The Dynamics of New York State Social Welfare Reform Finance at the County Level: A Feedback View of System Behavior

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Abstract

The 1996 welfare reform gave states an opportunity to review their own welfare programs. One of the important tasks for states recently is to examine the past resource allocation policies, and to explore the factors preventing these policies from meeting pre-set goals. In order to help state welfare decision makers approach the 1996 welfare reform challenge and to understand the welfare system as a whole, this study tries to explore the unexpected effects that offset the intended impacts of several welfare fiscal policies from a system dynamics point of view.

This study builds on the tradition of studying the feedback mechanisms that generate unintended policy outcomes with the aim of improving policy innovations in public policy systems. A highly aggregated system dynamics model is presented for the purposes of understanding implied feedback mechanisms underlying the welfare reform financing. The model in this research elucidates feedback mechanisms where fiscal policies that were intended to achieve goals related to administrative rules or controls touch off unforeseen consequences.   This research examines the dynamic impacts and consequences of various fiscal policies by analyzing the interactions among major welfare actors. This analysis may provide information regarding the factors causing past financial policies' failure to control the welfare expenditures. This thesis argues that past policies are piecemeal and fragmented because they lack insight into the feedback structure of this system.

How Policies Designed to Control the Cost of Welfare Reform Can Have Unintended Consequences: An Introduction

The social welfare system that provides assistance to low-income and needy families has been running for decades. The purposes of the welfare system include providing cash assistance to needy families while reducing caseload and costs, promoting work incentive, increasing earnings, promoting self-sufficiency of post-welfare employees and so forth. Not a single welfare policy can achieve all these goals. Those welfare policies, especially regarding how to improve the welfare system or how to allocate welfare resources more efficiently, could easily draw public attentions and discussions.

Behind each welfare expenditure allocation policy / strategy, there are goals that the governments intended to meet. For example, the federal mandatory participation fraction which requires a specific fraction of a state's nonexempt welfare recipients to participate in the job-related program is a strategy to help more welfare recipients become employed. Accordingly, a reducing welfare caseload as well as welfare cost is expected.

Raising job-training program quality is another policy to help welfare recipients quickly find jobs and leave the welfare system. As a result, the welfare caseload and spending could be decreased. The purpose of setting expenditure limits, for example, administrative cap and budget limits, is to control the administrative expenditures and the growth of total welfare expenditures.

However, not every welfare policy fully meets its goals. For example, the goal of increasing the work participation fraction was not completely met as can be seen by looking at the history of welfare caseload. The mandatory minimum participation rate, under the Aid to Families with Dependent Children (AFDC) program, increased from 7 percent in Fiscal Year (FY) 90-91 to 20 percent in FY 95. The increase in the participation fraction seemed not to have had much influence on the caseload. Figure 1, a plot of AFDC caseload and national unemployment rate, suggests that the national economics has been influencing the change of welfare caseload.

Figure 1
Average Monthly AFDC Caseload vs. Unemployment Rate
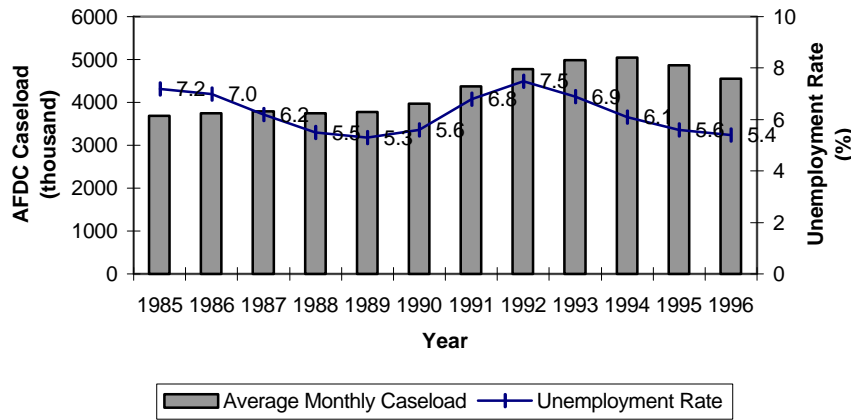
Sources: Committee on Ways and Means, U.S. House of Representatives, 1998 Green Book. P. 413
Bureau of Labor Statistics, Department of Labor, February, 1998.

Compensating feedback can cause unintended policy effect. Unexpected policy effects may offset the intended influences of a policy. This study hypothesizes that the pattern of system's behavior and the implied endogenous feedback mechanism create the unexpected effects of a policy so that the policy's goals can not be fully reached. Using feedback thinking linked to a formal simulation model, this study intends to focus on the unexpected effects of the mandatory participation fraction, higher job-related program quality, administrative expenditures cap and total budget limits. This study addresses the following questions: Do these welfare policies which intended to control costs and caseload using fiscal instruments fully reach intended goals and produce expected effects? If not, what unexpected factors may be the ones that cause these problems? Finally, what kind of policy improvement could solve problems associated with unintended effects due to feedback mechanisms that exist in the cost control policies?

This paper opens with a problem statement and the major purposes of this study followed by a brief introduction of the base of the study. Then, a brief literature review provides theories and empirical studies within which the key relationships of model WF 3.0 are found. The literature review is organized based upon the three major actors in the system: the federal government, the state/local governments as the welfare service provider, and the welfare recipients. After the literature review, a research methodology of this study is introduced and followed by a description of modeling tasks of this study. An example of the simulation results and conclusions drawn from the simulation results are presented at the end of this paper.

The Base of the Study

This study is built upon an Welfare Reform Research Project sponsored by New York State Department of Social Services (DSS). The system dynamics modeling team of University at Albany, Rockefeller College, cooperating with Office of Temporary and Disability Assistance (OTDA) of New York State (NYS), and Department of Social Services (DSS) of Cortland, Dutchess and Nassau county, have modeled the social welfare reform issues at county level from January 1997 to September 1998. This project is looking at the welfare client flow taking a full system view. Different from that research project, this paper will only focus on dynamic budgeting and welfare expenditure issues. The DSS Welfare Reform Research Project has been through several group model building processes and produced several products including meeting reports, flight simulators and parameter booklets. Those products provided important information for this study. Generally, the research project builds a strong foundation for the modeling tasks of this thesis. The model, WF 3.0, of this study is a higher aggregated model based upon the welfare model, Phase_8e, of the NYS DSS Welfare Reform Research Project (Center for Policy Research, May 1997; August 1997).

This research focuses on budget dynamics and financial policy analysis of Temporary Assistance to Needy Families (TANF) program (previously, Aid to Families with Dependent Children). Other benefit program like Supplemental Security Income (SSI), Medicaid, Child Support Enforcement, Social Security benefit, Food Stamps, and Home Relief are out of this research boundary.

Welfare Policy Experiences and Behaviors of System Actors

The formulation of WF 3.0 model is based upon theories and research that study the behaviors of welfare system actors and the interactions among them. There are three major system actors in the welfare system. They are federal government, state and local governments and the welfare recipients. The higher level sets the stage for the level below. The system actors' behaviors, including their expectations for the welfare policies, their responses to changes in welfare system, and the interactions among them, lead to the formulation of WF 3.0 simulation model.

Currently, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 placed less responsibility on the federal government and granted the state and local levels primary responsibility. The PRWORA changed the social welfare funding system of the United States dramatically. No later than July 1, 1997, each state began operating a program of assistance to needy families funded under the Temporary

Assistance for Needy Families (TANF) Block Grant. The provisions broadly put state governments in the business of operating their own welfare systems in states by turning over functions such as determining the eligibility of welfare recipients and designing their own welfare programs.

1) Federal Government

In the current welfare system, federal government works as a national welfare-funding provider. In addition to provide funding, federal agencies set the general guidelines regarding detailed welfare funding formula for state and local welfare services. Additionally, these general guidelines contain ways of federal government's supervision and evaluation over the implementation of local welfare services.

There are different intended effects behind federal welfare financial policies. However, not all of the pre-set goals are fully met. For example, one of the officially listed goals of PRWORA is to end the dependency of needy parents on government benefits by promoting job preparation, work and marriage (Section 401 (a)). However, this specific goal may not be fully achieved if welfare recipients' earnings are not promoted. The dependency of welfare recipients will not be promoted only by employment. Their earnings should be raised in order to stay away from the welfare system as long as possible. Otherwise, the possibility of these post-TANF employees to return to the welfare assistance could keep high.

2) State and Local Governments

State and local governments blend federal policies with their existing programs to adjust them to local customs and norms. Under TANF, state and local governments have broad discretion to customize their welfare program to meet local requirements. State and local governments are allowed to determine the eligibility standards and benefit levels for welfare assistance recipients in their jurisdictions, to decide the resources allocation among different welfare programs or services, to set the budget limitations on welfare programs and so forth. The shift of the funding formula from matching funds to block grant could change the ways that state and local governments design their welfare programs and allocate welfare resources.

Unintended effects of state and local governments' welfare policies happened under the new law. With a broader discretion on local welfare services, states have the freedom to find their own ways to release financial pressure which may caused by insufficient financial resources accompanied by the increase in welfare caseload. Studies show that the welfare benefit level could easily become a target of reduction (Fisher, 1996; Gold, 1995). In addition, state and local governments have discretion on the quality of welfare-to-work programs. Studies suggest a possible trade-off between income gain for participants versus budgetary savings for governments. This trade-off, according to the study, may be greatly influenced by the format of a welfare-to-work program (Friedlander & Burtless, 1995). Steuerle and Mermin (1997) argued that the TANF block grant provides low incentive for states to spend additional funds on low-income families with children. Previously, any additional dollar a state chose to spend on cash assistance for low-income families with children would be matched by federal funds. Under TANF, any additional dollar a state chose to spend is state-only dollar. Therefore, as Peterson (1995)

argued, rapid state spending growth will be halted because now states would enjoy 100 percent of any program savings they generate rather than sharing savings with the federal government.

3) Welfare Recipients

The welfare recipient's high length of stay has been a critical issue in this system (Committee on Ways and Means, U.S. House of Representative, 1996:89; Dutchess County meeting report, June 1997). One of the means to decrease length of stay of the welfare recipients is to raise their work incentives. However, there is a concern that high benefit levels would discourage lower-income people to work (Lerman, 1995:17). Appel's study in 1972 had the similar conclusions. Appel found that a welfare system with programs to encourage work incentives could make welfare system so attractive that it decreases the number of families leaving AFDC and increases the number entering AFDC. Accordingly, the welfare costs and caseloads increase.

Although a welfare recipient leaves the system, his or her dependency on welfare benefits does not necessary end permanently. According to Pavetti's study based on monthly data in 1993 and 1995, 58 percent of those who exit AFDC come back within 24 months. Those who leave AFDC because of employment remain off the program somewhat longer than those who leave for other reasons. However, leaving AFDC due to work only accounts for slightly less than half of all exits within a 5-year period (Committee on Ways and Means, U.S. House of Representative, 1996: 89). A recent study analyzing 57 districts outside New York City shows that 79 percent of the cases that left the welfare rolls in the first quarter of 1997 stayed off welfare during a one-year follow-up period (Nathan and Maxwell, 1999, iv). In other words, about 21 percent of the leaving cases ever returned to welfare. Some local data even shows that new opening cases only account for around 50 percent of the average monthly cases opened (Parameter Booklet of Dutchess County, 1997). This data implies that the other 50 percent of cases opened are actually re-opened cases. A high recidivism rate drove the AFDC caseload to increase about 23 percent from 1985 to 1996, and in effect raised total welfare expenditures (Committee on Ways and Means, U.S. House of Representative, 1998).

The Major Welfare Expenditures in this Study

In this study, welfare expenditures are divided into three major areas: administrative expenditures, census-driven benefit expenditures, and employment service program expenditures. A variety of functions and types of expenditures make up the totality of administrative costs. The administrative expenditures defined here are those costs paid for staff administering the TANF program (previously, AFDC and JOBS). These administrative expenditures include staff salaries and fringe benefits. Non-personal administrative costs including costs associated with the operation of physical office space, heat, light, etc. are not included in the administrative expenditures defined here because those are fixed costs that are uncontrollable in the short term. The census-driven benefit expenditures are paid for welfare cash benefit. Employment service program expenditures are defined here as payment for purchasing employment and related services including day care, transportation, skill training, and so forth. The purposes of this spending is to move

people to employment and keep them employed as long as they can to avoid long-term welfare dependence.

All of the expenditures mentioned above are paid for the purpose of providing basic needs and promoting self-sufficiency of welfare recipients. However, most of the past financial policy interventions did not fully meet their intended goals due to unexpected effects. For instance, the welfare-to-work program that successfully improved recipients' earnings encountered the growth of government spending. The program emphasizing both government budget savings and recipients' immediate employment failed to improve recipients' earnings. Federal mandatory participation fraction may successfully place more TANF recipients in job-training programs, but insufficient administrative support may offset the intended effect of this federal regulation. In review, most financial policies failed to foresee the effects and consequences of an individual policy from every dimension. This failure could prevent a policy from reaching its intended goals. Therefore, this study tries to explore the unexpected effects that offset the intended impacts of several resource allocation policies from a dynamic point of view.

Research Method and Analytic Framework

"The goal of a system dynamics policy study is understanding: understanding the interactions in a complex system that are conspiring to create a problem, and understanding the structure and dynamic implications of policy changes intended to improve the system's behavior." (Richardson, 1991: 162) The purposes of this research are to build a highly aggregated system dynamics model in order to understand implied feedback mechanisms underlying welfare reform financing, to understand how the feedback mechanisms meet the intended purposes of policy implementation, and to show how they produce unintended effects.

Figure 2 illustrates the research framework of this study and most importantly, the role of model WF3.0 and its relationships with other characters in this research framework.

As shown in figure 2, model WF3.0 is based on the welfare model that was funded by New York State Welfare Reform Group Modeling Project. The welfare model is a large and comprehensive model with 651 equations involving the detailed welfare services modeling. Since the purpose of this thesis is to analyze the welfare financing system from a more aggregated view, a detailed modeling of welfare services as in the model is not necessary for this particular purpose. To fulfill this purpose, a higher aggregated model with major feedback mechanisms, WF 3.0, was built. The structures, parameters and welfare service effects in model WF3.0 were basically formulated upon the welfare model. Model WF3.0 was calibrated to Dutchess county. The historical administrative data of Dutchess county was employed in the formulation of the model and as the reference mode for model evaluation. Gathering the strengths of the welfare model, model WF3.0 has rich feedback mechanisms with transparent processes of parameters and welfare service effects calibration.

Figure 2 The Research Framework
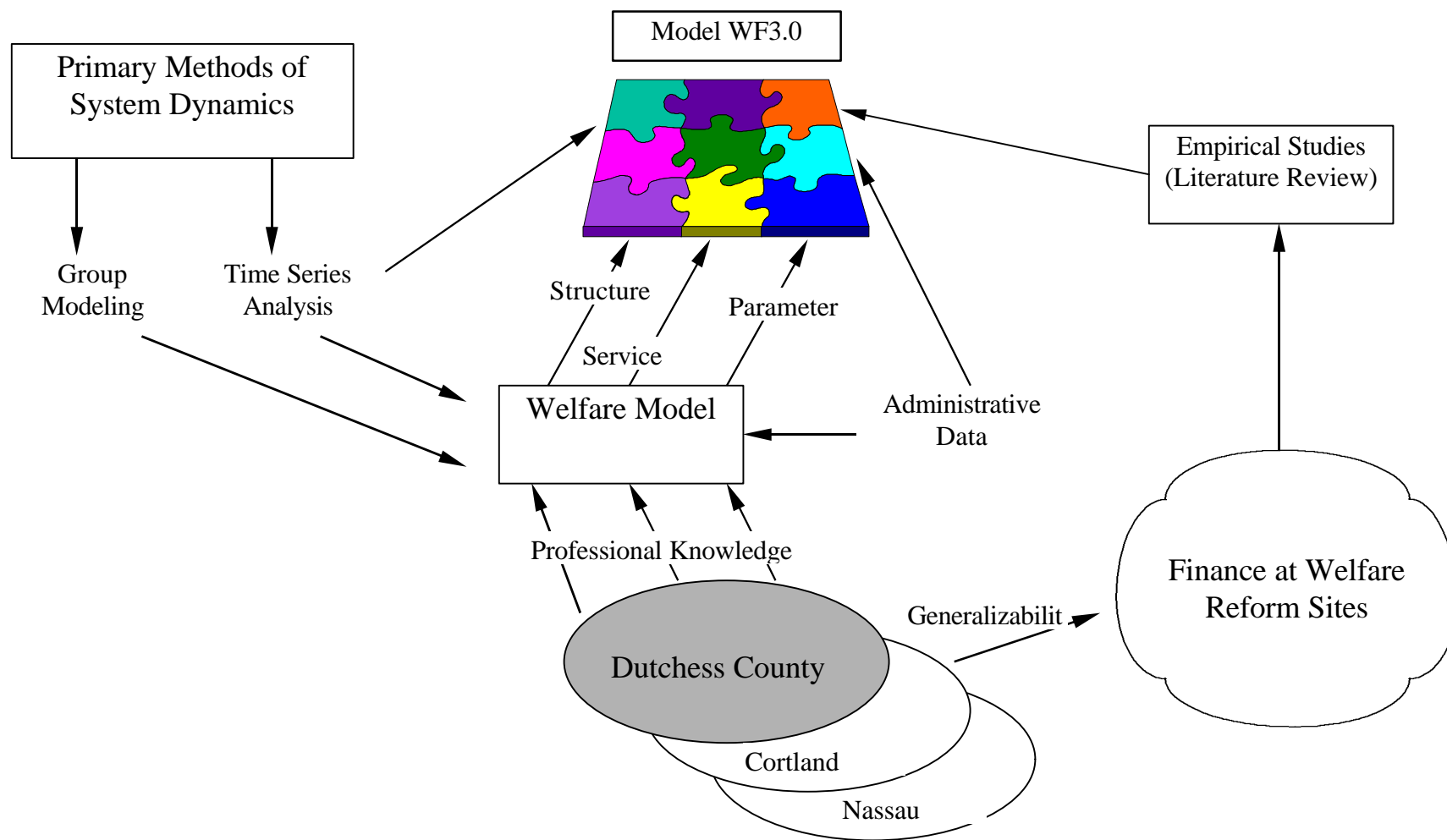
In addition to the welfare model, a minor part of the basis of model WF3.0 is empirical studies in the field of social welfare. These empirical studies provided model WF3.0 with richer ideas of existing problems in the welfare system.

Model Focus and Boundary

This study focuses only on the budget dynamics and the financial policies analysis of the local welfare system. The influence of non-financial factors, such as self esteem, time cost, the proportion of specific race in the low income population, the education level of the welfare recipients, the low income family size and so forth, are excluded from the model. The national economy that is indicated by the unemployment rate is included in this research. However, since the national economy has been an important factor influencing welfare caseloads, the effect of the unemployment rate on welfare caseloads is deactivated when fiscal policies are tested so that the pure effects of welfare fiscal policies could be easily shown and understood.

Model WF3.0 was calibrated into a county such like Dutchess County. Dutchess County is a median size county in New York State. The county Department of Social Services designs local welfare programs and provides local welfare services. The reference mode of model WF3.0 for model evaluation is AFDC/TANF caseloads of Dutchess County from 1984 to 1998. The pattern of the changing caseload is of more concern here than the numbers. The model is not developed for projecting point by point welfare caseload and expenditures. Neither is it developed for explaining what specific factors influence the growth of the caseload and expenditures and which factors do not.

Modeling and Model Evaluation

The conceptual foundation of model WF3.0 is based upon welfare model that was drawn from several group-modeling conferences held in Cortland and Dutchess County. Knowledge elicited from the discussion at these group-modeling conferences and data calibration conferences provides the foundation of causal linkages in the model. The information elicited from these conferences also provides the direction and polarity of a relationship and the magnitude of a relationship. In addition to the knowledge and information obtained from those group modeling sessions, some empirical studies from literature review are sources for model formulation. The division of model sectors is based upon key system actors. The major two sectors are TANF recipients and state/local governments (including the budgeting process dynamics). Since the national financial welfare policies made by the federal government have impacts on local budget processes, the function of the federal government is blended into the TANF recipients sector and the state/local government sector. Figure 3 shows an overview of the model sectors of model WF 3.0.

"Confidence in a system dynamics model accumulates gradually as the model passes more tests and as new points of correspondence between the model and empirical reality are identified" (Forrester & Senge, 1980: 209). Four tests are conducted for testing consistency and suitability of model structure and model behavior (Richardson and Pugh, 1981: 312). "Structure and parameter verification" is employed to examine the model structure consistency with the reality. "Extreme condition test" is for the purpose of model structure suitability. "Behavior reproduction test" is to examine if the model
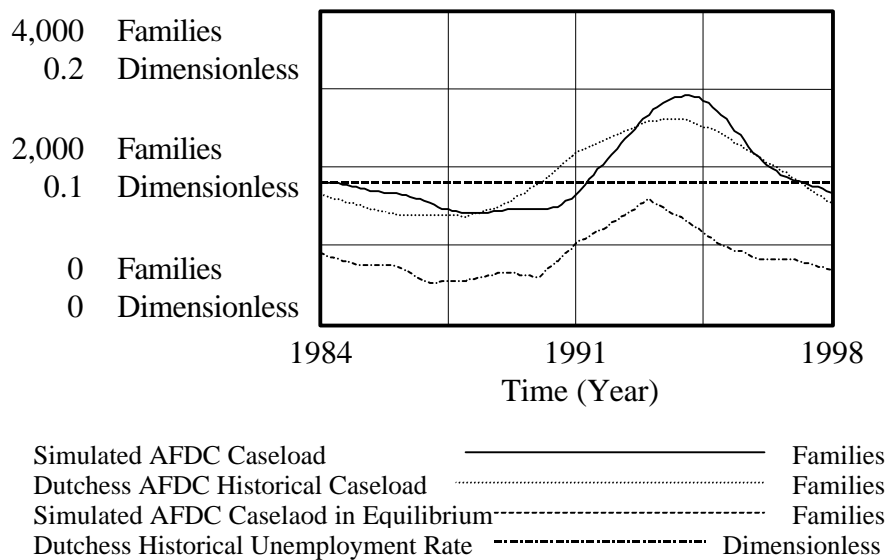
Figure 3 Model Overview
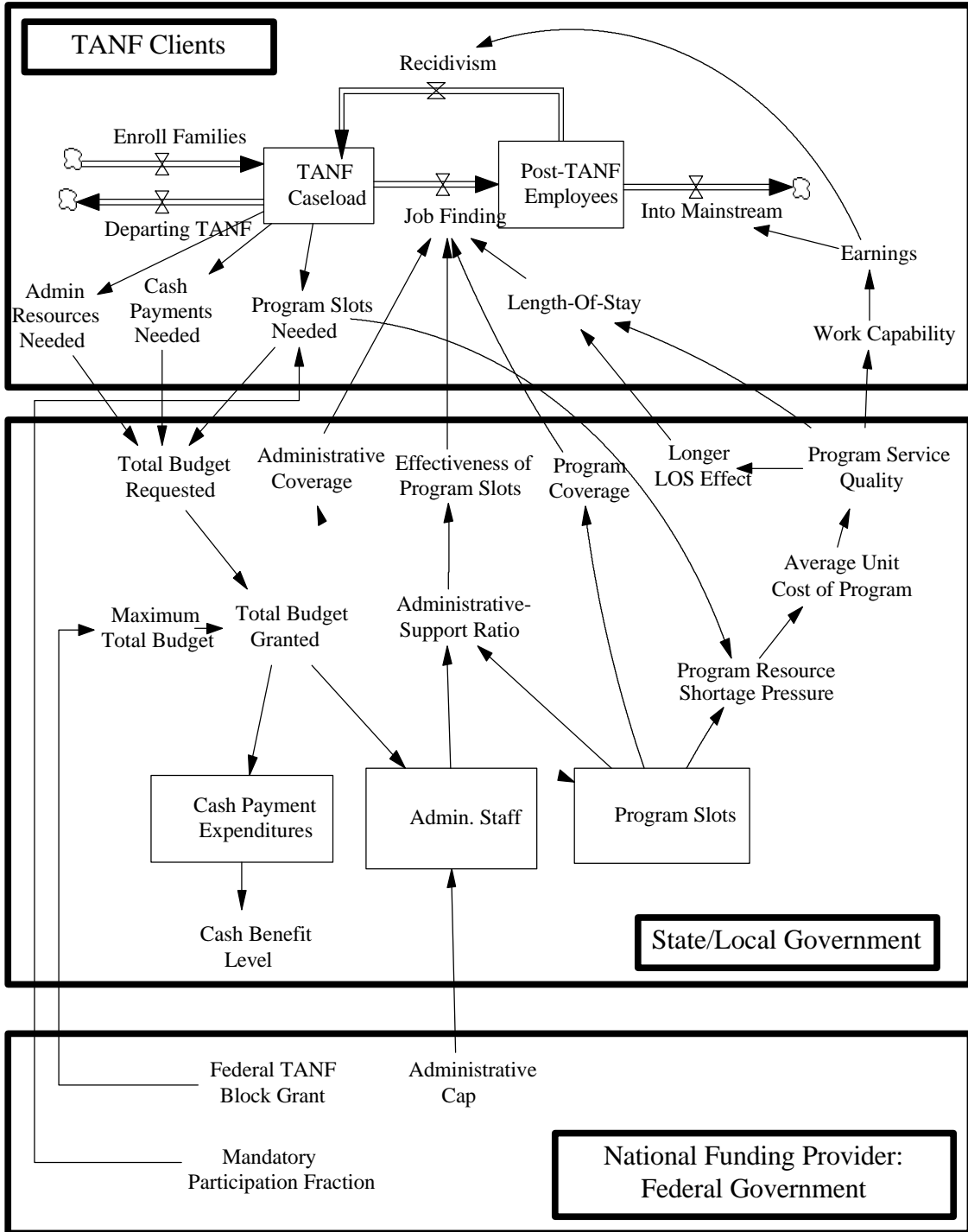
behavior is consistent with the reality. "Behavior sensitivity test" is for suitability of model behavior (Forrester & Senge, 1980: 212-223; Richardson & Pugh, 1981: 310-318).

By structure and parameter verification, the assurance on the conceptual and numerical correctness of model's structure and parameters is build. Through extreme conditions test, the suitability of model structure is ensured. The behavior reproduction test shows that the model-generated behavior fairly matches observed behavior of the real system (as shown in figure 4). A point-by-point measure of goodness-of-fit between model-generated and observed data is 0.75 (adjust R square). In behavior sensitivity test, the confidence in the model behavior is enhanced because the model behavior is not sensitive to changes in parameter values. After a fair confidence in the model WF 3.0 is build up, this model is ready for policy tests.

Figure 4 Simulated Caseload, Actual Caseload and Unemployment Rate of Dutchess County

4,000	Families
0.2	Dimensionless
2,000	Families
0.1	Dimensionless
0	Families
0	Dimensionless

1984   1991   1998
Time (Year)

Simulated AFDC Caseload	—————————	Families
Dutchess AFDC Historical Caseload	··························	Families
Simulated AFDC Caselaod in Equilibrium	-------------------------------	Families
Dutchess Historical Unemployment Rate	– – – – – – –	Dimensionless

Model Analysis and Policy Testing

The simulation results generated by Model WF3.0 are analyzed by examining longitudinal graphs over time of some key variables. Each graph is a result of the interaction among all model variables under a specific scenario and policy condition. The simulation time period is 16 years from 1994 to 2010.

Possible impact of different financial policies are examined by comparing their output values of key variables over time with the base run and among one another. The comparison among different runs is based upon three aspects. First, the pattern of the output values of key variables over time is scrutinized by examining the data of the output

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values. These output measurements are TANF caseload, total expenditures, earnings and recidivism fraction. Through these data, the part of the model that is accountable mainly for the trends of output behavior could become clearer. Second, percentage changes from the beginning to the end of simulation time are compared to observe the different impacts in magnitude. Third, 16-year cumulative values of key variables are compared to examine the total long- run effects. The cumulative values of financial variables for policy analysis are shown in net present values.

In this analysis, the base run is based on a world without the influence of national economics, administrative expenditure caps, higher job-training program quality, and the budget limit. Seven fiscal policies are examined in this study. They are:

1. Setting the administrative cap:
   An administrative cap is designed to prevent excessive administrative expenditures. In the policy run of setting the administrative cap, the administrative budget ceiling is fixed at 15 percent of the total budget granted.
2. Setting the budget limit:
   Under PROWRA, for the first couple of years most of the states will get a little more money than what they would have received under AFDC (Edelman, 1997: 49-50). Therefore, in this study, the total budget limit is fixed at 5 percent above the equilibrium (original) budget level so that the welfare system does not encounter budget pressure at the beginning of the simulation time. However, there is a very real possibility that states will run out of federal money woon (Edelman, 1997:50). The policy test results sho that the budget ceiling is hit very soon. This budget includes the program budget, administrative budget and TANF cash benefit payment budget.
3. Raising program quality:
   Raising program quality is indicated as higher unit cost of program slots. A major goal of the welfare system is to move recipients from public assistance to stable employment. Therefore, job-related program becomes a focus to be expanded and intensified for this purpose. In this study, a mechanism is set to raise the unit cost of program slots gradually after year 1997 until the unit cost is twice the original cost at year 2002.
4. Combination of the administrative cap with the budget limit.
5. Combination of the administrative cap with raising program quality.
6. Combination of setting the budget limit and raising program quality.
7. Combination of setting the budget limit, administrative cap and raising program quality.

The following is an example of policy testing and analysis. The dynamic structure of this policy will be discussed first and followed by the simulation results.

An Example of Policy Testing and Analysis – Setting Administrative Cap
1) Dynamic Structure of Administrative Cap

There are four important feedback loops in figure 5. Loop A is named program coverage loop. In this loop, higher TANF caseloads need more budgets for building program slots. Under unlimited budget, the amount of program slots will be provided as requested, except budget delays. Higher program coverage is expected to help more

TANF recipients find jobs so that the TANF caseload could decrease accordingly. Loop B is named administrative coverage loop which demonstrates the similar story as what loop A does. In loop B, a percentage administrative cap is set to control over the maximum administrative budget. Loop C is administrative-support acceleration loop.

Loop C demonstrates that, by multiplying a higher federal mandatory participation fraction, the increased TANF caseload will raise the need for program slots. Consequently, the amount of program slots will be increased. The key point in this loop is the administrative-support ratio. If the number of administrative staff grows slower than the number of program slots does, the administrative-support ratio becomes smaller. A smaller administrative-support ratio indicates fewer administrative supports to program slots. A smaller administrative-support ratio drives the job-finding rate even lower, and thus, raises the TANF caseload. This acceleration loop can offset the intended effect of the mandatory participation fraction.

Loop D is an administrative-support compensating loop. A higher TANF caseload needs more administrative staff to support the system. Increasing administrative staff drives the administrative-support ratio higher and, accordingly, the job-finding rate is increased and the TANF caseload is decreased. However, since the number of administrative staff is changed based on the size of TANF caseload, the growth of the number of administrative staff usually cannot catch the dramatic growth of program slots. Therefore, the administrative-support acceleration loop (loop C) is usually more dominating than the administrative-support compensating loop (Loop D).

The administrative cap places a ceiling on the maximum administrative budget. The maximum administrative budget is formulated as the total granted budget multiplied by the administrative cap percentage. This maximum administrative budget is a mechanism to keep administrative expenditures under control. The federal government mandates that total administrative expenditures must not go over 15 percent of total expenditures. Therefore, the administrative cap percentage is formulated as 0.15 in this policy test.

2) Policy Run : Setting Administrative Cap

Figure 6 shows the administrative cap run compared with the base run. The administrative cap, as expected, drives the system to spend less money than in the base run. In the graph of cumulative total expenditures in present value, the administrative cap run spends five millions less than in the base run along the simulation time. The savings is caused by the reduced administrative expenditures. However, setting the administrative cap creates more TANF caseload with a higher number of program slots than in the base run. The job-finding rate in the administrative cap run is much lower than in the base run. In summary, although the administrative cap saves administrative expenditures, the job-finding rate becomes lower, and accordingly, the TANF caseload increases.

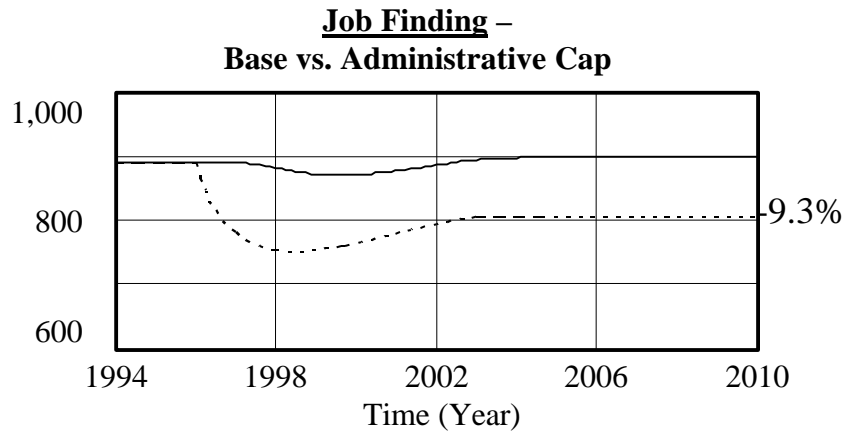Figure 5 The Dynamic Structure Including Administrative Cap
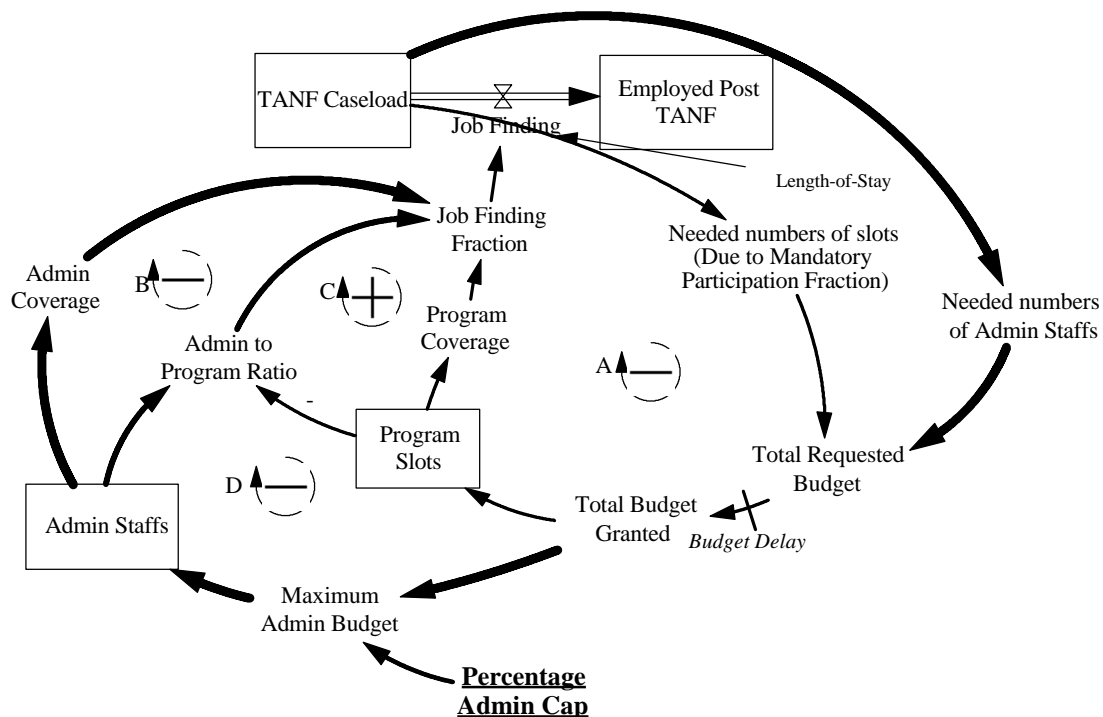
How does the administrative cap function? When the need for more administrative staff grows to reach maximum administrative budget, the administrative-support ratio declines. This is because administrative budget is no longer available for hiring more staff, on the one hand, the number of program slots keeps increasing due to the increased mandatory participation fraction, on the other hand. The lower the administrative-support ratio, the less the job-finding rate. Therefore, TANF caseload becomes higher than in the run without the administrative cap (base run). This story shows that cutting administrative expenditure could cause the program slots to be less productive. Additionally, this simulation result implies that any policy design without examining the whole picture of the system could cause unexpected problems.

Figure 6 Simulation Results of Base Run vs. Administrative Cap Run

<u>Program Slots</u> –
Base vs. Administrative Cap

1,000				+106%
700				
400				
1994	1998	2002	2006	2010

Time (Year)
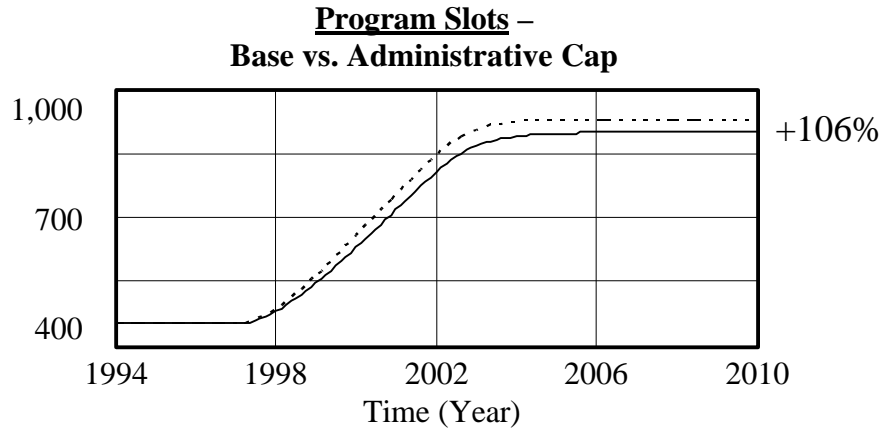
Program Slots : Base ——————— Slots
Program Slots : Base with Admin Cap ··········· Slots

<u>Job Finding</u> –
Base vs. Administrative Cap

1,000				
800				-9.3%
600				
1994	1998	2002	2006	2010

Time (Year)
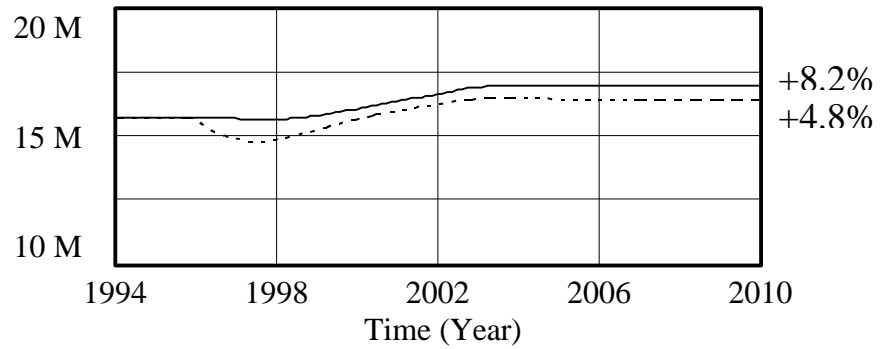
Job Finding : Base ——————— Families
Job Finding : Base with Admin Cap ··········· Families
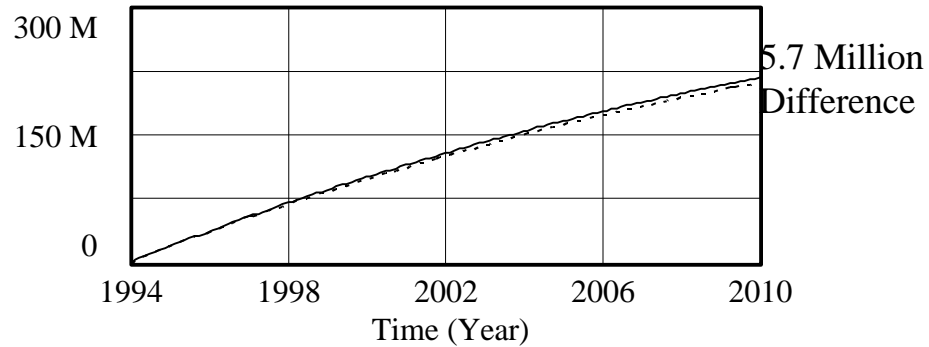
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TANF Caseloads –
Base vs. Administrative Cap
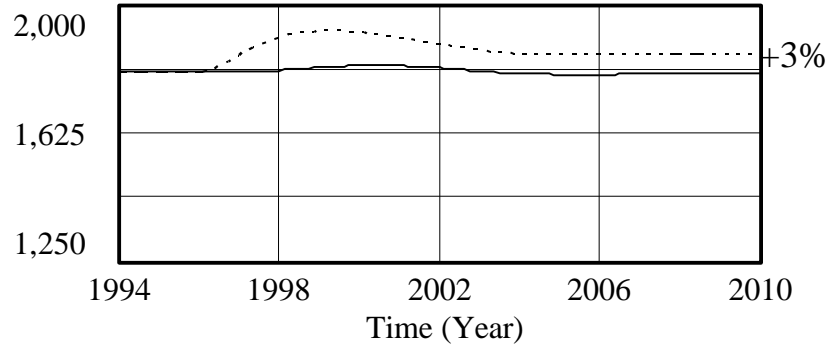
TANF Caseload : Base ————————	Families
TANF Caseload : Base with Admin Cap ·······	Families

Total Expenditures –
Base vs. Administrative Cap

Total Expenditures : Base ————————	Dollars
Total Expenditures : Base with Admin Cap ·····	Dollars

Total Expenditures in Present Value (Cumulative) –
Base vs. Administrative Cap

Total Expenditures in Present Value : Base   —— Dollars
Total Expenditures in Present Value : Base with Admin Cap · · ·Dollars

Summary and Conclusion

The purpose of this thesis is to build a highly aggregated system dynamics model in order to understand implied feedback mechanisms underlying the welfare reform financing. In addition, how the feedback mechanisms meet the intended purposes of fiscal policy implementation and how these policies produce unintended effects are also the major concerns of this research. This study does not attempt to project TANF caseload point by point. The concern is the pattern of the system's behavior and the implied feedback mechanisms.

1) The Mechanisms of Intended and Unintended Effects of Fiscal Policies

There are always one or more expected effects behind each policy. The expected effects are usually drawn from policy makers' understanding of the welfare system. However, lacking a comprehensive view of the entire welfare system, such an understanding might be partial and incomplete. Unexpected effects could be caused by endogenous problems. In this section, the intended effects of various fiscal policies are described and followed by an analysis of feedback mechanisms that cause the side effects.
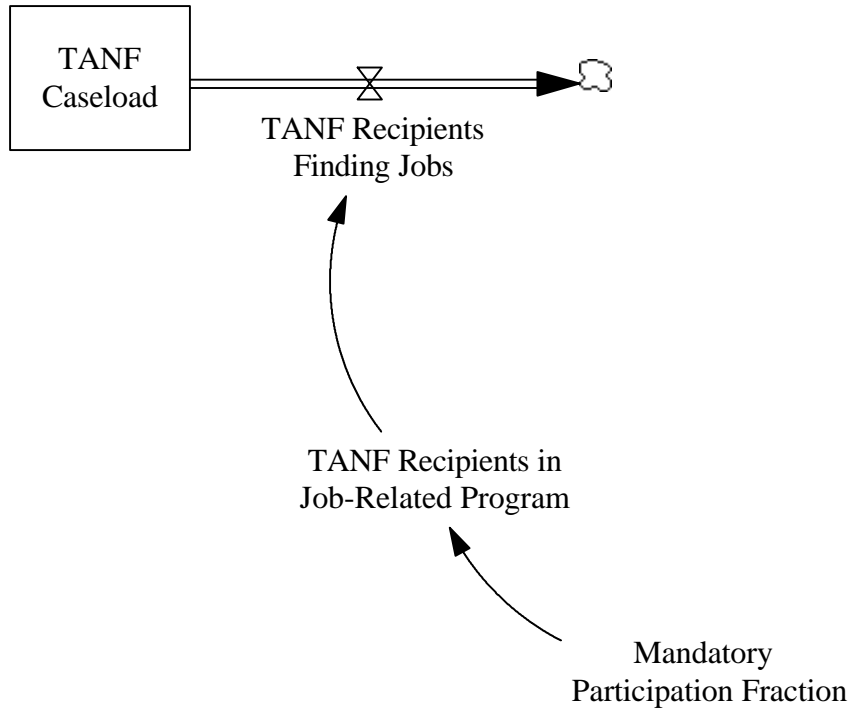
    A. The Effects of Mandatory Participation Fraction
        i) The Optimistic View of Mandatory Participation Fraction

Figure 7 depicts the pathway of how the mandatory participation fraction is expected to reduce TANF caseload. The mandatory participation fraction increases from 25% to 50%. Accordingly, more TANF recipients are required to participate in job-related programs, and then, more TANF recipients are expected to find jobs. As a result, the TANF caseload is reduced.

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Figure 7 Expected Effect of Mandatory Participation Fraction

ii) The Shortage of Administrative Support Reduces the Intended Effects of Mandatory Participation Fraction

The effects of the administrative support shortage counteract the expected effects of increasing the mandatory participation fraction. As the self-reinforcing loop shown in figure 8, the mandatory participation fraction increases the total of TANF recipients in job-related programs. Meanwhile, the amount of administrative staff is not enough to support the dramatic increase of the amount of TANF recipients in job-related programs. Thus, the job-related programs are not utilized in a productive and effective way. As a consequence, fewer TANF recipients in the programs can find jobs, and therefore, the TANF caseload increases. Due to the increased mandatory participation fraction, the more the TANF caseload is, the more the TANF recipients are required to participate in job-related programs. Under this circumstance, the administrative support shortage becomes even worse. Hence, if the amount of administrative staff does not change to correspond with the amount of the TANF recipients in job-related programs, the mandatory participation fraction could produce unexpected effects that lessen its intended effects.

Figure 8 The Shortage of Administrative Support Reduces the Effect of Mandatory
Participation Fraction
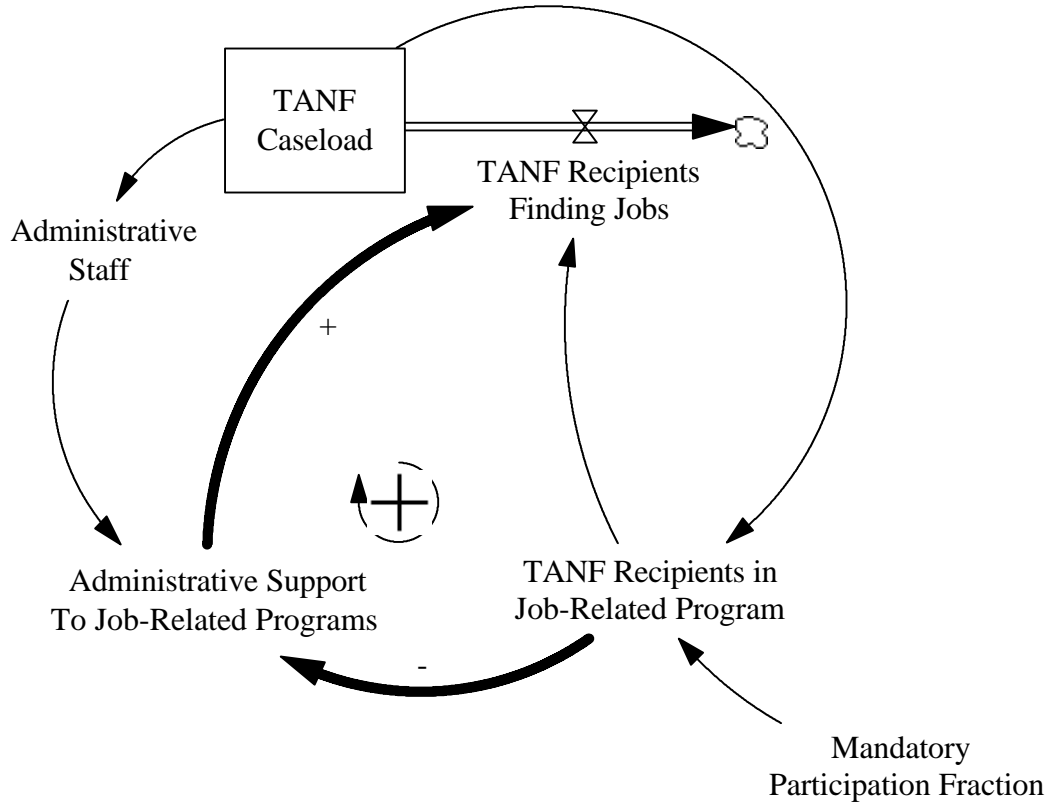
B) The Effects of Raising Program Quality

i) The Expected Effects of Raising Program Quality

In this study, the program quality is measured by the unit cost of program slots. A
higher unit cost of program slots indicates a higher program quality, and vice versa.
Raising the program quality is expected to reduce TANF recipients' length-of-stay.
TANF recipients who participate in job-related programs can receive better job-related
services than they would have had in a lower-quality program. Those TANF recipients
who receive better job-related services are expected to find jobs and leave TANF system
quickly. In other words, these TANF recipients' length-of-stay will be shorter, and
therefore, the TANF caseload is reduced. The intended effects of raising the program
quality are displayed as a causal diagram in figure 9.

Figure 9 The Expected Effects of Raising Program Quality
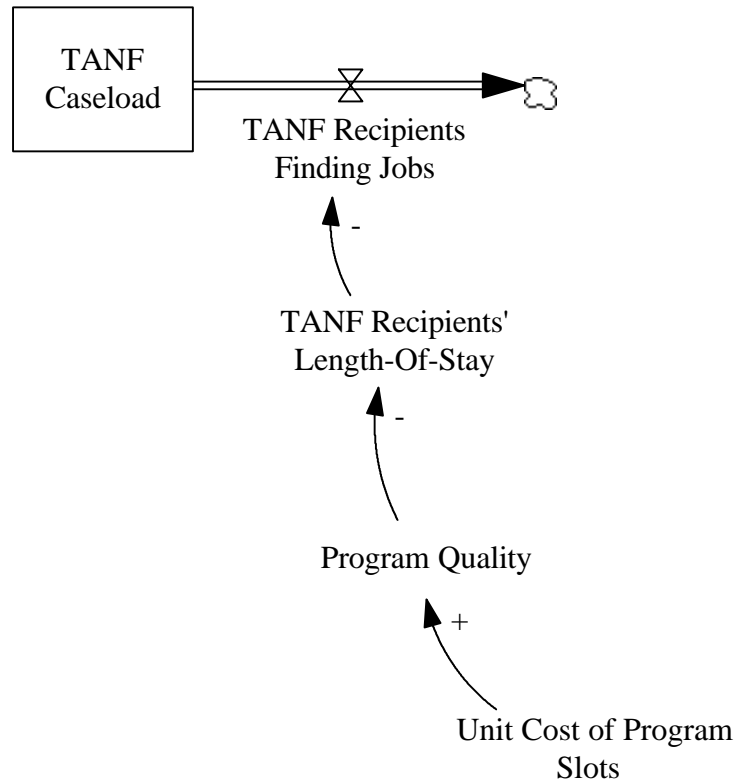
ii) The Focus of Job-Related Programs Influences the Intended Effects of Higher Program Quality

The expected effects of raising the program quality could be offset if job-related programs emphasize a long-term vocational training and education. The more the job-related programs emphasize long-term vocational training and education, the more the expected effects of higher program quality are offset. As the pathway shown on the left of the figure 10, the more the job-related programs emphasize long-term vocational training and education, the longer the TANF recipients are required to stay for job-training. Therefore, TANF caseload increases.

Figure 10 Longer Length-Of-Stay Effect
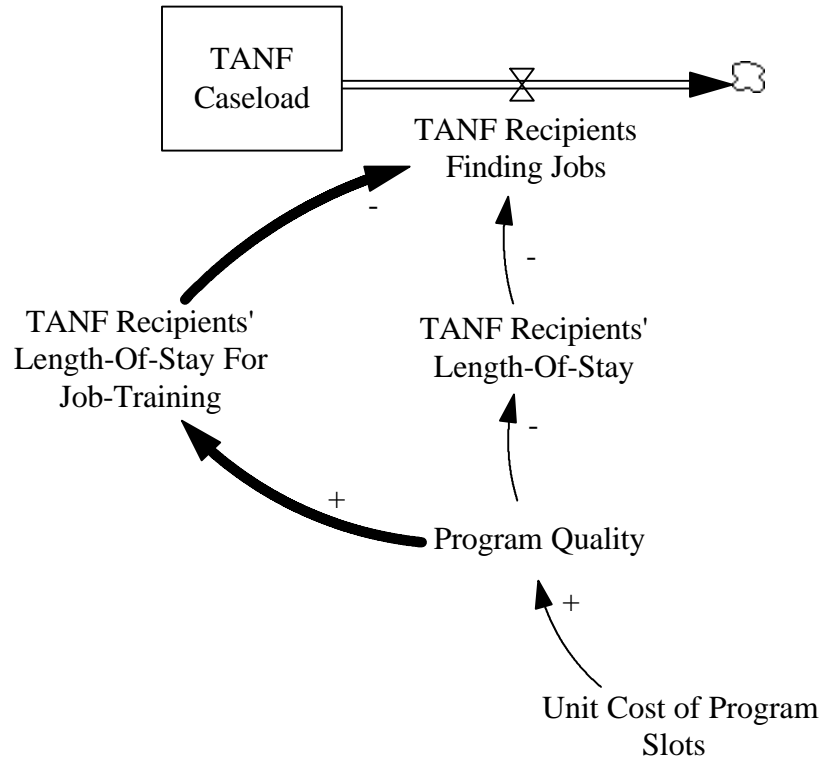

C)   The Function of the Administrative Cap
            i) The Expected Effects of The Administrative Cap
        The purpose of setting the administrative cap is to limit the administrative
expenditures. Currently, the local administrative expenditures, including local shares, are
beyond 20 percent of the total TANF/AFDC expenditures. When local governments'
administrative expenditures surpass the administrative cap, the local shares are increased
to cover the exceeding expenditures. When increasing the local shares becomes a strategy
of local governments to cover exceeding administrative expenditures, the original purpose
of administrative cap – preventing the administrative expenditures from overspending –
becomes even more difficult to reach. Thus, this study examined the policy consequences
of setting the administrative cap under the assumption that local governments do not
increase local shares. If so, as shown in figure 11, the lower the administrative cap, the
lower the available administrative budget. The lower the available administrative budget,
the fewer the number of the administrative staff. As a result, the administrative
expenditures could be under control.

Figure 11 The Expected Function of The Administrative Cap

Administrative
Expenditures

$+$

Administrative
Staff

$+$

Admin Budget
Available

$-$

Administrative
Cap
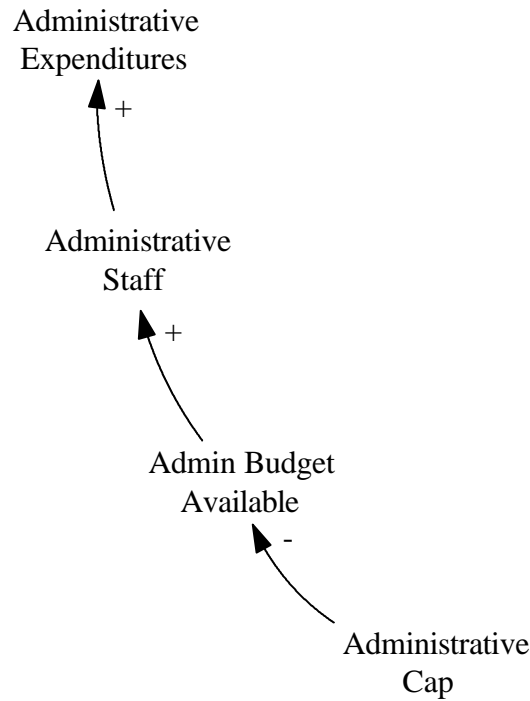
ii) The Side-effects of Setting the Administrative Cap

Without increased local shares, the administrative cap restricts the available administrative budget. Thus, the amount of administrative staff is limited. Facing the dramatic increase of TANF recipients in job-related programs, the limited number of administrative staff worsens the shortage of administrative support. Due to the administrative support deficiency, the job-related programs could not be as productive and effective as with sufficient administrative support. Consequently, less TANF recipients in these programs can find jobs. The TANF caseload increases accordingly. In this case, more TANF recipients are required to join job-related programs which, therefore, cause higher program expenditures. As shown in figure 12, the administrative cap restrains the administrative expenditures, but its side-effects produce higher program expenditures. Apparently, the expected governments' savings from capping administrative expenditures are offset by the higher program expenditures.

Figure 12 The Side-effects of Setting the Administrative Cap
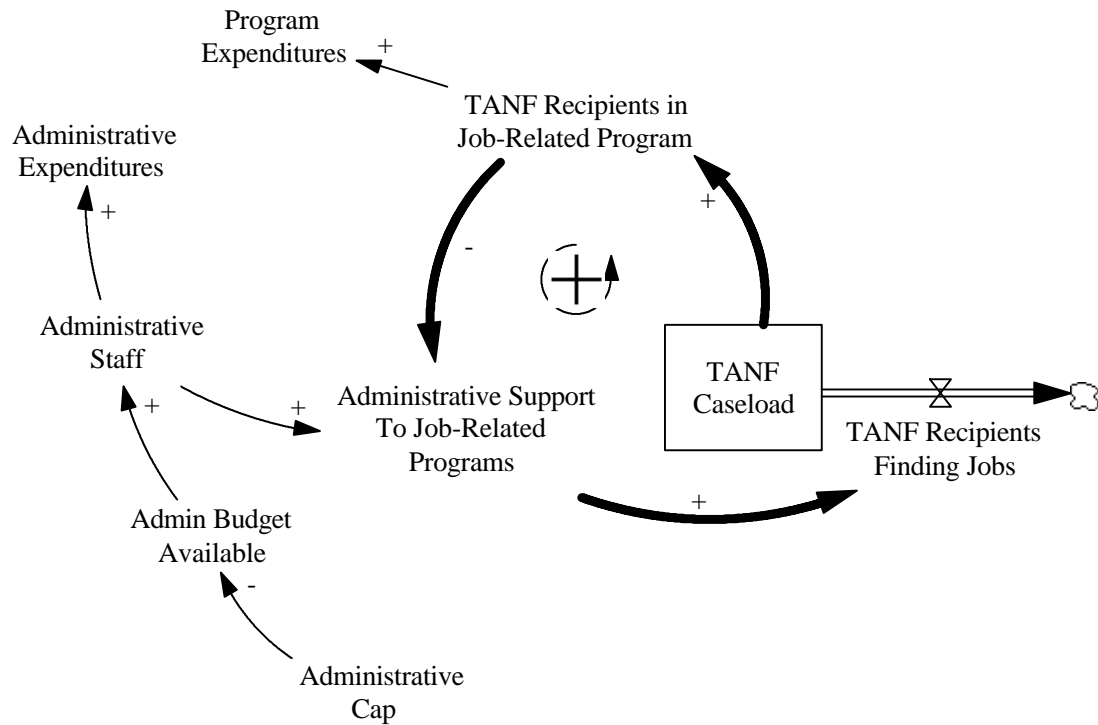
D) The Effects of Total Budget Limits

i) Economize By Setting Total Budget Limits

      The purpose of setting total budget limits is to control the growth of total TANF expenditures. The lower the total budget limits, the lower the budgets available for both administrative and program expenditures. Consequently, the amount of both the administrative staff and the TANF recipients in job-related programs are limited. Therefore, the actual administrative and program expenditures are under control and so are total expenditures. Figure 13 illustrates the diagram of the expected effects of setting total budget limits.

Figure 13 Economize By Setting Total Budget Limits

Total
Expenditures

+   +

Administrative   Program
Expenditures   Expenditures

+   +

Administrative   TANF Recipients in
Staff   Job-Related Program

+   +

Admin Budget   Program Budget
Available   Available

+   +
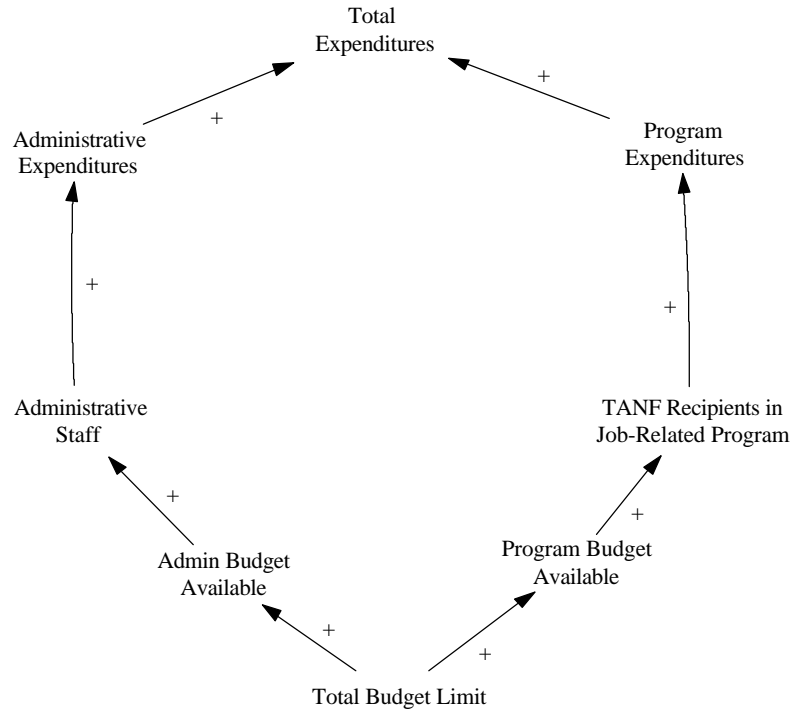
Total Budget Limit

ii) The Unintended Effects of Setting Total Budget Limits

Total budget limits could definitely restrict the total expenditures. However, the possible side effects of setting total budget limits should not be ignored. Part of the possible side effects is the same as the one caused by administrative cap. The lower the available administrative budget, the less the administrative support to the increased TANF recipients in job-related programs. Hence, fewer TANF recipients in job-related programs can find jobs, and as a consequence, the TANF caseload increases. However, the extent of the side effects caused by total budget limits is less than the one caused by administrative cap. Since a total budget limit restrains both administrative and program expenditures at the same time, the shortage of administrative support is not as serious as in the policy of administrative cap.

The program budget pressure that is resulted from the capped program budget causes the other possible side effects. When governments' available program budget is not sufficient to fulfill the needs for more program slots, such a budget pressure could motivate governments to reduce the unit cost of program slots. However, the lower program quality (indicated as lower unit cost of program slots) implies that the governments can not afford a long-term job-training program. Since the TANF recipients no longer receive a long-term job-training, they are not as competitive in the labor market as they otherwise would have been after a long-term training. In this case, the possibility for them to get jobs with higher wages could become lower. With low-wage jobs, these post-TANF employees may not be self-sufficient and independent from TANF assistance.

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Hence, the possibility of recidivism becomes higher, and accordingly, the TANF caseload increases. Apparently, both side-effects together cause higher TANF caseload. The trade-off between governments' savings and higher TANF caseload is worthy to be considered in the welfare policy making processes.

Figure14 The By-Effects of Setting Total Budget Limits
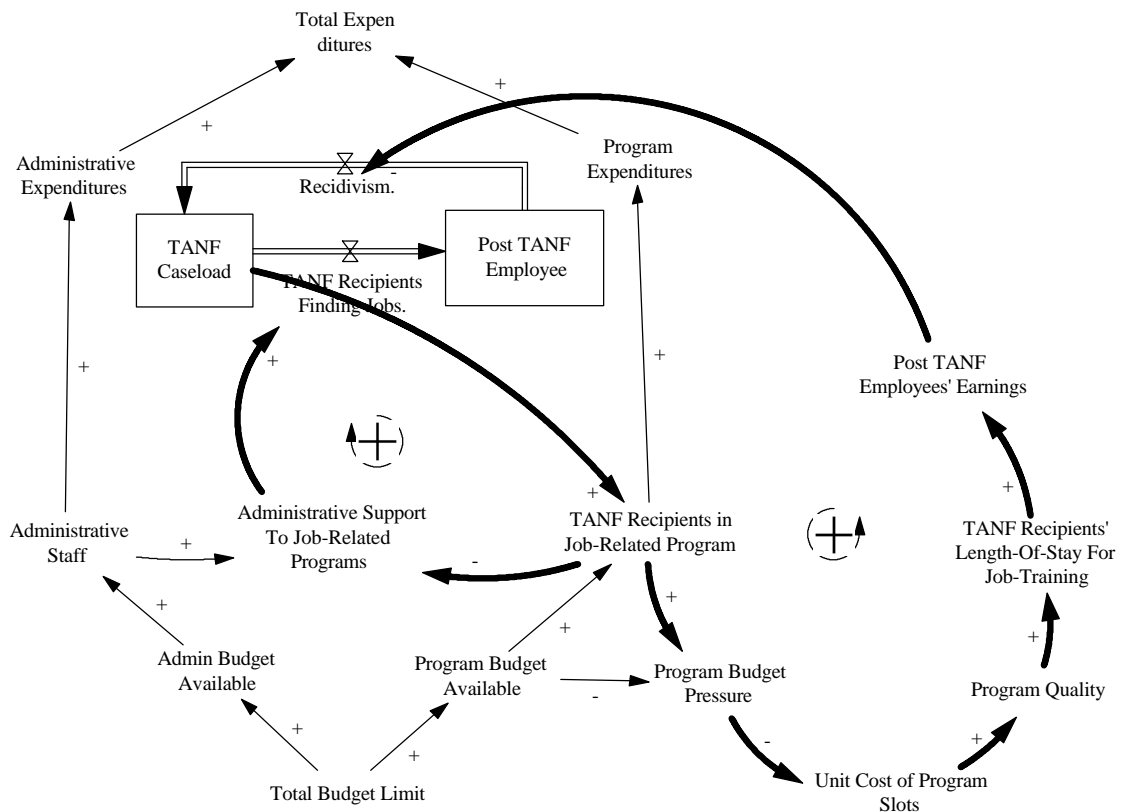
3) Summary of Simulation Results

Model WF3.0 is a structurally oriented model. All the model simulation outputs formed in graphs over time are structure-generated. The pattern of system's behavior is of more concern in this study than point-by-point projection. By means of model simulation, several welfare fiscal policies were tested and analyzed. The base world for the base run is a world with policy variables and exogenous influences taken out except the increasing mandatory participation fraction. These fiscal policies were analyzed by comparing the system's behavior between policy runs and base run. Such a comparison can show the pure effect of a fiscal policy while all the other factors are held the same. The simulation results and analyses of the fiscal policies examined in this study are summarized below.

A) Misallocation of Administrative-Support Can Drive Up TANF Caseload and Costs

As mentioned above, high program expenditures with increased TANF caseload is not as optimistic as expected. The main reason for the pessimistic results of the base run is that the amount of administrative staff does not increase corespondent with the increase of TANF recipients in job-related programs. The mandatory participation fraction requires more people to be placed in the job-related programs. However, the shortage of administrative support causes the results that the job-related programs can not be effectively and productively implemented. Therefore, in the base run, even though the total of program slots become more than doubled, the TANF caseload does not go down as expected.

B) Administrative Cap Can Exacerbate the Welfare Administration

Given the pessimistic system's behavior of the base run, the administrative cap makes the system behave even worse. Under the administrative cap, the TANF caseload becomes higher because the job-related programs are not as effective as expected due to the shortage of administrative support. Setting an administrative cap is able to bring down the growth in administrative expenditures. However, the program expenditures are raised to fulfill the needs for the higher TANF caseload.

C) Total Budget Limits Can Motivate Governments to Lower the Program Quality

At first glance, setting the total budget limits seems worse than setting the administrative cap because both the administrative and program expenditures are constrained. One of the problems caused by the total budget limits is the same as the one caused by setting the administrative cap. However, because the total budget limit cuts across administrative expenditures as well as program expenditures, the shortage of administrative support, indicated as the ratio of program slots to administrative staff, is not as serious as in the policy of setting administrative cap only. Another problem caused by the total budget limits is the program financial pressure. The financial pressure could motivate governments to lower the program quality that weakens the post-TANF employees' capability to become independent from TANF assistance. Therefore, the recidivism rate increases and so does the TANF caseload.

D) Different Job-Related Program Designs Can Generate Different Outcomes

Raising the program quality does not necessarily promote the number of job-finding people. A policy design that emphasizes long-term job-training and education could keep TANF recipients staying longer in the job-related programs. The more the job-related programs emphasize long-term job-training, the longer the TANF recipients are required to stay in the programs. As a result, the job-finding rate is comparably lower than in the programs emphasizing quick job-finding. However, such a long-term job-training program could help to increase the post-TANF employees' earning levels, and therefore, to decrease the recidivism rate.

3) Implications of Model WF3.0 – Corresponding Administrative-Support With Job-Related Program

The analysis of model structure and simulation results suggests that, to be effective, the amount of administrative staff should vary to correspond with the amount of TANF recipients in job-related programs. This study examined this policy suggestion with a revised model structure. In this revised model, the amount of administrative staff is increased when the present administrative support is lower than its initial level. This mechanism is formulated for the purpose of alleviating the administrative support shortage.

The simulation results show that the system behaves better under the new model structure. The TANF caseload decreases 3.8% compared with equilibrium level. In addition, this policy suggestion costs $0.6 million more in total expenditures at the end of simulation time. In summary, changing the number of administrative staff correspondent with the amount of TANF recipients in job-related programs could make the system perform better with a little more costs.

4) Research Results vs. Research Goals

As mentioned above, the purposes of this thesis are to build a highly aggregated system dynamics model in order to understand implied feedback mechanisms underlying the welfare reform financing, and to understand how the feedback mechanisms meet the intended purposes of policy implementation, or how they produce unintended effects. Furthermore, this study intends to provide policy suggestions that could alleviate those unexpected effects. The study of this thesis does achieve these goals. A highly aggregated welfare finance model, WF3.0, is built upon a complex welfare model which involving about 90 local welfare managers' professional knowledge. Model WF3.0 is a feedback-rich model and it has passed several model evaluation tests before it was employed for policy tests. These model evaluation tests were used to examine if the model structure and behavior are consistent with the real world and suitable to the goals. Passing these model evaluation tests built up the modeler's confidence to this model.

The feedback mechanisms in model WF3.0 has helped to understand what the intended effects of various fiscal policies are and how these fiscal policies are expected to function. Furthermore, by means of several feedback mechanisms, the analysis of model structure and the results of policy tests explained why and how the intended effects of fiscal policies are offset. In summary, clarifying the pathways and feedback mechanisms which cause unexpected effects of the fiscal policies is the major contribution of this thesis. Concluding that the welfare system could be better off if the amount of administrative staff changes to correspondent with the amount of TANF recipients in job-related programs is also a main contribution of this thesis.

Model WF3.0 does not lean toward any extreme point of view in order to obtain a specific system's behavior. It covers both conservative point of view (the performance of the welfare system is not sensitive to the amount of investment) and liberal point of view (the performance of the welfare system is sensitive to the amount of investment). The sensitivity analysis showed that the pattern of system's behavior does not change among different points of view. In addition, this thesis not only provided policy suggestions based on the implication of the model, but also revised the model in order to examine the policy suggestions. This thesis experimented with different scenarios (higher productivity

scenario) to examine if the conclusions drawn from the model simulation results vary under different scenarios. The experiment showed that the conclusions are solid.

5) Research Limitations and Suggestions for Future Research

There is always a trade-off between elaboration for causal structure and the desired level of analytic disaggregation (Andersen, 1983: 234). Model WF3.0 lacks the detailed cost breakout often expected by welfare practitioners. Welfare practitioners who are used to such details sometimes find it difficult to accept the model's results. Of course, the detailed feedback structure could be replicated for each service category, thereby making detailed cost projections available. For example, the job-related programs could be disaggregated into job-training program, job-searching program and so forth. TANF recipients could be differentiated into high need and low need as in welfare model. The advantage of such a disaggregation is to provide detailed cost breakdown so that the model's results could be easily accepted and understood by practitioners, and the policy suggestions provided by the study could be more specific. However, the cost of providing these information is a extreme complicated model with numerous feedback mechanisms which may lose the focus of the model.

TANF recipients' work incentives is a very important and controversial issue in the field of social welfare. Even though this issue is excluded from the research boundary of this study, the model could be expanded to include this issue for the future research. Modelers will find it very difficult to formulate work incentives not only because it is very hard to operationalize work incentive but also because it is a complex and controversial issue that may include opposite arguments at the same time. However, it is worthy to try to formulate welfare recipients' work incentives because, by means of model simulation, policy makers could have a more comprehensive view on work incentives when a related policy is considered.

Another ambitious extension to the model is involving the issue of "race to the bottom". "Race to the bottom" means a race for localities to cut welfare benefits faster than their neighbors in order to reduce the attraction to poor immigrants. This issue might be more serious in the situation that states have more discretion on deciding their welfare benefit packages. Since under the TANF system, state and local governments have more discretion on designing and implementing their local welfare programs, the issue of "race to the bottom" becomes very important. There are various ways to formulate this issue. The most comprehensive way is to replicate the existing model sectors to be another locality, and then, to make two localities respond to each other's benefit levels. Although conceptually plausible, such an expansion will make the model become a very large one.

The safety-net system could also be included in the model for the future research. Under the TANF system, those timing-out recipients will be placed in the safety-net. Governments' savings from the TANF system may cause more expenditures in the safety-net. Including the safety-net system in the model could help policy makers to balance the policy focus between the TANF and safety-net systems. By means of a system dynamics model, welfare policy makers could have a more comprehensive view of the entire welfare financing system. Hopefully, a well designed welfare financing policy could benefit both welfare recipients and governments.

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