held by pro-growth development interests in city politics, Hess et al. (2016) identify a "development" logic as a driving force in water supply organizations. They view the development logic as the "governing political logic that shapes the kinds of future projects that are deemed more or less desirable" (811) resulting in a preference for projects to increase water supplies over strategies to reduce demand on water supplies. Additionally, they identify a preservation logic, an environmental logic, and a consumer logic at work in this framework that motivate various state and nonstate actors to favor different water-supply management strategies.

Based on findings in this dissertation, from Chapter 2 and 3, which point to the salience of financialization in driving the policy of water governance, this chapter extends previous research (Hess et al. 2016). I do this by showing that it is necessary to account for a *financial logic* which contributes significantly to explaining the priorities of water managers in making environmentally consequential policy decisions, like those pertaining to reducing consumption or increasing supplies. For this study, the financial logic describes the application of financial concerns to engaging in strategic actions and decision-making. These financial concerns—like those analyzed in the evaluation documents of credit rating agencies in Chapter 2—include, but are not limited to, minimizing costs, maximizing revenues, embracing speculative economic arrangements for perceived future advantages, and seeking financial expertise in organizational leadership.

The expectation that financial activities and financial interests are influential in public governance settings is also consistent with the concept of financialization, which states that financial markets continually expand in influence throughout society and into previously non-financial areas of activity (Fligstein 1993; Epstein 2005; Krippner 2005; Foster 2007). Further, studies of urban governance demonstrate that neoliberal retrenchment of the federal government and declining economic support of local and regional governments, resulted in cities and special districts growing more reliant on private capital markets for financing than they had been previously (Sbragia 1996; Hackworth 2007; Weber 2010).

As discussed in Chapter 2, studies on the financialization of urban governance show that global capital markets have effectively rendered public infrastructure and the revenues of public utilities a unique class of assets through investments in municipal bonds and institutional arrangements that privilege finance (Leyshon and Thrift 2007; Halbert and Attuyer 2016;

O'Neill 2017). A key aspect to this is that the delivery of public services and management of so-called "public goods" depends upon the participation of private investors and financial gatekeepers like the credit rating agencies, private firms whose evaluations inform investors about the "quality" of municipal bonds and other investments (Poon 2012; Carruthers 2013). Research shows that these financial gatekeepers wield durable influence over the organizing of priorities held by local officials and organizations (Sinclair 1994; 2008; Hackworth 2002). Chapter 3 of this dissertation analyzes the influence of financial gatekeepers in water supply management and shows that they push water managers to prioritize financial considerations above environmental issues and potentially penalizes water districts for regulations imposed by higher levels of government.

In Chapter 3, I argue that the financial structures under which water districts operate create positive and negative financial feedbacks. For water districts serving relatively high SES communities, they benefit from *positive financial feedbacks* that afford them favorable credit ratings, easy access to capital, flexibility to adapt to changing environments, the ability to amass money in reserve funds that generate investment income, and opportunity to pursue technical upgrades for water quality and efficiency. Meanwhile, water districts predominantly serving lower SES communities struggle under *negative financial feedbacks.* I use the term, *the financial pathology of institutions* to embody this cyclical process. The financial pathology is a generalizable notion to describe cases in which public agencies rely on private capital, which constrains their policy priorities in ways at odds with their substantive mission and objectives. For water districts, the financial pathology can lead to compromised service provisioning, stunts the upgrading of technology and infrastructure, limits initiatives for environmental sustainability and efficiency, and presents a challenge to democratic representation. Furthermore, the negative

financial feedback is best described as pathological because it is self-reinforcing and cyclical. For instance, when financial gatekeepers view a water district negatively, the struggling organization will find it increasingly difficult to recover since costs will increase, access to capital will diminish, their reputation will decline in both horizontal and vertical relationships, and the ability to advocate for public and environmental interests will clash harder with revenue-seeking financial objectives. Drawing from research on institutional logics in water management (i.e. Hess et al. 2016) and research on the influence of financial markets in public urban governance settings (i.e. Hackworth 2002), I derive the following research expectation: *Research Expectation 2: Analysis of qualitative data will reveal that actions across all policy domains will be motivated by a financial logic that values maximizing revenues, minimizing costs, and other factors that contribute to pleasing credit rating agencies that function as financial gatekeepers.*

Additionally, in concurrence with Hess et al.'s typology (2016) in which they find a broad preference among city officials for a developmental logic, which stymies water demand-reduction strategies for conservation in favor for strategies of supply increase, I derive the research expectation below pertaining to economic development. However, unlike the cities in Hess et al.'s study, in the context of Southern California many municipal service areas are largely built out and development is limited to increasing densities or rebuilding already developed zones. Thus, I include in my research expectation phrasing to signal deeper gradation of how officials embrace development. In this setting, water officials may not maintain a full-throated embrace of development, but they may accept it as the generally expected and normative pursuit of governing. Furthermore, Brown and Hess (2017) similarly find that city and water supply officials tend to resist water conservation policies that threaten development

interests and population growth, demonstrating additional empirical evidence of the favoring of development among water supply officials.

Research Expectation 3: Analysis of qualitative data will reveal a broad acceptance of, or preference for, economic development.

DATA AND METHODS

This chapter uses in-depth, semi-structured interviews and participant-observations to examine the research expectations derived from existing literature and prior chapters of this dissertation. Participant-observation data were collected at sites where officials, both elected board members and upper-level staff members of water districts, gathered for discussions, deliberations, educational purposes, and formal board meetings. These included interagency committee meetings, single agency board meetings, public tours and other public-facing engagements, and academic presentations targeting water policy decision-makers. Fieldwork activities ranged in duration from a 10-hour day-long tour to a one-hour presentation, for a total of about 45 hours of active fieldwork. Visiting multiple and remote field sites is advantageous because it allowed observations of social interactions and concepts in a variety of contexts, ultimately revealing a more complex and thorough picture of actions and structures than observations from a single site would present. Following common ethnographic practices, while in the field I wrote frequent jottings and soon after leaving a field site, I wrote detailed prose fieldnotes for coding and analysis later. Additionally, I regularly engaged in field interviews through the fieldwork process. For example, on the tour bus I sparked a conversation with an employee from the district's legal department who was willing to discuss candidly the halfhearted, if not dishonest, nature of "conservation" programs. I refer to these activities as

participant-observation because they are all activities that are open to the public and I consider my presence in these spaces to be like that of engaged citizens, in addition to my role as a researcher. I embrace this role as a participant by asking questions, following up on implications for "regular" people, and engaging in discussions with other participants, board members, and water agency staff.

Individuals to whom I made requests for an in-depth, sit-down interview for this study were selected based on their roles within or advising WSOs. Most participants were elected board members or General Managers (GM), which is the highest leadership role among district staff, currently holding positions with a WSO in MWD's service area in Southern California. Two interviewees occupied outside advisory and consulting roles, offering insight into the role of outside expertise and on interagency collaborations. Interview data consists of nine in-depth interviews, two of which were with two interviewees simultaneously, for a total of 11 participants. All interviews were audio recorded and transcribed for analysis, with the exception of one that was alternatively documented through contemporaneous notetaking at the request of the interviewee. Interview duration ranged from about 3 hours to 1 hour, with an average of 1.72 hours.

Analysis of qualitative data was conducted as a mix of deductive, inductive, and iterative theory-driven coding methods. The inductive aspects of the analysis occurred in observing patterns in the data suggestive of engagements with the various policy domains, with a focus on when conflicts and tensions would emerge across domains to observe which considerations were given primacy over others. Furthermore, inductively analyzing the data also highlighted patterns of filtering matters of all policy domains through financial considerations, which I consider to be evidence of financial logic within water management. All fieldnotes and interview transcripts

were coded using the qualitative data analysis software, Atlas.ti. During analysis, the policy domain codes were not considered mutually exclusive in order to allow for overlap in policy domains. Thus, notes and quotations that are cross-coded with multiple domains, were important analytically for underscoring instances when the logics and considerations of one domain are in tension with those of another domain.

The geographical boundaries of the study participants are based on relationship to water policy issues in Southern California. All research participants represent water interests that are members agencies of Metropolitan Water District of Southern California (MWD), use water delivered via MWD or are regional partners with MWD if not members, as membership is subject to historical and institutional idiosyncrasies. This ensures that all data is relevant to the financial, environmental, social, and political matters that stem from the use of imported water in urban settings.

Lastly, ethnographic and interview methods bring the researcher into direct engagement with individuals and groups who are the subjects of the research. Accordingly, it is necessary to consider how the researcher's identity and social position may impact access, data generation, and other individuals. As a lifelong Californian, my interest in the substantive issues is genuine, beyond mere academic inquiry. Throughout my engagements in research sites, I embraced my role as a concerned citizen, in addition to that of a researcher. This is strategic because I hope that research subjects in the field perceived me less as an outsider there to observe them, and more as an interested party, a member of the public there to engage with public officials as I endeavored to understand the civic processes that shape our collective experiences. I believe this is the best stance, relative to my positionality, to access organizations and networks relevant to this study while remaining open in my intent and authentic to my multiple positions. Lastly, all

quotes in this chapter intentionally obfuscate locations and names to protect the identities of interview and fieldwork participants. Pseudonyms are used in some places to maintain linguistic flow and all research participants are referred to with the gender-neutral pronoun, they.

ANALYSIS

This analysis begins by defining the categories of the policy domain typology and illustrating how engagement with each category occurs through two primary channels. That is, *exogeneous events* can occur within a domain that water managers have no control over and to which they must react, and, *strategic actions* take place, which capture the actions and engagements of water managers within the constraints of the domain as they seek to influence the domain for the benefit of their respective organization. Within the examination of each category, I highlight dominant patterns in each domain and underscore how some matters achieve primacy over rival concerns. I also present empirical evidence that the regulatory compliance logic, largely a product of the Political/Legal domain, establishes a baseline for expected actions as well as the fragmented institutional conditions (see Mullin 2009 for a detailed accounting of the institutional fragmentation of water governance districts). This analysis attempts to draw lessons regarding how the fragmentation of governance institutions presents challenges to effective management in certain contexts by throttling collaboration and creating groups of organizational winners and losers by fiscally isolating the more profitable aspects of regional governance in public utility agencies. Table 4.1 presents a summary of the policy domain typology and the distinctions of *exogeneous events* and *strategic actions.*

Table 4.1: Examples of Exogenous Events and Strategic Actions Across Policy Domains

Policy Domains		Exogenous events	Strategic actions
Political/Legal		Regulations (legal, legislation, executive orders)	Lobby legislature, file lawsuits
Financial		Recession, unemployment, interest rate changes	Get AAA rating, raise rates, invest funds, issue debt
Developmental		Population growth, new development	Adjust to meet changing demands, integrate new revenues
Environmental/Ecological		Rainfall, drought	Conserve or maintain consumption levels, participate in habitat restoration
Technological		Infrastructure failure, routine maintenance	Implement replacement fund, install equipment

Policy Domains and Strategic Actions in Public Water Supply Management

These categories represent an attempt to identify a generalizable set of policy domains in the disorganized, blurry, and chaotic general field of public resource governance. As such, the boundaries of these categories are occasionally amorphous and overlap. For instance, the Technological domain overlaps with the Environmental/Ecological domain in the context of technology upgrades to improve water use efficiency, thereby reducing total consumption. However, there remains discrete policy domains, as in this example, some technology upgrades have nothing to do with environmental concerns and some environmental objectives require no attention to technologies. This general logic applies across all policy domains in the typology. Each domain contains some overlap, but none are entirely contained within another domain.

Political/Legal Domain

The Political/Legal domain largely encapsulates the legislative activities, court decisions, executive orders, and regulatory administration processes that impact WSOs. This domain also contains vertical relationships between regional water supply organizations and higher levels of government including the state and the federal government.

For water managers, exogeneous events in this policy domain are events that result in new regulations and directives from higher levels of government. This can include new legislation, court rulings, executive orders, and administrative rules set by agencies like the California Department of Water Resources or the federal Environmental Protection Agency. As such, this means that the Political/Legal domain has a strong influence over strategic actions throughout all policy domains because this is the policy domain that shapes the regulatory compliance logic. The regulatory compliance institutional logic assumes that water districts will comply with the law and various forms of regulatory oversight in the vast majority of situations. This presence of regulatory compliance logic is apparent throughout the data and this theme came up often and was discussed in every interview in various contexts. One illustrative example occurred when asking a long-time elected board member about changes that they have observed during their tenure. They stated:

> When I first got in, it was a series of districts that were silos that knew something about water within their boundaries and knew very little about water anywhere outside their boundaries… not a hugely cooperative, collaborative kind of system. … And then the *demands put on by meeting regulations have forced the people in the different districts to change their behavior quite a bit* [emphasis added]. (interview with WSO board member, 2/1/2019)

As a follow-up, I inquired about a specific example of this behavior change, to which they gave the example of improved water quality standards imposed by state and federal requirements:

> In order to meet the water quality, in order to have a drinkable water, potable water, they've had to develop testing regimes, laboratories in order *to satisfy the regulations* [emphasis added]. They had to sometimes divest themselves or leave certain kinds of treatment regimes that they had before the regulations came in. A lot of water would come into [the county] as untreated water from MWD and it would go through reasonably small package plants that were sand filtration and the results of the sand filtration plants, after the regulations change, failed to meet drinking water requirements on certain things that went right through it and they had to abandon those plants and go to better treatment. That caused them to readjust how they were running their system. (interview with WSO board member, 2/1/2019)

Another example of a significant way in which the Political/Legal domain shapes the activities of other domains is through court rulings. An adjudicated groundwater basin describes a groundwater aquifer with the rights to water allocations to various parties determined and settled by a court proceeding. These settlements tend to include a court-appointed committee, called a Watermaster, and include systems for determining and updating water availability and dispute resolution among other things.

I observed a discussion on an adjudicated basin that included representatives of multiple water districts. One speaker, a GM for a large retail district, party to an adjudicated basin who endeavors to implement greater cooperation stated, “The old agreement [an adjudication from the 1960’s] cements the old binary, us-them, thinking. You leave me alone, and I leave you alone. We want to work more collaboratively to solve the problems currently.” (fieldnotes, 10/4/2019). This individual also stated that, “due to the protection of ‘the sucker’ [referring to an endangered fish species], it is highly unlikely that [upstream water users] would only release the minimum flow of the agreement from the 60’s” (fieldnotes, 10/4/2019). Together, this part of the discussion demonstrates multiple ways that the Political/Legal domain drastically affects how they manage the water supply. The initial adjudication by the court established a set of rules and rights, but decades later regulations pertaining to ecological habitat came into play that overlaid on top of preexisting regulations. Ultimately, the minimum flows required to protect the habitat

are greater than the amount required in the 1960's adjudication, showing that, the Political/Legal domain is highly influential and regulatory compliance is the dominant institutional logic that determines the course of the entire system of water governance.

One significant and reoccurring strategic action in this domain includes representatives of water supply organizations working together through formal associations and informal networks to advance their shared agendas in legislative and legal process. An example of an agency that is particularly successful in this regard, I will refer to using the pseudonym, Rose Valley Water District. An elected board member of Rose Valley told me about lobbying efforts they conducted to get legislation passed in the state capitol that would create more financial flexibility. They stated:

> *We passed legislation* [emphasis added] to allow us to do that [issue variable rate debt] instead of issuing fixed rate debt… So we went up and testified to the legislature and committees and that authority to issue variable rate debt and as such, we became the first municipal issuer, including the State of California [to issue variable rate debt] and other people starting copying us. (interview with WSO board member, 2/1/2019)

They also detailed another successful effort to get legislation passed allowing the water district to hold real estate property solely for the purposes of financial investing:

> I was giving testimony to the Assembly Committee, water committee, asking to be able to invest in real estate and our state senator who was sponsoring the bill on the Senate side was giving testimony next to me. The Committee of 11 people were asking questions, 'Why is this right?' And I told them about the modeling we did and why it made sense… It went to the floor and it passed with four people voting against it out of an assembly of 80 people. (interview with WSO board member, 2/1/2019)

This particular example illustrates the saliency of financial logics as a driver of priorities in water management as observed in these multiple occasions of lobbying state lawmakers in pursuit of financial flexibility and financial advantages.

Other engagements in the Political/Legal domain include horizontal relationships with other agencies, including those between wholesale and retail water districts and between the

WSOs and city governments. An exchange with an elected board member of a small retail water district illustrates the perceived constraining effects of regulatory compliance and the importance of horizontal relationships with other agencies. For example, when asked if they thought the water district should be run like a business, they stated that they believe there are "all kinds of efficiencies you can pick up from corporate America that can be put on government," and elaborated on the impediments to being more efficient like private business stating,

> Some of it we can't control because we can be as efficient as we want internally at [the water district], but we still have a larger bureaucratic system we have to deal with… call it the bureaucratic red tape… I think we come really close to running this organization more like a business than a government agency. There are just some things you have to run like a government agency because we are part of a larger system. We have to deal with [the imported water wholesale district], we have to deal with [the groundwater management district], we have to deal with the other special districts in [the county], we are part of a city, which has a city government, not to mention the state water board. And governors, and legislators and legislators that have nothing to do with this part of the state. (interview with WSO board member, 2/12/2019)

The Political/Legal domain is also responsible for establishing the institutional arrangements and organizational structures that underpin all formal water supply management. A dominant theme in the qualitative data pertains to the fragmented nature of these organizations. By fragmented, I refer to the fact that American's rely upon an expansive network of special districts, joint power authorities, regional governments, and various forms of partially public and partially privatized utility systems, all of which are fiscally independent organizations with their own costs, revenues, investments, and debt portfolios. This is observed in the example above with the board member describing that neighboring water districts as existing in "silos," and that organizations benefit by advancing cooperative efforts. A water policy consultant who works on interagency, multi-benefit projects with water and sanitation districts underscored an effect of fragmented governance:

> One of the challenges to multi-benefit work, is that a lot of agencies, real, or imagined, or hoped, it's all three of those things, resist putting money into a project that's going to produce benefits that are not within their legal authority to do. If you're a flood control district, there's language in the legislature created you, what you do, where your money comes from and how you spend it. Now suddenly you're doing a project that's going to provide recreational access to a thing. If spending money on recreational access is not something you are empowered to do, the agencies, and some imagine they have that limitation when it probably isn't true. Others have a legal decision by their lawyers or someone else that says they cannot. Then others use the convenient excuse to not do it. (interview with consultant, 5/20/2019)

This illustrates the point that the Political/Legal domain exerts a heavy hand that can constrain and enable the policies and programs, including environmentally and socially oriented multi-benefit projects. They also point out that agencies looking to avoid incurring the expenses of such projects use the focused nature of their work in this highly fragmented system as a "convenient excuse to not do it." The aversion to incurring expenditures in this way is a product of the interaction between fragmented governance that makes every organizations a fiscally independent entity and the broad application of financial logics to policymaking across all policy domains.

Financial Domain

The Financial domain is the setting in which governance officials engage with financial actors and financial markets. Exogenous events in the financial domain include macroeconomic fluctuations, recession, unemployment, financial policy changes for example. Strategic actions in this domain include issuing debt, managing the district's investments, and various actions to please financial gatekeepers—the credit rating agencies—with the goal of receiving favorable ratings.

Despite the broad application of financial logics across all policy domains, I argue that the Financial domain is secondary to the Political/Legal domain because actions in the Financial

domain are subject to the conditions established by the Political/Legal domain, as illustrated in the example of financial policy-focused lobbying efforts described above. However, a strong financial logic can be observed as an underlying institutional logic that motivates actions across all policy domains. A dynamic that, in a very strong and direct way, encourages the application of financial logics is the necessity to please financial gatekeepers. Within the Financial domain, gatekeepers to capital are the three dominant credit rating agencies—Moody's, Standard & Poor's, and Fitch—that periodically issue discrete, categorical ratings of the perceived creditworthiness of agencies that issue debt. As discussed in Chapter 2 of this dissertation, water districts rely heavily on debt financing that is secured by future revenues streams—municipal revenue bonds.

The primacy of credit ratings was illustrated frequently by interview participants and while observing public meetings. For instance, in an interagency meeting with representatives of many water districts presents, I observed a panel discussion titled, "The Challenge of the Retailers" in which managers of retail water agencies shared their challenges and experiences. The moderator of the discussion, a GM of a relatively small-scale district that serves a predominantly middle-to-upper SES residential community stated in the first minute of their introduction, "When I came in I said, we want to achieve the highest credit rating possible, a AAA credit rating, so I went and talked to our financial advisors" (fieldnotes, 8/2/2019). As they continued, they stated that only 12 out of California's 537 water districts in the state have a AAA rating, emphasizing that they would do what is necessary to join this elite group. This observation illustrates two things. First, that pleasing the financial gatekeepers is a top priority for the management of water supply organizations. And, second, because of this high status of financial gatekeepers, financial expertise occupies a privileged role in these organizations.

In another example, I discussed the credit rating process with the GM of a AAA-rated organization:

> With S&P and Fitch, we're AAA, AAA. Moody's, it's almost impossible to get a AAA. We're the next step down. They do a very thorough analysis. You know, we have to show our financials, we have to have so much cash on-hand or days cash on-hand. There's different metrics that have to be met, as far as how much debt you have and revenue. The nice thing they like about us is that we have the ability to raise our rates, and have historically done that in the past to support building projects. In that sense, we're a pretty safe risk. That's why we get such a high credit rating. (interview with GM, 2/8/2019)

When prodded to elaborate further on what the rating agencies look for, they continued:

> Well, the ability to raise rates, I think, is what they look at. Then, whether you've historically shown that you've done so. We can very easily show that. Then, they look at your assets, obviously. We own a lot of land, we have a lot of infrastructure that we've invested in, and we've been pretty good in paying our loans back, also, over time. I think in that respect, those are the main things that they look at when they judge you. (interview with GM, 2/8/2019)

This illustrates how the financial gatekeepers have very specific priorities and that these priorities, although financially centered rather than focused on provisioning public goods or a technocratic logic of watershed stewardship, are indeed the priorities of water managers. Similar descriptions of the rating process were echoed throughout the interviews with representatives of other agencies. I also discussed the consequences of a downgrade. The same GM stated:

> [lower ratings] Costs us more to borrow… AAA is the lowest cost of borrowing, and then if you're, say AA, it's going to cost you, I don't know, maybe... I'm a civil engineer, not the finance guy, but maybe it's 50 basis points more on your loan percent, or something like that, in your debt issuance. (interview with GM, 2/8/2019)

This demonstrates that there are real, tangible consequences of being in the disfavor of the financial gatekeepers. It also shows that despite having a trained civil engineer managing the organization, the financial logics permeate the policymaking process. In other occasions, I heard from officials who specifically sought financial expertise, like a GM with an MBA and an engineering degree at one district (interview with GM, 8/20/2019) and a board of directors that

enthusiastically embraced a board member's background as a Certified Public Accountant at another district (interview with WSO board member, 2/12/2019).

Technological Domain

The Technological domain is the policy domain in which water managers pursue upgrades and maintenance for infrastructure and that make their physical systems function. The primary exogeneous events that affect the Technological domain are those associated with infrastructure failure or forced changes to infrastructure, which may be due to environmental factors—drought, earthquakes, climate change—or due to political factors like regulatory changes to water quality standards. Strategic actions in the Technological domain include performing the material upgrades as well as the creation of what is often referred to as a "replacement fund," used to fund maintenance. The replacement fund is a store of money, funded initially by the revenues from water sales, but as the fund grows, it becomes a source of investment income in many districts. The GM of a large retail water district explained their replacement strategy:

> I was able to use my finance background through my MBA as well as my engineering background, as I can look out and work with the engineers to say, "Well, when does this need to be replaced? When does that need to be replaced?" And we've got really a cutting-edge model on that because it's not like, "Oh this treatment plant that we're sitting next to right now,… It's all going to collapse in 30 years and we've got to re-build a whole new one." That was the old model. In the newer model, we've been able to be more granular as in, we can replace this process or that process or that process, because of when they came on. And that's much more realistic, a pump station. The whole station doesn't just fall down one day, right? (interview with GM, 8/20/2019)

In this case, the GM has MBA training in addition to his engineering credentials and they leverage this embedded financial expertise to integrate financially oriented strategies into their technical maintenance needs. The use of forward-thinking planning that integrates financial aims

of cost reduction with maintenance creates efficiency for the organization. This example serves to emphasize the role of financial logics in the Technical domain and how it merges with technical logics like the forecasting of equipment replacement costs.

An elected board member of the same district also discussed the replacement fund stating:

> We set up in [the water district] a replacement fund. So, we said 'gee as facilities wear out, we need to replace them, and we need a fund of money to do that.' And you cannot issue general obligation bonds to replace a facility that wears out. You have to use revenue bonds to do that. So, it won't be a tax item. It will be a revenue based supported debt. … And we said. 'gee, we need to start accumulating money to do that out of the rates… So, we incorporated in the fixed rates of the district, a portion approximately equal to the depreciation on the assets and then we invested that in things that you could invest it in. (interview with WSO board member, 2/1/2019)

They continued, explaining how the replacement fund grew significantly and eventually provided new financial advantages beyond having money saved for technical needs:

> And at the time when we started, we were getting probably 10% on the investments because that's what we were in a high rate environment. So very quickly we accumulated a considerable amount of money. So, 10% you double with five years. So, the fund started growing pretty rapidly. (interview with WSO board member, 2/1/2019)

And finally, they described how this growing fund helped them please the financial gatekeepers:

> So that gave us the ability, along with revenue bonds, to pay for replacements. After a while what we did was, we said, 'gee, this fund is accumulating!' It made all our [debt-to-income] ratios great. And so, our rating went from kind of a A minus to a double A kind of rating. And so that made the debt cheaper and made us easier for us to get financing. (interview with WSO board member, 2/1/2019)

This exchange shows that the technical needs—a replacement fund—were effectively used to justify amassing a large amount of money that was leveraged on speculative financial markets to generate investment income. Again, this example shows that within the institutions of water supply management, financial logics underpin actions across all policy domains, even the seemingly non-financial domains.

Environmental/Ecological Domain

The Environmental/Ecological domain refers to the ways in which WSOs engage with environmental and ecological concerns and other actors and organizations that oversee these issues like habitat preservation and resources consumption. Exogenous events in this domain include the material environmental conditions—rainfall, drought, climate change—to which actors must react. Another type of exogeneous event could be the production of new information about ecological degradation, which can face policymakers and water managers as new information and new laws come into play. Strategic actions in this policy domain include conservation—using less water—and various watershed habitat conservation initiatives. Other strategic actions might include making technical upgrades, like the development of water recycling, which may increase efficiency and reduce environmental footprint, although not all technical upgrades have a positive environmental impact.

In one example, an elected board member of a mid-sized retail district explained how environmental conditions affect revenues when I asked about water conservation:

> Well, there are two things here that you're talking about. One is the revenue aspect, and we're suffering from that right now. We aren't selling much water because it's raining. If it rains, people don't keep their sprinklers on. And that's where the big water use comes… So, that is a concern that you want to be able to operate through whatever nature throws at you. And that's why we have [cash and investment] reserves and stuff. We have reserves for almost everything. A special reserve, it's called a rate stabilization reserve. That is basically for whatever the state decides to throw at us. We have a new rule to take care of that, and we hope it's enough. I don't think it is because they can really mess us up. (interview with WSO board member, 2/26/2019)

In this case, "reserves" refers to financial reserves. In other words, "a special reserve" is an earmarked account of money. In this exchange, the director characterizes a dynamic that all water districts confront and was a reoccurring theme in the data, using less water compromises

revenue. For example, a GM stated about conservation, “it’s a little counterintuitive but we encourage our customers not to buy our product” (interview with GM, 5/28/2019). This individual also remarked on the link between drought, conservation, and revenues, observing that this dynamic is broadly present in the water sector:

> That's the whole water conservation and water use efficiency thing, that folks really struggled with particularly in the drought over the past six, seven years, when there was a drought and it was like, buy less water. A lot of agencies struggled because your revenues go down. (interview with GM, 5/28/2019)

In another example an executive engineer of water wholesale district explained the same dynamic and the potential cooling effect on credit ratings:

> A couple years ago they [rating agencies] were asking about how we had the drought, and water demands went really low. And when water demands go low, pumping went low, which affects our revenues. And they're like, ‘How's your revenues doing while everyone's conserving?’ And we're showing them our revenues are still strong. We're okay. We've been refilling the groundwater basin, and two of the last three years have been wet, so we're getting back to normal operations. But they take into account all that. (interview with engineer, 5/20/2019)

From the perspective of how private enterprise functions, selling less of your primary product will obviously impact revenues negatively, this is certainly no surprise, which also would predictably impact creditworthiness. However, as public agencies managing a shared common resource, the commodification—the transformation of water into an object of trade—of water is a dynamic that is perpetuated by financial structures in a fragmented governance system that prioritize revenues within individual agencies over centralized efficient distribution of natural resources. This is reinforced by the reliance on debt financing, which forces water supply organizations to effectively take direction from financial gatekeepers in order to maintain the crucial access to capital.

Of course, the commodification of water under a public governance system differs from commodification in a private enterprise because the public agency does not pay dividends to

shareholders and thus their incentive structures are different. However, as seen in examples above, public agencies can be very effective at developing large portfolios of cash and investment reserves, or replacement funds, that serve as deep stores of wealth that insulates the organization from external shocks, including those that are environmental, as well as those from the Political/Legal domain.

Adjustment to how water rates are established, a policy instrument known as budget-based rates, is increasingly being viewed as an essential part of adapting to climate change and to encourage efficient consumption of water resources. Budget-based rates are implemented differently by various agencies so there is not an established model and the ability to implement a plan like this may be throttled by economic factors like wealth in the tax base and financial position of the agency. One GM whose district pioneered budget-based rates in the 1990's described their rate structure as set up to cover fixed costs first and with variable costs paid for by "tiers" that charge increasing per unit rates as customers exceed their water "budgets." They explained this strategy:

> People will never buy no water, there's always some water they're going to buy, but there's a whole system that has to exist, it has to exist for fire flow, it has to exist for… health and human safety. So, for that minimalist flow of water, that whole system has to exist. Reservoirs, pipes, my staff, the fleet, the sewage treatment system, all these things are fixed costs to where customers could buy less and less and less and less and less water. I really don't care… But the key thing about our rate structure that I haven't mentioned is that within those tiers when do the higher tiers kick in? (interview with GM, 8/20/2019)

They continued further explaining how the tiers work as follows:

> I don't really care, if you want to own 10 acres with orange groves and have 10 kids and three horses that's your choice as my customer. If you want to live in an apartment with your wife, that's okay too. We're not going to say which one's better, but if one of you is wasting water, we're going to discourage that and if the other one is wasting water we're going to try too, and if you're both wasting water we're going to discourage that. (interview with GM, 8/20/2019)

When the budget-based rates function as intended, they will help residents stay within what the district perceives as an efficient use of water is relative to the size of their property and the people on it. By ensuring that fixed costs of the water system are covered within the guaranteed revenues of fixed charges and not by charges that come from per unit consumption, the district is able to insulate itself from the revenue swings that may come from exogeneous environmental events. However, budget-based rates, while presented as a solution to climate variability are grounded more in financial logics than they are climatological realities.

The GM of a large water district that also embraces budget-based rates discussed their rate system in terms of revenue stability:

> They [credit rating agencies] hear that you're investing in water use efficiency so you can sell less of your product, and ask how's that going to affect your bottom line? And I think one of the things they look at is revenue stability. So, we have a pretty complex rate structure... For example, during the drought when the state was calling for mandatory reduction in water use and we saw water use go down quite a bit, we were able to, because of what we called our water shortage contingency plan, restructure our rates during that time. Such that if customers overused water, they paid a much higher rate, if customers use water within their reduced budget, they would pay less. And so why we saw our revenues go down, because of that restructuring the rates during the drought or those changes during the drought, we were able to keep our net revenues the same. (interview with GM, 5/28/2019)

In this example, the application of financial logics to questions essential to policies in the Environmental/Ecological domain is apparent because changing the rate structure to match scarcity conditions was not based on environmental metrics in any sense. Rather, the primary focus is stabilizing revenues when the exogenous events from the dominant Political/Legal domain occur—in this case state drought mandates forcing regulatory compliance—and ultimately saving face with the financial gatekeepers that worry about selling “less of your product.”

Developmental Domain

The Development domain is where activities occur that are associated with housing construction, industrial expansion, and population growth and the interactions with actors and organizations involved in economic development. Water infrastructure is a precondition to development and, as such, water managers play an influential role in this domain. Exogenous events in this domain are those that force the water districts to meet new water demands, generally this is due to population growth. Strategic actions in this domain include water official adapting and expanding their systems to integrate changing demands and new revenue sources. In one exchange, an executive engineer at a water wholesale district explained how they manage growth:

> So, you're looking at: Here's your supplies, here's what demands will be [points to figures]. You want to make sure your customers always have enough water. Whenever you tell your customers, "You have to conserve," and you tell businesses, "You have to conserve," that's not good for the economy. (interview with engineer, 5/20/2019)

This statement illustrates the idea that the organization does not want to be the local institution that slows the economy or forces people to change their behaviors.

A key part of continuing development in water-stressed regions, is the implementation of new technologies and the integration of new water supplies. For example, the GM of a water district that invested heavily in water recycling equipment informed me:

> Recycled water will be supplying about 40% of all of the water that goes into the groundwater basin. With that, and these other sources of supply, we're able to maintain a very high pumping level out of the basin. (interview with GM, 2/8/2019)

While the recycling system certainly has a number of environmental benefits, primarily reducing the need for imported water that has a much higher carbon footprint and impacts sensitive ecological habitats, it is also viewed as a tool to maintain high consumption levels and meet

current and growing demands. In some cases, water recycling projects may be more of a tool to accommodate development that it is an environmentally oriented endeavor.

Considering that previous literature found support for developmental logics playing an important role in water policy surrounding water conservation (Brown and Hess 2017), it was surprising to find in the data that many water districts have a relatively ambivalent stance towards development. Outright opposition to development among water officials is relatively rare, except in situations where a strong no-growth agenda dominates local politics. Many water officials seem to be content with accommodating development, but they do not seem to actively encourage it. For instance, I asked an elected water board member about how they deal with new development projects:

> The way that is done is the developers put it in all the stuff they need, the local stuff. And even if they're up at the top of the hill, like these guys [points to map], we'll ask them to put in a reservoir too, and they'll put it in the reservoir up there because we got to put out fires. Then we take it over. We don't pay them for it. We take it over and then we operate it… *You've got to make some deal with the devil here, and we're the devil* [emphasis added] in this case. 'Do you want water? This is what it costs'. (interview with WSO board member, 2/26/2019)

In this statement the water director concedes that they are the "devil," implying that they are a necessary, but potentially difficult or threatening partner to work with.

In another case, the GM of a large water district explained how they plan for anticipated development:

> We're a very high growth area. Housing is still very affordable out there. We're growing at a rate of about 4 to 5,000 dwelling units per year. We have to constantly look at a complete portfolio of water supplies and we do long range forecasting and planning 50 years into the future. (interview with GM, 5/28/2019)

They continued, explaining how they intend to meet these needs through the adoption of new technologies and upgraded infrastructure:

> We're going to have a lot of growth; we're going to produce more wastewater. It's not going to be able to be all used for municipal irrigation. Ag [agriculture] is going to transition out, probably always have some Ag but less. And so, we are looking at an advanced treated purified water plant that would take the tertiary treated water and then use advanced treatment technologies; reverse osmosis, ultraviolet disinfection, microfiltration, and produce water that we would then use to supplement our groundwater based. (interview with GM, 5/28/2019)

This planned use of recycling systems echoes the activities of the district discussed above that already uses recycling in this way. Additionally, in this high growth area, the GM pointed out that they, like other districts, lost revenues during the drought; however, development offset the financial impacts of conservation:

> We saw, during the drought, about a 15% reduction. And during the drought from 2013 through 16, about a 15% reduction in our wastewater flow. But for us, we have so much growth in this service area that it's still an inclining line." (interview with GM, 5/28/2019)

In another example from this district, the GM, explained that growth affects how they think about using debt financing:

> That expansion is putting in infrastructure that's going to last 30 years, and the customers will benefit for the next 30 years. We'll issue bonds to pay for that infrastructure. Because... It matches the financing mechanism, matches the life of the infrastructure. And so that's a very good... So customers aren't having to pay, you don't have big rate spikes, they're able to pay over time. (interview with GM, 5/28/2019)

They elaborated on this process of matching financial instrument to its infrastructural use and also explained that they have requirements of the developers:

> And because we're public agencies, we can issue tax free municipal debt at a very, very low interest rate. We also do have requirements, for example in a growing area, where developers will have to, in neighborhoods, put in the local infrastructure at their expense and then we'll accept it. The reason is they need to grind those costs into the house, so we don't have existing customers paying to subsidize growth in other areas. (interview with GM, 5/28/2019)

This provides another example of how the water officials accommodate development in their service area but are not actively seeking it out or taking steps to attract this sort of investment in

their area. While the high growth in this region creates financial benefits for the water agency, the increased consumption will likely increase the stress on imported water systems and ecological habitat in the watersheds. However, the reliance on the Development domain for revenue stability is precarious because exogenous events can quickly call this into question. They explained that the biggest impact of the 2008 financial crisis was the loss of revenues made from developers paying the connection fees. Interestingly, while discussing the recessions they stated:

> So, we had to adjust. And I think a lot of water districts saw the effect of that… But probably, from my perspective, I think the drop in sales we saw during the drought, because we were mandated by the governor to cut 25% of our sales, was more significant than the economic downturn. (interview with GM, 5/28/2019)

This statement further reiterates the primacy of regulatory compliance logic and the Political/Legal domain. It is apparent that regulations coming from the Political/Legal domain dominate all other matters, as exemplified in the perception that the governor's mandate was more significant that the economic downturn.

DISCUSSION AND CONCLUSIONS

These data suggest that financial processes associated with the reliance on revenue-backed debt financing and the fragmented institutional structures of water supply management may be important sources of barriers to creating water policy that is ecologically sustainable and socially equitable. By accounting for the broad effects of the financialization of public governance that influence decisions across all policy domains, this study supports and extends previous research grounded in urban growth coalition theory (Brown and Hess 2017). While growth coalition theory (Logan and Molotch 2007[1987]) focuses on a pursuit of development and economic growth as the key site conflict with local quality-of-life social issues and environmental concerns, I find that the full story must also include the maintenance of financial

positions as a driving institutional logic in urban resource governance. In this study, I demonstrate how this institutional logic affects all policy domains applying the concept of a *financial logic*, or what might be understood as the "financial conception of control" applied elsewhere to the management of private firms (Fligstein 1993). This also extends theorizing on institutional logics (Thornton et al. 2012; Thornton and Ocasio 2008; Thornton et al. 2017) to account for how financialization of the economy shapes perceptions, decisions, and policymaking in political institutions.

Using the strategic action fields perspective (Fligstein and McAdam 2011; 2012; Scoville and Fligstein 2020) as a theoretical framework for understanding the social order in multi-level political organizations, the interviews and field observations show that actors in the field of public water supply management engage primarily in five policy domains: Political/Legal, Financial, Technical, Environmental/Ecological, and Developmental. By analyzing how actors and organizations engage in these policy domains, this study develops two key insights. First, previous research shows that special district governance institutions are highly fragmented (Mullin 2009), but this study explores how fragmentation combines with financialization to create unique barriers to efficient and sustainable water governance. I argue that there is discord between the fragmented governance institution and the integrated geographies upon which they overlay. Since each governance organization is a fiscally independent entity, water districts are encouraged to apply financial logics, even to non-financial, technical and environmental matters. This is because they rely upon issuing revenue-backed debt, seeking private capital to fund their work. However, to maintain affordable and steady access to capital, water districts must please financial gatekeepers (Sinclair 1992; Hackworth 2002) who evaluate and quantify credit worthiness based on financial metrics and performance, giving little to no weight to

sustainability, democratic responsiveness, or effective resource stewardship across the broader integrated geography. In other words, an urban water district can dry up a habitat across the state and consume excessive water during a drought and still receive favorable ratings, so long as the debt-to-revenue ratio and a few other metrics remain solid.

This fragmented governance structure places financial gatekeepers in a privileged position that encourages the application of financial logics in all policy domains, resulting in public governance agencies engaging in the commodification of water in order to pursue fiscally oriented objectives. Ultimately, this bestows financial advantages upon districts that are well-resourced and tend to operate in higher SES communities, while creating systematic and cyclical barriers to effective governance for districts with service areas in lower SES communities. As a consequence of these financial arrangements, we observe the presence of *financial feedbacks*. More specifically, WSOs can experience *positive financial feedbacks* and *negative financial feedbacks.* I further argue that the negative feedback can be theorized more generally applying the term, *the financial pathology of institutions.* The financial pathology and the feedback framework apply to water and other public utilities because the financial structures discussed in this chapter are observed broadly in a variety of fields and in most urban governance settings. I describe the negative feedback as pathological because it specifically refers to cases in which *public* agencies rely upon *private* capital. Public agencies exist to oversee the provision of public goods, but when they are beholden to private investors their priorities are pulled between substantive mission and financial objectives. In the context of water policy, the financial pathology can lead to ineffectual organizations that provide compromised services, lack technology and infrastructure upgrades, are unable to pursue environmental sustainability, and presents a potential challenge to democratic representation. This cyclical process becomes self-

reinforcing because as financial disfavor accrues for a floundering organization, restoring their standing will grow more costly and more difficult, their reputation will falter in vertical and horizontal relationships, and pressure will intensify between making expenditures on public and environmental interests on one hand, and pursuing revenue-maximizing objectives on the other hand.

In summary, this study highlights that the Political/Legal policy domain is highly consequential for all other policy domains because actions and relationships in this realm establish institutional conditions and regulatory regimes. With this in mind, designing more socially equitable and environmentally sustainable public governance systems will require addressing systematic issues at the top of the hierarchy by targeting legislatures and court systems for political opportunities for change making. Lastly, considering the need to adapt to the "historic game changer" and "giant wild card" of climate change, sustainable environmental reform must also be coupled with financial reforms that delink private capital markets and public governance institutions, so those agencies we charge with stewarding shared resources are free to pursue policies suitable for people and the environment without having to prioritize financial objectives over the public good.

TABLES AND FIGURES

Table 4.1: Examples of Exogenous Events and Strategic Actions Across Policy Domains

Policy Domains		Exogenous events	Strategic actions
Political/Legal		Regulations (legal, legislation, executive orders)	Lobby legislature, file lawsuits
Financial		Recession, unemployment, interest rate changes	Get AAA rating, raise rates, invest funds, issue debt
Developmental		Population growth, new development	Adjust to meet changing demands, integrate new revenues
Environmental/Ecological		Rainfall, drought	Conserve or maintain consumption levels, participate in habitat restoration
Technological		Infrastructure failure, routine maintenance	Implement replacement fund, install equipment

CHAPTER 5

CONCLUSION: TOWARD A GENERAL THEORY LINKING GOVERNANCE FAILURES TO FINANCIALIZATION

The importance of water to society's material well-being is obvious. At a bare minimum, we need clean water to drink, to irrigate crops for food, and it must be present to sustain ecological habitats in natural and built environments. In contemporary urban spaces, water delivery and the management of water supplies is a financially costly and politically complex endeavor relying upon vast networks of material infrastructure and political institutions. This dissertation examined the organizations and officials charged with managing essential water supplies in Southern California, a very thirsty, but very dry, region. Water policy is a contentious field of activity in which budgets are regularly counted in billions and diverse interests collide over intractable problems. For instance, rural agricultural communities compete with urban growth machines over water rights as the rural inhabitants are left to confront the environmental consequences of urban water consumption (Walton 1993). In other situations, environmentalists clash with public officials over the conservation of ecological habitat and defining what is and is not worthy of protections (Scoville 2019). And in other places indigenous communities struggle to protect culturally significant land from highly instrumentalized understandings of land and its uses (Espeland 1998). Furthermore, community activists take issue with the fact that under-resourced water districts serving low income communities deliver contaminated water, while other water districts have extensive financial resources and apply the latest in water quality technologies (Balazs et al. 2012).

The research questions and expectations in this dissertation were informed by the broad orienting theories pertaining to fundamental sociological concerns like how capital accumulation

shapes social life (Marx and Engels [1887] 1978), the tension between and embeddedness of market forces and political institutions (Polanyi [1944] 2001), and how we organize collectively to meet society's basic needs (Weber [1905] 2002). In this context, this dissertation investigated the role of finance within political institutions and processes that are vital to urban governance and the environment. As such, I derived research expectations from various strands of literature including studies on [1] the effects of financialization, [2] dynamics within the urban political economy, [3] how socio-environmental relations are structured by markets, and [4] theoretical frameworks on stability and change in political institutions and institutional behavior. The empirical studies of this dissertation are among a limited number that apply a sociological perspective to analyzing the financialization of the environment. My work also contributes sociological analysis on water governance organizations, of which there are a few limited studies. It also contributes an important perspective that emphasizes the social embeddedness of economic markets (Polanyi [1944] 2001) to a growing discussion on how financialization shapes urban and municipal governance and the activities of the modern state more broadly.

In this dissertation I found that water districts increasingly use financial instruments as means of accumulation as investors, and also that municipal debt increasingly functions to enable financial investors to extract wealth from public agencies. Taken together, I claimed that this can be characterized as the financialization of public resource governance, extending previous literature on financialization to the specific field of public municipal water management. Since the 1970s, intensifying competition, deregulated markets, and business strategizing to maximize shareholder value have encouraged a trend described as the financialization of the US economy (Lin and Tomaskovic-Devy 2013; van der Zwan 2014; Davis and Kim 2015). As Epstein informs us, financialization is "the increasing role of financial motive, financial markets,

financial actors and financial institutions in the operation of the domestic and international economies" (2005). Financialization can also be defined as accumulation patterns in which financial channels are the primary means to accrue profits rather than avenues of trade and commodity production (Arrighi [1994]2010, Krippner 2005). Furthermore, Fligstein's (1993) analysis of firm behavior demonstrates that firms shifted in orientation by growing more focused on financial returns and shareholder value and away from manufacturing and commodity production. Scholars have also analyzed the impacts of financialization on higher education (Eaton et al. 2016) and municipal developers (Pacewicz 2013; 2016), two fields that parallel aspects of water supply management as they are sites of public administrations, rather than private enterprise. This scholarship on the broad trends of financialization suggests that finance is an increasingly prominent driver of action in many sites of social activity, including examples in public governance. As such, this informed my dissertation research by directing the analytical lens to focus on financial accumulation patterns (Krippner 2005), management priorities and expertise (Fligstein 1993), and the entanglement of administrative processes with financial markets (Pacewicz 2013; Eaton et al. 2016).

Another key finding of this dissertation is that public water managers face a variety of financial pressures to treat water as a commodity, rather than a public good, as a result of prioritizing financial objectives, in large part due to the influence of financial gatekeepers. Broadly speaking, this emphasizes the haziness between distinctions of "public" and "private," as we observed that public governance over shared resources is highly influence by private money and private financial interests and also that public institutions invest their funds on speculative financial markets alongside private investors. Research on urban governance and urban political economy also takes up the issue of financialization and provides significant

insight that I applied to this dissertation. For instance, scholars show that financialization of urban governance is not simply a case of outside, autonomous markets being imposed on local officials, rather local actors in governments are better understood as object *and* agents of financialization as they engage in creating institutional conditions to attract financial market activities (Weber 2010; O'Brien et al. 2019). Moreover, financialization extends earlier theories of urban political economy, like Logan and Molotch's notion of the urban growth machine coalition (1987[2010]). Peck and Whiteside (2016) argue that the persistence of the growth machine depends upon expanding what they call a political debt machine, creating governance systems disciplined towards bondholder-value. A key aspect of a debt-oriented governance regime is the pursuit of pleasing financial gatekeepers, that is, obtaining favorable credit ratings from the Wall Street-based firms, Moody's, Standard & Poor's, and Fitch. The effects of which can be seen as undermining the autonomy of local officials and imposing the values of financial investors on policy priorities (Sinclair 1994; 2008; Hackworth 2002). In addition to engaging these strands of scholarship by unpacking broad theoretical concepts and exploring a new empirical setting, this dissertation also sought to make two specific contributions, including advancing our theorizing of socio-environmental relations in the field of environmental sociology, on one hand, and bringing the material natural environment into concerns shared with the field of economic sociology, on the other hand.

With regards to environmental sociology, the three studies in this dissertation presented evidence pointing to ways in which finance shapes interrelations among state and market actors, which contributes to recent theoretical developments in the subfield of environmental sociology, with the notion of the "anthro-shift" (Fisher and Jorgenson 2019). The anthro-shift seeks to transcend debates that attempt to adjudicate between if economic development is harmful or

potentially beneficial to the natural environment, establishing, instead, a framework focused on relationships between state, market, and civil society sectors. In addition to contributing to emerging frameworks in this subfield, this dissertation also built on environmental sociology research by finding that water governance exists as a midpoint between the exploitative macrostructural economic forces and the harmful, on-the-ground social and ecological consequences of overconsumption, habitat degradation, and unequal distribution of resources. The data in this dissertation aligned with other findings from environmental sociology that connect macrostructural economic processes to the commodification, and degradation, of the environment. Advancing this body of work, my specific inquiry helped identify how economic structures associated with financialization created financial feedbacks that increase social and environmental inequalities and the tendency for water organizations to give primacy to financial objectives over environmental concerns and conservation.

By analyzing the work of urban governance organizations and how financial gatekeepers shape their activities in managing and provisioning water, I uncovered how these processes are subject to positive and negative financial feedbacks. As such, this dissertation attempted to address a call by scholars for deeper engagement with the topic of urbanization using theories pertaining to environmental political economy (Clement 2010). Urban growth plays a significant role in creating the demand for water that leads to problematic environmental outcomes and social relations in largely rural spaces. This dissertation sought to engage research on the environment and society nexus. This body of research continually points to the role of capitalism and macroeconomic structures in perpetuating systemic environmental harm (Foster, Clark, and York 2010; Moore 2015; Downey 2015; Givens, Clark, and Jorgenson 2016) including studies taking on water specifically (Worster 1985) from a macro orientation and others assessing the

influence of growth machine logics in water policy (Brown and Hess 2017) within organizations. This dissertation emphasized the need to think beyond dualities of public versus private and commodification vs nationalization because, under the conditions of a highly financialized economy, private financial interests are interwoven with public governance through municipal debt and the investment of public money.

With regards economic sociology, I sought to develop environmentally oriented concepts and findings that apply the theoretical insights of economic sociology. In pursuing this I sought to observe as concretely as possible how concepts associated with financialization affected the strategic actions of policy makers. This required an established theoretical vocabulary to analyze patterns in qualitative data collected during fieldwork and interviews with key informants within water organizations. As such, my work benefitted from drawing theoretical insight from scholarship on the dynamics of political institutions (Fligstein and McAdam 2012) and institutional logics (Thornton et al. 2012). Building on Bourdieu's field theory (Bourdieu and Wacquant 1992), Fligstein and McAdam offer the notion of strategic action fields (2011; 2012) as a general theory that helps to explain social order and changes in political institutions. I used the theory of strategic action fields as a vocabulary to explain the discursive contours of water supply management. This framework allowed me to account for the effects of broad structural influences—like financialization—while it also provided conceptual space for actors and organizations to pursue strategic objectives. I also leveraged the institutional logics perspective (Thornton, Ocasio, and Lounsbury 2012), that is grounded in institutional theory (Meyer and Rowan 1977; DiMaggio and Powell 1983) in outlining the theoretical framework. Thornton and Ocasio define institutional logics as, "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce

their material subsistence, organize time and space, and provide meaning to their social reality" (1999, p. 804). The application of institutional logics complemented the notion of strategic action fields as both assume a certain level of individual agency, although constrained by broader institutional and social forces that establish expectations, rules, and practices. From this line of research, this dissertation examined the research expectation that actors and organizations in water governance, as a particular political field, exist in a web of overlapping policy domains (Scoville and Fligstein 2020) and that they generally act in accordance with relatively stable institutional logics that inform their priorities and decision-making. For instance, Chapter 4 applied this theoretical framing as I analyzed how actors engage across conflicting and overlapping policy domains. I found that the presence of finance-oriented institutional logics is a dominant pattern and tends to inform decision-making across all major policy domains.

Key aspects of the national and global economies are growing increasingly oriented around finance (Krippner 2005; Epstein 2005), with previously non-financial parts of life dominated by financialized ways of thinking (van der Zwan 2014; Davis and Kim 2015) and public goods increasingly transformed into financial assets for private gain, in cities (Hackworth 2007) and in rural spaces (Gunnoe 2014; 2016). Considering that water supply management is a consequential field that simultaneously underpins economic activity and is dependent upon large flows of money, this dissertation attempted to address the broad orienting question, "What does the financialization of the economy means for public water management?"

Together the three empirical studies in this dissertation presented evidence that public municipal governance is highly financialized and that the dominance of financial markets, which scholars observe in many seemingly non-financial areas of life, also extends to how we collectively govern environmental resources in public institutions. More specifically, I found that

public governance is reliant upon private capital and this creates a situation in which the tastes of investors and financial gatekeepers can enable or limit access to capital markets for governance organizations. These are democratic organizations that exist to serve the public's interest and manage shared resources; thus, it is problematic for their work to be limited by the tastes of geographically disconnected, private actors and heavily influenced by financial markets, rather than motivated by and responsive to public opinion and technocratically informed public policy. Furthermore, I found that the institutional setting of public governance is highly fragmented, despite occasional collaborative endeavors. Organizations effectively compete for access to funding opportunities and economic resources in pursuit of accruing advantages for their respective service areas.

This dissertation concludes that the primacy of financial logics combined with fragmented governance institutions encourages public officials to prioritize financial objectives—maximizing revenues, minimizing costs and expenditures, obtaining favorable credit ratings—over matters pertaining to the substantive charge of the municipal organization like mitigating environmental harms, the equitable provisioning of resources, and adapting to climatological realities. Additionally, I intend to develop a theoretical extension in future research that builds on the findings of this dissertation, suggesting conceptual updates to Polanyi's formative theorizing on the embeddedness of markets in social relations and political institutions. Specifically, I see an opportunity to argue that the financial entanglements that blur distinctions of public and private money, complicate the ability for the state to resist the marketization of public goods and necessities pertaining to environmental protections and resources. In sum, deeper theoretical explication of the financialization of public governance can help explain the contours of contemporary public governance and how it is interwoven with

private financial markets, which will offer an updated conceptualization of Polanyi's embeddedness that will be applicable to thinking about environmental policy and protection.

I also found in this research that the financial processes underpinning public governance differentially impact communities across levels of SES. I developed the notion of *financial feedbacks* to explain how social and environmental inequalities are reproduced through municipal governance. The *positive financial feedback* describes how well-resourced agencies with higher SES tax bases, obtain significant advantages through the financial structures that enable activities like technological upgrades, conservation and recycling initiatives, and holding sizable financial reserves that generate investment income. I argued that the *negative financial feedback* should be characterized as the *financial pathology of institutions*, as this provides a generalizable concept to describe this particular dynamic that links financial markets to governance failures and social injustices while emphasizing the pathological nature of the problem. A pathological behavior is one that is compulsive, persistent, and harmful to the self. I use the term, financial pathology of institutions, to emphasize that public institutions have a defined purpose, that is to provide services and resources for the benefit of the public that empowers institutional actors. The negative financial feedback is pathological because the agencies and political institutions are systematically drawn away from providing public good due to compulsive and persistent financial behaviors. Regardless of how well-intentioned an individual actor or a specific policy is, unless it upsets the hegemonic financial order, the pathological self-harm is likely to persist.

While the findings of this series of studies are suggestive of how finance impacts public water governance, there are limitations to these data. For instance, this work relied heavily on qualitative data, which can be effective for theory development and examining social phenomena

that cannot be measured validly. However, qualitative analysis is less capable of systematically testing hypotheses and producing generalizable results through representative samples. Doing this would greatly strengthen the claims being made through Chapters 2 through 4. Chapters 2 and 3 focused largely on a single organization and analyzed changes over time. While periodization and time series analysis provided a certain amount of analytical leverage, I concede that analysis of data from multiple organizations would enable comparisons and more thoroughly investigate the theories under examination. Additionally, Chapter 4 relied upon a modest volume of in-depth interviews, which complemented participant observations. Interview participants were selected for their position near the top of organizational hierarchies or occupying a unique niche. As such, recruitment took significant time as these individuals tended to be difficult to reach without interpersonal interactions, very busy in general, and fruitful engagement required the development of significant background knowledge on the part of the interviewer. I am hopeful that my future research projects will fill some of these gaps with studies that are quantitative and representative of a larger population of organizations, more topically diverse with consideration of other public utilities, and more expansive with examination of public governance in other regions and analysis of data from a larger sample of organizations.

The concept of financial feedbacks and associated institutional pathologies will benefit greatly from future research offering comparative analysis of social and environmental outcomes across communities, representing lower to higher SES levels. For instance, preliminary analysis of four major wholesale water districts in Southern California suggests that the district that serves a higher percentage of low SES households is the district that also struggles financially and receives the least favorable credit ratings among their peers. Furthermore, the credit rating agency, Moody's, explained in a 2018 report (at the time of downgrading the district in question)

that the downgrade was due in part because of the "large service area with below-average socioeconomic profile." Following this dissertation project, I intend to research this dynamic with a study that uses municipal agencies as the unit of analysis and quantitative data that captures the SES of the service area, population demographics, credit ratings, debt levels, tax revenues, and outcome variables that function to operationalize the quality of services received, community health, and environmental well-being. This project will seek to answer the question, "What does it mean for constituents when districts are subject to the financial pathology?"

Another important dynamic developed in this dissertation, but will benefit from further research, is explication of how urban and rural interests interact in contentious and cooperative ways. In Chapter 2, I examined the real estate acquisitions of MWD in the context of how their financial positioning enabled their ability to purchase land in rural spaces, providing advantages for their access to water for urban users. My interview data also contained discussions of strategic land holdings executed by other water districts as well. Considering the historical legacy of urban water grabs from rural and native communities in the West (Worster 1992, Walton 1993, Espeland 1998), it is important to analyze this fault line in light of the finance-dominated contemporary governance context. In future research, I intend to leverage geospatial data on water districts, maintained by state regulators, to test hypotheses systematically to bolster the findings of qualitative inquiry and insights developed in this dissertation. Additionally, as part of a long-term research agenda, I intend to produce and distribute a survey targeting elected officials and upper-level staff of water agencies throughout the state. A key aspect of analyzing this data will be to couple survey results with regional demographics and credit ratings to examine if water officials express and frame their work differently according to their rural or urban positioning.

In sum, in this dissertation I claim that socio-environmental relations are significantly shaped by financial markets. Furthermore, I analyzed data finding that the financialization of public governance pushes elected officials and upper-level staff to prioritize the interests of private capital investors over provisioning and stewarding water supplies as public good resources. Empirically, this study identified an important area to consider for those concerned with the seemingly intractable problems that are associated with effective water supply management in California and the western US. That is, an enduring reliance on revenue-backed debt financing reinforces policies that effectively commodify water and make environmental stewardship a tertiary concern in the absence of legal regulation that forces environmental concerns to the fore.

I attempted to use the empirical site of water governance to develop and articulate a generalizable theory regarding how finance impedes effective public policy with the notions of *financial feedbacks* and *the financial pathology of institutions*. I contend that these ideas, if brought to bear on other policy fields like power utilities, school districts, or city governments, would uncover patterns consistent with a tendency towards the systematic marginalization of substantive matters of collective benefit and an elevation of financial logics focused on maximizing revenues, minimizing expenditures, privileging financial expertise, and pleasing financial gatekeepers. As the effects of anthropogenic climate change are increasingly felt by communities around the world, we will surely grow more reliant upon city-level officials for upgrading infrastructure, implementing bold sustainability agendas, and distributing increasingly scarce resources. Ultimately, this research supported my assertion that we must be cognizant of the need for financial reform and financial adaptation measures because finance has the ability to prefigure the outcomes of well-intended social and environmental planning.

Financialization prioritizes revenues above public good, centralizes control among financial elites, and funnels wealth toward global capital circuits. Going forward, policy makers and community activists should seek opportunities to affect the political and legal processes to shape new financial structures grounded in more localized sources of funding to shorten financial circuits, so that investors will be more likely to have community ties. In this case, capital investors will be more attuned to local environmental realities and capital gains can stay closer to the borrowing community, rather than being extracted from local communities by global financial elites through interest and fee payments. Federal and state governments can support regional agencies by expanding funding from state-backed GO bonds and devaluing the role of credit ratings in determining funding eligibility. The pernicious effect of financial gatekeepers could be reduced with the development of new metrics that capture the positive impacts of conservation and environmental initiatives, rather than only capturing their effect on revenues. I concede that these suggestions are much easier said than done, as the current financial system is cemented by vast sums of speculative capital, powerful political interests, and decades of institutional inertia. However, policies that support more equitable communities, open democratic processes, and sustainable environments are growing increasingly urgent and political opportunities for systemic change may be on the horizon.

REFERENCES

Altman, Edward I., T. Sabri Öncü, Matthew Richardson, Anjolein Schmeits, and Lawrence J. White. 2011. "Regulation of Rating Agencies." Pp. 443–67 in *Regulating Wall Street*. Hoboken, NJ, USA: John Wiley & Sons, Inc.

Anon. 2018. "U.S. Muni Bond Market Rises to $3.853 Trillion in Second Quarter: Fed." *Reuters*, September 20.

Apkarian, Jacob. 2018. "Opposition to Shareholder Value: Bond Rating Agencies and Conflicting Logics in Corporate Finance." *Socio-Economic Review* 16(1):85–112.

Appadurai, Arjun. 1996. *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis, Minn: University of Minnesota Press.

Arrighi, Giovanni. 2010. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. London : New York, NY: Verso.

Ashton, Philip, Marc Doussard, and Rachel Weber. 2012. "The Financial Engineering of Infrastructure Privatization: What Are Public Assets Worth to Private Investors?" *Journal of the American Planning Association* 78(3):300–312.

Ashton, Philip, Marc Doussard, and Rachel Weber. 2016. "Reconstituting the State: City Powers and Exposures in Chicago's Infrastructure Leases." *Urban Studies* 53(7):1384–1400.

Assies, Willem. 2003. "David versus Goliath in Cochabamba: Water Rights, Neoliberalism, and the Revival of Social Protest in Bolivia." *Latin American Perspectives* 30(3):14–36.

Baker, Zeke, Julia Ekstrom, and Louise Bedsworth. 2018. "Climate Information? Embedding Climate Futures within Temporalities of California Water Management." *Environmental Sociology* 4(4):419–33.

Bakker, Karen J. 2010. *Privatizing Water: Governance Failure and the World's Urban Water Crisis*. Ithaca, N.Y: Cornell University Press.

Balazs, Carolina L., Rachel Morello-Frosch, Alan E. Hubbard, and Isha Ray. 2012. "Environmental Justice Implications of Arsenic Contamination in California's San Joaquin Valley: A Cross-Sectional, Cluster-Design Examining Exposure and Compliance in Community Drinking Water Systems." *Environmental Health* 11(1):84.

Bayliss, Kate. 2014. "The Financialization of Water." *Review of Radical Political Economics* 46(3):292–307.

Beecher, Janice A. 2010. "The Conservation Conundrum: How Declining Demand Affects Water Utilities." *American Water Works Association. Journal* 102(2):78–80.

Besedovsky, Natalia. 2018. "Financialization as Calculative Practice: The Rise of Structured Finance and the Cultural and Calculative Transformation of Credit Rating Agencies." *Socio-Economic Review* 16(1):61–84.

Block, Fred L., and Margaret R. Somers. 2016. *The Power of Market Fundamentalism: Karl Polanyi's Critique*.

Bourdieu, Pierre, and Loïc J. D. Wacquant. 1992. *An Invitation to Reflexive Sociology*. Chicago: University of Chicago Press.

Bourdieu, Pierre, Loic J. D. Wacquant, and Samar Farage. 1994. "Rethinking the State: Genesis and Structure of the Bureaucratic Field." *Sociological Theory* 12(1):1.

Bradley, Timothy J., and Gregory M. Yanega. 2018. "Salton Sea: Ecosystem in Transition" edited by J. Sills. *Science* 359(6377):754.1-754.

Brown, Kate Pride, and David J. Hess. 2017. "The Politics of Water Conservation: Identifying and Overcoming Barriers to Successful Policies." *Water Policy* 19(2):304–21.

Brown, R. R., and M. A. Farrelly. 2009. “Challenges Ahead: Social and Institutional Factors Influencing Sustainable Urban Stormwater Management in Australia.” *Water Science & Technology* 59(4):653.
Caniglia, Beth, Beatrice Frank, Bridget Kerner, and Tamara L. Mix. 2016. “Water Policy And Governance Networks: A Pathway To Enhance Resilience Toward Climate Change.” *Sociological Forum* 31:828–45.
Carle, David. 2016. *Introduction to Water in California*. Second edition. Oakland, California: University of California Press.
Carruthers, Bruce G. 2013. “From Uncertainty toward Risk: The Case of Credit Ratings.” *Socio-Economic Review* 11(3):525–51.
Carruthers, Bruce G., and Laura Ariovich. 2010. *Money and Credit: A Sociological Approach*. Cambridge: Polity.
Carruthers, Bruce G., and Jeong-Chul Kim. 2011. “The Sociology of Finance.” *Annual Review of Sociology* 37(1):239–59.
Clapp, Jennifer. 2014. “Financialization, Distance and Global Food Politics.” *The Journal of Peasant Studies* 41(5):797–814.
Clapp, Jennifer, and S. Ryan Isakson. 2018. “Risky Returns: The Implications of Financialization in the Food System.” *Development and Change* 49(2):437–60.
Clement, Matthew Thomas. 2010. “Urbanization and the Natural Environment: An Environmental Sociological Review and Synthesis:” *Organization & Environment*.
Crouch, Colin. 2009. “Privatised Keynesianism: An Unacknowledged Policy Regime.” *The British Journal of Politics and International Relations* 11(3):382–99.
Davis, Gerald F. 2011. *Managed by the Markets: How Finance Reshaped America*. Oxford: Oxford Univ. Press.
Davis, Gerald F., and Suntae Kim. 2015. “Financialization of the Economy.” *Annual Review of Sociology* 41(1):203–21.
DiMaggio, Paul J., and Walter W. Powell. 1983. “The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields.” *American Sociological Review* 48(2):147.
Downey, Liam. 2015. *Inequality, Democracy, and the Environment*. New York: New York University Press.
Eaton, Charlie, Jacob Habinek, Adam Goldstein, Cyrus Dioun, Daniela García Santibáñez Godoy, and Robert Osley-Thomas. 2016. “The Financialization of US Higher Education.” *Socio-Economic Review* mwv030.
Eisinger, Peter. 1998. “City Politics in an Era of Federal Devolution.” *Urban Affairs Review* 33(3):308–25.
Epstein, Gerald A., ed. 2005. *Financialization and the World Economy*. Paperback edition 2006, reprinted 2014. Cheltenham: Elgar.
Erie, Steven P. 2006. *Beyond Chinatown: The Metropolitan Water District, Growth, and the Environment in Southern California*. Stanford: Stanford University Press.
Espeland, Wendy Nelson. 1998. *The Struggle for Water: Politics, Rationality, and Identity in the American Southwest*. Chicago: University of Chicago Press.
Espeland, Wendy Nelson, and Mitchell L. Stevens. 1998. “Commensuration as a Social Process.” *Annual Review of Sociology* 24(1):313–43.
Espeland, Wendy Nelson, and Mitchell L. Stevens. 2008. “A Sociology of Quantification.” *European Journal of Sociology* 49(03):401.

Feldman, David Lewis. 2012. *Water*. Cambridge, UK ; Malden, MA: Polity.
Fields, Desiree. 2015. "Contesting the Financialization of Urban Space: Community Organizations and the Struggle to Preserve Affordable Rental Housing in New York City." *Journal of Urban Affairs* 37(2):144–65.
Fields, Desiree, and Sabina Uffer. 2016. "The Financialisation of Rental Housing: A Comparative Analysis of New York City and Berlin." *Urban Studies* 53(7):1486–1502.
Fisher, Dana R., and Andrew K. Jorgenson. 2019. "Ending the Stalemate: Toward a Theory of Anthro-Shift." *Sociological Theory* 37(4):342–62.
Fligstein, Neil. 1993. *The Transformation of Corporate Control*. 1. paperback ed. Cambridge: Harvard Univ. Press.
Fligstein, Neil, and Adam Goldstein. 2015. "The Emergence of a Finance Culture in American Households, 1989–2007." *Socio-Economic Review* 13(3):575–601.
Fligstein, Neil, and Doug McAdam. 2011. "Toward a General Theory of Strategic Action Fields." *Sociological Theory* 29(1):1–26.
Fligstein, Neil, and Doug McAdam. 2012. *A Theory of Fields*. First issued as an Oxford University Press paperback. Oxford New York Auckland: Oxford University Press.
Foster, John Bellamy. 1999. "Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology." *American Journal of Sociology* 105(2):366–405.
Foster, John Bellamy. 2007. "The Financialization of Capitalism." *Monthly Review* 58(11):1.
Foster, John Bellamy, Brett Clark, and Richard York. 2010. *The Ecological Rift: Capitalism's War on the Earth*. New York: Monthly Review Press.
Fowler, John F. Jr. 1938. *Revenue Bonds: The Nature, Uses, and Distribution of Fully Self-Liquidating Public Loans*. New York: Harper.
Friedland, Roger, and Robert Alford. 1991. "Bringing Society Back In: Symbols, Practices and Institutional Contradictions." Pp. 232–63 in *The New Institutionalism in Organizational Analysis*, edited by W. Powell and P. DiMaggio. University Of Chicago Press.
George, Alexander L., and Andrew Bennett. 2005. *Case Studies and Theory Development in the Social Sciences*. Cambridge, Mass: MIT Press.
Givens, Jennifer E., Clack, Brett, and Jorgenson, Andrew K. 2016. "Strengthening the Ties Between Environmental Sociology and Sociology of Development." Pp. 69–94 in *Sociology of Development Handbook*, edited by Hooks, Gregory. Oakland, California: University of California Press.
Goodman, R. M. 1968. "Municipal Bond Rating Testimony." *Financial Analysts Journal* 24:59–65.
Gotham, Kevin Fox. 2006. "The Secondary Circuit of Capital Reconsidered: Globalization and the U.S. Real Estate Sector." *American Journal of Sociology* 112(1):231–75.
Gotham, Kevin Fox. 2013. "Dilemmas of Disaster Zones: Tax Incentives and Business Reinvestment in the Gulf Coast after Hurricanes Katrina and Rita." *City & Community* 12(4):291–308.
Gotham, Kevin Fox. 2016. "Re-Anchoring Capital in Disaster-Devastated Spaces: Financialisation and the Gulf Opportunity (GO) Zone Programme." *Urban Studies* 53(7):1362–83.
Greenwood, Royston, Christine Oliver, Thomas Lawrence, and Renate Meyer, eds. 2017. *The SAGE Handbook of Organizational Institutionalism*. London, UK: SAGE.

Greenwood, Royston, Christine Oliver, Roy Suddaby, and Kerstin Sahlin-Andersson, eds. 2008. *The SAGE Handbook of Organizational Institutionalism*. Paperback edition. London, UK: SAGE.

Gunnoe, Andrew. 2014. "The Political Economy of Institutional Landownership: Neorentier Society and the Financialization of Land." *Rural Sociology* 79(4):478–504.

Gunnoe, Andrew. 2015. "The Financialization of the US Forest Products Industry: Socio-Economic Relations, Shareholder Value, and the Restructuring of an Industry." *Social Forces* 94(3):1075–1101.

Gunnoe, Andrew, and Paul K. Gellert. 2011. "Financialization, Shareholder Value, and the Transformation of Timberland Ownership in the US." *Critical Sociology* 37(3):265–84.

H.A. Loáiciga, T. Pingel, and E. Garcia. 2009. "Assessment of Seawater Intrusion Potential from Sea Level Rise in Coastal Aquifers of California." *University of California Water Resources Center Technical Completion Report*.

Hackworth, Jason. 2002. "Local Autonomy, Bond-Rating Agencies and Neoliberal Urbanism in the United States." *International Journal of Urban and Regional Research* 26(4):707–25.

Hackworth, Jason R. 2007. *The Neoliberal City: Governance, Ideology, and Development in American Urbanism*. Ithaca: Cornell University Press.

Halbert, Ludovic, and Katia Attuyer. 2016. "Introduction: The Financialisation of Urban Production: Conditions, Mediations and Transformations." *Urban Studies* 53(7):1347–61.

Hess, David J., Christopher A. Wold, Elise Hunter, John Nay, Scott Worland, Jonathan Gilligan, and George M. Hornberger. 2016. "Drought, Risk, and Institutional Politics in the American Southwest." *Sociological Forum* 31:807–27.

Hoffman, Andrew J., and Marc J. Ventresca. 2002a. "Introduction." Pp. 1–38 in *Organizations, Policy and the Natural Environment: Institutional and Strategic Perspectives*, edited by A. J. Hoffman and M. J. Ventresca. Stanford University Press.

Hoffman, Andrew J., and Marc J. Ventresca, eds. 2002b. *Organizations, Policy and the Natural Environment: Institutional and Strategic Perspectives*. Stanford, Calif: Stanford University Press.

IPCC. 2018. "Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty" edited by V. Masson-Delmotte, P. Zhai, H. O. Portner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Pean, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield.

Isakson, S. Ryan. 2014. "Food and Finance: The Financial Transformation of Agro-Food Supply Chains." *The Journal of Peasant Studies* 41(5):749–75.

Jackall, Robert. 1988. *Moral Mazes: The World of Corporate Managers*. New York: Oxford University Press.

Janoski, Thomas, Cedric de Leon, Joya Misra, and Isaac William Martin, eds. 2020. *The New Handbook of Political Sociology*. 1st ed. Cambridge University Press.

Jorgenson, Andrew K. 2003. "Consumption and Environmental Degradation: A Cross-National Analysis of the Ecological Footprint." *Social Problems* 50(3):374–94.

Kerwer, Dieter. 2002. "Rating Agencies Setting a Standard for Global Financial Markets." *Economic Sociology_the European Electronic Newsletter* 3(3):40–46.

King, Michael R., and Timothy J. Sinclair. 2003. “Private Actors and Public Policy: A Requiem for the New Basel Capital Accord.” *International Political Science Review* 24(3):345–62.
Kirkpatrick, L. Owen, and Michael Peter Smith. 2011. “The Infrastructural Limits to Growth: Rethinking the Urban Growth Machine in Times of Fiscal Crisis: The Urban Growth Machine in Times of Fiscal Crisis.” *International Journal of Urban and Regional Research* 35(3):477–503.
Knappen, Laurence S. 1939. *Revenue Bonds and the Investor*. New York: Prentice-Hall.
Krippner, G. R. 2005. “The Financialization of the American Economy.” *Socio-Economic Review* 3(2):173–208.
Krippner, Greta R. 2011. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. First Harvard University Press paperback edition. Cambridge, Massachusetts London, England: Harvard University Press.
Laumann, Edward O., and David Knoke. 1987. *The Organizational State: Social Choice in National Policy Domains*. Madison, Wis: University of Wisconsin Press.
Leyshon, Andrew, and Nigel Thrift. 2007. “The Capitalization of Almost Everything: The Future of Finance and Capitalism.” *Theory, Culture & Society* 24(7–8):97–115.
Lin, Ken-Hou, and Megan Tobias Neely. 2020. *Divested: Inequality in the Age of Finance*. New York: Oxford University Press.
Lin, Ken-Hou, and Donald Tomaskovic-Devey. 2013. “Financialization and U.S. Income Inequality, 1970–2008.” *American Journal of Sociology* 118(5):1284–1329.
Loftus, Alex, and Hug March. 2016. “Financializing Desalination: Rethinking the Returns of Big Infrastructure.” *International Journal of Urban and Regional Research* 40(1):46–61.
Logan, John R., and Harvey Luskin Molotch. 2010. *Urban Fortunes: The Political Economy of Place*. 20th anniversary ed. Berkeley, Calif.: Univ Of California Press.
Lounsbury, Michael, and Hirsch, Paul, eds. 2010. *Markets on Trial: The Economic Sociology of the US Financial Crisis. Pt. A:* ... Bingley: Emerald.
MacKenzie, Donald. 2011. “The Credit Crisis as a Problem in the Sociology of Knowledge.” *American Journal of Sociology* 116(6):1778–1841.
Malanga, Steven. 2010. “The Muni-Bond Debt Bomb.” *Wall Street Journal*, July 31.
March, Hug, and Thomas Purcell. 2014. “The Muddy Waters of Financialisation and New Accumulation Strategies in the Global Water Industry: The Case of AGBAR.” *Geoforum* 53:11–20.
Marx, Karl, and Friedrich Engels. 1978. *The Marx-Engels Reader*. 2d ed. edited by R. C. Tucker. New York: Norton.
Mazaika, Kathryn. 2004. “The Mono Lake Case: Shaking Up the Established Powers.” Pp. 71–105 in *Braving the Currents*. Boston, MA: Springer US.
Meyer, John W., and Brian Rowan. 1977. “Institutionalized Organizations: Formal Structure as Myth and Ceremony.” *American Journal of Sociology* 83(2):340–63.
Moore, Jason W. 2015. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. 1st Edition. New York: Verso.
MSRB. 2019. “Municipal Securities: Financing the Nation’s Infrastructure.”
Mullin, Megan. 2009. *Governing the Tap: Special District Governance and the New Local Politics of Water*. Cambridge, Mass: MIT Press.
Nau, Michael. 2013. “Economic Elites, Investments, and Income Inequality.” *Social Forces* 92(2):437–61.

O'Brien, Peter, Phil O'Neill, and Andy Pike. 2019. "Funding, Financing and Governing Urban Infrastructures." *Urban Studies* 56(7):1291–1303.
Ocasio, William, Patricia H. Thornton, and Michael Lounsbury. 2017. "Advances to the Institutional Logics Perspective." Pp. 509–31 in *The SAGE Handbook of Organizational Institutionalism*, edited by R. Greenwood, C. Oliver, T. Lawrence, and R. Meyer. London, UK: SAGE.
O'Neill, Phillip. 2017. "Managing the Private Financing of Urban Infrastructure." *Urban Policy and Research* 35(1):32–43.
Pacewicz, J. 2013. "Tax Increment Financing, Economic Development Professionals and the Financialization of Urban Politics." *Socio-Economic Review* 11(3):413–40.
Pacewicz, Josh. 2016. "The City as a Fiscal Derivative: Financialization, Urban Development, and the Politics of Earmarking." *City & Community* 15(3):264–88.
Panitch, Leo, and Sam Gindin. 2014. "Political Economy and Political Power: The American State and Finance in the Neoliberal Era." *Government and Opposition* 49(03):369–99.
Partnoy, Frank. 2006. *How and Why Credit Rating Agencies Are Not Like Other Gatekeepers*. *SSRN Scholarly Paper*. ID 900257. Rochester, NY: Social Science Research Network.
Peck, Jamie, and Heather Whiteside. 2016. "Financializing Detroit." *Economic Geography* 92(3):235–68.
Platz, Daniel. 2009. "Infrastructure Finance in Developing Countries— the Potential of Sub-Sovereign Bonds." *Development Office of the United Nations Department of Economic and Social Affairs*.
Polanyi, Karl. 2001. *The Great Transformation: The Political and Economic Origins of Our Time*. 2nd Beacon Paperback ed. Boston, MA: Beacon Press.
Poon, Martha. 2012. "Rating Agencies." in *The Oxford Handbook of the Sociology of Finance*, edited by K. Knorr Cetina and A. Preda. Oxford University Press.
Prasad, Monica. 2012. *The Land of Too Much: American Abundance and the Paradox of Poverty*. Cambridge, MA: Harvard University Press.
Pryke, Michael, and John Allen. 2019. "Financialising Urban Water Infrastructure: Extracting Local Value, Distributing Value Globally." *Urban Studies* 56(7):1326–46.
Quinn, Sarah L. 2019. *American Bonds: How Credit Markets Shaped a Nation*.
Reisner, Marc. 1993. *Cadillac Desert: The American West and Its Disappearing Water*. Rev. and updated. New York, N.Y., U.S.A: Penguin Books.
Rhoades, Alan M., Andrew D. Jones, and Paul A. Ullrich. 2018. "The Changing Character of the California Sierra Nevada as a Natural Reservoir." *Geophysical Research Letters* 45(23):13,008-13,019.
Roberts, J. Timmons, and Bradley Parks. 2006. *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy*. MIT Press.
Rona-Tas, Akos, and Stefanie Hiss. 2010a. "The Role of Ratings in the Subprime Mortgage Crisis: The Art of Corporate and the Science of Consumer Credit Rating" edited by M. Lounsbury and P. Hirsch. *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part A* 30(1):115–55.
Rona-Tas, Akos, and Stefanie Hiss. 2010b. "The Role of Ratings in the Subprime Mortgage Crisis: The Art of Corporate and the Science of Consumer Credit Rating." Pp. 115–55 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part A*. Vol. 30 Part A, *Research in the Sociology of Organizations*. Emerald Group Publishing Limited.

Sapozhnikova, Yelena, Ola Bawardi, and Daniel Schlenk. 2004. “Pesticides and PCBs in Sediments and Fish from the Salton Sea, California, USA.” *Chemosphere* 55(6):797–809.
Sbragia, Alberta M. 1996. *Debt Wish: Entrepreneurial Cities, U.S. Federalism, and Economic Development*. Pittsburgh, PA: University of Pittsburgh Press.
Scoville, Caleb. 2019. “Hydraulic Society and a ‘Stupid Little Fish’: Toward a Historical Ontology of Endangerment.” *Theory and Society* 48(1):1–37.
Scoville, Caleb, and Neil Fligstein. 2020. “The Promise of Field Theory for the Study of Political Institutions.” Pp. 79–101 in *The New Handbook of Political Sociology,* edited by T. Janoski, C. de Leon, J. Misra, and I. William Martin. Cambridge University Press.
Sicotte, Diane M. 2016. “The Importance of Historical Methods for Building Theories of Urban Environmental Inequality.” *Environmental Sociology* 2(3):254–64.
Sinclair, Timothy J. 1994. “Passing Judgement: Credit Rating Processes as Regulatory Mechanisms of Governance in the Emerging World Order.” *Review of International Political Economy* 1(1):133–59.
Sinclair, Timothy J. 2008. *The New Masters of Capital: American Bond Rating Agencies and the Politics of Creditworthiness*. Ithaca, NY: Cornell Paperbacks.
Streeck, Wolfgang. 2011. “The Crises of Democratic Capitalism.” *New Left Review* 71:5–29.
Swyngedouw, E. 2004. *Social Power and the Urbanization of Water: Flows of Power*. Oxford ; New York: Oxford University Press.
Thomas, Georgy S. 2004. “Rating Agencies: An American Policy Arm?” *Economic and Political Weekly* 39(42):4613–15.
Thornton, Patricia H., and William Ocasio. 2008. “Institutional Logics.” Pp. 99–128 in *The SAGE Handbook of Organizational Institutionalism*, edited by R. Greenwood, C. Oliver, R. Suddaby, and K. Sahlin. London, UK: SAGE.
Thornton, Patricia H., William Ocasio, and Michael Lounsbury. 2012. *The Institutional Logics Perspective: A New Approach to Culture, Structure and Process*. Oxford: Oxford University Press.
Walton, John. 1993. *Western Times and Water Wars: State, Culture, and Rebellion in California.* Berkeley: Univ Of California Press.
Weber, Max. 2002. *The Protestant Ethic and the Spirit of Capitalism*. 3rd Roxbury ed. Los Angeles, Calif: Roxbury Pub. Co.
Weber, Rachel. 2010. “Selling City Futures: The Financialization of Urban Redevelopment Policy.” *Economic Geography* 86(3):251–74.
Worster, Donald. 1992. *Rivers of Empire: Water, Aridity, and the Growth of the American West*. Oxford: Oxford Univ. Press.
Zorn, Dirk M. 2004. “Here a Chief, There a Chief: The Rise of the CFO in the American Firm.” *American Sociological Review* 69(3):345–64.
van der Zwan, N. 2014. “Making Sense of Financialization.” *Socio-Economic Review* 12(1):99–129.