

WELFARE REFORMS: A REVIEW OF DISCRETION AND CASH ASSISTANCE
PROGRAMS IN THE UNITED STATES

by

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(Under the Direction of J. Edward Kellough)

ABSTRACT

This dissertation assesses how changes in discretion level affect welfare programs, by developing program-level measures of discretion and examining its moderation effect on welfare spending. States' discretion regarding social safety net programs has been changed by welfare reforms in the U.S., and these federal acts provide rich information on discretion, describing not only legislative goals but also delegated agents' rights, responsibilities, expectations, and prohibitions when implementing policies or programs. This research investigates eight major federal acts on welfare reform since 1935 affecting Aid to Families with Dependent Children (AFDC), and its successor, Temporary Assistance for Needy Families (TANF). Findings indicate that TANF allows more discretion for state governments under less federal oversight, and that co-operations of diverse policy tools have produced wide state-level variations.

The new measures of states' discretion in program administration come through analyzing the provisions of 18 federal welfare reform acts using the Natural Language Processing (NLP) method, specifically the spaCy library in the Python language. Findings show that the level of discretion, rather than steadily changing in one direction as assumed, has increased by different degrees or remained static in response to these federal acts.

Finally, this research empirically estimates the moderating effect of discretion on TANF expenditures, by fiscal condition, political preferences, and racial diversity of state governments. Results reveal that discretion itself does not directly change the spending, but the effects of key variables of interest significantly change when discretion increases: discretion is a moderator in the relationship between characteristics of state governments and welfare expenditure. Taken together, this dissertation develops analytic methods to assess discretion from legal statements, allowing for its measure in various policies and programs. Furthermore, the moderating role of discretion in decision making on governmental assistance offers a different perspective with which to resolve discrepancies in empirical research on welfare state theory.

INDEX WORDS: Public administration, Public policy, Federalism, Decentralization, Public finance, Discretion, Measure of discretion, Measuring discretion, Welfare reforms, AFDC, TANF, Welfare policy, Welfare expenditure, Cash assistance programs, Natural language processing (NLP), spaCy

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DEDICATION

To my mother and grandmother in heaven.

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CHAPTER 1

INTRODUCTION AND HISTORICAL REVIEW

Donald Trump's presidency, with its emphasis on federal and state immigration policy, has reignited a long history of discussions on the nature of American federalism. Several states have accused the federal government of threatening their sovereignty (Max Behlke, 2018) and continue to protest against perceived centralizing tendencies in the political, judicial, and operational fields (Walker, 1996). As polarization increases around politically sensitive policies on immigration, welfare, abortion, the environment, recreational use of marijuana, and same-sex marriage, states challenge centralization in order to reflect the preferences of their own voters (Kincaid, 2017). The federal versus state power struggles have decades of history behind them, however.

One of such struggles has been around the role of state governments in the provision of welfare services in the United States. In the realm of welfare policy, decentralization of operations to the states over the decades has accumulated heavy criticism, and among other things, has been linked to aggravations in income inequality and poverty. Specifically, Temporary Assistance for Needy Families (TANF) programs, which target needy families with children to support their basic needs, have become one of the most decentralized welfare programs in the U.S. These programs, the focus of the dissertation, are characterized by widespread variations in benefits and diverse sets of restrictions around state discretion, which, in some cases, resulted in rapidly decreasing caseloads and spending levels. As the first step, this chapter starts with a review on how American federalism has evolved historically, covers

literature of general federalism and decentralization in the U.S., and discusses why the Temporary Assistance for Needy Families (TANF) is still important.

Progression of Federalism

American federalism, or the vertical separation of powers between federal and state governments, is meant to balance and limit the powers of each (Bolick, 2018). The concept of dual federalism, established in the 1800s as a backlash to the weak central government formed by the Articles of Confederation of 1781, refers to a divided system: this system of shared sovereignty delegates some powers to the federal government and reserves other powers for the states (Kincaid, 2017). The Great Depression introduced a shift in this power structure, called cooperative federalism, in which the federal and state governments collaborated on policy (Lowi, 1996). The late 20th century brought new federalism, which returned more power, financial resources, and governing responsibility to the states, as block grants and revenue sharing replaced categorical grants (Conlan, 2010).

In cooperative federalism, federal, state, and local governments interact cooperatively and collectively to solve common and complex problems and make intergovernmental agreements, rather than making policies separately and more or less equally. They also prefer a decentralized provision of services delegated toward lower-level governments (Inman & Rubinfeld, 1997). The Aid to Families with Dependent Children (AFDC) is often described as a program in cooperative federalism. The Supreme Court, in 1968 (*King v. Smith*, 392 U.S. 309, 316) and 1970 (*Rosado v. Wyman*, 397 U.S. 397, 422-23), explained cooperative federalism as “financed largely by the Federal Government, on a matching fund basis, and is administered by the States.” The arrangement demands a certain level of uniformity and compliance with federal

requirements, but also leaves discretion for state agencies to implement policies within federal restrictions (Weiser, 2000, p. 669).

Collaborative federalism entered the national conversation with the enactment of the Affordable Care Act (ACA) of 2010. Collaborative federalism supports the idea that the powers of federal and state governments are complementary: both entities work to frame the principles and guidelines about specific features of a given program (Gerken, 2013). State power, crucial for the creation and modification of these programs, is preferable to a system in which states just receive and follow federal orders without flexibility (Hynes, 2019). Most recently, the “Renaissance of Federalism,” a pro-federalism consensus to recover states’ discretion from the hands of the federal government, has expanded the variation of public services among state governments (Bolick, 2018).

Why Discretion Matters: Theories of Federalism/Decentralization

Scholars have produced many arguments for the devolution of authority towards multiple decentralized governments. First of all, Tiebout (1956)’s hypothesis (modified by Peterson (1981) and Oates (1972) decentralization theorem) suggests that decentralization improves allocative efficiency by producing heterogeneous options and matching them to citizens’ preferences (Arze del Granado et al., 2008; Jimenez, 2009). In Tiebout’s theoretical model, lower-level governments provide various fiscal packages, including intended rates of tax on residents and the public goods and services to offer them in return. Individual households vote with their feet, choosing the residence that fits their policy and lifestyle preferences, just like electorates vote for the political candidates they consider most likely to meet their demands. Tiebout (1956) believed that the preferences of individual households are heterogeneous, and that local governments are more likely to have precise and detailed information on the needs of

residents within their boundaries. Therefore, as governments segment, their packages become more customized, better allowing households to find their best option (Oates, 1998). This possibility of variety in tax rates and public provision is the virtue of lower-level governments; federal government cannot meet such diverse preferences (De Jong et al., 2006).

By contrast, the public choice school perceives government as a self-interested entity who acts against the interests of citizens, and argues that intergovernmental competition can limit this monopolistic power. Decentralization, in this assumption, promotes marketplace ideas such as “voting with one’s feet” and “yardstick competition,” so it prevents selfish governments from seeking their political rents (Arze del Granado et al., 2008; Boadway & Shah, 2007, p. 173; Shah, 1999). Furthermore, competition that arises among governments provides incentives for innovation, and decentralized, smaller administration units act more easily as “laboratories” for the experimentation and innovation of public policy (Anderson, 2010; Kinnersley & Shoulders, 2011; Oates, 2008b, p. 2). In the decentralized system, mobile citizens perceive each fiscal package as a substitutable option and governments compete with each other to attract citizens by improving their own efficiency, just as companies do in the private market. Therefore, competition in decentralized subnational governments promotes innovations, and citizens within a state will benefit more with an innovative public sector (Buchanan, 1997). Furthermore, the most efficient allocation of resources occurs when the level of government most closely represents the beneficiaries of these outlays because elected and appointed officials in lower governments are assumed to be more accountable to their electorate (Ter-Minassian, 1997). Therefore, local governments are more responsive to the priorities of their community (Anderson, 2010; Ter-Minassian, 1997).

Decentralization makes the policy process more accountable to citizens in addition, because 1) residents of decentralized subnational governments can punish or reward local bureaucrats, and 2) citizens and politicians communicate repeatedly with each other throughout the election process (Ostrom et al., 1993; Seabright, 1996; Tommasi & Weinschelbaum, 1999). As expectations of local loyalty increase, so do efficiency and welfare gains. On the other hand, higher-level of government covers wider and more complex and abstract policy areas than lower-level government. Local citizens may lack context to understand federal priorities and processes and have fewer effective tools to reward or punish central government's performance (Seabright, 1996; Tommasi & Weinschelbaum, 1999). In other words, decentralization shortens the geographic and ideological distance between decision-maker and target, while centralized government bears the cost of diminished responsibility.

There are other benefits to decentralization. First, decentralized, smaller administration units act as "laboratories" for experimentation and innovation in public policy (Kinnersley & Shoulders, 2011; Oates, 2008b, p. 2). Specifically, waivers from the Aid to Families with Dependent Children (AFDC)/TANF regulations requested by some states are viewed as experiments, and many of their innovative trials have been integrated into successional programs. Moreover, high discretion supports policy diffusion, or the theory that policies developed in one space influence policies elsewhere (Parinandi, 2013). Giving bureaucrats open or closed channels of diffusion fills informational gaps among subnational governments, allowing them to refer to comparable neighboring governments' policy experiences (Berry & Berry, 1990; Gray, 1973; Karch, 2006; Parinandi, 2013; Walker, 1969).

Also, decentralization constrains the undesired expansion of government (Oates, 1998). For example, Brennan and Buchanan (1980) and Musgrave (1980) viewed the public sector as "a

monolithic agent, a Leviathan,” determined to maximize its total budget regardless of citizens’ desires. However, competition among different levels and units of government in the decentralized system can segment the monopolistic leverage of a single federal government. Therefore, “interjurisdictional mobility of persons” (Brennan & Buchanan, 1980) defies the budget maximization of the Leviathan (Oates, 1998, p. 31), as voters threaten to leave for competitor governments. Empirical test results of this hypothesis give evidence on the downsizing effect of decentralization.

Conflicting Views on Decentralization

Although much of the economic literature has long supported the benefits of decentralization, concerns over the costs of devolution persist (Ter-Minassian, 1997). One strong counterview relates to economies of scale. Economies of scale occur when a given unit cost decreases as the amount of overall goods produced increases. Fixed cost per unit declines up to a congestion point, and producer/worker technique and skill rise with production (Mikesell, 2011). Because the scale of state and local government production is much smaller than that of the federal government, it follows that decentralized production is less efficient. Specifically, Wilson (1986), Wildasin (1989), Keen and Marchand (1997), Bucovetsky (2005) and Grisorio and Prota (2015) address that competition among governments can deteriorate social welfare.

Devolution can also negatively impact macroeconomies. Local elites, concerned primarily with their own political success, have weak incentives when faced with interest groups or election pressure. Their respective subnational governments can use added discretion to spend beyond their fiscal capacity, without considering wider negative externalities, and that tendency grows when they face soft budget constraints. In this case, generated governmental deficits undermine not only their own economic stability, but also the macroeconomic stability of a

nation. Furthermore, when multiple levels of government try to balance budgets among them, problems of coordination occur (Rodden & Wibbels, 2002). Subnational governments make fiscal decisions to maximize their own (partial) gains without considering externalities for the rest of the nation, degenerating the national economy (Prud'Homme, 1995).

Also, institutional constraints can undermine the theoretical efficiency gains of decentralization (Tanzi, 1996a). For example, the administrative capacity of a subnational government, including staffing, technical skills, and employee training, is likely to be weaker than that of the federal government. Mechanisms of financial control, reporting, and accounting may also be less developed in state and local governments. These institutional inferiorities, often decided historically and politically, are slow to change, and hence limit the possible efficiency gains by decentralization (Ter-Minassian, 1997).

Finally, the disparity of resource distribution across regions can negatively affect the efficiency gains of decentralization as well. Subnational income transfers are not optional when there are externality problems. As an example, benefit spillovers occur when a positive effect from a generous redistribution policy in one jurisdiction flows into other jurisdictions with stingier redistribution policies (Musgrave, 1971; Oates, 1972; Saavedra, 2000; Stigler & Phelps, 1957). Due to mobility issues and welfare migration, jurisdictions providing stronger redistribution programs attract the poor, while those with weak programs attract wealthier populations. This leads local governments to a race to the bottom for fear of being a “welfare magnet” (Volden, 2006, p. 792) when deciding the level of redistribution generosity (Jan K Brueckner, 2000; Helen F Ladd & Fred C Doolittle, 1982; Peterson & Rom, 2010; Volden, 2002c).

On the other hand, many recent studies using late 20th century data do not find evidence for this race to the bottom, pointing instead to small variations in benefits levels across states (Allard & Danziger, 2000; Berry et al., 2003; Buckley & Brinig, 1997; De Jong et al., 2006; Figlio et al., 1999; Saavedra, 2000; Schram et al., 1998). Donahue (1997) suggests that the TANF financing transition, from entitlement to matching grants, eliminates incentives for competition across states.

In addition to economic reasons, political necessity also drives centralized welfare provision in many democratic societies. Since the public provision of the social safety net became an essential role of governments, advanced industrial societies determined that uniform, nation-wide social security was a citizen's basic social right (Castles et al., 2005; Marshall, 1964; Pierson, 1996). If a citizen in one jurisdiction receives more provisions, while a similarly-situated individual in a different jurisdiction receives less, this incongruence seems politically wrong and unfair (Oates, 2008a). This philosophy suggests that a single national government is most appropriate, to establish a uniform welfare system and provide homogeneous assistance. Therefore, decentralization is not always beneficial for the whole society, or even the direct target of the policy, due to economic reasons, and giving more discretion to subordinate governments in redistributive provision is more likely to be more undesirable because of the political unfairness.

How Discretion Changes Welfare Policy: Less Explored Path

A large literature has studied whether federalism/decentralization in welfare policy reduces the production of public goods and welfare generosity understanding discretion to be a result of decentralization, however it pays less attention to the concept and how discretion shape the welfare programs (Berry et al., 2003; Peterson & Rom, 2010; Tiebout, 1956; Volden, 2002d).

By contrast, welfare state theories concern how various causes impact welfare policies, and many empirical studies have tested these theories across different welfare programs.

Furthermore, the literature has acknowledged far-ranging caseloads and benefit levels in cash assistance programs resulting from policy variations across states, and has also assessed the negative impacts of increasing state discretionary powers. Next to the direct effects of socioeconomic and institutional restraints and racial diversity on welfare policy, there are conditions where the influences could be reinforced or attenuated. However, the evaluation on the impact of discretion level changes and the interaction between discretion and policy constraints from welfare state theories have been neglected.

On the other hand, the interaction between (managerial) discretion and policy environments on the side of street-level has been studied with various contexts as Hambrick and Finkelstein (1987) suggested that managerial discretion provides a bridge between theories where public entities play a significant role like stakeholder theory, resource dependent theory and bureaucracy theory (Berman et al., 2005). Some scholars have attempted to incorporate both discretion and bureaucracy theory in public welfare programs. This line of study is largely based on street-level discretion in implementing welfare policy rather than that of states or programs (Brodkin, 2007).

Why TANF? And What About TANF?

Although centralized social safety net is considered to be more efficient and beneficial for welfare recipients to guarantee homogeneous public provision in other democratic countries, a distinctive feature of the U.S. welfare state is the complex relationship between federal and state governments running safety net programs (Christine Heffernan, 2018). AFDC, and its successor, TANF, major redistributive U.S. welfare programs, provide cash assistance, services,

and activities for families in need. AFDC (known as Aid to Dependent Children (ADC) until 1962), gave states the authority to set standards of eligibility and benefit levels, and states bore the responsibility to administrate their programs (Abramovitz, 2017; Gordon, 1994). The 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) represents a transition in this relationship, creating more authority and discretion for state governments to implement and operate TANF programs under less federal oversight (Sandra Wexler & Rafael J Engel, 1999). Not surprisingly, eligibility criteria and benefit amounts have varied widely from state to state and over time (Sandra Wexler & Rafael J Engel, 1999). Other state-level variations noted by scholars concern: time limits; the rate of benefit declines as earnings increase; work requirements; the definition of work; sanction policies for disregards of legislation; waivers; and external programs to avoid families becoming part of the welfare caseloads (Danielson & Klerman, 2008; Moffitt, 1999; Rowe, 2000; Schoeni & Blank, 2000).

Furthermore, TANF is still worth to study the impact of discretion on it as the only program that are not nationally uniformed while the other core assistance program in the U.S. like Earned Income Tax Credit (EITC), Supplemental Nutrition Assistance (SNAP), and Supplemental Security Income (SSI) have been homogeneous in the U.S. (Meni & Wiseman, 2017). In sum, this state-level flexibility of the TANF program by various policy tools over a span of 80 years, represents to be useful for analyzing the impact of decentralization.

However, despite the trend towards decentralization since the 1930s, discretionary levels have changed according to political and economic demands. While states' increasing overall discretion in TANF program implementation has been a popular topic for investigation, specific level changes of discretion have received less attention. This chapter aims to explore these neglected processes to date, comparing states' reactions to changes in discretion.

Abundant AFDC/TANF data over such a long historical time frame allows this study to set up a more robust quantitative estimation. For this study, TANF expenditure data is available for 31 years of the period from 1997 to 2019. Furthermore, AFDC/TANF programs have been heavily scrutinized by scholars and a large body of literature has examined the implementation of TANF as well (Beltz et al., 2015; Parinandi, 2013), so I believe accumulated research and comparisons can help validate my story.

Overarching Research Question: How Does Discretion Change TANF?

Inequality problems in modern times result more from social structures than from individual failures, therefore governmental roles for social security become more important. As governmental roles for social security fluctuate over time, researchers, politicians, and governmental officials dedicate time and resources to the evaluation welfare policies and investigate the various approaches and resulting outcomes to improve social security through welfare policies. Continuing in the tradition of evaluation research on welfare policy, this study focuses on filling the gaps in research on the changes of discretion level in the states and their moderating impacts on AFDC/TANF programs. This dissertation investigates how cash assistance programs have evolved in the U.S. and how the discretion of state governments has been changed as decentralization/federalism have developed, and tests how discretion and welfare state theory interact with each other to affect cash assistance programs.

Overview of Dissertation

This dissertation consists of five chapters. Chapter 1 presents an explanation of discretion by decentralization/federalism theories and recent interest on it. Then the distinguishing features of AFDC and TANF program for this study are defined. And overarching research question for following chapters is introduced.

To explore the relationship between discretion and welfare policy outcomes, this study takes three steps in three chapters. First, welfare reforms in the U.S. since 1935 that has reshaped ADC/AFDC/TANF programs are investigated and modified welfare goals and discretion for states depending on welfare reform acts, economic situations, public demands, and political opinions are explored in the first essay. AFDC/TANF policy changes, goals, and characteristics distinctive from other welfare program will also be analyzed, across eight acts and amendments, from the Social Security Act of 1935 to the American Recovery and Reinvestment Act of 2009. Furthermore, the study tracks changes in states' discretionary levels related to AFDC/TANF programs when these policy transitions occur. As a result, states have run ADC/AFDC/TANF programs very differently to balance achieving their own goals and national welfare policy goals within their discretions using various policy tools while the level of discretion distributed to states and federal policy goals have been changing. And sources and instruments of variety in programs because of governmental decisions on welfare policy are explained.

The second essay begins with investigating the definition of discretion and previous measures of decentralization and discretion. To track changes in states' discretionary levels related to AFDC/TANF programs when these policy transitions occur by welfare reform acts, this study aims to analyze legal documents, which describe delegated agents' rights, responsibilities, expectations, and prohibitions, and therefore provide rich information on discretion. Next, the provisions of 18 federal welfare acts using the Natural Language Processing (NLP) method, specifically the spaCy open-source library in the Python language are analyzed and discretion of states in each act to run the TANF programs are calculated by three different equations.

As the final step, the third essay investigates socio-economic theory, political institution theories, racial theory, and empirical studies on the relationship between discretion and fiscal outcomes of welfare policy are analyzed. And moderating effects of changing discretion on socio-economic, political, institutional, and racial characteristics of states are tested in regression models. Specifically, in institutional politics theories, impacts of fiscal condition and political ideology of states are investigated and multiculturalism explaining racial diversity of states and attitudes toward ethnic minorities and their impacts on welfare policy is tested in AFDC/TANF program variations among states. To estimate the impact of discretion and socio-economic, institutional, and demographic conditions controlling factors changing over time, six two-way fixed effect regression models are tested with three discretion measures, two racial diversity indexes, governor's political affiliation, legislator control and governmental ideology index in the 50 states and 23 years panel data. And six two-way fixed effect regression models are tested with three discretion measures, two racial diversity indices (Gini-Simpson and Shannon index), and government ideology index in the 50 states and 21 years panel data. Especially, one-year lagged discretion and interaction terms of one-year lagged discretion and other variable of interest are included to capture the moderating effects of discretion. I expect the results of regression models can explain how discretion and state-specific factors based on welfare state theories shapes TANF programs.

Lastly, chapter 5 summarizes the findings, suggests possible contributions of this dissertation, and ends with explanation on limitations and suggestions for further steps in research as a conclusion.

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CHAPTER 2

**REFORMS OF WELFARE SYSTEM IN THE U. S. FOCUSING ON CHANGES OF THE
TANF PROGRAMS¹**

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ABSTRACT

Persistent governmental and congressional actions have changed the public cash assistance program for the poor, in response to political demands, economic pressures, and social evolutions since the early 20th century. Eight major welfare reforms comprise this transformation of the welfare system in the U.S.: the Social Security Act of 1935; the Social Security Amendments of 1967; the Omnibus Budget Reconciliation Act of 1981 (OBRA); the Family Support Act of 1988 (FSA); the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA); the Balanced Budget Act of 1997 (BBA); the Deficit Reduction Act of 2006 (DRA); and the American Recovery and Reinvestment Act of 2009 (ARRA). To provide context on the analysis of states' responses to the Temporary Assistance for Needy Families (TANF) expenditure on federal reform, coming later in the study, this chapter begins with a history of the Aid to Families with Dependent Children (AFDC) and its successor, TANF via federal acts and amendments, focusing on changes in discretionary levels and organizational goals. It also compares variations among states' TANF implementation procedures and TANF programs throughout the 20th century, and their motivations.

From ADC to AFDC

Historically, AFDC/TANF programs have evolved to be provided on a more decentralized basis to states. Before 1935, many states used revenues from local property taxes to fund programs to help the elderly, the blind, and children in need (*A Brief History of the Afdc Program*, 1998; Falk, 2019b; Sandra Wexler & Rafael J Engel, 1999). However, the Social Security Act of 1935, created to boost depleted individual and public resources after the Great Depression, established a federal cash assistance program for single mothers in need. Title IV of the Social Security Act created the Aid to Dependent Children (ADC) program later renamed

Aid to Families with Dependent Children (AFDC) to permit single mothers to stay at home), providing federal funding for social services, medical assistance, child care, and foster care (Falk, 2019b). However, states' participation in ADC was voluntary; eight states, including Connecticut, Illinois, Iowa, Kentucky, Mississippi, Nevada, South Dakota, Texas, and Alaska did not have the program as of 1939 (*A Brief History of the Afdc Program*, 1998; Trattner, 1997). ADC was jointly financed by open-ended federal and state funds: the federal government matched the amount of state governments' spending (Patterson, 1994).

The federal government allowed significant discretion at the state level. Each state government could operate the program significantly differently in regards to administration, eligibility and benefits, age eligibility, family income, and funding (*A Brief History of the Afdc Program*, 1998; Sandra Wexler & Rafael J Engel, 1999). In sum, even though states' participation was not mandated, and federal guidelines allowed vast operational discretion, the Social Security Act was the first legislative interruption on states' public assistance programs by the federal government (*A Brief History of the Afdc Program*, 1998; Trattner, 1997; Sandra Wexler & Rafael J Engel, 1999).

The original purpose of AFDC, to keep mothers at home to provide children "physical and affectionate guardianship," maintained throughout the 1950s and 1960s (*U.S. Congress, House Committee on Ways and Means, Economic Security Act, Hearings on H.R. 4120, 74th Cong.*, 1935). Contrary to this early sweet slogan, however, low-income women often had to work to support their families, and the overall number of working women significantly increased. State and local governments began to complain about ADC's incentives keeping mothers at home, prompting a response from the federal government (Goldin, 1971). In 1962, ADC was renamed AFDC, to emphasize the family unit rather than just single mothers and

disabled fathers, and AFDC started as an open-ended entitlement welfare program (DiNitto & Dye, 1983; Falk, 2019b). As studies emerged linking AFDC payments with unemployment, child abandonment, and increased family size (Lurie, 1973), the Social Security Amendments of 1967 ("Act of Jan. 2," 1968) introduced oversight into caseload and expenditure reduction, and an increase in the work participation requirements. These amendments created two incentives for current recipients to find or keep a job. The first was a reduction of the tax rate on earnings income. The second was the establishment of the Work Incentive (WIN) program to train AFDC recipients; states were required to refer unemployed fathers to WIN, with a few specific exceptions (*A Brief History of the Afdc Program*, 1998; Lurie, 1973). Only 25% of AFDC recipients fell into the category to be referred to WIN; of these, less than 75% were actually referred. This inefficiency led to the Talmadge amendment of 1971 (called WIN II) ("Act of Dec. 28," 1971), but disappointingly, WIN II did not produce a different result (Levitan et al., 1972; Lurie, 1973; Moffitt & Wolf, 1987).

The 1967 amendments also required states to create a program to identify children born out of wedlock or abandoned by AFDC recipient parents, but ill-designed financial incentives for both AFDC families and local governments limited its effectiveness (Lurie, 1973). Even with these marginal results, the Social Security Amendments of 1967 represented a shift in philosophy: the role of public funds, once purposed to allow mothers to remain at home, was now to promote entrance into the labor force (DiNitto & Dye, 1983; Levitan et al., 2003; Lurie, 1973; Patterson, 1994; Stern & Axinn, 2012). The centralized Work Incentive program (WIN) included in the 1967 amendments also restricted some discretionary power of the states by requiring the Departments of Labor and Health, Education, and Welfare to administer the work incentive

program in order to increase the employment of AFDC recipients (Handler & Hollingsworth, 1969).

The unsuccessful efforts to control the expenditures and caseload of the AFDC program in the 1960s led to public pressure to produce a better system. The Omnibus Budget Reconciliation Act of 1981 (OBRA) adopted strict regulations and altered AFDC in significant ways (Barton & Pillai, 1993). In particular, OBRA changed the benefit formula and eligibility criteria, in order to downscale the scope and aid level to an “unprecedented degree” (Moffitt & Wolf, 1987, p. 248). It cut federal in-kind welfare benefit expansion, and restricted program eligibility and work-related waivers (Abramovitz, 2017; Patterson, 1994; Sandra Wexler & Rafael J Engel, 1999). Out of 22 total provisions on AFDC in OBRA Title XXIII (P.L. 97-35), the Government Accountability Office (GAO) defined six changes that impacted national AFDC caseload, outlays, recipients’ work effort, and quality of life for families losing benefits (GAO, 1985). First, OBRA introduced a gross income limit at 150 % of the state’s need standard, in addition to an established net income limit. Second, the eligibility limitation for allowable assets was cut in half, from \$2,000 to \$1,000 per recipient. Third, OBRA now included stepparents’ earned income in eligibility and benefit calculations.

Before OBRA, work and child-care expenses were deducted from monthly earned income when determining benefit eligibility, with no cap. However, the fourth provision limited the work expense deduction to \$75/month; fifthly, it limited the child-care expense deduction per child to \$160/month. Finally came the ‘\$30 and the one third’ rule, stating that an applicant was eligible to have \$30 and one-third of remaining gross earned income, after work-related expenses, but before dependent care deductions, disregarded for eligibility determination or calculation of benefits (GAO, 1984, 1985). In other words, OBRA determined that the ‘\$30 and

one third' deduction came from net income rather than gross income (Hedrick & Shipman, 1988). Despite these modifications, and further restrictions on states' discretion, concerns and criticisms about the AFDC program did not subside until the late 1980s (Sandra Wexler & Rafael J Engel, 1999).

The Family Support Act of 1988 (FSA) tried to revise welfare policy dramatically, switching its emphasis from income support to mandatory work and training, namely the Job Opportunities and Basic Skills Training program (JOBS) (Rom, 1989; Stoesz, 1989; Trattner, 2007). Specifically, the FSA required single parents to participate in work-related programs for the first time, as well as one parent in two-parent families. To help parents enter the labor force, governments reimbursed the expenses of childcare and work transportation. In addition, FSA encouraged graduating recipients to stay employed by providing health insurance and child care (Rom, 1989). More importantly, FSA changed states' discretion to operate AFDC programs, even though efforts to standardize welfare benefits by President Nixon and Carter often ran into the opposition in the Senate (Peterson & Rom, 1988). FSA demanded that all states enact the Aid to Families with Dependent Children-Unemployed Parents (AFDC-UP) program, previously optional, which provided welfare benefits to two-parent families with an unemployed breadwinner. Also, states were ordered to garnish court-ordered child support from an absent parent's income and deliver it directly to the family (Rom, 1989). Overall, while states maintained some autonomy in designing and implementing the JOBS and making benefit-level decisions, the FSA greatly limited states' discretion (Book, 1988; Rovner, 1988).

However, there were two impediments to the enforcement of FSA. First, the details of implementing the JOBS, such as designing and negotiating the employment services, education, and training for recipients, took time (Falk, 2019b; Sandra Wexler & Rafael J Engel, 1999).

Executive action also played a part. President H. W. Bush encouraged states to apply for waivers to AFDC rules (DiNitto & Dye, 1983). Between 1993 and 1996, President Clinton issued a total of 83 waivers, in 43 states and the District of Columbia, before enacting the 1996 welfare reform law (Falk, 2013; Health & Services, 1997). Furthermore, the 1996 welfare reform law continued to “grandfather in” waivers until the last one, in Tennessee, expired in 2007 (Falk, 2013, p. 11).

TANF and Its Major Distinctions

During the presidential campaign in 1992, candidate Clinton proposed a two-year limitation on AFDC benefits, in order to “end welfare as we know it” (Stern & Axinn, 2012). The Republican credo Contract with America aimed for a similar limit, as well as a lifetime five-year cap (Falk, 2019b). In 1996, as a consequence of negotiations and modifications among party leaders in the Senate, the House of Representatives, and President Clinton, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA; P.L. 104-193) replaced AFDC with the Temporary Assistance for Needy Families (TANF) block grant program.

Before exploring the major differences between AFDC and TANF, two issues must be noted. One, states, and occasionally, localities, generally ran these programs, and set the maximum level of benefits and income eligibility thresholds (Falk, 2019b). Two, even after PPWORA was enacted in 1996, Clinton’s federal government allowed states to choose whether to carry on waivers, regardless of how well these waivers accorded with new TANF policy (Falk, 2013). Consequently, full implementation of TANF was delayed until the last waivers expired in 2007. However, and more importantly, many waiver programs included features like TANF policy. These waivers were regarded as “the first phase of welfare reform,” and many were integrated into TANF programs in 1996 (Health & Services, 1997, p. 1). The details of the

waivers and their comparability to TANF policies will be discussed in the preceding section of the conclusion.

First of all, from the four statutory purpose specified in federal law, TANF emphasized an increase of state flexibility: 1) to assist needy families for children to be cared for in their own homes or in relatives' home; 2) to end the dependence of needy parents on government benefits; 3) to reduce out-of-wedlock pregnancies; and 4) to support two-parent families in need (Schott et al., 2015). Federal controls on eligibility and benefit amounts for states relaxed (except for time limits). While AFDC was subject to federal rules on gross income limits, an asset test, and the way states evaluate income, states determined financial eligibility and benefit amounts without interference under TANF. Restrictions on the use of funds also relaxed. While AFDC rules only reimbursed cash assistance, administration costs, and expenditures on employment, JOBS and Emergency Assistance (EA) training programs, TANF rules allowed states to use funds for more extensive activities deemed to meet the statutory purpose and goals.

Secondly, states are funded differently in AFDC and TANF programs. The federal government reimbursed the share of states' expenditures on AFDC and EA without a limit; reimbursement for the JOBS had limits for each state. Federal funding was permanently entitled, with annual appropriations, and the state share was proportional to per-capita incomes in AFDC. By contrast, the federal government funds the TANF program as a block grant. Each state's share is based on its previous federal slice of AFDC, EA, and JOBS funding, without amount adjustments at the beginning, regardless of how much each state spends on TANF. States who meet performance criteria receive additional funding, such as supplemental grants and bonus funds; economically needy states may also enjoy a contingency fund.

Finally, TANF toughened up performance standards, employing sanctions and limiting the maximum period of cash assistance for states who were underperforming. While AFDC allowed states to dedicate a certain percentage of the caseload to recipients who did not work full-time, and to give reduced benefits to non-compliant recipients instead of cutting them off completely, TANF required states to meet two strict standards each year. First, 50% of the caseload must work or participate in job preparation activities for a specified minimum number of hours (work requirements are not categorically exempted). Secondly, 90% of two-parent families must work or participate in those activities (Falk, 2019c). However, states that decreased their FY1995 assistance caseload by 1% without an eligibility change received a “caseload reduction credit” that lowered work participation standards by 1% (CRS, 2007). These participation rate requirements were not applied to separate state programs (SSPs); their spending was included in Maintenance of Effort (MOE) requirements and available to help two-parent families, and for other causes, regardless of the 90% rule (CRS, 2007). Sanctions, such as benefit reductions or eliminations, now affected TANF recipients who did not meet the work requirements; under AFDC, states had to option to protect recipients (Falk, 2019b; Haskins, 2016). Also, while AFDC did not limit the period of cash assistance, TANF prohibited this funding for families whose head of household had already received benefits for 60 months. TANF required states to increase the minimum amount of assistance to at least 75% of the FY1994 expenditure (the MOE level). States who failed to meet TANF work participation requirements were required to increase their MOE level from 75% to 80% (Falk, 2011).

Reauthorizations of TANF

One year after the PRWORA, the Balanced Budget Act of 1997 (BBA97, P.L. 105-33) permanently changed two details of TANF. First, it created a program providing additional

funding for work activities, allowing more recipients to be counted as engaged in work through education and training, though it imposed a limit on how to count such participation (Falk, 2019b). Second, BBA97 raised the statutory limit on transfers from TANF to the Social Services Block Grant from, 4.25% to 10% (Falk, 2019b; Lynch, 2011).

President G. W. Bush's proposals of 2002, the House of Representatives' bills of 2002 (H.R. 4737 of 107th Congress), 2003 (H.R. 4 of 108th Congress), and 2005 (H.R. 240), and the Senate Finance Committee's bills held substantially different views on caseload reduction, work participation standards, and the performance bonus in TANF. The Deficit Reduction Act (DRA) of 2006 was passed by the House in 2002, but the two chambers of Congress did not reach an agreement. These bills by both parties influenced each other and evolved for more than four years, but failed to pass. Therefore, the TANF program and its funding remained static without reauthorization until 2006, when President Bush finally signed the DRA into law (P.L. 109-171); this extended the TANF programs at the FY2004 level through FY2010 (Sec. 7101) (Falk, 2019b).

Although the DRA continued the TANF of 1996, its final version contained four significant changes in financing and work participation rate rules, reducing discretion for states. First, there were four revisions and establishments in funding. The DRA continued supplemental grants at their current levels through FY2008 for 17 states, terminated \$300 million in performance bonuses for states, increased mandatory funding on the Child Care and Development Block Grant from \$2.717 billion/year to \$2.917 billion/year for FY2006-FY2010, and created new research funds and grants to promote healthy marriage and responsible fatherhood among TANF recipients (CRS, 2007; Falk, 2019b). The Secretary of the U.S. Department of Health & Human Services (HHS) funded approximately \$100 million in annual

grants for the promotion of healthy marriage, and \$50 million per year for responsible fatherhood (Tollestrup, 2018). The DRA also allowed states to use TANF and MOE funds for healthy marriage and responsible fatherhood purposes, but these expenditures were small (CRS, 2007).

Secondly, the DRA converted previous “caseload reduction credits” to make states reduce cash assistance caseloads and engage more activity-related caseloads. Since PRWORA enacted this incentive in 1996, most states received significant caseload reduction credits. These credits compounded, until, in FY2004, 18 states’ participation rate standards were as low as 0% (CRS, 2007). To correct this, the DRA revised the existing caseload reduction credit formula for work participation rates (Sec. 7102), so that new credits would only be given to states that reduced caseloads from FY 2005 to FY 2007 (Sec 407(b)(3) of the Social Security Act).

Third, the DRA required HHS to deliver definitions and regulations on 1) the definition of work activities, 2) the procedures for verification of recipients’ work participation, and 3) the determination of family characters to be included in the participation rate (Parrott et al., 2007). For example, HHS categorized a total of 12 work activities, including nine creditable towards the work participation rate and three to be counted only in conjunction with one or more of the previous nine (CRS, 2007). Furthermore, HHS required daily supervision on these activities. States needed to set procedures to check recipients’ range of work standards, reporting methods, and work verification. Initial TANF work-participation policies excluded child-only families, which arise when no adult is included in the benefit calculation; the DRA required HHS to specify types of families counted in work participation rate. As a result, states could decide whether to include or exclude immigrant parents, parents receiving Supplemental Security Income (SSI), or parents caring for a disabled family member in work participation rate calculations (Parrott et al., 2007).

Finally, the DRA mandated that families in separate state programs must be applied to work participation rates standard, so the combined caseloads funded by federal TANF and/or state MOE funds became subjected to the participation rates (Parrott et al., 2007). This change affected states' flexibility of fund usage for two-parent families and college-attending recipients (CRS, 2007).

Responses to the Great Recession

Late 2007 marked the beginning of the Great Recession, the period of major financial crisis and high unemployment stemming from the collapse of the U.S. real-estate market. President Obama signed several acts to adjust economic course, including the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5). This legislation had various goals; it aimed to stimulate the creation of new and safer jobs, to provide more funds to states and localities to support victims of the downturn, to invest in school improvements and updates to infrastructure, to allow temporary tax relief for individuals and businesses, to modernize health care, and to promote clean energy (Barnow, 2013; Reichling, 2012).

The ARRA made several changes to TANF provisions, giving states more funding and greater discretion. It created the new Emergency Contingency Fund (ECF) and modified the caseload reduction credit (Parrott & Schott, 2009). ECFs were payable for one year only, from 2009 to 2010, with a total maximum amount of \$5 billion over two years ("American Recovery and Reinvestment Act of 2009," 2009). States could receive 50% of the State Family Assistance Grant per year under the new ECF plus the regular contingency fund in FY2009 and FY2010; the regular contingency fund allowed states only 20% of its block grant amount per year (Parrott & Schott, 2009). States were eligible for ECF up to 80% of their increased spending level in three categories, including basic assistance, non-recurrent short-term payments, and subsidized

employment (ECF was non-transferable to the Social Services Block Grant (SSBG) or Child Care and Development Block Grant (CCDBG)) (Parrott & Schott, 2009). Indian tribes with approved tribal families assistance plans were also able to receive ECF under ARRA (Parrott & Schott, 2009). Furthermore, ARRA extended the TANF supplemental grant through FY2010 by authorizing the use of carryover TANF funds from the previous year for any purpose, without unnecessary complexity, within TANF spending categories (even for non-assistance). Before ARRA, states could only spend carryover funds on assistance (Parrott & Schott, 2009).

ARRA also allowed states to set a base year as FY2007 or FY2008, according to which year represented the smaller caseload for the basic assistance category and the lower spending level for the subsidized employment and non-recurrent short-term benefits categories (Parrott & Schott, 2009). As a result, the base year differed by state and expenditure categories. ARRA continued this practice for FY2009, FY2010, and FY2011 (Falk, 2019b). This modification helped states tolerate the pressure of higher work participation rate targets based on increasing caseloads (Parrott & Schott, 2009).

Finally, ARRA authorized HHS to make adjustments to caseload and expenditure data (Parrott & Schott, 2009). Given the choice of base year for the caseload reduction credits and ECF expenditures, comparability issue arose between the current year and the base year for some states: data adjustments for program comparisons were inevitable. Therefore, HHS allowed a state could choose and report a caseload reduction credit for 2010 based either on 2007 or 2008 instead of 2009 regardless of rising caseloads due to the economic shock (Schott, 2009).

From 2010 to 2019, Congress continued to renew the TANF program on a short-term basis, and these extensions did not change TANF policies substantially. In 2018, a bill from the House (H.R. 5861, 115th Congress) proposed to reauthorize, and to fund a revision of TANF's

work rules. Suggested changes included the measurement of employment outcomes, the requirement for all TANF recipients to have an individualized plan, limiting support to families at or below the 200% poverty level, and the establishment of a minimum percentage of TANF funds to be spent on an assistance, work activities, or short-term economic aid. The full House did not consider it (Falk, 2019b). Most recently, the TANF Extension Act of 2019 (P.L. 116-4) extended program funding until June 2019. Table 2.1 summarizes findings from historical reviews on welfare reforms in the U.S. since 1935 focusing their impacts on TANF programs.

Table 2.1: U.S. Welfare Reforms and Their Impacts on States' Discretion Since 1935

Purposes and Objects	Major Features of Cash Assistance Programs
Social Security Act of 1935	
<ul style="list-style-type: none"> • Initiation of ADC program • Keeping single mothers at home 	<ol style="list-style-type: none"> 1. Voluntary participation by states 2. Broad Guidelines for states
Social Security Amendments of 1967	
<ul style="list-style-type: none"> • Induction of recipients' labor force participation • Decrease of caseloads and expenditure 	<ol style="list-style-type: none"> 1. Reduction of tax rate on earnings 2. Establishment of the Work Incentive (WIN) program 3. Creation of finding children of AFDC recipient parents in need program
Omnibus Budget Reconciliation Act (OBRA) of 1981	
<ul style="list-style-type: none"> • Reducing welfare reliance • Decrease of caseloads and expenditure 	<ol style="list-style-type: none"> 1. Benefit formula revision 2. Eligibility criteria revision 3. Restriction on work-related waivers
Family Support Act (FSA) of 1988	
<ul style="list-style-type: none"> • Switch emphasis to a mandatory work and training 	<ol style="list-style-type: none"> 1. Mandatory work requirement for single parent

<ul style="list-style-type: none"> • Decrease of caseloads and expenditure in cash assistance 	<p>2. AFDC-UP</p>
<p>Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996</p>	
<ul style="list-style-type: none"> • TANF initiation • End of dependence of needy parents on government benefits • Reduction of out-of-wedlock pregnancies • Supporting two-parent families in need 	<ol style="list-style-type: none"> 1. Increase of state flexibility <ul style="list-style-type: none"> Disregard of federal rules on eligibility and benefit amount for states Allowance on expenditures for extended activities 2. Changes on Funding <ul style="list-style-type: none"> Shift from an entitlement to a block grant Supplemental or bonus grant is available depending on performance Contingency fund for economically needy states 3. Tightening up performance standards and maximum period of case assistance <ul style="list-style-type: none"> Rigid work participation standard Unavoidable sanctions for poor performed recipients Maximum of 60 months of cash assistance Maintenance of effort (MOE) requirement
<p>Balanced Budget Act (BBA) of 1997</p>	
<ul style="list-style-type: none"> • Detail adjustment • Technical corrections to the PRWORA 	<ol style="list-style-type: none"> 1. Raising the limitation of recipients in education that were counted as work-related activities from 20% to 30% 2. Raising a statutory limit on transfers from TANF to the social services block grant from 4.25% to 10% 3. Establishment of the Welfare-to-Work (WTW) grant program within TANF

Variations and Their Sources in the States' TANF Programs Across the Twentieth Century

As mentioned above, the Social Security Act of 1935 permitted states to set their own standards for ADC eligibility and benefit levels (Sandra Wexler & Rafael J Engel, 1999). Therefore, state governments operated the program significantly differently, not only by establishing eligibility criteria and benefit amounts according to their budgets, but also by assigning state-level agencies to manage the programs (Abramovitz, 2017; Gordon, 1994; Sandra Wexler & Rafael J Engel, 1999). After ADC was renamed AFDC, the federal government left this status quo in place (DiNitto & Dye, 1983; Jansson, 1993). Also, states decided whether to administer AFDC programs themselves or supervise administration by local governments. While 32 of 50 states chose state-supervised, locally-administrating systems initially, only 15 states kept this model until 1990 (Adkisson & Peach, 2000).

TANF, the subsequent generation of ADC and AFDC, further heightened the variation in states' authority and discretion for programming (Sandra Wexler & Rafael J Engel, 1999), through block grant funding, restrictions on fund usage, and other federal controls. States can choose time limits shorter than the five-year federal limit; they are also able to cover people who exceed the federal time limit. Three states and the District of Columbia cover TANF participants beyond the federal time limit using state funds (Narain & Ettner, 2017). States also varied in *when* they implemented time limits. For example, 14 states adopted time limits in 1996, 20 in 1997, seven in 1998, and one each in 2000 and 2008 (Narain & Ettner, 2017). This illustrates the wide range of discretion by enjoyed by state legislations, and state-by-state diversity, from the initiation of ADC in 1935 until the present. All possible TANF policy variations for states follow below in Table 2.2.

Table 2.2: TANF Policy Options from 1996 to 2017

Sections	Dimensions	Categories
Initial Eligibility	Does the state try to divert some families from becoming recipients?	Formal Diversion Payments
		Mandatory Job Search at Application
	How does family composition or individual status affect eligibility?	Eligibility of Pregnant Women with No Other Children
		Eligibility Rules for Two-Parent, Nondisabled Applicant Units
		Special Rules Imposed on Minor Parent Eligibility
		Inclusion of Stepparents in the Assistance Unit
		Eligibility of Noncitizens
		Treatment of Non-Caretaker Adults in Household
		Eligibility Requirements for Children
		Inclusion of SSI Recipients in the Assistance Unit
	Inclusion of Nonparent Caretaker in the Assistance Unit	
	What level of assets can a family have and still be eligible?	Asset Limits for Applicants
	How is income counted in determining eligibility?	Treatment of Grandparent Income
		Treatment of Stepparent Income
		Treatment of Income and Assets of Nonparent Caretakers
		Treatment of Income of Parents Excluded from the Assistance Unit
	How much income can a family have and still be eligible?	Income Eligibility Test for Applicants
Earned Income Disregards for Initial Income Eligibility Purposes		
Standards for Determining Eligibility		
Maximum Income for Initial Eligibility for a Family of Three		

Benefits	If a family passes all eligibility tests, what is received?	Earned Income Disregards for Benefit Computation
		Benefit Determination Policies
		Standards for Determining Benefits
		Maximum Monthly Benefit for a Family with No Income
		Maximum Monthly Benefit for a Child-Only Unit with One Child, No
		Benefit Issuance Policies
Requirements	Once determined eligible, what must a recipient family do to maintain benefits?	Behavioral Requirements and Bonuses
	What work activities are required?	Work-Related Activity Exemptions for Single-Parent Head of Unit
		Work-Related Activity Requirements for Single-Parent Head of Unit
		Sanction Policies for Noncompliance with Work Requirements for Single-
Ongoing Eligibility	What eligibility tests must recipient families pass for continuing eligibility?	Work-Related Activity Requirements for Parents Outside the Unit and
		Eligibility Rules for Two-Parent, Nondisabled Recipient Units
		Treatment of Child Support Income for Recipients
		Asset Limits for Recipients and Related Assets Policies
		Income Eligibility Tests for Recipients
		Earned Income Disregards for Continuing Income Eligibility
	Maximum Income for Ongoing Eligibility for a Family of Three	
	Are children eligible if born while the family receives benefits?	Family Cap Policies
	How long can a family receive benefits?	Time Limits Policies
		Time Limit Exemption and Extension Policies
Can families receive transitional cash assistance?	Transitional Cash Benefits	

Recreated from Thompson et al. (2018)

The other dimension of program variation by state was the extent of waiver use. The legal foundation for waivers of federal-state public assistance programs is found in the Public Welfare Amendments of 1962 (P.L. 87-543), Section 1115 of the Social Security Act (*A Brief History of the Afdc Program*, 1998; Williams, 1994). Presidents Reagan, H. W. Bush, and Clinton encouraged states to use waivers, called section 1115 waivers, as experiments in welfare policy (Health & Services, 1998); frequent use of waivers started in the late 1980s (Falk, 2013). Each state or locality's waiver application was different, but most sought changes to the work requirements or other mandates, to better manage their programs. Various versions of these waivers were devised and submitted by the states, and many were approved by the federal government.

For example, under AFDC rules, the amount of a family's benefit was decided by family size. Some states argued that families could exploit this rule by having more and more children to increase the monthly benefit (Health & Services, 1997). In answer to this concern, the federal government approved the waivers of 19 states designed to set a "family cap," which would terminate or decrease the benefit for AFDC recipient families who have additional children (Health & Services, 1997, p. 6).

Benefits and eligibilities also varied by the usage of waivers. Traditional AFDC rules deducted some earned income, labeled a work expense, when calculating a recipient's eligibility and benefits; this discount would disappear within a year. Thirty-two states, concerned that this decreasing benefit could discourage recipients from getting jobs, adopted waivers to eliminate or reduce the time limits on this deduction (Health & Services, 1997). Other states worried about an AFDC rule stating that a child was eligible only when either 1) one of the parents was absent or 2) both parents were unemployed. If a head of household worked more than 100 hours per

month, the family lost AFDC assistance regardless of the amount of income. Legislators suspected that this restriction encouraged family separation, or discouraged family formation, in order to maintain eligibility for AFDC; many states implemented waivers of this 100-hour rule. TANF rules deemed that children did not need to be deprived of parental support to qualify for assistance. States could choose whether to apply additional restrictions on benefits for two-parent families, or to provide the same benefits for two-parent families as for one-parent families (Health & Services, 1997). Furthermore, some states considered asset determinations to be either too lax or too strict; a total of 57 waivers increasing or adjusting the asset limit were approved (Falk, 2013, 2019b).

Exemptions from JOBS were changed by waivers, too. Many states found the exemption criteria from JOBS in AFDC to be too vague, allowing recipients to take undue advantage of exemptions (Health & Services, 1997). To promote JOBS participation, these states designed waivers requesting a reduction of exemptions from JOBS and intensifying the sanctions for non-compliance; these were commonly approved.

Lastly, some states tried to apply time limits on assistance. Since AFDC rules did not impose time limits on assistance, some states, concerned about long-term dependency on public welfare, applied for waivers to set time limits. As discussed before, many of the concepts addressed in these waivers, including the family cap, elimination of the JOBS exemptions, and time limits on welfare receipt were incorporated into TANF rules (Falk, 2013, 2019b).

Conclusion

Each welfare reform in the U.S. since 1935 has reshaped ADC/AFDC/TANF programs but some reforms like PRWORA and ARRA made major changes in TANF while other reforms introduced minor changes. Especially, welfare goals and discretion for states have been modified

often depending on economic situations, public demands, and political opinions. As one of the cash assistance programs for the needy families giving great amount of discretion for states from their beginning, AFDC and TANF programs have been significantly affected by the changes of federal reform goals and how much discretion left for one state to operate the programs.

However since the passage of PRWORA, states were more expected to run TANF programs innovatively with greater discretion, to meet their own needs (Pimpare, 2012). As a result, implemented legislations by each state vary across multiple dimensions, including thresholds for eligibility, the amount of cash assistance, categories of eligible individuals, time limits, work requirements (and the definition of work), the generosity of childcare subsidies, sanction policies for abusers, diversions of programs or payments to decrease applications, contracting status, funding and oversight of the pertinent agents, and how street-level departments interpret and implement written law (Rowe, 2000). Furthermore, frequent usage of waivers expands the variations of the program among the states and successful new policies waived from federal provisions of the time spread to other states and influence next welfare reform leading the dispersion of policy innovation. In sum, states have run ADC/AFDC/TANF programs very differently to balance achieving their own goals and national welfare policy goals within their discretions using various policy tools while the level of discretion distributed to states and federal policy goals have been changing.

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CHAPTER 3

WELFARE REFORMS OF CASH ASSISTANCE PROGRAMS IN THE U.S. AND MEASURING DISCRETION USING NATURAL LANGUAGE PROCESSING (NLP)²

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Abstract

Decentralization, or the delegation of power from central to subnational governments based on the principles of federalism, has been long debated in the United States. Empirical studies to measure decentralization and discretion have heavily relied on fiscal data; however, some recent studies have tried to measure discretion using legal statements, such as legislation and contracts. This study aims to analyze such documents and measure changes in state governments' discretion in the administration of the Temporary Assistance for Needy Families (TANF) programs, by analyzing the provisions of 18 federal welfare acts using the Natural Language Processing (NLP) method. Findings show that states' discretion to run TANF programs has not, contrary to general assumptions, steadily changed in one direction; rather, it has increased to different degrees or remained static following the adoption of new federal acts.

Introduction

Despite of well-founded theoretical and empirical research on the relationship between decentralization and welfare programs like TANF, any consideration on decentralization is still challenging since it involves defining the concept of discretion and measuring levels of discretion or decentralization. A large body of research has measured decentralization and discretion using fiscal data, assuming that the distribution of money represents devolution between different levels of government. However, I aim to analyze legal statements, which describe delegated agents' rights, responsibilities, expectations, and prohibitions, and therefore provide rich information on discretion. Chapter 3 hence measures changes in state governments' discretion in the administration of TANF programs, from the provisions of 18 federal welfare acts, using the Natural Language Processing (NLP) method, specifically the spaCy open-source library in the Python language. Furthermore, this essay develops new measurements of discretion to create further research opportunities in decentralized public provisions.

Defining Discretion

The general definition of discretion sounds simple (the freedom to make decisions in particular circumstances (Scarman, 1981)), but the concept of discretion, when applied in governmental settings, is far more complicated. A governmental unit's discretion is devolved from a more centralized (federal/national) unit of government, so federalism and decentralization track with a line of power separation and authority devolution among federal, state, and local governments. Decentralization gives subordinate governments greater discretionary power in implementing policies and allocating fiscal and human resources. Therefore, delegating power and giving discretion involve the transfer of managerial responsibility for defined functions to organizations that are 1) outside the central government structure and 2) indirectly controlled by the central government (Mills, 1994; Prud'Homme, 1995; Tanzi, 1996b) and state and local governments enjoy discretion in some degree as a result of decentralization of authority from the national to the state and local levels.

Discretion of subordinate governments is a product of the decentralization process involving multiple aspects of power devolution. Martinez-Vazquez and Timofeev (2009) described three facets of decentralization, including deconcentration, delegation, and devolution. Deconcentration refers to “the dispersion of responsibilities within the central government structure” (Bird, 1993, p. 222): the national government gives some autonomy to the sub-national governments (Martinez-Vazquez & Timofeev, 2009). Delegation, on the other hand, is “a situation where local governments act as direct agents for the center in executing certain functions” (Bird, 1993, p. 222). Delegation assumes that local governments possess new responsibilities, subject to strict regulation imposed by the central government, while devolution allows complete autonomy of local governments (Martinez-Vazquez & Timofeev, 2009).

Moreover, Martinez-Vazquez and Timofeev (2009) introduced three dimensions of decentralization, including the scope of authority, the degree of autonomy, and the direction of accountability. Decentralization delegates more responsibility and authority to state and local governments, imposing two inevitable characteristics. First, it is inevitably dependent on redistribution of authority from a national unit to subnational units; second, it presupposes an imbalance of authority between national and subnational governments with multiple dimensions, each of which differently impacts the results.

On the other hand, legal statements describe delegated agents' rights, responsibilities, expectations, and prohibitions, meaning discretion can be defined by comparing the number of delegations, constraints, permissions, and entitlement statements in a legal text. This approach assumes that delegation or entitlement statements give the delegated entity freedom to act or not act, while constraint statements limit the freedom to do or not to do within a policy or program by its own decision (Ash et al., 2019a; Ceci et al., 2011; Epstein & O'halloran, 1994, 1999; Franchino, 2001, 2004; Lame, 2003; Saias & Quaresma, 2003; Vannoni et al., 2019). Therefore, this essay defines discretion as difference between delegation and constraint across four categories: delegation, constraint, permission, and entitlement.

Measures of Decentralization and Discretion

Discretion change is one outcome of reforms and policy changes involving the centralization or decentralization of power. Therefore, measuring discretion is inseparable from analyzing decentralization. However, defining decentralization is not easy, and it is even more difficult to empirically measure its level, depending on focus. Decentralization, a multidimensional process between national and subnational governments, involves political (power dimension), administrative (management dimension), and fiscal (resource dimension) devolution (Ezcurra & Rodríguez-Pose, 2013).

Furthermore, discretion changes exist in four dimensions: programs; sub-unit governments; upper-unit governments; and national-level governments. Discretion in each dimension changes with the adoption of a new policy or law. For example, AFDC was replaced by TANF in the PRWORA of 1996. First, the discretion of the TANF *programs* changed, allowing more flexibility on details than AFDC, as long as program purposes were followed. Second, *state governments'* discretion on TANF administration increased. The reform emphasized state-level empowerment, and funding switched from a matching grant to a block grant, allowing states to shift funds to other programs, increasing fiscal discretion (Douglas & Flores, 1998; Schott et al., 2015). Thirdly, though the discretion level of the federal government changes when a policy changes, the direction of the change is difficult to predict: more discretion for state governments does not necessarily mean that the federal government has lost power. After devolution, a federal or central government retains the responsibility and authority to monitor the programs in question. Therefore, if subnational governments have more flexibility to run programs, upper-level governments also strengthen their own sanction to control the quality

of program outcomes. In other words, the distribution of discretion in policy process is not a zero-sum game between an upper government and lower governments.

Finally, a national level of decentralization also changes with a policy. With fiscal decentralization changes, for example, if a national government starts to transfer more and unconditional funds to state and local governments, increasing subnational governments' spending and discretion, it is assumed that the nation is more decentralized than before. This last dimension is commonly measured as fiscal decentralization, assessed with numerical data, relatively comparable across countries and regions, and a useful representation of a subnational entity's level of discretion (Ezcurra & Rodríguez-Pose, 2013; Martínez-Vázquez & McNab, 2006). The most common indices of fiscal decentralization, used internationally and domestically, are: the share of federal transfers/grants in state and local expenditures (Fisman & Gatti, 2002b; Goel & Nelson, 2011); the share of subnational revenue (Altunbaş & Thornton, 2012; Enikolopov & Zhuravskaya, 2007a; Fan et al., 2009b; Kyriacou & Roca-Sagalés, 2011; Lessmann & Markwardt, 2010); own tax revenue (Altunbaş & Thornton, 2012; Goodspeed, 2011); the share of subnational expenditures (Akai & Sakata, 2002; Altunbaş & Thornton, 2012; Dincer et al., 2010; Fisman & Gatti, 2002b; Goel & Nelson, 2011; Ivanyna & Shah, 2011; Kyriacou & Roca-Sagalés, 2011; Shah & Huther, 1999; Tumennasan, 2005a); and the share of own source spending (Baskaran et al., 2016) as Table 3.1 shows.

Table 3.1: Fiscal Measures of Decentralization

Category	Measure
Expenditure	Subnational Share of Expenditures (Arikan, 2004; Dincer et al., 2010; Goel & Nelson, 2011; Huther & Shah, 1998; Ivanyna & Shah, 2011; Kyriacou & Roca-Sagalés, 2011; Lessmann & Markwardt, 2010; Sow & Razafimahefa, 2015; Tumennasan, 2005a, 2005b)
Revenue	Subnational Revenue (Enikolopov & Zhuravskaya, 2007b; Fan et al., 2009a; Lessmann & Markwardt, 2010)
	Share of Federal Transfers in Total State and Local Expenditure (Fisman & Gatti, 2002a; Goel & Nelson, 2011)
	Degree of Regulation on Deciding Tax Base and Rate (Ivanyna & Shah, 2011)
	Share of Transfers from other governments (same tier or upper tier, also from other countries) in revenue (Ivanyna & Shah, 2011)
	Unconditional Transfers per Capita/Conditional Transfers per Capita (Goodspeed, 2011)
	Share of Transfers that are Unconditional or Formula Based (Ivanyna & Shah, 2011)
	Own Tax Revenue per Capita (Goodspeed, 2011)
	Whether can a Subnational Government borrow money (Ivanyna & Shah, 2012)
Employment	Subnational Government Employment Share (Arikan, 2004; Fan et al., 2009a; Ivanyna & Shah, 2012; Lessmann & Markwardt, 2010)
Institutional Arrangement	Number of tiers of Government (Fan et al., 2009a)
	Number of Local Jurisdictions (Arikan, 2004)
	Number of Local and Intermediate Jurisdictions (Arikan, 2004)

While fiscal measurements of discretion/decentralization level bring challenges, many studies try to estimate the level of discretion using other aspects as Table 3.2 and Table 3.3 demonstrate. For example, Ivanyna and Shah (2012) categorized political and administrative decentralization. Political decentralization features three sub-categories: whether local legislative

bodies are 1) partly or entirely elected (directly or indirectly), 2) partly or entirely appointed, or 3) do not exist; whether executive heads of local governments are directly elected, indirectly elected, or appointed; and whether options for citizen participation are suggested. Ivanya and Shah considered two sub-categories for administrative decentralization: whether local governments can have their own policies regarding hiring, firing, and terms of local employment; and the share of local employment in all levels of governmental employment. Also, Bruch et al. (2018) analyzed discretion in three processes (financing, rulemaking, and administration) and assessed them as low, medium, or high based on the design features of welfare programs. Volden (2002a), Bailey and Rom (2004), and Parinandi (2013) estimated the level of discretion given to a state’s bureaucrats as no discretion, advisory discretion, or policymaking discretion, according to the types of welfare boards in AFDC policy (no board, advisory board, or policy forming board).

Table 3.2: Examples of Political Variables for Decentralization

Political Decentralization Variables				
Sub-category	Weight			
	0	0.25	0.50	1.00
Legislative Party	Entirely appointed Does not exist		Partly elected Partly appointed Entirely, indirectly elected When local governments are treated asymmetrically	Entirely, directly elected
Executives	Appointed		Indirectly elected Does not exist Coexist with an appointed executive	Directly elected

			When local governments are treated asymmetrically	
Citizen participation	No option	Civil council Open local government sessions Submission of petition Submission of initiate referendum	Obligatory public approval for certain governmental decisions in public hearings or citizen assemblies	Obligatory referendum for certain governmental decisions by law or constitution

Recreated from Ivanyna, M., & Shah, A. (2012)

Table 3.3: Examples of Administrative Variables for Decentralization

Sub-category	Administrative Decentralization Variables			
	Weight			
	0	.25	.5	1
Hiring	No discretion in hiring	When local governments are treated asymmetrically	Partial discretion in hiring and terms of employment	Full discretion over local employment by laws
Employment	Share of local employment in all levels of governmental employment			

Recreated from Ivanyna, M., & Shah, A. (2012)

A final measure of discretion focuses on congressional outputs in the appropriations process, an authentic method for distributing discretion with executive responsibilities (Bolton & Thrower, 2019). Many empirical studies have tried to measure discretion by analyzing legislation in political economy and political science (Vannoni et al., 2019). One measure of executive discretion, the written length of authorizing statutes, assumes a negative relationship between the length of legislation and the level of decentralization/discretion, since more detailed specifications mean more rigorous restrictions (Clinton et al., 2012; Huber & Shipan, 2002; Parinandi, 2013). For example, Huber and Shipan (2002) measured the length of state Medicaid

laws, Clinton et al. (2012) counted the length of federal statutes, and Vannoni et al. (2019) counted the number of legal provisions within state statutes, as reverse indices of bureaucratic discretion. Other studies have measured discretion level by analyzing legal text. Epstein and O'halloran (1999) estimated delegation ratio (level of authority delegated to executive branch) and constraint ratio (degree of constraint exerted on the executive branch) by counting proportions of provisions to delegate or constrain discretion in the U.S. Congress. Franchino (2001, 2004) also measured delegation and constraint ratios, but among European states and the commission from European legislation. Vannoni et al. (2019) measured a state's executive discretion from state statutes regulating charter schools using the legal information extraction method. Beyond even this information extraction technique, machine learning is used to measure delegation of power in Natural Language Processing (NLP) and Anastasopoulos and Bertelli (2020) classified delegation and constraint provisions in E.U. legal texts through machine learning and used those to calculate ratios of delegation and constraint most recently.

Measuring States' Discretion from Federal Provisions

Recently, the literature on bureaucratic discretion has focused on legislation, since legislators not only delegate authority to bureaucrats but also use ex ante or ex post control mechanisms to manage policy implementation (Epstein & O'halloran, 1994; Gailmard & Patty, 2012; Levine & Forrence, 1990; Martin, 1997; McCubbins et al., 1987; McCubbins & Schwartz, 1984; Vannoni et al., 2019). Delegated bureaucrats and members of a legislative body only make decisions and wield power within the prescribed legal text. I aim to analyze legal statements, which describe delegated agents' rights, responsibilities, expectations, and prohibitions, and therefore provide rich information on discretion. Just as Huber and Shipan (2002) studied U.S. statutes to measure bureaucratic discretion to run Medicaid programs, analyses of welfare reform provisions give data representing changes in the discretion of state governments. This essay focuses on 51 provisions within federal acts related to TANF programs between 1996 and 2019 in order to measure states' discretion, in line with Falk (2019a)'s study as Table 3.3 shows.

Table 3.4: Acts Related to TANF Programs

Year	Purposes and Objects	Changes on TANF Programs
1996	P.L. 104-193 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of	
	<ul style="list-style-type: none"> • TANF initiation • End of dependence of needy parents on government benefits • Reduction of out-of-wedlock pregnancies • Supporting two-parent families in need 	<ol style="list-style-type: none"> 1. Increase of state flexibility <ul style="list-style-type: none"> Disregard of federal rules on eligibility and benefit amount for states Allowance on expenditures for extended activities 2. Changes in Funding <ul style="list-style-type: none"> Shift from an entitlement to a block grant Supplemental or bonus grant is available depending on performance

		<p>Contingency fund for economically needy states</p> <p>3. Tightening up performance standards and maximum period of case assistance</p> <p>Rigid work participation standard</p> <p>Unavoidable sanctions for poorly-performing recipients</p> <p>Maximum of 60 months of cash assistance</p> <p>Maintenance of effort (MOE) requirement</p>
	P.L. 104-327	
	<ul style="list-style-type: none"> • Technical corrections to the PRWORA 	<ol style="list-style-type: none"> 1. Amending the transition rule for pre-TANF programs 2. Changing the limit on funding to an amount equal to their basic block grant, plus their previous reception from the TANF contingency fund, if qualified
1997	P.L. 105-33 Balanced Budget Act (BBA)	
	<ul style="list-style-type: none"> • Detail adjustment • Technical corrections to the PRWORA 	<ol style="list-style-type: none"> 1. Raising the limitation of recipients engaged in education counted as work-related activities from 20% to 30% 2. Raising a statutory limit on transfers from TANF to the social services block grant from 4.25% to 10% 3. Establishment of the Welfare-to-Work (WTW) grant program within TANF
	P.L. 105-89 Adoption and Safe Families Act	
	<ul style="list-style-type: none"> • Promoting the adoption of children in foster care 	Reducing the contingency fund appropriation by \$40 million
1998	P.L. 105-178 Transportation Equity Act for the 21st Century	
	<ul style="list-style-type: none"> • Authorizing funds for federal-aid highways, highway safety programs, and transit programs 	<ol style="list-style-type: none"> 1. Permitting the use of federal TANF funds as matching funds for reverse commuter grants 2. Setting the statutory limit on TANF transfers to Title XX social services at 4.25% of the block grant
1999	P.L. 106-113 District of Columbia Appropriations Act	

	<ul style="list-style-type: none"> • Making consolidated appropriations for the fiscal year ending September 30, 2000 	<ol style="list-style-type: none"> 1. Raising eligibility for WTW grant program recipients 2. Adding limited authority for vocational education or job training to count as WTW activities
2000	P.L. 106-554 Consolidated Appropriations Act	
	<ul style="list-style-type: none"> • Making consolidated appropriations for the fiscal year ending September 30, 2001 	Giving grantees two more years to spend WTW grant funds
2002	P.L. 107-147 Job Creation and Worker Assistance Act	
	<ul style="list-style-type: none"> • Provision of tax incentives for economic recovery 	<ol style="list-style-type: none"> 1. Extension of TANF supplemental grants and contingency funds through FY2002 2. Extension of Supplemental grants at FY2001 levels
	P.L. 107-229 Joint Resolution	
	<ul style="list-style-type: none"> • Making continuing appropriations for fiscal year 2003 	Extension of TANF basic grants, supplemental grants, bonus funds, and contingency funds through December 20, 2002
	P.L. 107-294 Joint Resolution	
	<ul style="list-style-type: none"> • Making further continuing appropriations for fiscal year 2003 	Extension of TANF and related funding through March 30, 2003
2003	P.L. 108-7 Consolidated Appropriations Resolution	
	<ul style="list-style-type: none"> • Making consolidated appropriations for the fiscal year ending September 30, 2003 	Extension of TANF and related funding through June 30, 2003
	P.L. 108-40 Welfare Reform Extension Act	
	<ul style="list-style-type: none"> • Reauthoring TANF block grant program through fiscal year 2003 	Extension of TANF and related funding through September 30, 2003
	P.L. 108-89	
	<ul style="list-style-type: none"> • Extension of TANF block grant program and certain tax and trade programs 	Extension of TANF and related funding through March 31, 2004
2004	P.L. 108-199 Consolidated Appropriations Act	
	<ul style="list-style-type: none"> • Making appropriations for Agriculture, Rural Development, Food and Drug Administration, and related agencies for the fiscal year ending September 30, 2004 	<ol style="list-style-type: none"> 1. Ending all remaining unspent WTW formula grant funds 2. Ending the WTW grant program

	P.L. 108-210 Welfare Reform Extension Act	
	• Reauthorizing the TANF block grant program through June 30, 2004	Extension of TANF and related funding through June 30, 2004
	P.L. 108-262 TANF and Related Programs Continuation Act	
	• Reauthorizing the TANF block grant program through September 30, 2004	Extension of TANF and related funding through September 30, 2004
	P.L. 108-308 Welfare Reform Extension Act, Part VIII	
	• Reauthorizing the TANF block grant program through March 31, 2005	Extension of TANF and related funding through March 31, 2005
2005	P.L. 109-4 Welfare Reform Extension Act	
	• Reauthorizing the TANF block grant program through June 30, 2005	Extension of TANF and related funding through June 30, 2005
	P.L. 109-19 TANF Extension Act	
	• Reauthorizing the TANF block grant program through September 30, 2005	Extension of TANF and related funding through September 30, 2005
	P.L. 109-68 TANF Emergency Response and Recovery Act	
	• Providing assistance to families affected by Hurricane Katrina, through TANF block grants to states	<ol style="list-style-type: none"> 1. Allowing states to draw upon contingency funds to assist Hurricane Katrina-affected families, with loan forgiveness 2. Suspending penalties for failure to meet certain requirements for states directly affected by the hurricane 3. Temporarily extending TANF grants through December 30, 2005
	P.L. 109-161 TANF and Child Care Continuation Act	
• Reauthorizing the TANF block grant program through March 31, 2006	Extension of TANF grants through March 30, 2006	
2006	P.L. 109-171 Deficit Reduction Act (DRA)	
	<ul style="list-style-type: none"> • Promotion of healthy marriage and responsible fatherhood • Reduction of cash assistance caseloads and engagement of more activity-related caseload • Intensification of work participation requirement 	<ol style="list-style-type: none"> 1. Changes in funding <ul style="list-style-type: none"> Expiry of low historic grants for 17 states in FY2008 Termination of performance bonus Increase of mandatory funding on childcare and development block grant

	<ul style="list-style-type: none"> • TANF extension 	<p>New research fund and grants for healthy marriage and responsible fatherhood</p> <ol style="list-style-type: none"> 2. Change on caseload reduction credit 3. SSPs recipients' inclusion for work participation rates standard counting 4. Request to deliver definitions and regulations by HHS <p>Definition of work activities State work verification plans Families included in the participation rate</p>
2008	P.L. 110-275 Medicare Improvements and Patients and Providers Act	
	<ul style="list-style-type: none"> • Amendment of Titles XVIII and XIX of the Social Security Act to extend expiring provisions under the Medicare Program • Improving beneficiary access to preventive and mental health services, to enhance low-income benefit programs, and to maintain access to care in rural areas, including pharmacy access 	Extension of TANF supplemental grants through the end of FY2009
2009	P.L. 111-5 American Recovery and Reinvestment Act (ARRA)	
	<ul style="list-style-type: none"> • Response to the Great Recession • Provision of more funds to states and localities to support people who suffered from the effects of the recession 	<ol style="list-style-type: none"> 1. Changes in funding <ul style="list-style-type: none"> Creation of a new emergency contingency fund Extension of TANF supplemental grant Authorization to use carryover TANF funds from last year 2. Modification of caseload reduction credit 3. Adjustments of data by HHS for comparability
2010	P.L. 111-242 Continuing Appropriations Act	
	<ul style="list-style-type: none"> • Making continuing appropriations for fiscal year 2011 	Extension of TANF funding through December 3, 2010
	P.L. 111-290 Joint Resolution	
	<ul style="list-style-type: none"> • Making further continuing appropriations for fiscal year 2011 	Extension of TANF funding through December 18, 2010

	P.L. 111-291 Claims Resolution Act	
	<ul style="list-style-type: none"> • Accelerating income tax benefits for charitable cash contributions for the relief of earthquake victims in Chile and Haiti³ 	<ol style="list-style-type: none"> 1. Extension of basic TANF funding through the end of FY2011 2. Suspension of supplemental grants only through June 30, 2011 3. Splitting funding for healthy marriage and responsible fatherhood programs to \$75 million each instead of a combined \$150 million appropriation 4. Requirement of additional reporting on work activities and TANF expenditures
	P.L. 112-35 Short-Term TANF Extension Act	
	<ul style="list-style-type: none"> • Extension of TANF block grants to states through December 31, 2011 	Extension of basic TANF funding for three months, through December 31, 2011
2011	P.L. 112-78 Temporary Payroll Tax Cut Continuation Act	
	<ul style="list-style-type: none"> • Extension of the payroll tax holiday, unemployment compensation, and Medicare physician payment in consideration of the Keystone XL pipeline 	Extension of basic TANF funding for two months through February 29, 2012
	P.L. 112-96 Middle-Class Tax Relief and Job Creation Act	
2012	<ul style="list-style-type: none"> • Provision of incentives for job creation 	<ol style="list-style-type: none"> 1. Extension of basic TANF funding for two months for the remainder of FY2012 (to September 30, 2012) 2. Prevention of electronic benefit transaction access to TANF cash at liquor stores, casinos, and strip clubs 3. Requirements for states to prohibit access to TANF cash at ATMs liquor stores, casinos, and strip clubs 4 Requirements for states to report TANF data to facilitate exchange with other programs' data systems
	P.L. 112-175 Continuing Appropriations Resolution	
	<ul style="list-style-type: none"> • Making continuing appropriations for fiscal year 2013 	Extension of TANF funding through March, 2013

³ To Accelerate the Income Tax Benefits for Charitable Cash Contributions for the Relief of Victims of the Earthquake in Chile, and to Extend the Period from Which Such Contributions for the Relief of Victims of the Earthquake in Haiti May Be Accelerated., H.R. 4783, 111th Congress (2010).

2013	P.L. 112-275 Protect Our Kids Act	
	<ul style="list-style-type: none"> To establish a commission to develop a national strategy and recommendations for reducing fatalities resulting from child abuse and neglect 	<ol style="list-style-type: none"> Appropriation of \$612 million to the TANF contingency fund for FY2013 and FY2014 Reserving \$2 million from each of the two years' appropriations for the activities of a commission to examine child welfare fatalities
	P.L. 113-6 Consolidated and Further Continuing Appropriations Act	
	<ul style="list-style-type: none"> Making consolidated appropriations and further continuing appropriations for the fiscal year ending September 30, 2013 	Extension of TANF funding through the remainder of FY2013
	P.L. 113-46 Continuing Appropriations Act	
	<ul style="list-style-type: none"> Making continuing appropriations for the fiscal year ending September 30, 2014 	Extension of TANF funding through January 15, 2014
2014	P.L. 113-73 Joint Resolution	
	<ul style="list-style-type: none"> Making further continuing appropriations for fiscal year 2014 	Extension of TANF funding through January 18, 2014
	P.L. 113-76 Consolidated Appropriations Act	
	<ul style="list-style-type: none"> Making consolidated appropriations for the fiscal year ending September 30, 2014 	Extension of TANF funding for the remainder of FY2014
	P.L. 113-164 Joint Resolution	
	<ul style="list-style-type: none"> Making continuing appropriations for fiscal year 2015 	Extension of TANF funding through December 11, 2014
	P.L. 113-202 Joint Resolution	
	<ul style="list-style-type: none"> Making further continuing appropriations for fiscal year 2015 	Extension of TANF funding through December 13, 2014
	P.L. 113-203 Joint Resolution	
	<ul style="list-style-type: none"> Making further continuing appropriations for fiscal year 2015 	Extension of TANF funding through December 17, 2014
	P.L. 113-235 Consolidated and Further Continuing Appropriations Act	
<ul style="list-style-type: none"> Making consolidated appropriations for the fiscal year ending September 30, 2015 	Extension of TANF funding through September 30, 2015	
2015	P.L. 114-53 TSA Office of Inspection Accountability Act, Continuing Appropriations Act	

	<ul style="list-style-type: none"> To require the Transportation Security Administration to conform to existing federal law and regulations regarding criminal investigator positions 	Extension of TANF funding through December 11, 2015
	P.L. 114-96 Further Continuing Appropriations Act	
	<ul style="list-style-type: none"> Short-term continuing resolution 	Extension of TANF funding through December 16, 2015
	P.L. 114-100 Joint Resolution	
	<ul style="list-style-type: none"> Making further continuing appropriations for fiscal year 2016 	Extension of TANF funding through December 22, 2015
	P.L. 114-113 Consolidated Appropriations Act	
	<ul style="list-style-type: none"> Making appropriations for military construction, the Department of Veterans Affairs, and related agencies for the fiscal year ending September 30, 2016 	Extension of TANF funding for the remainder of FY2016
2016	P.L. 114-223 Continuing Appropriations and Military Construction, Veterans Affairs, and Related Agencies Appropriations Act of 2017, Zika Response and Preparedness Act	
	<ul style="list-style-type: none"> Making continuing appropriations for fiscal year 2017 	Extension of TANF funding through December 9, 2016
	P.L. 114-254 Further Continuing and Security Assistance Appropriations Act	
	<ul style="list-style-type: none"> Making appropriations for energy and water development and related agencies for the fiscal year ending September 30, 2016 	Extension of TANF funding through April 28, 2017
2017	P.L. 115-30 Joint Resolution	
	<ul style="list-style-type: none"> Making further continuing appropriations for fiscal year 2017 	Extension of TANF funding through May 5, 2017
	P.L. 115-31 Consolidated Appropriations Act	
	<ul style="list-style-type: none"> Making appropriations for the fiscal year ending September 30, 2017 	<ol style="list-style-type: none"> Extension of TANF funding for the remainder of FY2017 and through the end of FY2018 Reduction of the basic TANF block grant for each state by that percentage (0.33%) Requirement for the Department of Health and Human Services, in consultation with the Department of Labor, to develop a database named "What Works: A Clearinghouse of Proven and Promising

		Projects to Move Welfare Recipients into Work”
2018	P.L. 115-245 Department of Defense and Labor, Health and Human Services, and Education Appropriations Act, Continuing Appropriations Act	
	• Making consolidated appropriations for the Departments of Defense, Labor, Health and Human Services, and Education, and Related Agencies for the fiscal year ending September 30, 2019	Extension of TANF funding through December 7, 2018
	P.L. 115-298 Joint Resolution	
	• Making further continuing appropriations for fiscal year 2019	Extension of TANF funding through December 21, 2018
2019	P.L. 116-4 TANF Extension Act	
	• To extend TANF block grants to states and related programs through June 30, 2019	Extension of TANF funding through June 30, 2019

Methodology

From this full dataset of 51 acts, the author excluded 32 that simply extended the effective periods of TANF and TANF-related programs. The remaining 19 acts bore relevance to TANF programs according to Falk (2019a)'s research on legislative history. These acts were extracted as a text file and the strings were cleaned of numbers, notes, and other miscellaneous materials. Next, the cleaned strings were separated by act into sentences using the Python package spaCy, known as one of the fastest and most accurate natural language processing implementations (Choi et al., 2015; Honnibal & Johnson, 2015). The number of sentences varies: some acts contain major changes and new policy details while others have only minor revisions and additions. For example, the first act (PRWORA of 1996) initiating TANF programs has 1,704 sentences, while the Joint Resolution of 2002 (P.L. 107-229) has only two sentences.

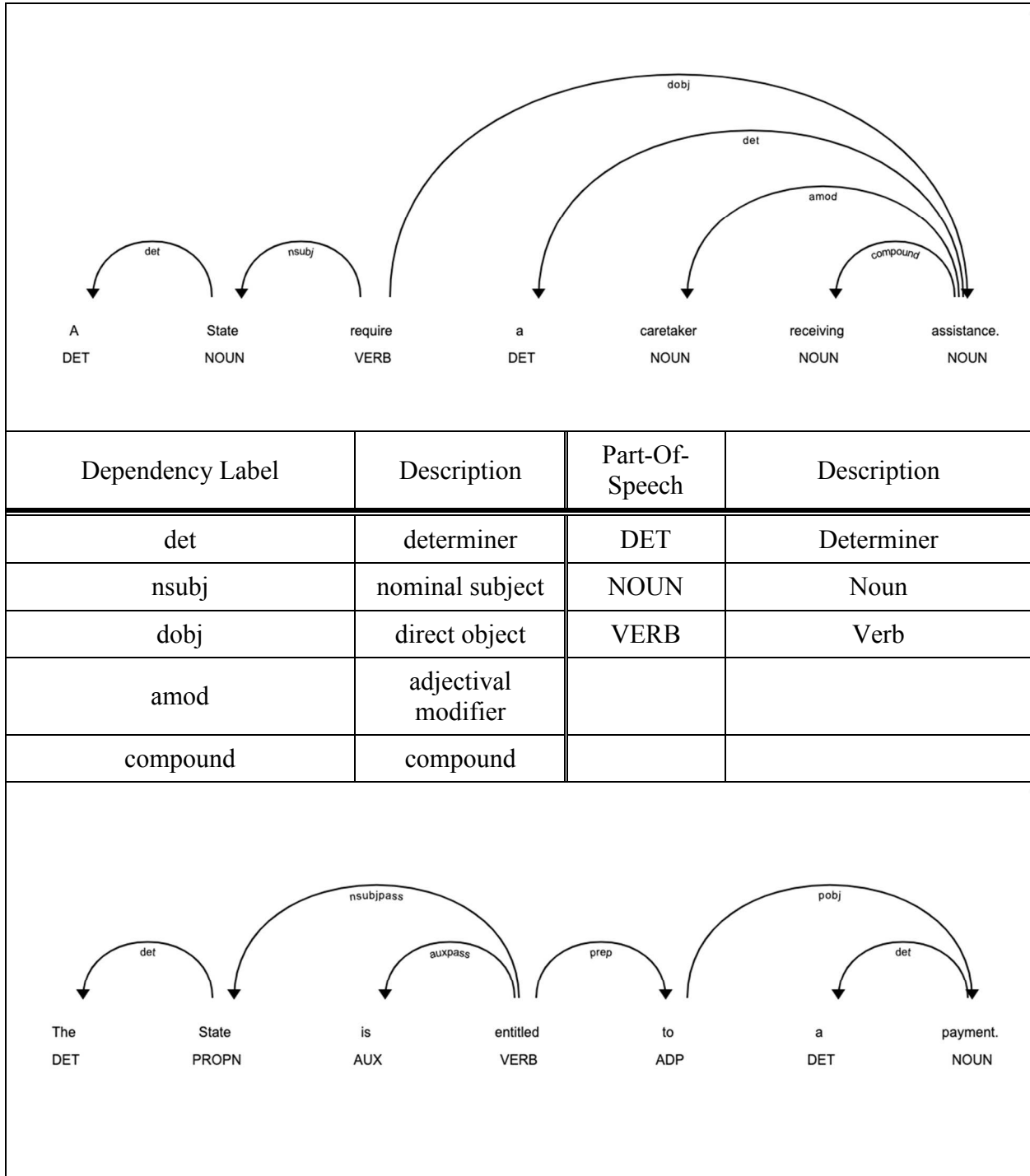
Table 3.5: Summary Statistics on Legislative Text Data

Variable	Mean*	Standard** Deviation	Min	Max
Number of Sentences in an Act	161.17	403.04	2	1704

* Mean is rounded off to two decimal places; ** Standard deviation is rounded to two decimal places

According to previous research tracking discretion through legal texts, delegated discretion can be captured from 1) identification of delegated agents who hold authority over policy-making or program management, and 2) legislative conditions on exercising that authority (Anastasopoulos & Bertelli, 2020; Epstein & O'halloran, 1999). In order to identify delegated agents in TANF programs, I first divided the text into tokens (single words or groups of words which relate to a concept) and used the statistical dependency parsing method through spaCy. Parsing in NLP is a process to determine a syntactic structure of text by analyzing constituent

words based on grammar (Srinivasa-Desikan, 2018). Dependency parsing, one of several parsing methods, defines sentence structure from words in a sentence and identifies grammatical relationships among them (Jurasky & Martin, 2000).



Dependency Label	Description	Part-Of-Speech	Description
det	determiner	DET	Determiner
nsubjpass	nominal subject (passive)	PROPN	noun, proper singular
auxpass	auxiliary (passive)	AUX	Auxiliary
prep	prepositional modifier	VERB	Verb
pobj	object of preposition	ADP	conjunction, subordinating or preposition
		NOUN	Noun

Figure 3.1. Examples of Syntactic Dependency Parsing in spaCy

First, I identify subjects ('nsubj' and 'nsubjpass') of sentences used in 1996 PRWORA since it has most lengthy and abundant examples and make a list of detected subjects since this study focuses on state governments' discretion change in TANF programs. As a result of frequency analysis with extracted subject list as lower cases, the most 10 common subjects are 'state', 'that', 'secretary', 'who', 'which', 'individual', 'grant', 'amount', 'term', 'section'.

Table 3.6: Result of Frequency Test on Subjects

Subject Word: Number of Appearance			
'state': 136	'number': 9	'parent': 5	'increase': 3
'that': 135	'child': 9	'officer': 5	'they': 3
'secretary': 121	'agency': 9	'sums': 5	'purpose': 3
'who': 78	'amendments': 9	'states': 5	'whichever': 3
'which': 52	'program': 8	'costs': 5	'grants': 3
'individual': 51	'assistance': 8	'grants': 4	'403': 3
'grant': 39	'adult': 8	'data': 4	'amounts': 3
'amount': 31	'waiver': 8	'b': 4	'penalty': 3
'term': 26	'ii': 7	'provisions': 4	'head': 3
'section': 25	'seq': 7	'services': 4	'a': 3
'c.': 22	'plan': 7	'year': 4	'sentence': 3
'family': 19	'programs': 7	'income': 4	'finding': 3
'children': 15	'recipient': 7	'limitation': 4	'paragraph': 3
'it': 15	'nothing': 7	'sections': 4	'study': 3
'rate': 15	'report': 7	'families': 4	'commissioner': 3
'percent': 13	'payments': 7	'member': 4	'reform': 3
'i': 12	'note': 7	'individuals': 4	'obligations': 3
'expenditures': 11	'information': 6	'provisions': 4	
	'appropriation': 6	'board': 4	
	'subsection': 6	'territory': 4	
	'date': 6		
	'tribe': 6		
	'standards': 6		

Second, I identified words and groups of words in sentences representing 1) state government or 2) the agent with authority to make decisions on TANF policies as delegated objects based on subject analysis. These included ‘state,’ ‘states,’ ‘state government,’ ‘state governments,’ ‘state agency,’ ‘state agencies,’ ‘state officer,’ ‘state officers,’ ‘state official,’ ‘state officials,’ ‘state governor,’ ‘state governors,’ and combinations of ‘government, agency, officer, official, governor’; ‘of’; ‘a, the’; and ‘state’ and combinations of its plural forms, such as ‘government of the state,’ ‘government of a state,’ ‘governments of the state,’ ‘governments of

the states,’ and ‘governments of states’ (in lower case). I coded rules for all of the combinations of words in the list, but ruled out ‘United States’ as an exception.

Third, I set six lexical unit lists of verbs defining the role of delegated agents in order to find structures to define conditions for exercising legislative authority. These lists, derived from a literature review on contract statements and state executive discretion, included prescriptive legal ontological components (Ash et al., 2019b; Ash et al., 2018; Fatovic, 2013). In formal documents, modal verbs such as ‘shall,’ ‘must,’ ‘will,’ ‘may,’ and ‘can’ describe legal obligations and entitlements (Ash et al., 2019a; Lame, 2003; van Engers et al., 2004). Also, special verbs frequently used to explain obligations and entitlements were identified, as shown in Table 3.7 (Ash et al., 2019a; Lame, 2003; van Engers et al., 2004).

Table 3.7: Lexical Unit List of Verbs for the Role of Delegated Agents

Category	Subcategory	Words
Modals	Strict Modals	‘shall,’ ‘must,’ ‘will’
	Permissive Modals	‘may,’ ‘can’
Special Verbs	Delegation Verbs	‘be required,’ ‘be expected,’ ‘be compelled,’ ‘be obligated,’ ‘have to,’ ‘ought to’
	Constraint Verbs	‘be prohibited,’ ‘be forbidden,’ ‘be banned,’ ‘be barred,’ ‘be restricted,’ ‘be proscribed’
	Permission Verbs	‘be allowed,’ ‘be permitted,’ ‘be authorized’
	Entitlement Verbs	‘have,’ ‘receive,’ ‘retain’
Active Verbs		Non-special active-tense verbs, ‘be’
Passive Verbs		Non-special passive-tense verbs

Finally, legal statements that describe the possible actions of subjects and objects in intergovernmental relationships were categorized, as delegation, constraint, permission, and entitlement. Each of these categories was constructed with combinations of specific verbs, based on research measuring discretion for delegated object agents (Ash et al., 2019a; Ceci et al., 2011;

Epstein & O'halloran, 1994, 1999; Franchino, 2001, 2004; Lame, 2003; Saias & Quaresma, 2003; Vannoni et al., 2019). This work followed recent studies by Ash et al. (2019a) and Vannoni et al. (2019), who agreed on the structures but suggested different sentence examples.

While Ash et al. (2019a) and Vannoni et al. (2019) suggest the same structures for *delegation* statements, they disagree on the syntactic structures of the constraint, permission, and entitlements statements. For example, for the second structure of constraints, Ash et al. (2019a) suggest a negative structure with or without a modal verb, followed by a permission verb, but Vannoni et al. (2019) suggest a negative structure followed by a permission verb without a modal verb. However, as long as a sentence has a passive permission verb, the existence of the modal verb does not change the intention of the sentence to restrict the subject: a comparison of ‘The State may be prohibited’ and ‘The State is prohibited’ illustrates this shared intent.

Therefore, this study takes a more inclusive structure than that of Ash et al. (2019a). Furthermore for the third structure of constraints, while Ash et al. (2019a) suggest a negative structure with any modal verb followed by any active verb, Vannoni et al. (2019) suggest a negative structure with any modal verb followed by a non-delegation verb. However, the sentences with active delegation verbs, such as ‘The State shall not require,’ or ‘The State shall not expect’ still mean that the subjecting entity is restrained from doing something; therefore, this study adopts Ash et al. (2019a)’s opinion for analyzing constraint statements.

Ash et al. (2019a) and Vannoni et al. (2019) also define the examples slightly differently in all three structures of permission statements. For example, Ash et al. (2019a) suggest a positive structure with or without a strict modal verb followed by a passive permission verb, but Vannoni et al. (2019) suggest a positive structure followed by a passive permission verb without a modal verb. However, the sentence ‘The State shall be allowed’ and ‘The State may be

allowed' similarly give permission to the state to act, differing only in the degree of permission. Therefore, this study makes the modal verb optional, to include Ash et al. (2019a)'s examples and Vannoni et al. (2019)'s examples, as a negative structure followed by a passive permission verb with or without a modal verb, offering more comprehensive sentence types.

Furthermore, the studies conflict on the second structure of the permission statement. While Ash et al. (2019a) suggest a positive structure with a permissive modal verb followed by an active verb, Vannoni et al. (2019) suggest a positive structure with a permissive modal verb followed by a non-special verb (that does not fall in the categories of delegation, constraint, permission, or entitlement verbs. However, any active verbs in the four categories above describe specific allowable actions, such as 'The State may require,' 'The State may prohibit,' 'The State may allow,' 'The State can permit,' and 'The State can retain.' Therefore, this study adopts Vannoni et al. (2019)'s example. Also, Ash et al. (2019a) define the last example of permission statements as a negative structure with a modal verb, followed by a passive constraint verb, while the modal verb is excluded in Vannoni et al. (2019)'s example, as a negative structure followed by a passive constraint verb. However, 'The State shall not be restricted' and 'The State is not restricted' imply similar expectations, permitting the state to do something, so the modal verb does not significantly affect meaning. Therefore, this study adopts Vannoni et al. (2019)'s suggestion.

Studies of Ash et al. (2019a) and Vannoni et al. (2019) also differ slightly in the first and third examples of entitlement statements. Ash et al. (2019a) require a strict modal verb ahead of an active entitlement verb, but Vannoni et al. (2019) exclude it. However, the meanings of 'A State shall have the power to,' 'A State may retain the power to,' and 'A State has the power to' give the state authority to act regardless of a strict, or any, modal verb, so this study constructs a

new positive structure, with or without a modal verb, followed by an active entitlement verb, to encompass Ash et al. (2019a) and Vannoni et al. (2019)’s suggestions. Furthermore, for the last structure of entitlements, Vannoni et al. (2019) and Ash et al. exclude the modal verb, with a negative structure followed by a passive delegation verb. However, ‘The State shall not be required’ and ‘The State is not required’ hold similar meanings, allowing the state the option to or not to act, and differ in degree only. The current study, therefore, also constructs a new structure with a negative structure, with or without any modal verb, followed by a passive delegation verb, including both previous suggestions.

Table 3.8: Comparisons of the Syntactic Structures

Category	Structure by Ash et al. (2019a)	Structure by Vannoni et al. (2019)
Delegation	Positive Structure + Strict Modal Verb + Active Verb	
	Positive Structure + Strict Modal Verb + Passive Delegation Verb	
	Positive Structure + Non-Modal Verb + Passive Delegation Verb	
Constraint	Positive Structure + Strict Modal Verb + Passive Constraint Verb	
	Negative Structure + Any Modal Verb + Active Verb	Negative Structure + Any Modal Verb + Not Delegation Verb
	Negative Structure + (Any Modal Verb) + Passive Permission Verb	Negative Structure + Passive Permission Verb
Permission	Positive Structure + Non-Modal Verb + Permission Verb	Positive Structure + Passive Permission Verb
	Positive Structure + Strict Modal Verb + Permission Verb	
	Positive Structure + Permissive Modal Verb + Active Verb	Positive Structure + Permissive Modal Verb + Non-Special Verb
	Negative Structure + Any Modal Verb + Passive Constraint Verb	Negative Structure + Passive Constraint Verb
Entitlement	Positive Structure + Strict Modal Verb + Active Entitlement Verb	Positive Structure + Active Entitlement Verb

	Positive Structure + Strict Modal Verb + Any Passive Verb	
	Negative Structure + Any Modal Verb + Passive Delegation Verb	Negative Structure + Passive Delegation Verb

In conclusion, this study combines syntactic structures of four categories: *delegation*; *constraint*; *permission*; and *entitlement* from Ash et al. (2019a) and Vannoni et al. (2019)’s work as Table 3.9 shows. First, *delegation* statements include an active subject, a positive structure, and a strict modal followed by an active verb, such as ‘The State will provide’; a positive structure with a strict modal followed by a passive delegation verb like ‘The State will be required to’; or a positive structure with a passive delegation verb without a modal verb, such as ‘The State is required to,’ on which the previous studies agree.

Secondly, the syntactic structures of *constraint* statements feature a passive subject within a positive structure, followed by a strict modal verb with a passive constraint verb, as in ‘A State shall be prohibited to’; a negative structure with a modal verb followed by an active verb, like ‘A State shall not use’; or a negative structure with or without a modal verb followed by a passive permission verb, like ‘A State may not be allowed to,’ or ‘A State is not allowed to.’

Thirdly, the syntactic structures of *permission* statements, which give a subject authority to act, have a positive structure followed by a passive permission verb with or without a modal verb, like ‘The states shall be allowed to’ or ‘The States are allowed to’; a positive structure followed by a permissive modal without an active verb like ‘The states may plan’; a negative structure with or without any modal verb followed by a passive constraint verb like ‘The states may not be restricted to’ and ‘The states are not restricted to’ respectively.

Lastly, the syntactic structures of *entitlement* statements have a positive structure, with or without a modal verb, followed by an active entitlement verb, as in ‘The Governor will have the

power to’ and ‘The Governor retains the power to,’ respectively; a positive structure with a strict modal followed by a passive verb, like ‘The Governor will be considered’; or a negative structure with or without a modal verb, followed by a passive delegation verb like ‘The Governor will be obligated to’ and ‘The Governor is not expected to,’ respectively.

Table 3.9: Syntactic Structures of Provisions

Category of Provision	Structure
Delegation	Positive Structure + Strict Modal Verb + Any Active Verb Positive Structure + Strict Modal Verb + Passive Delegation Verb Positive Structure + Not Modal Verb + Passive Delegation Verb
Constraint	Positive Structure + Strict Modal Verb + Passive Constraint Verb Negative Structure + Any Modal Verb + Any Active Verb Negative Structure + (Any Modal Verb) + Passive Permission Verb
Permission	Positive Structure + (Any Modal Verb) + Passive Permission Verb Positive Structure + Permissive Modal Verb + Any Active Verb Negative Structure + (Any Modal Verb) + Passive Constraint Verb
Entitlement	Positive Structure + (Any Modal Verb) + Active Entitlement Verb Positive Structure + Strict Modal Verb + Any Passive Verb Negative Structure + (Any Modal Verb) + Passive Delegation Verb

As the final step, I matched the defined subjects, representing state governments running TANF programs, and 12 syntactic structures of the provision categories with all sentences in each act, through spaCy. If a sentence matched one of the subject word chunks representing delegated agents and fell in one of the twelve structures, it was counted as a provision. The following sentences are examples defined as one of 12 structures of statements in the PRWORA of 1996 (P.L. 104-193).

Table 3.10 demonstrates sentence examples to be matched with subjects and syntactic structures at the same time. The first example has a subject, ‘State agency or agencies’; strict

modal verb, ‘will’; and an active verb, ‘administer and supervise,’ so it was detected as delegation type 1. The second example has a subject of ‘The State’; a strict modal verb, ‘shall’; and an active verb, ‘make,’ so it was also detected as delegation type 1. The third example, with a subject of ‘the State’ and the passive delegation verb ‘was required,’ without any modal verb, was detected as delegation type 3. The fourth example has a subject of ‘a State’; a modal verb, ‘shall’; a word of negation, ‘not’; and an active verb, ‘be’, and so was detected as constraint type 2. The fifth example was also defined as constraint type 2 since it has a word of negation, ‘nor’; a subject of ‘a State’; a modal verb, ‘shall’; and an active verb, ‘require.’ The sixth example was categorized as permission type 1, with its subject of ‘the State’ and the passive permission verb, ‘was authorized.’ The seventh example, detected as permission type 3, has a subject of ‘A State’; a modal verb, ‘shall’; a word of negation, ‘not’; and a passive constraint verb, ‘be prohibited.’ The last example was defined as entitlement type 2, since it has a subject of ‘a State’; a strict modal verb, ‘shall’; and a passive verb, ‘be determined.’

Table 3.10: Examples of NLP Parsing through spaCy

#	Provision Type	Sentence Examples
1	Delegation Type 1	A certification by the chief executive officer of the State specifying which State agency or agencies will administer and supervise the program referred to in subsection (1) for the fiscal year, which shall include assurances that local governments and private sector organizations (A) have been consulted regarding the plan and design of welfare services in the State so that services are provided in a manner appropriate to local populations; and
2	Delegation Type 1	The State shall make available to the public a summary of any plan submitted by the State under this section.
3	Delegation Type 3	A State that submits a corrective action plan that the Secretary has found contains the information required by this subsection shall implement the corrective action plan until the State

		determines that the child poverty rate in the State is less than the lowest child poverty rate on the basis of which the State was required to submit the corrective action plan.
4	Constraint Type 2	a State shall not be a qualifying State for any fiscal year after 1998 by reason of clause (i) if the State is not a qualifying State for fiscal year 1998 by reason of clause(i).
5	Constraint Type 2	Neither the Federal Government nor a State shall require a religious organization to— (A) alter its form of internal governance; or (B) remove religious art, icons, scripture, or other symbols; in order to be eligible to contract to provide assistance, or to accept certificates, vouchers, or other forms of disbursement, funded under a program described in subsection (a)(2).
6	Permission Type 1	a State to which a grant is made under section 403 may use the grant— (1) in any manner that is reasonably calculated to accomplish the purpose of this part, including to provide low income households with assistance in meeting home heating and cooling costs; or (2) in any manner that the State was authorized to use amounts received under part A or F, as such parts were in effect on September 30, 1995.
7	Permission Type 3	A State to which a grant is made under section 403 shall not be prohibited from sanctioning a family that includes an adult who has received assistance under any State program funded under this part attributable to funds provided by the Federal Government or under the food stamp program, as defined in section 3(h) of the Food Stamp Act of 1977, if such adult fails to ensure that the minor dependent children of such adult attend school as required by the law of the State in which the minor children reside.
8	Entitlement Type 2	For purposes of subsection (A) and section 452(a)(4), a State which is not in full compliance with the requirements of this part shall be determined to be in substantial compliance with such requirements only if the Secretary determines that any noncompliance with such requirements is of a technical nature which does not adversely affect the performance of the State's program operated under part D.

Study results produced a total of 105 provisions defined as either delegation, constraint, permission, or entitlement statements, across 18 acts. However, provisions explaining states'

jurisdictions over TANF programs were detected in only 10 of 18 acts, since some contain major, specific program statements while the others have minor technical statements as Table 3.11 shows.

Table 3.11: Identification of Four Categories in Provisions

Year	Public Law # (Act)	# of Provision	Delegation	Constraint	Permission	Entitlement
1996	P.L. 104-193 (PRWORA)	76	30	16	26	4
	P.L. 104-327	0	0	0	0	0
1997	P.L. 105-33 (BBA)	17	9	1	4	3
	P.L.105-89 (Adoption and Safe Families Act)	0	0	0	0	0
1998	P.L. 105-178 (Transportation Equity Act for the 21st Century)	1	0	0	1	0
1999	P.L. 106-113 (District of Columbia Appropriations Act)	1	1	0	0	0
2000	P.L. 106-554 (Consolidated Appropriations Act, 2001)	0	0	0	0	0
2002	P.L. 107-147 (Job Creation and Worker Assistance Act)	0	0	0	0	0
	P.L. 107-229 (joint Resolution)	0	0	0	0	0
	P.L. 107-294 (joint Resolution)	0	0	0	0	0
2004	P.L. 108-199 (Consolidated Appropriations Act, 2004)	0	0	0	0	0
2005	P.L. 109-68 (TANF Emergency Response and Recovery Act)	3	0	0	1	2
2006	P.L. 109-171 (DRA)	1	1	0	0	0
2009	P.L. 111-5 (ARRA)	2	0	0	2	0

2010	P.L. 111-291 (Claims Resolution Act)	2	2	0	0	0
2012	P.L. 112-96 (Middle Class Tax Relief and Job Creation Act)	1	1	0	0	0
2013	P.L. 112-275 (Protect Our Kids Act)	0	0	0	0	0
2017	P.L. 115-31 (Consolidated Appropriations Act, 2017)	1	1	0	0	0

Measures of Discretion

To empirically measure the degree of control/discretion for delegated agents, Ash et al. (2019a) suggested a sum of entitlement and delegation statements. Vannoni et al. (2019), however, preferred a weighted ratio, measured by the share of major provisions delegating powers in an act and weighted by the constraints imposed on delegated agents, based on Epstein and O'halloran (1999) and Franchino (2004)'s research. This ratio was defined through the following equation: for an act of i , where TP is total number of provisions in any of the delegation, constraint, permission, or entitlement categories, D is the number of delegation statements, E is the number of entitlement statements, and C is the number of constraint statements.

$$Discretion_i = D + E \quad (3-1)$$

$$Discretion_i = \frac{D}{TP} - \left(\frac{C}{TP} \frac{D}{TP}\right) = \frac{D}{TP} \left(1 - \frac{C}{TP}\right) \quad (3-2)$$

Before proceeding to the final results, it should be noted that the acts in the dataset, which do not represent the stock of legislation, do illustrate the flow. The acts contain recycled

provisions, stated as amended from previous legislation or repealed from preexisting statutes; therefore, it is not surprising to find that measured discretion levels across acts do not differ significantly over time (Vannoni et al., 2019). Furthermore, two measures (Discretion 1 and Discretion 2) suggested by Ash et al. (2019a) and Vannoni et al. (2019) will, by definition, always be positive values. However, it is more comprehensive to assume that the discretion of subjected agents can be decreased by new acts and reforms. Therefore, this study suggests an additional measure of discretion that can work as a negative value as well: see below, in which the number of constraint statements is larger than the number of delegation statements, the difference between delegation ratio and constraint ratio for an act of i , where TP is the total number of provisions, D is the number of delegation statements, and C is the number of constraint statements.

$$Discretion_i = \frac{D}{TP} - \frac{C}{TP} \quad (3-3)$$

Results

I calculated the changes of discretion level by three measures (Discretion 1, Discretion 2, and Discretion 3). These measures change in company with each other, except once in 2005. However, the initial changes of Discretion 1 in 1996 and 1997 were overweighted compared to the changes of Discretions 2 and 3, while subsequent changes of Discretions 2 and 3 since 1999 were overweighted compared to that of Discretion 1 during the analysis period. This is because Discretion 1 measures an absolute sum of delegation and entitlement statements, while Discretions 2 and 3 measure proportionate values in four categories (delegation; constraint; permission; and entitlement) representing rights and obligations of delegated entities.

Results indicate that discretions measured by Discretion 2 and 3 for state governments increased in 15 of 18 acts, though they remained static in 1998, 2005, and 2009, as Table 3.12 shows. The discretion level of state governments to run TANF programs has increased as most of the new welfare reform acts were adopted since 1996. However, the level of discretion has not been steadily changing in one direction, but has increased to different degrees, and three static points of discretion were found in which level of discretion did not change, contrary to the general assumption that discretion for state governments in TANF programs increases over time. It is also worth noting that there are only small changes in the discretion level over the 23 years since TANF programs were first established by PRWORA in 1996.

Table 3.12: Discretion of State Governments in Acts

Year	Public Law # (Act)	Changes of Discretion		
		$D + E$	$\frac{D}{TP} \left(1 - \frac{C}{TP} \right)^*$	$\frac{D}{TP} - \frac{C}{TP}^*$
1996	P.L. 104-193 (PRWORA)	34	0.3116	0.1842
1997	P.L. 105-33 (BBA)	12	0.4983	0.4706
1998	P.L. 105-178 (Transportation Equity Act for the 21st Century)	0	0	0
1999	P.L. 106-113 (District of Columbia Appropriations Act)	1	1	1
2005	P.L. 109-68 (TANF Emergency Response and Recovery Act)	2	0	0
2006	P.L. 109-171 (DRA)	1	1	1
2009	P.L. 111-5 (ARRA)	0	0	0

2010	P.L. 111-291 (Claims Resolution Act)	2	1	1
2012	P.L. 112-96 (Middle Class Tax Relief and Job Creation Act)	1	1	1
2017	P.L. 115-31 (Consolidated Appropriations Act, 2017)	1	1	1

* Rounded to 4th decimal place

Conclusion

Since TANF programs started devolving greater authority from federal to state governments in 1996, welfare policy changes have produced 51 federal acts. Each act affected and changed TANF programs to a degree, likely altering the level of states' discretion over this 20-year period. This study focuses on the legal text of federal acts that define delegated agents' rights, obligations, and prohibitions, as governmental bodies acting within legislative limitations.

To analyze these acts, I first identified subject words representing state governments as delegated agents. The next step compared the synthetic structures of delegation, constraint, permission, and entitlement within subjected agents' legal actions. This study integrates lexical structures from both Ash et al. (2019a) and Vannoni et al. (2019), and suggests a new set of lexical frameworks to include more structures among the suggested examples. Sentences of each act were then classified into four categories: delegation, constraint, permission, and entitlement, using an NLP parsing mechanism through the Python language package spaCy program. The method that this essay developed, to investigate discretion in delegated entities and measure the level of discretion, can be applied to analyze any devolved discretion by formal statements in different decentralized policies and programs in future research.

Furthermore, this new measuring method for discretion creates further research opportunities, since its ability to be negative differs from that of the previous two discretion

measures. For example, it will be interesting to track the level of discretion as it decreases, instead of continuously increasing or remaining static, and to assess the ongoing relevance of the welfare state theory as discretion fluctuates.

Results showed that the level of discretion has not remained static or steadily changed in one direction, but has remained static or increased to different degrees. In 15 of 18 acts, discretions for state governments increased, though they remained static in 1998, 2005, and 2009.

Due to the nature of the dataset, acts contain both completely new provisions and revisions of previous acts. In other words, legal text in acts does not represent the stock of legislation describing the scope of actions by governmental agents, but rather shows the flow of them. Therefore, the results of provision analysis bear a limitation: measured values do not directly present a level of discretion. However, these data help to monitor changes in discretion when new acts are applied, and to compare the significance of these changes.

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CHAPTER 4

**WELFARE STATE THEORIES AND STATES' DECISIONS ON THE CASH
ASSISTANCE PROGRAMS IN THE U.S.⁴**

⁴ Cho, Yoon Kyoung. To be submitted to *Public Budgeting & Finance*.

Abstract

Welfare state theory has shown how socio-economic factors, institutional settings, and demographic characteristics shape welfare policy. Many credit the increasing discretion for state governments through welfare reforms with changes in welfare programs in the U.S. However, few studies explicitly link the level of discretion and welfare state theory when explaining the evolution of American welfare policy. This study tries to fill the gap by examining the moderating effect of discretion. I estimate the role of discretion in the contexts of the state fiscal condition, party affiliation of state governors, partisan control of state legislatures, government ideology, racial diversity, and their impacts on per capita Temporary Assistance for Needy Families (TANF) expenditure, using panel data. The results indicate that states' discretion significantly changes the initial effect of the fiscal condition, the partisanship of governors, and government ideology on TANF spending. Taken together, the findings suggest that variation in states' TANF expenditures is not only a function of socio-economic, institutional, political, and demographic characteristics in each state but also a function of the interaction of discretion level change with these factors.

Introduction

In the half century following the Social Security Act of 1935, Aid to Dependent Children (ADC) /Aid to Families with Dependent Children (AFDC) /Temporary Assistance for Needy Families (TANF) played a key role as a cash assistance redistribution program for needy families in the U.S. However, it has recently devolved into one of the smallest welfare programs (Brown & Best, 2017). Although the basic TANF block grant has remained near \$16.5 billion since 1996, thanks to inflation its real value had fallen by almost 50% by 2019 (CBPP, 2018). In 2017, only 23% of families in poverty received TANF cash assistance, compared to 68% in 1996,

continuing a decline of more than 50% between 1995 and 2010 (Brown & Best, 2017; Ife Floyd, 2018; Trisi & Pavetti, 2012).

This decline can be partially explained by a sound economy and the notable expansion of other means-test income support programs such as the Supplemental Nutrition Assistance Program (SNAP); the Earned Income Tax Credit (EITC) cash transfer program; refundable tax credits; and child tax credits in the 2010s (Hoynes, 2014; Shaefer & Edin, 2013). However, the success of the programs cannot fully explain this dramatic caseload drop, for several reasons. First, statistical data following the economic downturn in 2008 shows only slight increases in TANF caseloads, even with rises in unemployment and the poverty rate (Seefeldt, 2017; Shaefer & Edin, 2013; Trisi & Pavetti, 2012). Secondly, the demographic characteristics of the population eligible for TANF benefits have not changed much over time (Loprest, 2012).

What Shapes Welfare Policy: Welfare State Theories

What make welfare programs like TANF prosper or wither then? Dominant theories suggest that the welfare state is shaped by socioeconomic conditions, political institutions, multiculturalism concerns on race, immigrants and social policy, and interactive combinations of the three (Kail & Dixon, 2011). On the demand side, financially underprivileged people are more vulnerable to social shocks due to unexpected worldwide pandemics or economic downturns, so welfare benefits are highly necessary to help them. However, governments cannot satisfy the demand for welfare since their budgets are limited and there are always demands for different public programs, too. Therefore, the level of spending on social security is decided by governmental preference toward welfare over different policy goals and financial and administrative capacity of the governments to provide necessary programs on the supply side.

Socioeconomic theory sees welfare generosity as a function of demand-side socioeconomic conditions (Feiock & West, 1993; Lineberry, 1977). Higher poverty rates, unemployment rates, inequality, cost of living, and diminished median household income, require governmental involvement via redistribution (Brown & Best, 2017; Wilensky, 1974). The median voter model in public choice theory declares that median income voters determine the level of redistribution at a majority voting equilibrium, linking economic imperatives and favor toward generous welfare programs (Boadway & Wildasin, 1989; Congleton, 2004; Holcombe, 1989). When an economy declines and income disparity in a society deteriorates, then population that benefits from redistribution increases. Therefore, self-interested voters choose progressive interventions by governments in economic downturns but conservative welfare policies during periods of growth.

However, empirical studies on the issue show mixed results. For example, while Chamlin (1987) and Pack (1998) found a positive relationship between poverty rate and welfare spending, and Blank (2001) found AFDC caseloads increased during the economy slowdown, Isaac and Kelly (1981), Sharp and Maynard-Moody (1991), and Albert (2016) could not find evidence linking economic conditions to changes in welfare programs (Craw, 2010).

On the other hand, the attitudes of public entities toward redistribution, and the generosity of redistributive policies on the supply side, vary significantly both internationally and domestically. Political institution theories examine how institutions and politics jointly shape public policy (Amenta, 2000; Amenta et al., 2005; Huber & Stephens, 2010; Kail & Dixon, 2011; Moller et al., 2003). Specifically, fiscally conservative Republicans are more likely to restrain welfare generosity while pro-spending political groups like Democrats incline to more generous social policy (Amenta, 2000; Brown & Best, 2017; Filindra, 2013; Reese et al., 2013;

Tope & Hickman, 2012; Zylan & Soule, 2000). Other political characteristics, like political legacies and prior policy decisions, also limit the available options for policy makers on implementing more progressive welfare policies or expanding existing ones (Amenta, 2000; Craw, 2010; Heclo, 1974; Kail & Dixon, 2011; Pierson, 1994; Quadagno, 1987; Stone, 1989; Swanstrom, 1988; Wong, 1988, 1990; Zylan & Soule, 2000).

More institutionally-centered factors, such as structures of governments, formal and informal political institutions, legislative structures within a government, administrative capacities, and fiscal conditions also determine the prioritization of redistribution (Fox, 2012; Hicks, 2018; Huber & Stephens, 2010). For example, institutional theory assumes that mobilized political opinions influence higher voter turnout in support of generous welfare programs (Amenta et al., 2001). Greater administrative capacities give more flexibility to determine whether they implement new welfare policy or expand or retrench an existing welfare policy. Further, more professionalized legislators and governors with greater power over the budgetary process are better able to achieve their goals (Barrilleaux & Berkman, 2003).

In particular, fiscal conditions, one of the administrative capacities of state governments, influence welfare policy decisions to meet both obligations and residents' needs (Brown & Best, 2017; O'connor, 1979). However, fiscal condition/health is composed of multiple dimensions and factors, complicating its measure relationship to policy decisions (Berne & Schramm, 1986; Hendrick, 2004). This will be discussed further in the following section.

Last, public opinions, attitudes, and perceptions on race have been studied as primary factors setting the level of welfare benefits and explaining the relationship between immigration and welfare (Brooks & Manza, 2006, 2008; Brown & Best, 2017). Martin (1999) argued that lawmakers and public opinion misrecognize African-Americans as primary beneficiaries of

AFDC based on a manipulated image presenting them as “lazy” or having a “weak work ethic” (Martin, 1999, pp. 77-78). Many fear that social welfare benefits would drive labor supply decreases and relative disadvantages for the dominant race population (Fox, 2012; Martin, 1999). Gilens (2009a), Luttmer (2001), and Sears and Citrin (1982) have provided evidence that White voters are more reluctant to support redistribution if they believe that racial minorities get the benefits (Rugh & Trounstine, 2011). Though the ratio of African American recipients has been decreasing, many still view AFDC as a welfare policy serving mostly African-Americans and Hispanic immigrants (Kail & Dixon, 2011; Marchevsky & Theoharis, 2000; Parham et al., 2000; Peterson, 1995). This racial perception affects not only the stringency of benefit levels, but also rules on program participation and its extension (Graefe et al., 2008; Soss et al., 2011). For example, when the Social Security Act of 1935 created the predecessor of AFDC, Aid to Dependent Children (ADC), state legislators who set benefit eligibility and levels often discriminated against African-American populations (Parham et al., 2000; Quadagno, 1994).

The impact of racial composition on welfare generosity is not well-understood (Chamlin, 1987; Craw, 2006). For example, some empirical evidence shows racially diverse composition to be negatively associated with support for welfare policy, since individuals fear that their benefits will go to other groups (Alesina et al., 2004; Gilens, 2009b; Hopkins, 2009). In fact, states with large African American and Hispanic populations are more likely to be stingy on average AFDC benefits (Fording, 2003; Sander & Giertz, 1986), and a state’s African-American population correlates with restrictive welfare policy (Marchevsky & Theoharis, 2000; Soss et al., 2011). On the other hand, recent studies reveal dramatic changes in racial attitudes (Lassiter, 2013; Mendelberg, 2017; Schuman et al., 1997; Sears, Henry, et al., 2000; Sears, Sidanius, et al.,

2000), and empirical evidence that diversity does not depress public goods provision (Boustan et al., 2010; Hopkins, 2011; Rugh & Trounstein, 2011).

Furthermore, racial theory has been applied to the policy impact of foreign-born immigrants, finding that the existence of a higher immigrant population is negatively related to the preference for generous welfare policy (Brown & Best, 2017). However, other studies question this relationship. For example, Preuhs (2007) found that immigrant populations were not statistically related to extended welfare benefits. Reese et al. (2013) found that states with a higher immigrant population were more likely to adopt generous welfare policies.

Discretion and Welfare Policy

A large literature has studied whether federalism/decentralization in welfare policy sharing power, responsibility, and discretion with different levels of government to reduce the production of public goods and welfare generosity (Berry et al., 2003; Peterson & Rom, 2010; Tiebout, 1956; Volden, 2002d). This body of studies focuses on competition at the state level, testing whether power devolution from the federal government makes state governments race to the bottom to avoid being a welfare magnet for neighbors.

While most of this research understands discretion to be a result of decentralization, it pays less attention to the concept. Several scholars have tried to define and measure the discretion in different state-level welfare programs. Volden (2002b) and Parinandi (2013) classified discretion levels of each state into four categories based on the role of its board in setting requirements, eligibility standards, and benefit levels for AFDC: no board, administrative, advisory, and policy-forming. If a welfare board is assigned an administrative role, it is assumed that bureaucrats in the state have no discretion; an advisory role indicates low discretion, and policy-forming roles represent high discretion (Volden, 2002b). Bruch et al. (2018) measured

state authority discretion levels of ten safety net programs affected by the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) across the categories of financing, rule-making, and administration. For example, cash assistance earned the highest discretion (high discretion in financing, rule-making, and administration) while supplemental security income represented the lowest discretion (low discretion in financing, rule-making, and administration) for state governments. Interestingly, their findings related both expansions and reductions in welfare programs to the highest level of discretion (Bruch et al., 2018).

Welfare state theories concern how various causes impact welfare policies, and many empirical studies have tested these theories across different welfare programs. Furthermore, welfare state theories literature has acknowledged far-ranging caseloads and benefit levels in cash assistance programs resulting from policy variations across states, and has also assessed the negative impacts of increasing state discretionary powers. Next to the direct effects of socioeconomic and institutional restraints and racial diversity on welfare policy, there are conditions where the influences could be reinforced or attenuated. However, the conditions to reinforced or attenuate the direct impact of policy environments based on welfare state theories have been understudied, and the evaluation on the impact of discretion level changes has been neglected in favor of the role of bureaucratic discretion in welfare policy adoption and diffusion.

On the other hand, some studies found that decentralized governments are more reluctant to expand redistribution programs while others showed inconsistent or mixed findings, but attempts to explain the controversy through discretion level changes have been unnoticeable as well (Allard & Danziger, 2000; Berry et al., 2003; Jan K. Brueckner, 2000; Buckley & Brinig, 1997; De Jong et al., 2006; Figlio et al., 1999; Helen F. Ladd & Fred C. Doolittle, 1982; Peterson & Rom, 2010; Saavedra, 2000; Schram et al., 1998; Volden, 2002d).

By contrast, the interaction between (managerial) discretion and policy environments at street-level has been studied within various contexts. Hambrick and Finkelstein (1987) suggested that managerial discretion provides a bridge between theories in which public entities play a significant role, like stakeholder theory, resource dependent theory and bureaucracy theory (Berman et al., 2005). Some scholars have attempted to incorporate both discretion and bureaucracy theory in public welfare programs. This line of study is largely based on street-level discretion in implementing welfare policy rather than that of states or programs (Brodkin, 2007). For example, Brodtkin (1997), using a case study, analyzed how environment-, organization-, and worker-level discretionary behaviors shape the practice of Job Opportunities and Basic Skills (JOBS) agencies, finding that interactions between agency-level policy environments and conditions influence how street-level bureaucrats use their discretion. Also, Keiser (1999) suggested that street-level bureaucrats in the Social Security Disability program across all 50 states were affected by state partisan politics, the health of the economy, and the level of need for benefits.

Research Questions and Hypotheses

Extant research indicates mixed results on the effects of socioeconomic conditions, institutional restraints, and racial diversity and the relationship between decentralization and governmental commitment to welfare programs. However, the effort to explain these inconsistent results by integrating discretion research and welfare state theory has been limited. Given prior studies suggesting discretion and policy environmental conditions are influenced by each other on the street-level, it is imperative to explore the moderating role of discretion on the state government level. Therefore, this study tries to fill the gap in welfare policy research to focus on the role of state discretion level and the effects of interaction between the level of

discretion and different key factors identified. In this chapter, I investigate three constraints on welfare generosity: fiscal conditions; political preference (based on political institution theory); racial compositions (based on multiculturalism theory) with TANF expenditures, and whether the impacts of three factors are enhanced or reduced by higher discretion.

First of all, as discussed in Chapter 2, the discretion of governments plays a key role in TANF policy decisions and options, within initial eligibility, benefits, requirements, ongoing eligibility, and program flexibility through the use of waivers (Thompson et al., 2018). To address the relative lack of analysis of the role of discretion in welfare policy, this dissertation posits that the level of discretion acts as a moderator in welfare spending, in line with the findings of Bruch and White (2018) that increasing discretion is related to simultaneous expansions and reductions in social provision. To estimate the moderating effects of discretion, this model used one-year lagged level of discretion, its interaction terms, and other variables of interest.

H₁: The level of discretion does not directly change TANF expenditures.

Second, the relationship between the fiscal slack of the state and changes in welfare generosity is evaluated by 1) whether or not the fiscal slack of states influences TANF expenditures, and 2) how the discretion changes the impact of the fiscal condition on the outcome, based on political institution theory. Especially, between late 1990s and early 2000s, each state in the U.S. encounters the budget crises at a different time (Volden, 2006), therefore, it is important to include fiscal condition into the regression to estimate the impact of fiscal stress. Political institution theory predicts that when states' budgets are fiscally sound, they have to capacity to be more generous with welfare spending. Additionally, it is difficult to predict how

fiscal condition will affect increases in caseloads and spending, especially if the goal of a given policy is to reduce them. For example, if fiscal condition works more as an institutional ability/capacity measure than as an institutional constraint, then a fiscally healthy condition should provide greater flexibility to states, allowing them to intensively change their outcomes in order to achieve new goals. Therefore, if policy goals pursue increases in outcomes, states with fiscal health will increase caseloads and expenditures more while fiscally unhealthy states will increase them less.

On the other hand, if fiscal condition reflects financial resources rather than institutional capacity, then states with better fiscal condition will act differently depending on whether a reform seeks an expansion of welfare programs or a reduction. In this case, the growth of caseloads and expenditures is greater in states with better fiscal health when the reform policy targets to increase the outcomes (Bahl, 1984; Hendrick, 2006; Michael A Pagano, 2002) as empirical studies on fiscal “capacity” showed high fiscal capacity increases welfare spending (Chamlin, 1987; Craw, 2010, p. 908; Isaac & Kelly, 1981; Peterson, 1981; Sharp & Maynard-Moody, 1991).

However, when states are required to cut caseloads and expenditures, states with fiscal slack can minimize the retrenchments of welfare policy compared to other states with insufficient financial resources and stability (Hendrick, 2006; Morgan & Pammer Jr, 1988). In particular, the fiscal slack model argues that it helps governments cope with uncertain shocks, serving as “buffers” (Jimenez, 2009, p. 83), and empirical evidence shows that governments with large fiscal slack minimized the retrenchment of welfare benefits during economic downturns (Dougherty et al., 2003; Gorina et al., 2019; Hendrick, 2006; MacManus & Pammer, 1990; Marlowe, 2005; Moulick & Taylor, 2017; Wang & Scorsone, 2019).

H_{2a}: A state in better fiscal condition spends more money on TANF programs.

H_{2b}: The positive effect of fiscal condition on TANF expenditures is amplified if states have a higher level of discretion.

Third, the institutional theory of politics expects that partisanship/political preferences will have impacts on redistributive inclinations (Adkisson & Peach, 2000; Campbell et al., 1980; Einstein & Glick, 2018; Green et al., 2004; Peterson, 2012). In the specific political context of the U.S., party affiliation has been suggested as a dominant factors influencing policy decisions (Einstein & Glick, 2018). In particular, while Democrats emphasize progressivism and social equity to favor more generous welfare policy for diverse racial groups, Republicans generally oppose the expansion of welfare programs in the U.S. (Brown, 1995; Keita & Mandon, 2018; Potrafke, 2018; Rigby & Wright, 2013). In other words, Republican-dominated conservative states are more likely to be less generous with welfare policies, while Democratic-dominated progressive states are more generous. This relationship between states' political ideology and actions on TANF programs is estimated in this study by two measures. One, whether the state's political preferences on redistribution are related to TANF expenditures, and two, does the level of discretion reinforce the impact of political ideology on outcomes?

H_{3a}: States with progressive ideology spend more money on TANF programs while states with conservative ideology spend less.

H_{3b}: The positive effect of progressive ideology on TANF expenditures is amplified if states have a higher level of discretion while the negative effect of conservative ideology is amplified, too.

Finally, multiculturalism in welfare state theories suggests that issues of race/ethnicity and attitudes toward immigrants have impacts on welfare generosity decisions (Rodney E Hero & Robert R Preuhs, 2007). Influences of racial diversity and tension on welfare policy have been widely noticed, especially in the U.S. (Brown & Best, 2017; Lieberman, 1998; Neubeck & Cazenave, 2002). The diversity of the U.S. racial composition would naturally lead to more interest groups with different preferences; however, the interest group model determined that minorities are underrepresented in policymaking (Dahl, 1967; Jimenez, 2009; Lowi, 1979; Truman, 1951). Therefore, policy decisions on welfare programs depend on an official authority's opinion or attitude towards racial minorities and immigrants. The group threat theory explains that dominant groups are reluctant to support welfare policies, assuming that benefits go mostly to racial minorities; hence, these leading groups perceive welfare programs to be unfavorable to themselves (Kail & Dixon, 2011).

Based on these multiculturalism theories, the final analysis of this dissertation estimates the relationship between the composition of racial group and changes in TANF expenditures. First, it tests whether the state's racial group composition is related to changes in expenditures. Secondly, it asks whether the level of discretion reinforce the impact of diversity of racial groups on outcomes.

H_{4a}: States with more racial diversity spend less money on TANF programs.

H_{4b}: The negative effect of racial diversity on TANF expenditures is amplified if states have a higher level of discretion.

Variables of Interest

Table 4.1 shows the first independent variable of interest, discretion of state governments was measured by three methods comparing the number of provisions of delegation, constraint, permission, and entitlement in 18 welfare reform acts between 1997 and 2019, labeled Discretion 1, Discretion 2, and Discretion 3 as the results of analysis in Chapter 3.

Table 4.1: Identification of Four Categories in Provisions

Year	Public Law # (Act)	# of Provision	# of Delegation	# of Constraint	# of Permission	# of Entitlement
1996	P.L. 104-193 (PRWORA)	76	30	16	26	4
	P.L. 104-327	0	0	0	0	0
1997	P.L. 105-33 (BBA)	17	9	1	4	3
	P.L.105-89	0	0	0	0	0
1998	P.L. 105-178	1	0	0	1	0
1999	P.L. 106-113	1	1	0	0	0
2000	P.L. 106-554	0	0	0	0	0
2002	P.L. 107-147	0	0	0	0	0
	P.L. 107-229	0	0	0	0	0
	P.L. 107-294	0	0	0	0	0
2004	P.L. 108-199	0	0	0	0	0
2005	P.L. 109-68	3	0	0	1	2
2006	P.L. 109-171 (DRA)	1	1	0	0	0
2009	P.L. 111-5 (ARRA)	2	0	0	2	0
2010	P.L. 111-291	2	2	0	0	0
2012	P.L. 112-96	1	1	0	0	0
2013	P.L. 112-275	0	0	0	0	0

2017	P.L. 115-31	1	1	0	0	0
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Table 4.2: Discretion of State Governments in Acts

Year	Public Law # (Act)	Change of Discretion			Level of Discretion		
		Discretion 1	Discretion 2	Discretion 3	Discretion 1	Discretion 2	Discretion 3
		$D + E$	$\frac{D}{TP} \left(1 - \frac{C}{TP} \right)^*$	$\frac{D}{TP} \left(1 - \frac{C}{TP} \right)^*$			
1996	P.L. 104-193 (PRWORA)	34	0.3116	0.1842	34	0.3116	0.1842
1997	P.L. 105-33 (BBA)	12	0.4983	0.4706	46	0.8099	0.6548
1998	P.L. 105-178	0	0	0	46	0.8099	0.6548
1999	P.L. 106-113	1	1	1	47	1.8099	1.6548
2005	P.L. 109-68	2	0	0	49	1.8099	1.6548
2006	P.L. 109-171 (DRA)	1	1	1	50	2.8099	2.6548
2009	P.L. 111-5 (ARRA)	0	0	0	50	2.8099	2.6548
2010	P.L. 111-291	2	1	1	52	3.8099	3.6548
2012	P.L. 112-96	1	1	1	53	4.8099	4.6548
2017	P.L. 115-31	1	1	1	54	5.8099	5.6548

* Rounded to 4th decimal place

In particular, Discretion 2 and Discretion 3 can only differ significantly when delegation provisions within an act are more than constraint provisions, but this case does not occur during the periods of this analysis. As a result, measurements Discretion 2 and 3 are statistically similar.

Table 4.3: Comparison of Discretion Measures

Distributions of Discretion 1 and Discretion 2								
		Discretion 2						
		0.8099	1.8099	2.8099	3.8099	4.8099	5.8099	Total
Discretion 1	46	100	0	0	0	0	0	100
	47	0	300	0	0	0	0	300
	49	0	50	0	0	0	0	50
	50	0	0	200	0	0	0	200
	52	0	0	0	100	0	0	100
	53	0	0	0	0	250	0	250
	Total	100	350	200	100	250	150	1,150
Distributions of Discretion 2 and Discretion 3								
		Discretion 3						
		0.6548	1.6548	2.6548	3.6548	4.6548	5.6548	Total
Discretion 2	0.8099	100	0	0	0	0	0	100
	1.8099	0	350	0	0	0	0	350
	2.8099	0	0	200	0	0	0	200
	3.8099	0	0	0	100	0	0	100
	4.8099	0	0	0	0	250	0	250
	5.8099	0	0	0	0	0	150	150
	Total	100	350	200	100	250	150	1,150

Second, the fiscal condition of a state government generally represents the “ability to timely meet financial obligations” (Wang et al., 2007, p. 3), subject to current and future commitments (Mead, 2002). However, fiscal condition consists of several dimensions and numerous factors; these components and the balance between them are expected to influence policy decisions in different directions with varying degrees (Berne & Schramm, 1986). The first dimension involves properties of the environments that a government faces, which are external and out of their control, while the latter dimension, properties of fiscal structures, depends on

financial choices by governmental policy makers and other direct participants, and are controlled relatively easily (Berne & Schramm, 1986; Hendrick, 2004).

Table 4.4: Dimensions and Factors of Fiscal Health in a Government

1. Environments	<ol style="list-style-type: none"> 1) Wealth of Revenue: Tax Bases, Other Revenue Sources 2) Spending Needs: Function of Miles of Road, Range of Governmental Services, Cost of Delivery 3) Socioeconomic, Political, and Demographic Features: Population, Economy
2. Fiscal Structures	<ol style="list-style-type: none"> 1) Fiscal Slack: Function of Level of Flexibility, Discretion, Surplus in a Fiscal Structure, Fund Balance, Discretionary Spending 2) Revenue Sources Composition/Dependency on Few Revenue Sources 3) Possible Debt Instruments 4) Amount of Debt/Fund deficits/Fund Borrowing/Short Term Borrowing 5) Liquidity 6) Current Spending Function 7) Future Obligations on Debt, Pensions, Deferred Maintenance, Long-term contract, Unfunded Liabilities

Fiscal conditions can be defined by: 1) current financial capacity to keep providing basic government services, indicatable by revenue-to-expense ratio and surplus/deficit-to-population ratio; 2) fiscal stress/crisis, in which a government suffers from extreme financial problems and struggles to provide public services due to changes of the external environment, such as unemployment rate, poverty level, per capita income change, general fund balance-to-general fund spending, balance of stabilization fund, the growth rate of absolute tax effort, and tax revenue per real personal income; 3) financial achievements shown by net assets, fund equity, and net cash flows; 4) liquidity proportions of cash, cash equivalents, investments, and receivables in current liabilities; and 5) solvency related to short-term debts, long-term debts, a total debt-to-assets ratio, and total debt per capita (Chaney et al., 2002; Douglas & Gaddie, 2002;

Hou, 2003; Jimenez, 2009; Nathan & Adams, 1976; Relations, 1979; Wang et al., 2007; Wolkoff, 1987). And research on financial condition of local governments suggest different categories and indicators as Table 4.5 shows.

Table 4.5: Categorization of Fiscal Condition

Chaney et al. (2002)	Wang et al. (2007)	Wang et al. (2007)
<p>Financial Position</p> <p>Variations on Fund Balance/Revenues, Expenditures</p> <p>Unrestricted Net Assets/Expenses</p>	<p>Budget Solvency</p> <p>Total Revenue/Total Expense</p> <p>Total Surplus (Deficit)/Population</p> <p>Service Solvency</p> <p>Total Revenue/Population</p> <p>Total Expenses/Population</p>	<p>Capacities (Revenues, Assets, and Other Resources)</p> <p>Revenue Diversity (Recurring Intergovernmental Revenue, Revenue Elasticity)</p> <p>Revenue Collected</p> <p>State Economy</p> <p>Residents and Business Growth</p> <p>Account Receivable</p> <p>Surplus Resources</p> <p>Physical Assets and Long-term Investments</p> <p>Fund Balance</p> <p>Revenue Reserves</p> <p>Cash and Short-term Investments</p>

		Expenditures and Liabilities Spending Needs and Demands, Cost Residents and Business Growth State and Federal Mandates Long-term Debt Short-term Debt Unfunded Pension Liabilities Deferred Maintenance Budgeted Expenditures Spending Priorities Account Payable
Financial Performance Change in Total Net Assets Change in Net Assets Total Net Assets		
Liquidity Quick Ratio of Case/ Current Liabilities	Cash Solvency Cash + Cash Equivalents + Investments/Current Liabilities Cash + Cash Equivalents + Investments + Receivables/Current Liabilities Current Assets/Current Liabilities	Net Financial Condition (Balance and Solvency) Long-term solvency Spending Needs Relative to Revenue Wealth Long-term Liabilities/Long-term Wealth Service Level Solvency Revenue Burden
Solvency Short and Long-term Debts-to-Assets Ratio	Long-run Solvency Restricted and Unrestricted Net Assets/Total Assets Long-term (non-current) Liabilities/Total Assets Long-term (non-current)/Population	Spending Relative to Needs Slack Relative to Risk Cash Solvency Budgetary Solvency Operating Position Liquidity

		Expenditures Relative to Revenues Shor-term Slack
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These numerous approaches to measuring fiscal condition introduce their own limitations when focused on specific research objectives, owing to their interactions with residents' need, budgetary processes, and governmental decisions (Alm et al., 1993; Aronson & Hilley, 2010; Bahl, 1984; Hendrick, 2006; Hendrick et al., 2006; Jimenez, 2009; Pagano & Moore, 1985). Among various measures representing fiscal conditions of states, this study focuses on fiscal slack to present a flexibility allowing governments to buffer uncertainty from environmental changes (Hendrick, 2004). Rainy day fund (budget stabilization fund) maintains a balanced budget and preserves financial flexibility by weathering revenue fluctuations due to economic cycles so it has been often used in numerous studies as an index to indicate fiscal slack_(Bruch et al., 2018; Hendrick, 2004; Michael A. Pagano, 2002; Pagano & Johnston, 2000; Sobel & Holcombe, 1996). The year-end balance of stabilization fund in the National Association of State Budget Officers' Fiscal Survey of the States series was also used as a measure of the fiscal condition of states for this study, to test the impact of fiscal slack of state governments.

The third and fourth independent variables of interest are the partisan affiliations of state governors and legislators, to test the impact of government's political preferences on welfare generosity. The accumulated evidence of the relationship between citizens' political preferences and electing a Democrat or a Republican representative is well established (Abramowitz, 2010; Campbell et al., 1980; Einstein & Glick, 2018; Fiorina Morris et al., 2005; Green et al., 2004; Lee et al., 2004). Public views on different racial groups and immigrants are reflected and articulated at the same time by partisan affiliation (Keita & Mandon, 2018). According to the

significant evidence that the political affiliation of governors and legislators affects policy decisions in their states (Beland, 2015; Beland & Unel, 2018; Besley & Case, 2003; Keita & Mandon, 2018; Reed, 2006), this study's model uses the partisan affiliation of the state's governor and the legislative control of the state senate and house collected from National Conference of State Legislatures. Governor is a binary variable coded as 1 if state governor is Democratic and 0 if state governor is Republican and other. Legislative control is also a binary variable, coded as 1 if both houses of the state legislature are controlled by the Democratic party and 0 if both houses are controlled by the Republican party or by different parties.

The last independent variable of interest is racial diversity. A significant body of study demonstrated that voters in demographically dominant groups and governors with conservative ideology are more reluctant to support redistribution, due to fear of relative disadvantages for the dominant race population and concerns that social welfare benefits would drive labor supply decreases (Conlan & Posner, 2016; Fox, 2012; Martin, 1999; Page, 2015; Rugh & Trounstein, 2011). For measures representing racial heterogeneity, this study looks to the widely used Gini-Simpson index and Shannon index (Mendes et al., 2008). The Gini-Simpson index gives more weight to large species where p_i denotes the number of individuals of species i divided by the total number of individuals in that community as the relative abundance of species i (Guiasu & Guiasu, 2012; Heip et al., 1998; Mendes et al., 2008; Yeom & Kim, 2011; Yue & Clayton, 2005). The value of the Gini-Simpson Index ranges from 0 to 1; 0 means no diversity while 1 means infinite diversity. The Shannon Index is the sum of products of the percentage of races in the total population and their natural logs. This measure attempts to account for more richness than the Gini-Simpson Index, managing the degree of uncertainty when predicting one person's racial orientation (Mendes et al., 2008; Yeom & Kim, 2011). For example, if the society

is highly racially diverse, the uncertainty of prediction is low; this index is 0 when the population is perfectly homogeneous (McLaughlin et al., 2015).

$$\text{Gini-Simpson Index} = 1 - \sum_{i=1}^n p_i^2 \quad (4-1)$$

$$\text{Shannon Index} = \sum_{i=1}^n p_i \ln p_i \quad (4-2)$$

Data and Models

As discussed in Chapter 3, this study measured the level of states' discretion in TANF programs through the provisions of welfare reforms. Changes of discretion were identified within welfare reform acts, and then the level of one-year lagged discretion was used as an interacting key variable with five independent variables of interest (rainy day fund balance ratio in state's total expenditure budget; partisan affiliation of state governor; legislative control of the state; governmental ideology index; and racial diversity to check for moderating effects on welfare spending.

Table 4.6: Descriptive Statistics

Variables	N	Mean	SD	Min	Max
State	1150			1	50
Year	1150			1997	2019
Dependent Variable					
TANF Expenditure per Capita+	1150	79.80782	48.90123	-14.45341	288.1797
Independent Variables of Interest					
Discretion 1	1100	50.02909	2.797222	46	54
Discretion 2	1100	3.146264	1.551525	.8099	5.8099
Discretion 3	1100	2.991164	1.551525	.6548	5.6548

Rainy Day Fund Balance Ratio	1143	.0293775	.0992003	-.0237641	1.353856
Governor*	1150	.4165217	.4931966	0	1
Legislature**	1149	.3655352	.4817896	0	1
Government Ideology	1050	45.56429	15.41206	17.51221	73.61864
Gini-Simpson Index	1150	.3864952	.1570623	.0467	.6716
Shannon Index	1150	.7549689	.2574838	.1447	1.2273
Control Variables					
Poverty Rate	1150	13.03217	3.215393	5.6	23.9
Unemployment Rate	1150	5.341652	1.930434	2.2	13.7
State GDP++	1150	25.89173	1.051098	23.70688	28.65721
% of the Population Over 65 Years old	1150	13.69366	2.285472	5.118864	21.94346

+ Real Value as of 2012; ++ Real Value as of 2012 and Natural Logarithm of the Value

* 0: Republican and Other Governor, 1: Democrat Governor

** 0: Republican, Separate, and Other Control, 1: Democrat Control

Each state's expenditures were collected from TANF reports compiled by the Office of Family Assistance in the Office of the Administration for Children and Families for the period 1997-2019. Rainy day fund balance, projection accuracy on expenditure, and total general fund expenditures were obtained from the Fiscal Survey of States by the National Association of State Budget Officers, though a few states failed to report these over the years. For calculations of projection accuracy, unavailable actual data or unavailable enacted year data were replaced by available preliminary data. In sum, I used a panel of the 50 states over 23 years for the main estimation of total TANF expenditures.

Table 4.7: Data Sources

Variables	Source
TANF Expenditure	State TANF Data and Reports (An Office of the Administration for Children & Families, Office of Family Assistance)
Rainy Day Fund Balance	The Fiscal Survey of States (National Association of State Budget Officers)
Party Affiliation of Governor Party Control of Legislature	National Conference of State Legislatures
Government Ideology	Richard C. Fording State Ideology Data*
Race Statistics	Bridged-Race Population Estimates (National Center for Health Statistics)
State Total Expenditure State Population	The Fiscal Survey of States (National Association of State Budget Officers)
State' % of the Population Over 65 Years old Unemployment Rate State GDP State Poverty Rate	U.S. Bureau of Economic Analysis

* <https://rcfording.com/state-ideology-data/>

This study tested two-way linear fixed and two-way random effect regressions with panel data to control causal effects of state- and time-specific characteristics. The mathematical equation of the first restricted model and the mathematical equation of the second full model with interactions are written as follows:

$$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (4-3)$$

$$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} R_{it} + \beta_7 D_{t-1} G_{it} + \beta_8 D_{t-1} L_{it} + \beta_9 D_{t-1} I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (4-4)$$

The regressions includes: parameter D_{t-1} is the level of states' discretion in year t-1; parameter R_{it} is the ratio of the rainy day fund balance in the total expenditure of state i's budget in year t to control the effect of differences in state government size; parameter G_{it} is a categorical variable to represent whether state i's governor's party affiliation is Democratic or the others in year t; parameter L_{it} is also a categorical variable to represent whether both the state senate and house of representatives are controlled by Democratic, or the others; parameter I_{it} is the value of the racial diversity index of state i in year t; parameter X_{it} is a vector of control variables; μ_i denotes the unobserved attributes of groups that do not change with time; δ_t denotes the unobserved attributes of time that do not change with groups; ε_{it} denotes the residuals unexplained by the regression; and Y_t represents the dependent variable, state's real value of TANF expenditures divided by population of a state as of 2012. Furthermore, the interaction terms with the one-year lagged discretion variable in the equation estimate the moderating effect of state discretion on fiscal condition ($D_{t-1}R_{it}$), state governor's political affiliation ($D_{t-1}G_{it}$), legislative control ($D_{t-1}L_{it}$), and racial diversity ($D_{t-1}I_{it}$).

Several economic and demographic factors that might influence welfare program expenditures differently were included as control variables, in accordance with previous literature. The poverty rate, unemployment rate, real GDP in each state as a natural logged form, and the ratio over 65 years old were included in the model since they can create differences in TANF expenditures (Hayashi, 2014; Hero & Levy, 2018; Rodney E. Hero & Robert R. Preuhs,

2007; Klerman & Danielson, 2016; Rodgers, 2005; Rodgers & Tedin, 2006; Schildkraut, 2001; Snarr, 2013; Vu, 2014; Wallace, 2007).

In addition, the restricted model and the full model that government ideology indicator (B_{it}) developed by Berry et al. (1998) replacing governor's party affiliation and legislature control were estimated as well. The government ideology indicator represents the average location of the elected officials including the governor, and two major parties in each legislative chamber in each state on a liberal-conservative continuum and higher number indicates more liberal ideology. However, the indicator is only available until 2017, and the third and fourth model are tested with data of 50 states for 20 years from 1997 to 2017. The mathematical equations of the regression models with government ideology are written as follows:

$$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (4-5)$$

$$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \beta_5 D_{t-1} R_{it} + \beta_6 D_{t-1} B_{it} + \beta_7 D_{t-1} I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (4-6)$$

Before running regressions, I conducted correlation analyses of the data set in preparation for the development of regression models first and test results showed there was no ground for concerns regarding multicollinearity. Secondly, I ran the entry wise and hierarchical regression analysis to fit multiple regression models to test the hypotheses of this study. The entry wise regression analysis compares the model having one interaction term with discretion and one of the key explanatory variables to the basic model having no interaction term while the hierarchical regression analysis compares the models by adding interaction terms gradually. As results, inclusion of the interaction term of legislature control and discretion in models appeared not to significantly improve the regression model's fitness while other interactions are more

likely to improve the fitness through these tests. However, this study keeps the legislature control variable and its interaction term with discretion since the correlation analysis showed its collinearity is less likely to be problematic. Analyses on checking multicollinearity and model specification by testing entry wise and hierarchical regressions are explained in appendix A at the end of this dissertation.

Lastly, I compared two-way fixed and random effect model estimations assuming fixed effects for time (year) and group (state); fixed effects for time and random effects for group; and random effects for time and group with different discretion and diversity measures to control the effect of regional characteristics and time specific attributes in the panel data set, which covered 50 states and 23 years. To find the best fit models, I ran the F-test for the fixed effect, the Breusch and Pagen likelihood ratio test for the random effect, and the Hausman test to compare the fixed and random models to control group (state) and time (year) effects (Kunst, 2009). As a result, both group and time, in turn, have significant effects on the dependent variable and the Hausman test result statistics suggested that fixed effect models are more properly specified than random effect models, consistently across discretion measures 1, 2, 3 and both the Gini-Simpson and Shannon indices, therefore two-way fixed effect model estimations were analyzed.

Result and Discussion

I tested 24 two-way fixed effect models focusing the moderating effect of discretion with three different discretion measures (Discretion 1, Discretion 2 and Discretion 3), two diversity indices (Gini-Simpson Index and Shannon Indices), fiscal condition (ratio of rainy-day fund balance in total expenditure), and political ideology (governor's party affiliation and legislative control of states). The first six restricted two-way fixed effect models, with governor, legislature control, and one of the three discretion measures, are tested with either Gini-Simpson or Shannon

index (restricted G-L models) and six full two-way fixed effect models with all interaction terms are tested next (full G-L models). Furthermore, six restricted two-way fixed effect models with government ideology and one of the three discretion measures with either Gini-Simpson or Shannon index (restricted GI models) and six full models with all additional interaction terms are tested next (full GI models). Most results of the estimations were consistent in all models while several coefficients of key variables yielded different statistical significances in models with different combinations of variables. This finding shows that the new discretion measure (Discretion 3) developed in Chapter 3 is comparable to the other discretion measures and therefore applicable to indicate the level of discretion in different decentralized programs or policies in future research.

Specifically, all three discretion measures are not statistically significant in restricted models, as this study assumed discretion as a moderator in the first six restricted G-L models, as shown in Table 4.8. Democratic governor and Democratic control in the state legislature were likely to spend more in TANF, in accordance with previous literature, while rainy-day fund ratio showed a negative relationship; per capita TANF expenditure and racial diversity were not statistically significant, contrary to existing theory in restricted models.

Table 4.8: Restricted Models with Governor and Legislature Control (Restricted G-L Models)

VARIABLES	Per Capita TANF Expenditure					
	(1) D1& Gini- Simpson	(2) D2& Gini- Simpson	(3) D3& Gini- Simpson	(4) D1& Shannon	(5) D2& Shannon	(6) D3& Shannon
Discretion	-2.47 (2.81)	-6.88 (4.30)	-6.88 (4.30)	-2.37 (2.81)	-6.79 (4.30)	-6.79 (4.30)
Rainy Day Ratio	-31.01*** (9.38)	-31.01*** (9.37)	-31.01*** (9.37)	-30.81*** (9.38)	-30.82*** (9.37)	-30.82*** (9.37)
Democrat Governor	2.72** (1.22)	2.68** (1.22)	2.68** (1.22)	2.73** (1.22)	2.69** (1.22)	2.69** (1.22)
Legislature Control	3.69**	3.71**	3.71**	3.27**	3.29**	3.29**

by Democrat	(1.66)	(1.66)	(1.66)	(1.63)	(1.62)	(1.62)
Racial Diversity	-35.31 (47.02)	-35.43 (46.96)	-35.43 (46.96)	12.89 (28.82)	12.69 (28.79)	12.69 (28.79)
Observations	1,094	1,094	1,094	1,094	1,094	1,094
R-squared	0.250	0.251	0.251	0.250	0.251	0.251
Number of State	50	50	50	50	50	50

+ 1: Democrat 2: Other 3: Republican

++ 1: Democrat 2: Other 3: Republican 4: Separate

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Also, in full G-L models, the coefficients of discretion are statistically insignificant in all six models, while rainy-day fund ratio is positively related to TANF expenditure, contrary to the results in restricted models consistent with the assumptions of this study and existing literature. Furthermore, the effect of racial diversity is statistically significant in two models, with more diversity related to more TANF expenditure.

Table 4.9: Full Models with Governor and Legislature Control (Full G-L Models)

VARIABLES	Per Capita TANF Expenditure					
	(7) D1& Gini- Simpson	(8) D2& Gini- Simpson	(9) D3& Gini- Simpson	(10) D1& Shannon	(11) D2& Shannon	(12) D3& Shannon
Discretion	-2.08 (2.77)	-5.52 (4.28)	-5.52 (4.28)	-2.34 (2.78)	-5.88 (4.30)	-5.88 (4.30)
Rainy Day Ratio	1109.44*** (159.13)	112.02*** (25.09)	107.19*** (24.37)	1173.04*** (160.58)	119.84*** (25.26)	114.75*** (24.53)
Rainy Day Ratio#	-21.49*** (2.99)	-31.16*** (5.04)	-31.16*** (5.04)	-22.69*** (3.02)	-32.87*** (5.09)	-32.87*** (5.09)
Democrat Governor	69.23*** (20.46)	9.63*** (2.53)	9.23*** (2.43)	72.15*** (20.38)	10.00*** (2.53)	9.58*** (2.43)
Democrat Governor#	-1.35*** (0.41)	-2.57*** (0.75)	-2.57*** (0.75)	-1.41*** (0.41)	-2.67*** (0.75)	-2.67*** (0.75)
Legislature Control by Democrat	4.64 (22.19)	3.23 (2.85)	3.24 (2.75)	2.51 (22.07)	2.73 (2.83)	2.75 (2.73)
Legislature Control by Democrat#Discretion	-0.02 (0.45)	0.09 (0.80)	0.09 (0.80)	0.01 (0.44)	0.15 (0.80)	0.15 (0.80)
Racial Diversity	-111.73* (66.64)	35.31 (47.18)	36.12 (47.24)	-35.64 (40.33)	59.80** (29.06)	60.33** (29.10)
Racial Diversity # Discretion	3.49*** (1.22)	5.20** (2.21)	5.20** (2.21)	2.32*** (0.76)	3.42** (1.39)	3.42** (1.39)

Observations	1,094	1,094	1,094	1,094	1,094	1,094
R-squared	0.296	0.287	0.287	0.298	0.289	0.289
Number of State	50	50	50	50	50	50

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

In six restricted models with government ideology (restricted GI models), estimation results on overlapping variables are consistent with the previous six restricted G-L models, as shown in Table 4.10. Additionally, more progressive governments are related to generous TANF expenditure, in accordance with existing theory and the assumptions of this study.

Table 4.10: Restricted Models with Government Ideology Index Variable

VARIABLES	Per Capita TANF Expenditure					
	(1) D1& Gini- Simpson	(2) D2& Gini- Simpson	(3) D3& Gini- Simpson	(4) D1& Shannon	(5) D2& Shannon	(6) D3& Shannon
Discretion	-2.60 (2.92)	-7.25 (4.46)	-7.25 (4.46)	-2.55 (2.92)	-7.23 (4.46)	-7.23 (4.46)
Rainy Day Ratio	-42.80*** (10.22)	-42.71*** (10.21)	-42.71*** (10.21)	-42.76*** (10.22)	-42.68*** (10.21)	-42.68*** (10.21)
Government Ideology	0.13** (0.06)	0.13** (0.06)	0.13** (0.06)	0.12** (0.06)	0.12** (0.06)	0.12** (0.06)
Racial Diversity	-36.06 (52.29)	-35.62 (52.23)	-35.62 (52.23)	5.49 (32.38)	5.46 (32.35)	5.46 (32.35)
Observations	995	995	995	995	995	995
R-squared	0.211	0.213	0.213	0.211	0.212	0.212
Number of State	50	50	50	50	50	50

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

In all six full GI models, discretion is also statistically insignificant, regardless of the method of measurement, as this study assumes discretion as a moderator while the interaction terms with discretion measures and key explanatory variables are consistently significant to prove the moderating effect of discretion. More detailed explanations on the coefficients of product variables in the 12 full G-L and GI models will be discussed further in the following section.

Table 4.11: Results of Full Models with Government Ideology Variable (Full GI Models)

VARIABLES	Per Capita TANF Expenditure					
	(7) D1& Gini- Simpson	(8) D2& Gini- Simpson	(9) D3& Gini- Simpson	(10) D1& Shannon	(11) D2& Shannon	(12) D3& Shannon
Discretion	-2.19 (2.97)	-5.54 (4.62)	-5.54 (4.62)	-2.48 (2.97)	-6.04 (4.64)	-6.04 (4.64)
Rainy Day	971.73*** (175.27)	77.15*** (28.21)	73.19*** (27.43)	1,032.09*** (176.30)	84.37*** (28.31)	80.14*** (27.52)
Rainy Day # Discretion	-19.01*** (3.27)	-25.57*** (5.46)	-25.57*** (5.46)	-20.16*** (3.29)	-27.30*** (5.49)	-27.30*** (5.49)
Government Ideology	1.60** (0.74)	0.31*** (0.11)	0.30*** (0.10)	1.72** (0.74)	0.32*** (0.11)	0.31*** (0.10)
Government Ideology # Discretion	-0.03** (0.01)	-0.06** (0.03)	-0.06** (0.03)	-0.03** (0.01)	-0.07** (0.03)	-0.07** (0.03)
Racial Diversity	-184.46** (75.69)	24.50 (52.58)	25.83 (52.62)	-83.46* (45.79)	49.99 (32.71)	50.84 (32.75)
Racial Diversity # Discretion	4.89*** (1.36)	8.63*** (2.63)	8.63*** (2.63)	3.17*** (0.85)	5.53*** (1.65)	5.53*** (1.65)
Observations	995	995	995	995	995	995
R-squared	0.249	0.240	0.240	0.251	0.242	0.242
Number of State	50	50	50	50	50	50

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

First of all, the effect of discretion itself is not statistically significant in all twelve models, as this study initially assumes the variable of discretion to be a moderator, in accordance with hypothesis 1. On the other hand, the moderating effects of discretion on other variables of interest (rainy day fund ratio, party affiliation of governor, and racial diversity) are significant enough to change the direction of the coefficients in many cases, so discretion represents a key moderating role on TANF expenditures in this analysis.

Second, a higher rainy-day fund balance ratio is likely related to more per capita TANF expenditures, consistent with previous research and hypothesis 2a in this study linking states in better fiscal condition to greater spending on welfare programs in all full models. On the other

hand, the coefficient of the interaction term of one-year lagged discretion and rainy-day fund ratio turned out to be significantly negative in all full models. Figure 4.1 demonstrates that as discretion increases, the negative slope of the rainy-day fund becomes steeper: higher discretion and a higher rainy-day fund balance is likely related to lower TANF expenditure. Contrary to the initial expectation of this study, discretion does not strengthen the effect of rainy-day fund balance on TANF expenditure, but changes its direction. In other words, as discretion increases, states can easily change the TANF benefit level, standards of qualification, and maximum length of benefits. Therefore, when states have more flexibility to run TANF programs, as compared to other similar welfare programs, those with more state savings may want to spend their budget on other, more stable and efficient, welfare programs instead of TANF. On the other hand, states with worse financial conditions might want to use their flexibility to prioritize TANF programs.

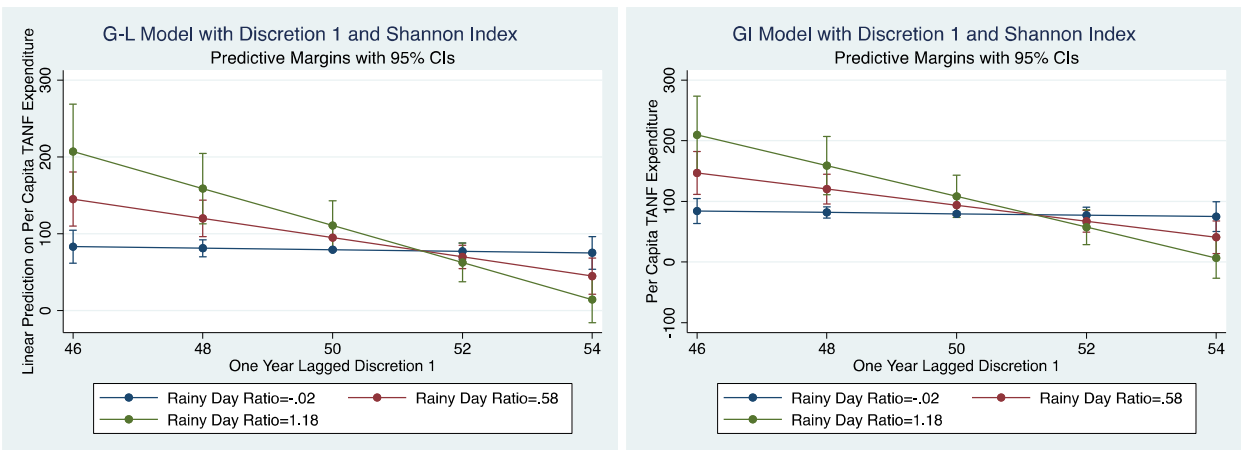


Figure 4.1: Interaction Effect of Rainy-Day Ratio and Discretion

Third, Democratic governors are likely to spend more on TANF programs in the full G-L models than Republican and other governors (Figure 4.2), and governments with more liberal ideology are likely to spend more in TANF programs in full GI models (Figure 4.3), consistent with the literature of political institution theories on political affiliations that Republicans are less

generous on welfare programs. Party legislature control is not statistically significant in the full G-L models.

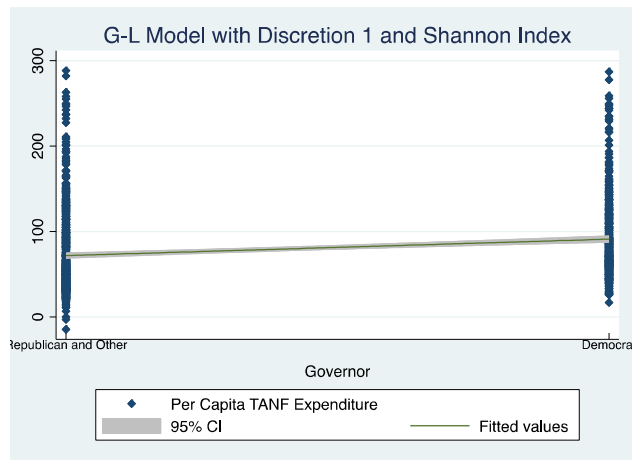


Figure 4.2: Governor's Partisan Affiliation and per capita TANF Expenditure

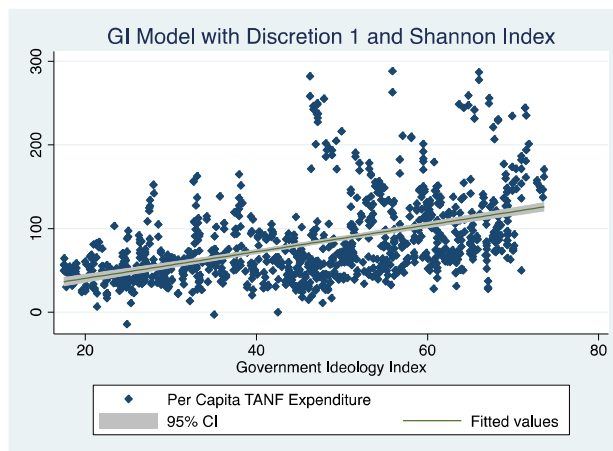


Figure 4.3: Government Ideology and per capita TANF Expenditure

On the other hand, the interaction of discretion with a Democratic governor is negatively related to per capita TANF expenditure (Figure 4.4), and the interaction of discretion with government ideology index also has a negative effect on welfare spending (Figure 4.5). This negative relationship of political stance and welfare spending when discretion increases can be explained in two ways. If state-level TANF discretion is low, Republican governors and conservative state governments are more hesitant about expanding welfare program for fear of

the flypaper effect, in which governments are not able to retrench spending once it is increased (Bailey & Connolly, 1998). However, significant discretion to change the programs can motivate expanded spending, since the states are confident that they can cut TANF expenditures easily when it is necessary. Furthermore, as Republican governors and governments with conservative ideology gain more discretion, they could be inclined to put more money in TANF, to divert it to other, more favored policies in order to redirect funds for other purposes.

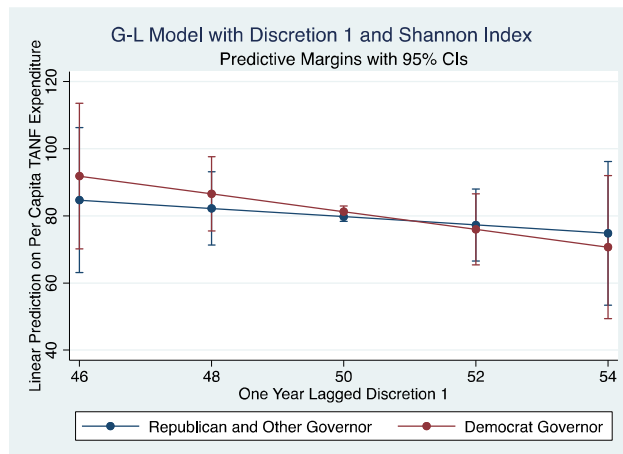


Figure 4.4: Interaction of Governor's Partisan Affiliation and Discretion

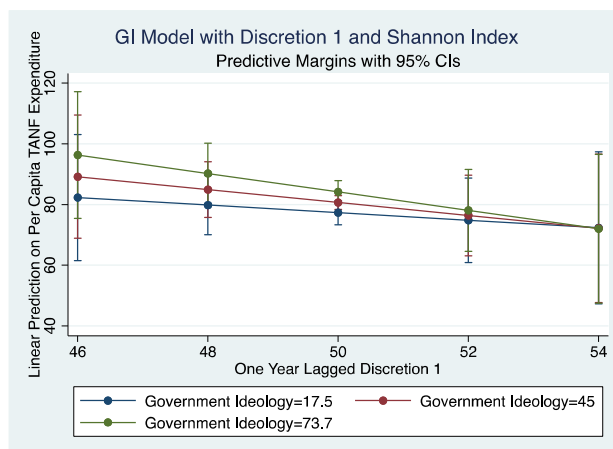


Figure 4.5: Interaction of Government Ideology and Discretion

Finally, estimations of racial diversity show complicated results like extant research evidence although multiculturalism theories expect states with more diverse racial groups are more reluctant to expand welfare programs. In two estimations, more diversity in racial

composition is related to more spending on TANF, while more racial diversity is related to less TANF spending in one estimation, across six G-L models. On the other hand, more diversity appears to be related to more TANF expenditure in two estimations among six GI models. More importantly, however, the interaction terms of racial diversity and discretion have statistically significant positive effects on TANF expenditure in all 12 models, consistently across regressions with either Gini-Simpson or Shannon indices. Therefore, states with racially diverse composition appear to expand welfare programs more if they have a higher level of discretion, suggesting that racial groups in need can benefit from decentralized welfare production.

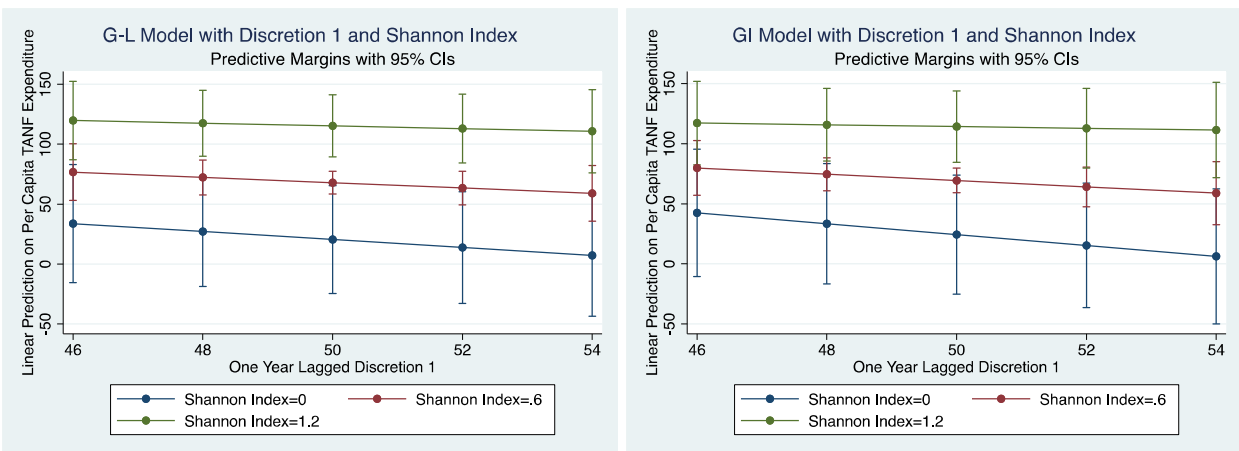


Figure 4.5: Interaction Effect of Racial Diversity and Discretion

Conclusion

The results of these estimations, though consistent with the literature on welfare state theory, introduce several novel aspects. First, while the steady weakening of TANF's role as a safety net program in its expenditure is well observed, research on the moderating influence of discretion on spending diversity across states is limited. This work captures the moderating effect of discretion, by its interactions with factors drawn from welfare state theory, and the results

support the hypothesis that discretion plays a substantial role as a moderator. The moderating effect of discretion can help explain mixed results in welfare state research on the impacts of governmental characteristics and environmental conditions on welfare policy. Furthermore, this essay investigated the moderating effect of discretion on rainy day fund balance, state governor's partisanship, state legislature control, government ideology, and racial diversity in TANF programs, but socio-economic constraints, political institutions, ethnic composition and other conditions drawn from welfare state theory are more likely to interact with each other instead of affecting policy decisions in isolation. Therefore, it will be more fruitful if future studies can evaluate the mediating effects of factors from welfare state theory and the moderating effects of discretion simultaneously, and track their relationships within welfare policy decisions.

Second, this essay tested rainy-day fund ratio, representing fiscal slack as an indicator of fiscal condition. However, fiscal condition of government is too comprehensive a concept with multiple dimensions, as discussed in Variables of Interest section in this essay, for one variable of rainy-day fund ratio to denote. Therefore, additional indicators reflecting other dimensions (financial position, budget solvency, service capacity, liquidity, and/or long-term solvency) can be included in next study to test the effect of fiscal health on welfare expenditures.

Third, while this study only used per capita total expenditures on TANF programs as the dependent variable representing state governmental policy decisions, other indicators should be studied as well. Other dependent variables could include caseload, number of recipients, share of basic assistance in total program expenditure, expenditure per recipient, and poverty rate. However, this study chose to focus on changes of expenditure for two reasons. It allowed for concise modeling with fewer control variables and concentration on the discretion of subordinate state governments: one, changes of caseload and expenditures are explicitly stated as goals of

AFDC/TANF reforms in federal acts and amendments; two, caseload and expenditures are direct products, or policy outcomes, of actions by state governments, compared to other concepts, like poverty rate. and analyzed with various dependent variables like caseload, recipient, share of basic assistance in total program expenditure, and expenditure per recipient.

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CHAPTER 5

CONCLUSION

Introduction

Scholars have both applauded and bemoaned federalism/decentralization in public policy. Though the traditional literature in fiscal federalism suggests that the national/federal government takes primary responsibility for income redistribution, U.S states have significantly engaged in redistribution (Gordon & Cullen, 2012a), especially via decentralized cash assistance programs (Sandra Wexler & Rafael J. Engel, 1999). Although the significance of Temporary Assistance for Needy Families (TANF) as a redistribution policy is decreasing (Floyd et al., 2018), differing TANF caseloads and benefit levels based on policy variations across states through the use of discretion can be explored to better understand state welfare programs.

This dissertation examined welfare reforms in the U.S. since 1935 to track how ADC (Aid to Dependent Children)/AFDC (Aid to Families with Dependent Children)/TANF (Temporary Assistance for Needy Families) programs have responded to policy instruments and state-level discretion. Chapter 2 explored the distinct features of these cash assistance programs. Chapter 3 analyzed and measured discretion granted through decentralization by applying the Natural Language Processing (NLP) method to the text of welfare reform acts. Finally, the results of the analysis in Chapter 3 and panel data were used to study the relationships between discretion and welfare state theory and their impact on TANF expenditures.

This chapter summarizes the major findings of the previous chapters and discusses its contributions to the literature in public budgeting and finance, public administration, and policy. Also, limitations and next steps for research and practice are identified.

Summary of Findings

Each welfare reform in the U.S. since 1935 has reshaped ADC/AFDC/TANF programs, and state-level welfare goals and discretion have changed regularly to reflect economic situations, public demands, and political opinions. AFDC and TANF programs have been significantly affected by changing federal reform goals and how much discretion these policy instruments leave for states to operate them. Especially since the passage of PRWORA, states have been expected to run TANF programs innovatively, with greater discretion, to meet their own needs (Pimpare, 2012), resulting in variation across states as they balance their own goals with those of national welfare policy. Implemented legislation by each state varies across multiple dimensions: thresholds for eligibility; the amount of cash assistance; categories of eligible individuals; time limits; work requirements (and the definition of work); the generosity of childcare subsidies; sanction policies for abusers; diversions of programs or payments to decrease applications; contracting status; funding and oversight of the pertinent agents; how street-level departments interpret and implement written law; and usage of waivers (Rowe, 2000).

To measure the level of discretion, Chapter 3 analyzed legislation demonstrating right and obligation of delegated entities to run designated programs and policies, using 50 provisions within federal acts related to TANF programs between 1996 and 2019. By combining the structures of Ash et al. (2019a) and Vannoni et al. (2019), I suggested a new lexical framework to demonstrate four categories of sentences in provisions (delegation, constraint, permission, and entitlement) affecting state government's discretion. Also, a new measure of discretion able to represent the case when discretion decreases was developed in Chapter 3. The findings indicated that discretions for state governments increased in 15 acts and remained static in 3 acts, to show

that the level of discretion has not been static or steadily changing in one direction, but has increased to different degrees.

Lastly, Chapter 4 investigated how states' discretion, political and institution theory, and racial theory interact to affect TANF expenditures. Using the three measures of discretion calculated in Chapter 3, the study tested fiscal condition; governor's political affiliations; partisan control of state legislature; political ideology; and racial diversity using two-way fixed regression models in the panel data set, which covered 50 states and 23 years. To estimate the effects of test variables, I used 12 models focusing the moderating effect of discretion with three different discretion measures (Discretion 1, Discretion 2, and Discretion 3) and two diversity indices (Gini-Simpson index and Shannon index) on fiscal condition (rainy-day fund balance), political ideology (governor's party affiliation, legislative control of states, government ideology index), and racial diversity. The overall results suggest that the effects of the rainy-day fund, state governor's party affiliation, government ideology index, and racial diversity on TANF expenditures significantly change when discretion increases.

Contributions

The first essay developed an expanded understanding of AFDC/TANF history since 1935, focusing on the federal acts that significantly reformed the cash assistance program. It discussed amendable agenda items beyond caseload and benefit level within a TANF program and the sources and instruments of variety granted by governmental decisions on welfare policy, and weighed the benefits and costs of utilizing discretion using competing welfare state theories under environmental constraints.

In the second essay, I integrated syntactic structure suggestions from both Ash et al. (2019a) and Vannoni et al. (2019), to include more structures among the suggested examples.

Ash et al. (2019a) suggested 13 syntactic structures and Vannoni et al. (2019) suggested 12, representing delegation, constraint, permission, and entitlement sentences, and I compared structures of each and suggested a new, more inclusive, syntactic structure capable of detecting more sentences within those four categories.

Third, a new measure of discretion was developed in the second essay; adding this to the two preexisting measures helps to overcome the limitation related to the fact that previous measures, which can only be positive numbers, cannot capture decreasing discretion. It is more comprehensive to assume that the discretion of subjected agents can be decreased by new acts and reforms. Therefore, this study contributes to the literature by suggesting an additional measure of discretion that can work as a negative value; the regression results indicate that this new measure delivered a statistically similar impact as the two established discretion measures.

Fourth, the second essay measured the discretion levels of subordinate governments by focusing on legislation. As one of the most studied fields in federalism, fiscal decentralization has assumed that financial allocations among governments signify level of decentralization or devolution; hence literature on measuring discretion has heavily relied on fiscal data (Bruch et al., 2018; Gemmell et al., 2013; Lindaman & Thurmaier, 2002; Schneider, 2003; Sepulveda & Martinez-Vazquez, 2011). On the other hand, since legislators not only delegate authority to bureaucrats but also use ex ante or ex post control mechanisms to manage policy implementation, these bureaucrats only make decisions and wield power within the prescribed legal text (Epstein & O'halloran, 1994; Gailmard & Patty, 2012; Levine & Forrence, 1990; Martin, 1997; McCubbins et al., 1987; McCubbins & Schwartz, 1984; Vannoni et al., 2019). Federal acts and amendments include comprehensive provisions covering extensive policy areas and explicit and public directions and goals for states' policy implementation. Therefore, the

method developed in this study, to investigate discretion in delegated entities and measure its level, can be applied to measuring any devolved discretion by formal statements in different decentralized policies and programs in future research. Additionally, using computer science language analyzing these provisions with the contexts of public policy and finance issues created more opportunities for integrated research in public administration and policy.

Fifth, while the steady weakening of TANF's role as a safety net program in its expenditure is well-observed, research on the moderating influence of discretion on spending diversity across states is limited. The third essay evaluated the effects of discretion change resulting from TANF reform on each state's per capita TANF spending, using welfare state theory. As a result, this work captured the moderating effect of discretion, by its interactions with factors drawn from welfare state theory, which was only possible using this study's successful measurement.

Limitations and Next Steps

This study suffers from several limitations. First, the results of the provision analysis present a comparative, rather than absolute, level of discretion, reflecting differences from the discretion level in the immediately previous act. Acts contain both completely new provisions and revisions of previous acts due to the nature of the dataset. In other words, legal text in acts does not represent the full stock of legislation describing the scope of actions by governmental agents, but rather shows the flow of them. However, these findings still represent discretion levels of state governments in each given reform act, comparable to the level of discretion in past or future acts, although the results of provision analysis bear a limitation: measured values do not directly present a level of discretion.

Secondly, the findings did not reveal any cases in this data set in which the level of discretion decreased, rendering a negative measure of Discretion 3. However, this new measuring method for discretion creates further research opportunities, since its ability to be negative differs from that of the previous two discretion measures. For example, it will be interesting to track the level of discretion as it decreases, instead of continuously increasing or remaining static, and to assess the ongoing relevance of the welfare state theory as discretion fluctuates. Furthermore, the discretion levels of different welfare programs affected by welfare reform acts may be measured following the methods this study adopted.

Third, while rainy-day fund ratio representing fiscal slack as an indicator of fiscal condition was tested, fiscal condition of government is too comprehensive of a concept for one variable of rainy-day fund ratio to denote. Therefore, additional indicators reflecting other dimensions, such as financial position, budget solvency, service capacity, liquidity, and long-term solvency can be included in next study to test the effect of fiscal health on welfare expenditures.

Fourth, the mediating effects of socio-economic constraints, political institutions, and ethnic composition, and the moderating effects of discretion on the various combinations of states' characteristics, should be explored in future research. The third essay investigated the moderating effect of discretion on rainy-day fund balance, state governor's partisanship, state legislature control, government ideology, and racial diversity in TANF programs, but socio-economic constraints, political institutions, ethnic composition, and other conditions drawn from welfare state theory are more likely to interact with each other instead of affecting policy decisions in isolation. Therefore, it will be more fruitful if future studies can evaluate the

mediating effects of factors from welfare state theory and the moderating effects of discretion simultaneously, and track their relationships within welfare policy decisions.

Fifth, while this study only used per capita total expenditures on TANF programs as the dependent variable representing state governmental policy decisions, other indicators should be studied as well. Other dependent variables could include caseload, number of recipients, share of basic assistance in total program expenditure, expenditure per recipient, and poverty rate.

However, this study chose to focus on changes of expenditure, for two reasons. It allowed for concise modeling with fewer control variables and concentration on the discretion of subordinate state governments. One, changes of caseload and expenditures are explicitly stated as goals of AFDC/TANF reforms in federal acts and amendments; two, caseload and expenditures are direct products, or policy outcomes, of actions by state governments, compared to other concepts, like poverty rate.

In the U.S., sub-national governments are found to be actively involved in redistribution of income regardless of federal government involvement (Gordon & Cullen, 2012b). While states' increasing discretion is one outcome of decentralization, it is not a product of a zero-sum game between federal and state governments. In other words, if states gain more discretion, this does not necessarily mean that the federal government loses an equal amount, since it retains the responsibility to support and monitor state governments. More importantly, the federal government should be able to identify and correct extreme deviations among states and secure desired levels of redistribution in each state government. Therefore, using and expanding upon this study's analysis on the relationship among discretion, welfare state theory, and policy decisions on TANF, future studies should further evaluate decentralization in welfare policy and varying levels of state government discretion.

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APPENDIX A

In preparation for the development of regression models to check for multicollinearity, I conducted a bivariate analysis of the data set. Table A.1 and Table A.2 show a correlation analysis of the variables of interest for the models with governor, legislature control, and Gini-Simpson index, respectively, and Table A.3 and Table A.4 show the correlation analysis for the models with government ideology index and Gini-Simpson index, respectively. In both tests, the average variance inflation factors (VIF) are much less than 10, so there is no ground for concerns regarding multicollinearity (O'brien, 2007). Test results of other combinations with Discretion 2 and 3 and Shannon index also reported similar conclusions on multicollinearity concerns.

Table A.1: Pearson Correlation Matrix with Governor and Legislature Control (N=1093)

	1	2	3	4	5	6	7	8	9	10
1 Per Capita TANF Expenditure	1									
2 Discretion1	-0.1351*	1								
3 Rainy Day/ Expenditure	0.0561	0.0711*	1							
4 Governor	0.1944*	-0.0102	-0.0769*	1						
5 Legislature	0.3471*	-0.0572	-0.1032*	0.2233*	1					
6 Simpson Index	0.1368*	0.1799*	0.0698*	0.0411	-0.1473*	1				
7 Poverty Rate	-0.2399*	0.2612*	-0.1323*	0.1034*	-0.0404	0.2817*	1			
8 Unemployment Rate	0.1585*	0.1054*	0.0324	-0.0745*	-0.1070*	0.2680*	0.4803*	1		
9 GDP	0.2249*	0.1077*	-0.1813*	-0.0432	0.0323	0.5775*	0.1057*	0.2026*	1	

10 Share of 65+	-0.0523	0.5505*	-0.2687*	-0.0214	-0.0656*	-0.1709*	0.1330*	-0.1501*	-0.042	1
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t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.2: Collinearity Diagnostics with Governor and Legislature Control (N=1093)

	VIF	SQRT VIF	Tolerance	R-Squared
Discretion 1	1.86	1.37	0.5365	0.4635
<i>Rainyday Expenditure</i>	1.3	1.14	0.7676	0.2324
Governor	1.1	1.05	0.9079	0.0921
Legislature Control	1.2	1.1	0.8319	0.1681
Gini-Simpson Index	2.03	1.43	0.4922	0.5078
Poverty Rate	1.59	1.26	0.6287	0.3713
Unemployment Rate	1.53	1.24	0.6547	0.3453
GDP	1.75	1.32	0.5706	0.4294
Share of 65+	1.99	1.41	0.502	0.498
Mean VIF	1.60			

Table A.3: Pearson Correlation Matrix with Government Ideology Index (N=994)

	1	2	3	4	5	6	7	8	9
1 Per Capita TANF Expenditure	1								
2 Discretion1	-0.1351*	1							
3 Rainy Day/ Expenditure	0.0561	0.0711*	1						
4 Government Ideology	0.4975*	-0.1318*	-0.0574	1					
5 Simpson Index	0.1368*	0.1799*	0.0698*	0.0324	1				
6 Poverty Rate	-0.2399*	0.2612*	-0.1323*	-0.1780*	0.2817*	1			
7 Unemployment Rate	0.1585*	0.1054*	0.0324	0.0960*	0.2680*	0.4803*	1		

8 GDP	0.2249*	0.1077*	-0.1813*	0.0412	0.5775*	0.1057*	0.2026*	1	
9 Share of 65+	-0.0523	0.5505*	-0.2687*	0.0211	-0.1709*	0.1330*	-0.1501*	-0.042	1

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Secondly, I ran the entry wise and hierarchical regression analyses to fit multiple regression models to test the hypotheses of this study. For this test, the models with Discretion 1, governor, legislature control (G-L models), and Gini-Simpson index, and the models with Discretion 1, government ideology (GI models) and Gini-Simpson index were examined. The entry wise regression analysis compares the model having one interaction term with discretion and one of the key explanatory variables to the basic model having no interaction term while the hierarchical regression analysis compares the models by adding interaction terms gradually. In the entry wise regression analysis with governor and legislature control variables, the value of R-squared in all models increases when an interaction term was added to the basic model, as displayed in Table A.5. But the increases in models 4 and 5 were smaller than others. Furthermore, the likelihood ratio test results showed that the basic model is nested in model 4, while models 2 and 3 are statistically different from the basic model at 99% significance and model 5 at 90% significance, in turn (Montgomery et al., 2021). Similarly, the hierarchical regression analysis showed that while the value of R-squared increased whenever additional interaction was added, the increased values of R-squared are smaller when an interaction of discretion and legislature control was added. An interaction of discretion and diversity index was also added, as displayed in Table A.7. Also, the likelihood ratio test result showed that model 6 was nested in model 7. In sum, inclusion of the interaction term of legislature control and discretion in models appeared not to significantly improve the regression model's fitness, while

other interactions are more likely to improve the fitness through these tests. However, this study keeps the legislature control variable and its interaction term with discretion since the correlation analysis showed its collinearity is less likely to be problematic, as checked above.

Table A.4: Equations of Entry Wise Regression with Discretion 1 and Gini-Simpson Index in G-L Models

Model	Equation
(1)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(2)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} R_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(3)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} G_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(4)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} L_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(5)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$

Table A.5: Entry Wise Regression Analysis with Discretion 1 and Gini-Simpson Index in G-L Models

VARIABLES	Per Capita TANF Expenditure				
	(1) Basic Model	(2) (1)+Discretion# Rainy Day Ratio	(3) (1)+Discretion# Governor	(4) (1)+Discretion# Legislature	(5) (1)+Discretion# Racial Diversity
Discretion	-2.47	-1.89	-1.65	-2.62	-3.25
Rainy Day Ratio	-31.01***	1,041.21***	-32.71***	-30.61***	-31.42***
Rainy Day Ratio# Discretion		-20.15***			
Democrat Governor	2.72**	1.86	61.24***	2.64**	2.67**
Democrat Governor # Discretion			-1.17***		
Democrat Legislature Control	3.69**	3.66**	3.88**	-10.32	3.43**

Democrat Legislature Control#Discretion				30.08	
Racial Diversity	-35.31	9.60	-21.68	-35.36	-127.92*
Racial Diversity # Discretion				0.28	2.31*
Poverty Rate	-0.28	-0.85	-0.42	-0.20	-0.33
Unemployment Rate	-0.84	-0.15	-0.88	-0.86	-1.07
GDP	-29.99***	-30.02***	-31.36***	-29.16***	-31.00***
Share of 65+	-1.01	0.42	-0.28	-1.09	-0.78
Observations	1,094	1,094	1,094	1,094	1,094
R-squared	0.250	0.282	0.256	0.250	0.253
Number of State	50	50	50	50	50
Likelihood-ratio Test Assumption		(1) is nested in (2)	(1) is nested in (3)	(1) is nested in (4)	(1) is nested in (5)
Likelihood-ratio Test Result		LR chi2(1)= 49.31	LR chi2(3)= 35.08	LR chi2(4)= 5.78	LR chi2(1)= 3.49
		Prob>chi2= 0.0000	Prob>chi2= 0.0000	Prob>chi2= 0.2163	Prob>chi2= 0.0616

+ 1: Democrat 2: Other 3: Republican

++ 1: Democrat 2: Other 3: Republican 4: Separate

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table A.6: Equations of Hierarchical Regression with Discretion 1 and Gini-Simpson Index in G-L Models

Model	Equation
(1)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(2)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} R_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(6)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} R_{it} + \beta_7 D_{t-1} G_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(7)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} R_{it} + \beta_7 D_{t-1} G_{it} + \beta_8 D_{t-1} L_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(8)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 G_{it} + \beta_4 L_{it} + \beta_5 I_{it} + \beta_6 D_{t-1} R_{it} + \beta_7 D_{t-1} G_{it} + \beta_8 D_{t-1} L_{it} + \beta_9 D_{t-1} I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$

Table A.7: Hierarchical Regression Analysis with Discretion 1 and Gini-Simpson Index in G-L Models

VARIABLES	Per Capita TANF Expenditure				
	(1) Basic Model	(2) (1)+Discretion# Rainy Day Ratio	(6) (2)+Discretion# Governor	(7) (6)+Discretion# Legislature	(8) (7)+Discretion# Racial Diversity
Discretion	-2.47	-1.89	-0.99	-1.12	-2.08
Rainy Day Ratio	-31.01***	1,041.21***	1,058.08***	1,047.49***	1,109.44***
Rainy Day Ratio# Discretion		-20.15***	-20.51***	-20.30***	-21.49***
Democrat Governor	2.72**	1.86	65.55***	68.71***	69.23***
Democrat Governor # Discretion			-1.28***	-1.34***	-1.35***
Democrat Legislature Control	3.69**	3.66**	3.86**	-11.12	4.64
Democrat Legislature Control#Discretion				0.30	-0.02
Racial Diversity	-35.31	9.60	25.22	25.48	-111.73*
Racial Diversity # Discretion					3.49***
Poverty Rate	-0.28	-0.85	-1.01	-0.93	-1.13
Unemployment Rate	-0.84	-0.15	-0.19	-0.22	-0.51
GDP	-29.99***	-30.02***	-31.51***	-30.70***	-33.21***
Share of 65+	-1.01	0.42	1.24	1.17	1.70
Observations	1,094	1,094	1,094	1,094	1,094
R-squared	0.250	0.282	0.290	0.290	0.296
Number of State	50	50	50	50	50
Likelihood-ratio Test Assumption		(1) is nested in (2)	(2) is nested in (6)	(6) is nested in (7)	(7) is nested in (8)
Likelihood-ratio Test Result		LR chi2(1)= 49.31 Prob>chi2= 0.0000	LR chi2(3)= 19.43 Prob>chi2= 0.0002	LR chi2(4)= 5.05 Prob>chi2= 0.2823	LR chi2(1)= 5.06 Prob>chi2= 0.0244

+ 1: Democrat 2: Other 3: Republican

++ 1: Democrat 2: Other 3: Republican 4: Separate

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

This study adds models in which government ideology replaces governor and legislature control (GI models) with fewer interaction terms, to compare results from G-L models. In the entry wise regression analysis with government ideology, the value of R-squared in all models increases when an interaction term is added to the basic model, as displayed in Table A.8. However, the likelihood ratio test results showed that model 12 is not significantly different from the basic model, while models 11 and 13 are statistically different from the basic model at 99% significant level (Table A.9). Similarly, the hierarchical regression analysis showed that the value of R-squared increased whenever additional interaction was added, as displayed in Table A.10. But the likelihood ratio test result showed that model 14 was more likely to be nested in model 10 (Table A.11). In sum, inclusion of the interaction term with government ideology and discretion in models appeared not to significantly improve the regression model's fitness, while other interactions were more likely to improve fitness through these tests. However, this study keeps the government ideology variable and its interaction term with discretion, since the correlation analysis showed its collinearity is less likely to be problematic, as checked above.

Table A.8: Equations of Entry Wise Regression with Discretion 1 and Gini-Simpson Index in GI Models

Model	Equation
(10)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(11)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \beta_5 D_{t-1} R_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(12)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \beta_5 D_{t-1} B_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$

$$(13) \quad Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \beta_5 D_{t-1} I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$$

Table A.9: Entry Wise Regression Analysis with Discretion 1 and Gini-Simpson Index in GI Models

VARIABLES	Per Capita TANF Expenditure			
	(10) Basic Model	(11) (10)+Discretion# Rainy Day Ratio	(12) (10)+Discretion# Government Ideology	(13) (10)+Discretion# Racial Diversity
Discretion	-2.60	-2.20	-1.45	-3.82
Rainy Day Ratio	-42.80***	928.11***	-44.14***	-44.56***
Rainy Day Ratio# Discretion		-18.12***		
Government Ideology	0.13**	0.11**	1.26*	0.13**
Government Ideology#Discretion			-0.02	
Racial Diversity	-36.06	2.88	-25.99	-198.65**
Racial Diversity # Discretion				3.93***
Poverty Rate	-0.50	-0.95	-0.82	-0.51
Unemployment Rate	-0.99	-0.33	-0.92	-1.51*
GDP	-29.90**	-29.48**	-33.46***	-31.58***
Share of 65+	-0.55	0.56	-0.15	-0.28
Observations	995	995	995	995
R-squared	0.211	0.236	0.213	0.218
Number of State	50	50	50	50
Likelihood-ratio Test Assumption		(1) is nested in (11)	(11) is nested in (12)	(11) is nested in (13)
Likelihood-ratio Test Result		LR chi2(1)= 32.57 Prob>chi2= 0.0000	LR chi2(3)= 2.50 Prob>chi2= 0.1142	LR chi2(4)= 8.84 Prob>chi2= 0.0029

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table A.10: Equations of Hierarchical Regression with Discretion 1 and Gini-Simpson Index in GI Models

Model	Equation
(10)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(11)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \beta_5 D_{t-1} R_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(14)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \beta_5 D_{t-1} R_{it} + \beta_6 D_{t-1} B_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$
(15)	$Y_{it} = \alpha + \beta_1 D_{t-1} + \beta_2 R_{it} + \beta_3 B_{it} + \beta_4 I_{it} + \beta_5 D_{t-1} R_{it} + \beta_6 D_{t-1} B_{it} + \beta_7 D_{t-1} I_{it} + \rho X_{it} + \mu_i + \delta_t + \varepsilon_{it}$

Table A.11: Hierarchical Regression Analysis with Discretion 1 and Gini-Simpson Index in GI Models

VARIABLES	Per Capita TANF Expenditure			
	(10) Basic Model	(11) (10)+Discretion# Rainy Day Ratio	(14) (11)+Discretion# Government Ideology	(15) (14)+Discretion# Racial Diversity
Discretion	-2.60	-2.20	-1.06	-2.19
Rainy Day Ratio	-42.80***	928.11***	926.24***	971.73***
Rainy Day Ratio# Discretion		-18.12***	-18.11***	-19.01***
Government Ideology	0.13**	0.11**	1.24*	1.60**
Government Ideology#Discretion			-0.02	-0.03**
Racial Diversity	-36.06	2.88	12.85	-184.46**
Racial Diversity # Discretion				4.89***
Poverty Rate	-0.50	-0.95	-1.27	-1.42
Unemployment Rate	-0.99	-0.33	-0.25	-0.84
GDP	-29.90**	-29.48**	-33.02***	-36.21***
Share of 65+	-0.55	0.56	0.96	1.48
Observations	995	995	995	995

R-squared	0.211	0.236	0.238	0.249
Number of State	50	50	50	50
Likelihood-ratio Test Assumption		(10) is nested in (11)	(11) is nested in (14)	(14) is nested in (15)
Likelihood-ratio Test Result		LR chi2(1)= 32.57 Prob>chi2= 0.0000	LR chi2(3)= 2.54 Prob>chi2= 0.1109	LR chi2(4)= 13.89 Prob>chi2= 0.0002

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX B

Among the variables in the regression models, rainy-day fund balance ratio has a right-skewed distribution with a long-left tail. To check the impact of a few outlier observations of rainy-day fund ratio, I generated five categorical variables (CAT1; CAT2; CAT3; CAT4; CAT5), with continuous rainy-day ratio data first.

Table B.1: Descriptive Statistics of Rainy-Day Fund Ratio (Continuous)

Obs	Mean	Std. Dev.	Min	Max
1,143	0.0293775	0.0992003	-0.0237641	1.353856

Table B.2: Descriptive Statistics of CAT1

	CAT1	Freq.	Percent	Cum.
Rainy Day Ratio < Median Value	0	571	49.65	49.65
Rainy Day Ratio >= Median Value	1	579	50.35	100
	Total	1,150	100	

Table B.3: Descriptive Statistics of CAT2

	CAT2	Freq.	Percent	Cum.
Rainy Day Ratio < Mean Value	0	927	80.61	80.61
Rainy Day Ratio >= Mean Value	1	223	19.39	100
	Total	1,150	100	

Table B.4: Descriptive Statistics of CAT3

	CAT3	Freq.	Percent	Cum.
Rainy Day Ratio <= 0	1	199	17.3	17.3
0 < Rainy Day Ratio <= Median Value	2	372	32.35	49.65
Rainy Day Ratio > Median Value	3	579	50.35	100
	Total	1,150	100	

Table B.5: Descriptive Statistics of CAT4

	CAT4	Freq.	Percent	Cum.
Rainy Day Ratio \leq 0	1	199	17.3	17.3
0<Rainy Day Ratio \leq Mean Value	2	728	63.3	80.61
Rainy Day Ratio>Mean Value	3	223	19.39	100
	Total	1,150	100	

Table B.6: Descriptive Statistics of CAT5

	CAT5	Freq.	Percent	Cum.
1 st quartile of Rainy Day Ratio	1	286	24.87	24.87
2 nd quartile of Rainy Day Ratio	2	285	24.78	49.65
3 rd quartile of Rainy Day Ratio	3	287	24.96	74.61
4 th quartile of Rainy Day Ratio	4	292	25.39	100
	Total	1,150	100	

To check if the regression results are consistent if the rainy-day ratio data is replaced by its transformed data into a categorical variable, I compared five additional regression results with categorical rainy-day variables to the initial regression results with the continuous rainy-day variable. In G-L models with state governor’s party affiliations and partisan control of legislature variables, findings on governor, legislature control, and racial diversity are consistent throughout all models. In other words, statistical significances and signs of coefficients for governor, legislature, and racial diversity variables and the interaction terms of them with discretion did not change from the regression model with continuous rainy-day fund variable.

Most categorical variables of rainy-day ratio are statistically significant, but high rainy-day fund ratio in upper categories appeared to be negatively related to TANF expenditures, while low rainy-day fund ratio is positively related, as the initial model with continuous rainy day ratio data. On the other hand, the negative impact of rainy-day ratio (as the categorical format) when discretion increase is consistent in all models as well.

Table B.7: Comparison of Regression Results in G-L Models

VARIABLES	Per Capita TANF Expenditure					
	Continuous Rainyratio	CAT1_rai nyratio	CAT2_rai nyratio	CAT3_rai nyratio	CAT4_rai nyratio	CAT5_rai nyratio
Discretion	-2.08	-1.56	-2.05	-1.00	-1.09	-1.30
Rainy Day Ratio	1,109.44***					
Rainy Day Ratio# Discretion	-21.49***					
CAT1=1		76.82***				
CAT1=1 # Discretion		-1.52***				
CAT2=1			96.32***			
CAT2=1 # Discretion			-1.87***			
CAT3=2				41.13		
CAT3=3				104.50***		
CAT3=2 # Discretion				-0.82		
CAT3=3 # Discretion				-2.07***		
CAT4=2					58.40**	
CAT4=3					144.62***	
CAT4=2 # Discretion					-1.16**	
CAT4=3 # Discretion					-2.82***	
CAT5=2						33.09
CAT5=3						81.92***
CAT5=4						115.33***
CAT5=2 # Discretion						-0.70
CAT5=3 # Discretion						-1.64***

CAT5=4 # Discretion						-2.11***
Democrat Governor	69.23***	74.44***	70.14***	74.52***	71.91***	74.08***
Democrat Governor # Discretion	-1.35***	-1.45***	-1.36***	-1.45***	-1.39***	-1.44***
Democrat Legislature Control	4.64	-28.78	-22.57	-28.41	-23.92	-26.42
Democrat Legislature Control#Discretion	-0.02	0.65	0.52	0.64	0.54	0.60
Racial Diversity	-111.73*	-81.42	-81.08	-81.33	-77.57	-74.70
Racial Diversity # Discretion	3.49***	2.46**	2.15*	2.46**	2.25*	2.32*
Observations	1,094	1,094	1,094	1,094	1,094	1,094
R-squared	0.303	0.296	0.296	0.306	0.298	0.298
Number of State	50	50	50	50	50	50

Also, in GI models with state government ideology variable, most findings are consistent throughout all models, with few exceptions. Most categorical variables of rainy-day ratio are statistically significant, but high rainy-day fund ratio in upper categories appeared to be negatively related to TANF expenditures while low rainy-day fund ratio was positively related, as in G-L models. However, the negative impact of rainy-day ratio (as the categorical format) when discretion increases is consistent in all models as well. By contrast, the coefficient of government ideology index changed to be statistically insignificant in four models out of five. Meanwhile, categorical rainy-day ratio variable and the interaction term of government ideology and discretion turned to be statistically insignificant, though their directions remained the same as in the regression with continuous rainy-day ratio data.

Table B.8: Comparison of Regression Results in GI Models

VARIABLES	Per Capita TANF Expenditure					
	Continuous Rainyratio	CAT1_rai nyratio	CAT2_rai nyratio	CAT3_rai nyratio	CAT4_rai nyratio	CAT5_rai nyratio
Discretion	-2.19	-1.84	-2.31	-1.25	-1.37	-1.64
Rainy Day Ratio	971.73***					
Rainy Day Ratio# Discretion	-19.01***					
CAT1=1		71.54***				
CAT1=1 # Discretion		-1.40***				
CAT2=1			96.41***			
CAT2=1 # Discretion			-1.88***			
CAT3=2				46.65		
CAT3=3				102.16***		
CAT3=2 # Discretion				-0.93		
CAT3=3 # Discretion				-2.01***		
CAT4=2					59.90**	
CAT4=3					143.43***	
CAT4=2 # Discretion					-1.19*	
CAT4=3 # Discretion					-2.81***	
CAT5=2						42.41
CAT5=3						85.63***
CAT5=4						109.58***
CAT5=2 # Discretion						-0.89
CAT5=3 # Discretion						-1.72***

CAT5=4 # Discretion						-2.19***
Government Ideology	1.60**	1.26*	1.23	1.25	1.21	1.23
Government Ideology # Discretion	-0.03**	-0.02	-0.02	-0.02	-0.02	-0.02
Racial Diversity	-184.46**	-166.90**	-169.80**	-164.18**	-163.27**	-163.24**
Racial Diversity # Discretion	4.89***	4.22***	3.87***	4.15***	3.91***	4.13***
Observations	995	1,000	1,000	1,000	1,000	1,000
R-squared	0.25	0.21	0.21	0.21	0.22	0.22
Number of State	50	50	50	50	50	50

In conclusion, statistical significance of a few variables with categorical variables changed and R-squared values of new model regression decreased than in initial models, as more interaction terms of each category of rainy-day ratio data and discretion were added. However, initial models with continuous rainy-day fund ratio revealed major findings: 1. discretion itself is not statistically significant as a moderator; 2. the interaction terms with discretion and other key independent variables are statistically significant indicating the moderating effect of discretion; 3. The moderating effect of discretion, which flips the directions of interaction term's coefficients when discretion increases in most models, holds in additional new models, with categorical rainy-day ratio variable from continuous data.