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Federal Pay-for-Performance Reform and Organizational Discrimination: Lessons, Impacts, and Guidance for the Future

Stephen R. Goddard

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**Federal Pay-for-Performance Reform and Organizational
Discrimination: Lessons, Impacts, and Guidance for the Future**

Stephen R. Goddard

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Federal Pay-for-Performance Reform and Organizational Discrimination: Lessons, Impacts, and Guidance for the Future

Executive Summary

Those closest to the field of public administration, either through scholarly or practitioner roles, know very well that pay systems within the federal government are in dire need of new ideas. The General Schedule was established 60 years ago with the passage of the Classification Act of 1949. Since that time, the federal pay system has done quite well in establishing internal fairness and equality for workers within its purview. Starting in the 1970s, however, the General Schedule has fallen under increasing criticism for its failure to provide federal workers with an incentive to do better work or take on more demanding levels of responsibility.

Recent federal efforts to reform human capital management and increase organizational performance have attempted to connect strategic goals with employee performance objectives. Reforming or replacing the General Schedule has been deemed an ancillary, yet crucial, step in this process. The plans, as carried out, typically provide top performers in federal agencies with bonuses in addition to their base pay. A variety of test programs have been authorized and executed to evaluate the efficacy of these programs.

Academic research suggests that the type of pay scheme implemented by an organization can have many unintended impacts. The General Schedule is an internally rigid system that reduces subjectivity in employee evaluations, but it does this by sacrificing rewards for high achievers. Pay-for-performance systems respond well to the accomplishments of hard workers, but also introduce a larger degree of subjectivity into the system by providing monetary rewards

based on supervisory evaluations. If this subjectivity is not properly controlled, it could result in increased levels of discrimination within the organization.

When the Notification and Federal Employee Antidiscrimination and Retaliation (No FEAR) Act of 2002 was passed, it required federal agencies to collect data on discrimination complaints within each agency on a yearly basis. These data, once collected, must be published in all agencies' websites. Complaint activity is broken down in these reports based on total numbers of complaints, the basis of complaints, complaints actually resulting in a finding of discrimination, the processing time of complaints, and many more categories. The data create a very detailed view of each agency's discrimination levels and provide a useful medium for analyzing the impacts pay-for-performance reforms have within an agency.

The purpose of this study is to identify and describe any discriminatory impacts pay-for-performance reforms might cause within public organizations. This research identified three particular programs, those carried out by Government Accountability Office, Securities and Exchange Commission, and Federal Deposit Insurance Corporation, for evaluation. These agencies were chosen due to their similarities. All three instituted their pay system reforms at a similar point in time, have comparable numbers of employees, and are independent federal agencies. These organizations make up the experimental group of this research. Controlling for size and type of agency reinforces the validity of the results in that they are not subject to unpredictable influences resulting from the variations.

Nine other agencies were selected as a control group against which the experimental group was compared. No agencies in the control group have implemented pay-for-performance reforms. However, they do retain the other common similarities of the experimental group. The

control group was comprised of other independent federal agencies with at least 1,000 employees.

By utilizing time series analyses and independent samples t-tests to examine the EEOC data provided by the agencies, the study found no connection between pay-for-performance reforms and discrimination. Three hypotheses were tested that led the research to this conclusion. First, it was hypothesized that the control group would have a lower rate of discrimination complaints than the experimental group. Next, the research anticipated that the post-intervention totals for the experimental group would be higher than the pre-intervention totals. Lastly, SEC was predicted to have a significantly lower incident rate of discrimination reporting than FDIC or GAO due to its strict internal review process. In all cases, the statistical analysis returned results that showed no significant difference between the variables. Therefore, all three hypotheses were rejected and it was determined that pay-for-performance reforms had no discernable impact on organizational discrimination levels.

The time series analysis did provide interesting insight into employee reactions to the policy introduction. For each agency in the experimental group, the year immediately following the reforms displayed a marked increase in discrimination complaints. Within a few years of the initial introduction of the reforms, complaint activity had returned to levels similar to what was observed prior to the policy intervention. This trend seems to indicate a linkage between pay-for-performance reform and the initial perception of discrimination among employees. Actual findings of discrimination did not increase during this time and complaint levels, so no connection can be made between the pay system changes and discrimination.

Future administrators considering implementing adjustments or reforms to their existing pay structures may wish to carefully consider the impacts such changes have on their workers.

Having one's pay altered or being passed over for a bonus is not easily taken by most, and without understanding the new system, many employees may find it to be discriminatory in nature. This study concludes that while continual consideration should always be given to the discriminatory impacts new policies may have on employees, prudent public managers should educate their subordinates on the specifics of new pay systems before they are introduced. Communication with employees and the consideration of feedback and suggestions from them occur on a continual basis. This recursive cycle will ultimately lead to plans that attract a wider base of support, facilitate compromise between staff and managers, and reduce the amount of apprehension found among employees after the programs are implemented.

Federal Pay-for-Performance Reform and Organizational Discrimination: Lessons, Impacts, and Guidance for the Future

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Federal Pay-for-Performance Reform and Organizational Discrimination: Lessons, Impacts, and Guidance for the Future

Introduction

Upon entering office, each new president will undoubtedly face the issue of federal government reform. The topic is inherently related to the responsibilities and duties each president fulfills. President Roosevelt rapidly expanded the size and purview of the federal government during the 1930s and 1940s, firmly establishing a model of government similar to what is still present today. This expansion of the federal government generated a new interest in analyzing public sector productivity. Not only has the efficiency and efficacy of the federal government come under increasing scrutiny since the New Deal, but so too have those who work within it. Academics, advocacy groups, and even various agencies within the federal government have all created plans to increase federal employees' productivity and efficiency.

Recent presidents have attempted to confront these issues in efforts to update and revolutionize the administrative world. President Ronald Reagan implemented the policy of devolution, where the administration of many public programs and funding of personnel systems was relegated to the states. This, it was believed, would reduce bureaucracy and increase responsiveness. President Clinton focused on quality management. He launched the National Performance Review, headed by Vice President Gore, to identify areas and ideas where government could be streamlined and made more efficient (Breul and Kamensky, 2008). Most recently, President Bush applied private sector approaches to federal agencies through his Management Agenda (U.S. Office of Management and Budget, 2002). The new emphasis under President Bush's plan focused on strengthening accountability and organizational performance

rather than radically reforming hierarchy or shifting power. President Bush's new agenda effectively revitalized a decades-old discussion about civil service reform and the proper use of merit and performance-based incentives (Breul and Kamensky, 2008).

Systems that remunerate employees based on individual or group performance, better known as pay-for-performance systems, are commonly found in the private sector. These types of schemes reward workers with a predetermined amount of money for each measurement of success completed satisfactorily. Even though this type of system is used widely outside of government, it still signals a radical shift in the pay paradigm commonly held by most federal workers. The success rate of such reforms in the public sector has been mixed, and scholars have found evidence in support of and against performance-based pay systems in government agencies.

Most of the literature published on this topic as it relates to public agencies has focused on evaluating the efficacy and promising nature of these reforms. Variables such as efficiency, effectiveness, productivity, and quality of work have all been examined in detail. Very few researchers have focused on the unforeseen impacts of these reforms, however. This research examines whether performance-based pay systems have any impact on the amount of discrimination within an agency. Existing theory suggests that making such changes will cause a change in the level of organizational discrimination. It is not only relevant but also vitally important to research these issues as government takes on the task of modernizing the federal service.

The General Schedule System currently covers about 70 percent of all federal employees and does well to establish a culture of fairness and equality within agencies. Despite this positive aspect of the system, it has received increasing levels of criticism throughout recent decades.

Scholars and civil servants have decried it as being outdated and inefficient. They claim that its restrictive and rigid properties prevent government from acquiring and retaining the critical talent it needs to run well. To confront these challenges, alternatives for replacing the General Schedule System, such as performance-based systems, have been offered by many experts in the field. Again, it is very important to consider the unforeseen effects that might be caused as a result of changes in remuneration systems as government attempts to update itself and challenge the underlying assumptions of older models.

Congress and the Office of Personnel Management have been eager to allow independent agencies to pursue their own pay schedules and plans in recent years. It is hoped that this experimentation will allow government to test the ability of new systems to bring about the changes people are looking for. Securities and Exchange Commission (SEC), Federal Deposit Insurance Corporation (FDIC), and Government Accountability Office (GAO) have all received authorization from one or both of the aforementioned bodies to implement performance-based reforms in their pay systems. GAO has been particularly influential in the recent push for federal reform, authoring numerous reports that detail the successes of current changes and advocate heavily for more expansive performance-based improvements across a broader range of federal agencies.

Using EEOC data collected and published as a requirement of the Notification and Federal Employee Antidiscrimination and Retaliation (No FEAR) Act of 2002, a comparison will be carried out between three agencies that have implemented performance-based pay changes and nine other independent agencies that have not. By contrasting the levels of discrimination claims and findings between the two groups, a picture should emerge detailing the

exact impact the changes had on workplace discrimination within the agencies. This research examines the discrimination complaint levels within each organization.

Assessing whether performance-based pay systems cause a change in the amount of discrimination experienced within agencies is vital to the discussion of government reform. The movement for finding an alternative to the General Schedule System is spreading. As this exploration continues and the tendency to adopt such reforms gains popularity among agencies and departments, understanding the underlying discriminatory effects, if any should exist, is absolutely essential to forming a better system. The new system must implement accountability and performance initiatives in a way that aligns well with the principles of fairness and equity.

Describing the Pay Systems

The Civil Service Reform Act of 1978 implemented major initiatives to motivate civil service employees by rewarding high achievers. By establishing the merit system, which allows federal agencies to provide incentives and rewards to the hardest working employees, it was assumed these principles would lead to a revitalized and more productive civil service. Unfortunately, the federal merit system has been largely ineffective since its inception to produce major productivity benefits. Federal employees have traditionally had a difficult time linking pay to performance under the system (Pearce and Perry, 1983). Over the decades, the merit system has become more of an insulating feature of federal employment, which keeps political pressures from whimsically affecting workers' future, rather than an impetus for increased productivity.

The Office of Personnel Management was tasked with the oversight and administration of the General Schedule after the passage of the Civil Service Reform Act of 1978. Under this system, individual employees receive yearly increases in pay based on their particular level of

employment, also known as a step. Seniority, or time spent within an organization, tends to be the predominant factor for promotions and increases in pay, not performance. Most employees are eligible for advancing to the next grade level after a certain amount of time, usually one year. Each grade in the General Schedule corresponds to a classification regarding the type of work being performed by the individual. As such, grades within the General Schedule usually relate more to an employee's rank within the hierarchy of an organization than the market value of his or her skills (Milakovich and Gordon, 2004, 304-315).

There are many benefits of this General Schedule System, however. For example, employees covered under the General Schedule must rarely worry about their yearly increase in pay, as it is prescribed and set into law by Congress. The system is internally fair and embodies the philosophy of "equal pay for equal work." The classification system also allows for employees to transfer easily between agencies, as their job, grade level, and specific step held relate directly to their positions in the previous agencies' hierarchy. As Kim (1988, 109) observed, "merit pay includes the element of scientism, which emphasizes objectivity and accuracy in placing workers in appropriate positions and rewarding them with appropriate pay." Not all observers see a need to reform the federal service, and some completely denounce the current movement of market-based reforms. Claims exist that such reforms are incompatible with the nature of government service and that "the performance paradigm compromises the capacity of the civil servant to act according to public service ideals" (Thompson, 2006, 498).

The Government Accountability Office has been one of the most vociferous proponents of federal strategic performance reforms. As such, it is of little surprise that the agency has undertaken one of the most extensive initiatives within the federal government to reform its compensation system. GAO implemented a policy to band its pay levels and adjust them to more

accurately reflect market trends for employees in the same positions or with the same education levels and skills. The system became most noteworthy in 2005 after the passage of the GAO Human Capital Reform Act of 2004. The agency continuously reevaluates and adjusts its pay scales to ensure continued reflection of private sector offerings. Using a tiered system, GAO ranks employees' performance on five levels. The total compensation for performance-based salary adjustments is determined by calculating the percentage of salaries within each band. The organization does not use a pooling or review board technique in evaluating employee performance audits. In FY 2006, GAO gave an average adjustment of 2.6 percent to those employees who received a satisfactory evaluation (U.S. Office of Personnel Management, 2007, 23; U.S. Government Accountability Office, 2007; Walker, 2007).

In 2002, the Securities and Exchange Commission executed its own pay-for-performance system. The system initially assesses the individual performance of an employee in a binary fashion, labeling performance as either acceptable or unacceptable. The second part of the process allows employees and supervisors to submit written statements highlighting the findings of the evaluation. Once this is done, the supervisors place the respective employee into one of four categories. A committee devoted to the review of this process then assesses the comments of both the supervisor and employee and the category the employee was placed in by the supervisor. The final evaluation is retained by the committee, who will place the employee into a step from 0 – 3. This placement reflects the actual amount of bonus pay the individual employee will receive (U.S. Office of Personnel Management, 2007, 29; U.S. Securities and Exchange Commission, 2008).

The FDIC also has a performance-based pay system originating in 1998. The most recent and significant changes occurred in 2003, however, when the reforms began to impact lower-

level staff. There are two separate systems covering all employees, one for senior managers and another for all bargaining unit and non-bargaining unit personnel, within the agency. Increases in pay are closely tied to individual contributions to organizational goals. After an employee receives a satisfactory evaluation, he or she is placed into one of four pools of employees who performed similarly well. Performance-based bonuses are awarded after the individual is compared to other peers in the same pool (U.S. Office of Personnel Management, 2007, 27).

To illustrate the pay-for-performance systems further: if a carpenter gets paid \$100 for every new chair s/he makes, a policy analyst at GAO might get put into the next highest category for bonuses each time s/he contributes directly and unambiguously to the agency's strategic goals. To continue the analogy, if the carpenter makes no chairs, s/he gets no pay. If an employee at GAO, FDIC, or SEC does not meet expectations for the year, s/he receives no bonus or increase in pay.

By understanding the differences between the individual systems and the General Schedule, several disparate approaches to federal pay emerge. The General Schedule is a system based on longevity within civil service and does very little to promote productivity. Merit pay was originally thought of as a way to encourage federal employees to work harder by adding incentives to their routines. Ultimately, this did very little to influence or inspire civil servants. Performance-based pay systems are the latest attempt at increasing government efficiency by directly linking pay to performance and the closest scheme white-collar federal employees have to actual output-based pay.

Literature Review

Pay-for-Performance systems are rooted in expectancy theory and reinforcement theory (Perry, Engbers, and Jun, 2009). Taken together, they provide a foundation and explanation for why performance-based systems work. Each framework provides an explanation for how incentives in the remuneration schemes compel employees to work harder and create better work. Keeping the discussion relevant to this research, discrimination, if shown to exist in the data, would undermine both theories and remove the incentivizing factors for employees within the performance-based systems.

Expectancy theory ties effort to outcome. If an employee believes that exerting more effort or performing better in a particular way within a job will attract more rewards, and the employee values those rewards, then s/he will work harder in order to obtain the rewards (Vroom, 1964). It has also been shown that individuals will attempt to optimize their situations by comparing the immediate choices available rather than holding each choice to an independent standard. This process is a display of an individual's attempt to maximize personal outcome and reward (Behling and Starke 1973). When discrimination is observable and rampant, this comparison might encourage employees to quickly assess their situation and seek out new agencies or sectors for work. These theories show that discrimination could undermine the ability for performance-based reforms to create the desired changes.

If expectancy theory can be summarized as compelling one to choose to perform better, then reinforcement theory can be thought of as training for an individual to do so. That is, reinforcement theory places importance on the current act (typically performance) and the consequences (positive or negative) of that act. Over time, pay can reinforce good behaviors (high performance) and lead to a more productive workforce. For performance-based systems,

the opportunity for bonuses continually motivates and trains an employee to work hard in order to obtain established goals (Perry, Mesch, and Paarlberg, 2006).

Performance-based compensation systems have been demonstrated to reduce the amount of organizational discrimination due to inequities in pay. As Heywood and O'Halloran (2005, 449) found, "evidence presented suggests that the racial wage differential is smaller for those receiving output pay. Output-based pay schemes provide more objective information on productivity than do typical supervisory evaluations." Heywood and O'Halloran's (2005) research is predicated upon the assumption that performance-based pay schemes remove subjectivity from decision making within individual systems. Each worker receives a predefined increase in pay for every new unit of productivity. This removes the often arbitrary nature of supervisor evaluations, thus reducing the amount of bias in the system. Moreover, this type of system makes discrimination more easily observed. The repercussions in the form of legal settlements, fines, and damage to an organization's reputation make the cost for discrimination high, lessening the chance of it actually occurring (Becker, 1971; Heywood and O'Halloran, 2005). As observed, evaluations introduce bias and subjectivity into a system and often account, at least partially, for discrepancies between race and gender pay levels.

The performance-based systems implemented by GAO, FDIC, and SEC have a methodological review process that deviates slightly from the research performed by Heywood and O'Halloran, whose assumptions are based on the framework of tangible outputs. Unfortunately, most work produced by government agencies is of an intangible nature. Employees of federal agencies are frequently called upon to complete tasks that require mental, rather than physical, skills. Work produced might be in the form of reports or portions of reports, which makes assessing the output difficult and raises several questions. These questions include,

but are not limited to, the following: In a performance-based pay system, should a policy analyst be remunerated for the amount of reports authored in a given year? Does the total length of the reports matter? Should the quality of the reports be considered as well? Is the amount of impact that resulted from the reports important for consideration during evaluations?

Attempting to take issues of fairness and objectivity into account throughout the evaluation process, the systems at GAO, SEC, and FDIC have internal mechanisms that discourage and remove discrimination. However, if bias were to occur, it should have a much larger impact on the affected employee than within the General Schedule, where s/he would be insured a yearly increase regardless of review. Because of this, Heywood and O'Halloran's (2005) model must be revised for applicability in this study. Pay-for-performance systems within these agencies attempt to disambiguate and standardize the tasks of individuals within the organizations. However, the process is not as mechanical as for the public employee as it is for the carpenter or sales person, who is paid an additional sum for each unit of output. All three systems rely upon evaluations from superiors to measure initial performance. It is virtually impossible to eliminate all forms of favoritism and subjectivity from performance reviews.

Should the internal controls for removing bias be ineffective within these systems, the ability for discrimination to occur is much more likely. Elvira and Town (2001) found that workplace performance evaluations are highly dependent upon the race of the supervisor(s) and subordinate. Racial differences in pay discovered during their research are directly dependent upon the bias and subjectivity of the evaluator. When an evaluator is a different race than that of the employee being evaluated, the evaluator is much more likely to discount the employee on the basis of his or her race. The resulting lower score on the evaluation then directly impacts the

future pay of the employee. One can see from this study just how significantly race can impact evaluations.

Additional studies have shown how wages in jobs traditionally filled by women pay much lower than sectors dominated by men (Bridges and Nelson, 1989). These disparities are attributable to a variety of contextual factors including sociological and economic elements. However, the study suggests that if the current trend to mirror government salaries to those within the private market continues, those roles in government that are similar to women-dominated professions in the private sector could face suppressed wages. This is congruent with the observations of other research, which found that performance-based systems actually exacerbate this phenomenon (Elvira and Graham, 2002). Meyer observes that “a merit pay plan rests on the assumption that a supervisor can make objective and valid distinctions between the performances of various individual who report to him” (Meyer, 1975, 41).

Evaluations of employees are, by their very nature, often highly subjective. Attempts have been made within the reformed agencies (GAO, FDIC, and SEC) to make the process as fair and scientific as possible, but it would be difficult to imagine a system where all bias was removed. Studies show that performance appraisals impact the efficacy of performance-based remuneration. When evaluations are unfair, or simply perceived to be so, the efficacy of the entire pay system can be undermined. Employees perception of the system is essential to building a successful program (Perry, Engbers, and Jun, 2009). To describe this more accurately, the General Schedule System is actually more like the output-based pay discussed by Heywood and O’Halloran (2005), due to its lack of ambiguity or the influence of supervisory subjectivity. From this perspective, this study’s first two hypotheses emerge. **H1:** Agencies that implement pay-for-performance reforms will have higher incident rates of discrimination. **H2:** Within the

experimental group, the pre-intervention means will be significantly lower than the post-interventional means.

The three agencies being reviewed have developed their pay system reforms autonomously. Ideas might have been gleaned from previous and existing projects, but each system was developed independently within the individual agency. The systems, developed as they were, have different banding systems, pay structures, and evaluation processes. Evaluation processes at SEC seem to be more focused on controlling bias than at GAO or FDIC. As previously mentioned, the SEC has a supervisor appraisal, followed by the employee being allowed to add his or her own argument to the evaluation, which is finally reviewed by a committee to ensure the supervisor's findings were appropriate. GAO and FDIC also have systems in place to remove subjectivity from the evaluation process, but their systems are not as stringent as the process at the SEC. Given these observations, a third hypothesis becomes apparent. **H3:** Among the three agencies that have implemented performance-based pay reforms, post-intervention discrimination at SEC will be lower than at FDIC or GAO, due to the internal controls on bias during SEC employee evaluations.

Methodology

Pursuant to the No FEAR Act of 2002, each federal agency is required to publish a yearly report that details the occurrences of discrimination within each organization. The data contained within these reports are useful for this analysis because they are uniformly collected information on the number of complaints alleging discrimination filed during a given year, the total number of complainants filing the grievances, the alleged basis upon which the discrimination occurred, the issue from which the complaint resulted, and the total number of actual findings of

discrimination as determined by agency investigation or adjudication. As such, the figures published by the agencies provide a means for undertaking a comprehensive comparative analysis of the agencies that have implemented pay-for-performance reforms and those that have not.

In total, 12 agencies were included in the research, and each represents the study's unit of analysis. GAO, SEC, and FDIC were the only three completely independent federal agencies meeting our size criterion that have implemented performance-based pay changes. Other quasi-independent agencies, such as the Internal Revenue Service, have implemented similar changes, but were excluded from this analysis because they are within a larger federal department (IRS being a part of the Department of Treasury). It was determined that focusing on independent agencies, free of larger departmental cultures, would eliminate additional bias from the analysis. Excluding agencies with under 1,000 employees ensured that the agencies included in the evaluation were large enough to produce meaningful data. Numbers from small agencies, none of which had performance-based reforms implemented, would be of little contribution to the study. The other nine agencies included have not implemented remunerative reforms similar to GAO, SEC, or FDIC. As such, they serve as a control group for the analysis. See Appendix C for a listing of all agencies within the control group.

Time-series analyses are used to describe and compare the trends among both the control and experimental groups. Additionally, means analyses are utilized for more accurate and descriptive comparisons for testing the aforementioned hypotheses. Given the data available, this methodology allows for trends in EEOC complaints to be established before and after the independent variable's introduction. Should a similar trend be found among all agencies within a particular group after the intervention is introduced, a compelling case might be made in support

of or against the aforementioned hypotheses. Additionally, by comparing the results found within the experimental group to those among the control group, the findings should be even more substantiated.

The independent variable, performance-pay reforms, was tracked among the three agencies that made the changes and compared during those same years to the EEOC data for agencies that still use the General Schedule System. The dependent variable is the total number of complaints contained within each agency's yearly publications on discrimination (race, gender, age, religious affiliation, and all Title V protected classes). The data collected are thorough and allow for analysis of the same dependent variable across the experimental and control groups. Since all data collected were secondary in nature, no considerable ethical concerns arise.

To make the numbers meaningful, the data collected by the agencies were converted to percentages based on the total number of employees within each agency for a given year. For example, if an agency had 100 complaints of discrimination during FY2006 and also had 1,000 employees, the data collected were converted to represent this as 10 percent. Otherwise, comparing complaint levels from agencies with 1,000 employees to those with 10,000 would make very little sense. One hundred complaints during a year within a smaller agency would be much more significant than the same number within a tremendously larger organization. All numbers for employment for a fiscal year within each agency were taken from the database through the Office of Personnel Management's website, also known as FedScope. The Government Accountability Office, an agency under the direct supervision of Congress, does not have data collected within the FedScope database on its yearly employment statistics. Because of this, alternative means were sought to identify the numbers. The employment numbers for GAO

were taken from the Best Places to Work in the Federal Government, an annual study conducted by the Partnership for Public Service and the Institute of Public Policy and Implementation at the School of Public Affairs at American University. These data did not include the employment numbers for GAO during FY 2007, however. This number was found within the 2007 GAO Performance and Accountability Report.

The pay-for-performance changes were implemented several years ago in all the agencies within the experimental group. The data, collected before and after the reforms, should provide a worthwhile analysis for assessing the changes in organizational discrimination amongst the groups and within the experimental group. To test the hypotheses, multiple measures were taken. Pre- and post-intervention means were compiled and examined for the experimental group, an analysis was performed of only the post-intervention means within the experimental group, and the post-intervention means for the experimental group were compared to the total means of the control group.

All data among the agencies were collected and organized by fiscal year. This process, while being as thorough and complete as possible for each individual agency, does leave gaps in some areas of the data. Agencies began and ended collecting data at different times. The Office of Personnel Management, for example, has the most extensive employment data available on the agencies, covering all years from 2000 to present. However, the Social Security Administration only has EEOC data published from 2006 to present. Most agencies began posting their No FEAR data in 2003, which provides a solid foundation for analysis, so any data lacking in the years after this should be relatively inconsequential to this study. The amount of data and type of analysis being conducted should overcome these deficiencies.

Findings

While the research produced a better understanding of the impact pay-for-performance reforms on organizational discrimination, a number of other, ancillary findings were discovered as well. To best understand the dynamics of the impacts, the discussion of the findings takes both standard time series and regression models into account.

Using an interrupted time series model (Appendix G), the impact of transitioning from a standardized pay system, like that of the General Schedule, to one that links performance with remuneration is clearly illustrated. In all three agencies within the experimental group, total EEOC claims alleging discriminatory treatment rose in the years immediately following the introduction of the performance-based pay reforms. For GAO and SEC, the increase in complaints filed was drastic, while the increase for FDIC was only mild. Nevertheless, all three agencies did experience an initial increase in EEOC complaint activity.

Once the policy had been established for a number of years, the number of EEOC complaints within all agencies had returned to levels similar to those before the policy intervention. In the case of FDIC, the number of EEOC complaints filed in 2008 was less than half of the pre-intervention total of FY2003. For the other two agencies, GAO and SEC, complaint levels two years after the initial introduction of the policy were at similar levels to the pre-intervention data.

The abrupt rises and declines around the policy intervention for the experimental agencies display a significant event. While other factors could have influenced the data and caused a similar spike in complaint levels, it is unlikely that the same occurrence happened at all three agencies at exactly the necessary time to produce such a result. The policy interventions occurred during a different year for all three agencies, yet the same results are found amongst the

three agencies. Thus, it is highly improbable that the same unpredicted interruption occurred at each agency at the precise year needed to produce these results.

GAO had the largest single-year increase of the three agencies. Complaints within the agency rose almost 700 percent from FY2005 to FY2006. During FY2004 and FY2005, GAO had only received 5 total complaints alleging discrimination, or only 0.15 percent of all employees. By the end of FY2006, a full year into the pay-for-performance reforms, GAO faced 35 complaints of discrimination, or 1.07 percent of its total workforce. By the end of FY2008, levels had settled around the pre-intervention levels.

The changes to remuneration policy at SEC occurred in 2003. The available data did not extend to data points prior to the policy intervention. However, if 2003 is considered a baseline for the time series analysis, which is acceptable due to time lag, the findings display a significant increase in the reported number of EEOC claims in FY2004. Similar to GAO, the spike in the number of claims is immediately followed by an abrupt decline in subsequent years. Unlike GAO, the most recent observation points on the time line for SEC display complaint levels much lower than the pre-intervention totals.

FDIC implemented its pay-for-performance policy in 2004. The numbers of EEOC complaints within the agency rose from that time through FY2006, but not as dramatically as SEC or GAO levels. Following FY2006, the numbers had begun to decline, and by FY2008, numbers of complaints had dropped to 13, or 0.26 percent of the workforce. The most recent data point is less than half of the number of complaints filed immediately preceding the policy intervention.

The scope of the data available on GAO, FDIC, and SEC was limited, but not so much so as to impact the findings of the study. The No FEAR Act, which requires the documentation and

publication of EEOC data, was passed in 2002. Almost all the 12 agencies in the study had no data available prior to FY2003. The pay-for-performance reforms were implemented in 2003 at SEC, so the policy intervention and beginning of the analysis of EEOC data occurred contemporaneously. Thus, there is no way to ascertain the behavior of data prior to the introduction of the reforms. Luckily, however, the reforms only manifested in relevant data trends in the fiscal year following implementation. For practical purposes, the fiscal year in which the intervention occurred could be thought of as the last data point for the pre-intervention model. Once the policy to remunerate based on performance was established in any of the analyzed agencies, complaints did not begin to appear in the data until the following year due to the time the agencies' processes take to undertake employee review and make decisions affecting pay.

The Perception of Discrimination

The dramatic changes in EEOC complaint activity directly following the policy intervention within the evaluated agencies initially suggest to the observer that pay-for-performance programs do indeed impact the level of discrimination within an organization. However, when compared to the adjudicated levels of cases determined to actually be discrimination, a different picture emerges.

Actual findings of discrimination were rare among the three agencies in the experimental group. GAO had no findings of any discrimination during the entire period from FY2003 through FY 2008. Only one case of discrimination was discovered in the same time frame at FDIC. The case, adjudicated in FY2008, happened long after the initial intervention occurred. As such, it is difficult to establish if the pay-for-performance policy contributed in any manner to the

occurrence. At SEC, there was, again, only one finding of discrimination, which took place in 2005. While this incidence happened in a time span close to the policy intervention, it also arose as total complaints of discrimination within the agency were in a precipitous decline. The total number of adjudications of discrimination within the experimental group does not constitute a significant finding that might indict the performance-based systems for elevating organizational levels of discrimination.

A more relevant and useful observation of this trend might focus less on actual discrimination and more on perceived discrimination. That is, the spikes in complaint data with little to no corroborating data of actual discrimination suggest that employees within the organizations at least feel like they are being discriminated against. This in no way undermines the importance of understanding this trend; perceived injustice can be just as damaging to an agency as actual discrimination. A prudent public manager might find it wise to educate his or her organization extensively about the proposed changes and work closely with staff to tailor the plans precisely to the needs of the organization and expectations of employees.

Comparing to the Control Group

Comparing the rise in complaint activity of the experimental group to the same data for the control group produced very interesting results. However, since the control group was not exposed to the intervening variable, a standard interrupted time series analysis is of little use when trying to compare the control and experimental groups. Instead, an independent samples t-test was employed to analyze the data. This method allowed for the first hypothesis (H1) to be tested. H1 hypothesized that agencies that did not implement pay-for-performance reforms

would have lower levels of discrimination complaints.

The results of the independent samples t-test entirely contradict the above hypothesis. For the comparison, only the post-intervention data from the experimental group was compared to the data from the control group. After completing the analysis, it was discovered that the mean of all EEOC complaints for the years following the policy intervention in the experimental group was lower than the complaint level for the control group.

Since the significance of the Levene's Test is 0.328, much larger than 0.05, the results of the t-test can be considered equivalent and included in the findings. The results show, however, that there is not a significant difference between the totals of the control and experimental groups. Assuming equal variances or not, the significance is above 0.1 for both groups (0.130 assuming equal variances and 0.113 if not assuming equal variances). While the mean of the experimental group is lower than that of the control group, it is not significantly lower. That being the case, H1 must be rejected. The findings show no significant difference in the totals. There is no certainty that any significant difference in discrimination levels exists between the two groups. Statistically speaking, they are equivalent. Appendix B has the detailed statistics report for this finding.

Analyzing the Experimental Group

H2 hypothesized that the post-intervention means within the experimental group would be significantly higher than the pre-intervention means. A means analysis was again employed using an independent samples t-test. The difference of the means between the experimental and control groups was not significant. In two of the agencies, the post-intervention mean was higher (GAO and SEC). FDIC had a post-intervention mean that was 0.0000017 lower than pre-

interventional mean. The post-interventional mean for SEC was slightly larger than the pre-intervention mean. GAO, again having the most drastic change in complaint totals, had a post-intervention mean that was more than three times the pre-interventional mean.

Like the findings comparing the means of the experimental and control groups, none of the post-intervention means were statistically significant from pre-intervention means. GAO was the agency closest to the 0.05 significance level, with SEC and FDIC much further from significance. This being the case, H2 is rejected. The difference between the pre- and post-intervention means for the experimental group is not significant. See Appendix C for more details on the results of the t-test results.

H3 posited that SEC, due to the strict internal controls limiting subjectivity throughout the performance review process, would have the lowest rates of discrimination complaints after the intervening variable was introduced. To test this, means were again compared using an independent samples t-test (Appendix D). After reviewing the post-intervention means, SEC did indeed have the lowest level of discrimination complaints, with a mean of 0.0041445. FDIC had the highest mean of the group at 0.0064283. GAO had a post-intervention mean that was between the aforementioned agencies' totals. The mean for GAO was closer to FDIC's mean than SEC's. Testing the difference of the means between SEC and the other agencies showed that the difference was not significant. H3 is rejected. The difference is not significant enough for the research to conclude that SEC's means were significantly lower than GAO or FDIC.

Conclusion

Pay-for-performance initiatives are gaining increasing levels of popularity at all levels of government. The findings from this research suggest that these reforms have had no short-term

effects on the levels of discrimination within the agencies that have implemented the changes. No positive or negative impact could be ascertained from the means analyses. The time-series analysis did produce evidence that would be of use to public administrators considering implementing pay-for-performance reforms.

This analysis created demonstrable evidence that actual discrimination should not be an impediment to agencies implementing pay system reforms. There were no significant changes in the number of discrimination complaints within the individual agencies' pre- and post-intervention totals. Additionally, the difference between the post-intervention mean of SEC (which had the lowest post-intervention mean) when compared to the means of GAO and FDIC was not significant. Finally, there was no statistically significant difference in the means of the experimental and control groups. Through testing for all three hypotheses, the evidence clearly indicates that no discernable connection exists, positive or negative, between pay-for-performance reform and discrimination complaint levels.

Education, Outreach, and Compromise

While there was no evidence to suggest that pay system reform impacted individual agency discrimination levels in a positive or negative manner, there is evidence to suggest that employees initially perceive a negative impact. The time-series analysis displayed a common trend among all of the agencies within the experimental group. The trend, a sudden and precipitous increase in discrimination complaints in the first and second years following the introduction of the reforms, with no corroborating increases in adjudicated cases of discrimination, suggests that employees perceive the system to be unfair and discriminatory.

After the first few years, this sudden increase in complaints drops back down to levels typical of what was observed prior to the reforms' implementation. This quick decline of complaint levels indicates that as time passes and the employees become more accustomed to the new system, their apprehension toward it decreases. The decline in complaints could also be attributable to compromises reached between the agencies and the employees through negotiations. GAO employees attempted to unionize in the years following the reforms at the agency (Rutzick, 2007).

Administrators considering pay system reforms should be less concerned about actual discrimination and more interested in reaching out to the employees of their organizations prior to, during, and after the implementation of the changes. This is not to say that managers of public organizations should lose sight of the possibility of organizational discrimination. The possibility of this occurring remains in any and all systems, and should always be a continuing consideration. The findings of this research, however, suggest that if new pay systems are implemented correctly, discrimination should not be an impeding concern. More importantly, administrators considering the reforms should be focused on education, outreach, and compromise when implementing the reforms.

Before embarking upon any implementation of pay system reforms, administrators should have a well-planned program to present to the employees. Properly educating employees on the details of the changes should either garner their support or elicit feedback. Suggestions and comments provided by employees would need to be incorporated into the plans. As the process moves into implementation, employees need to be approached and again educated and listened to. The recursive nature of this process should provide both management and employees

with the knowledge of what is needed and a method of collaboration to produce a plan that accommodates most parties, thus reducing the initial shock of the changes.

Call for Future Research

The push for federal pay reform to take a performance-based approach will ultimately have positive and negative implications. Many studies have already been conducted on the efficacy of these systems, spanning from the Civil Service Reform Act of 1978 to the more contemporary approaches as part of President Bush's Performance Agenda. There is a profound and recognizable need to analyze other repercussions that could theoretically result from such changes in remunerations systems. After all, increased efficacy and efficiency within the federal public service is an admirable goal to seek, but reaching this goal while jeopardizing the careers or remuneration of others is unacceptable.

While the findings in this paper suggest that no connection between pay-for-performance reforms and discrimination exists, future research should seek to verify this finding within the different EEOC-protected classes. Total discrimination was the major dependent variable analyzed in this research. This is by no means, however, the only aspect that could be impacted by performance-based reforms, and even within this variable a more nuanced analysis should be undertaken in future research. The No FEAR Act of 2002 also requires agencies to report on specific categories of complaints, such as race, age, gender, national origin, and all other legally protected classes. Future research might find it useful to analyze these specific categories to establish a more detailed view of this topic. Where the data are available, these same techniques might be usefully employed to evaluate these effects at lower levels of government as well.

In addition to testing within more EEOC related variables, future researchers may find it prudent to examine the effects pay systems reforms have on trust and morale within organizations. These studies could advance the field of knowledge on the evidence discovered in the time-series analysis utilized in this research, which suggested an initial perception of discrimination amongst the employees. Agencies with demoralized or untrusting employees might find decreased levels of productivity and heightened levels of turnover (Perry, Engbers, and Jun, 2009).

The data used in this study contained a relatively short time frame for analysis. The No Fear Act was passed in 2002 and, as such, a dearth of data was available prior to 2003, when most agencies began to comply with the provisions of the legislation. A few agencies, such as the Social Security Administration, whose data collection began in 2006, had even shorter time frames for reporting the data. As such, longer trends in discrimination complaint levels were not ascertainable. More testing will be needed to further corroborate the findings in this research. As time passes, more agencies will continue to comply with the No FEAR Act of 2002 and more data will become available to social scientists interested in this topic. As this occurs, the initial insight provided here could be expounded upon to further the knowledge of the topic.

References

Becker, Gary S. *The Economics of Discrimination*, 2nd Ed. Chicago & London: University of Chicago Press.

Behling, Orlando and Frederick A. Stark. 1973. The Postulates of Expectancy Theory. *The Academy of Management Journal*, 16, no. 3 (September): 373-88.

Breul, Jonathan D. and John M. Kamensky. 2008. Federal Government Reform: Lessons from Clinton's "Reinventing Government" and Bush's "Management Agenda" Initiatives. *Public Administration Review*, 68, no. 6 (November-December): 1009-26.

Bridges, William P. and Robert L Nelson. 1989. Markets in Hierarchies: Organizational and Market Influences on Gender Inequality in a State Pay System. *The American Journal of Sociology*, 95, no. 3 (November): 616-58.

Elvira, M. and M. E. Graham. 2002. Not Just a Formality: Pay System Formalization and Sex-Related Earnings Effects. *Organization Science*, 13, no. 6 (November-December): 601-17.

Elvira, M. and R. Town. 2001. The Effects of Race and Worker Productivity on Performance Evaluations. *Industrial Relations*, 40, no. 4 (October): 571-90.

Heywood, J. S. and P. L. O'Halloran. 2005. Racial Earnings Differentials and Performance Pay. *The Journal of Human Resources*, 40, no. 2 (Spring): 435-52

- Kim, Jae T. 1988. Current Issues in Public Personnel Administration: The Merit Pay System, Performance Appraisal, and Professionalization. *Public Productivity Review*, 11, no. 4 (Summer): 109-14.
- Meyer, Herbert H. 1975. The Pay-for-Performance Dilemma. *Organizational Dynamics*, 3, no. 3 (Winter): 39-50.
- Milakovich, Michael E. and George J. Gordon. 2004. *Public Administration in America*. 8th ed. Belmont, CA: Wadsworth/Thomson Learning.
- Pearce, J. L. and J. L. Perry. 1983. Federal Merit Pay: A Longitudinal Analysis. *Public Administration Review*, 43, no. 4 (July-August): 315-25.
- Perry, James L., Trent Engbers, and So Yun Jun. 2009. Back to the Future? Performance-Related Pay, Empirical Research, and the Perils of Persistence. *Public Administration Review*, 69, no. 1 (January-February): 39-51.
- Perry, James L., Debra Mesch, and Laurie Paarlberg. 2006. Motivating Employees in a New Governance Era: The Performance Paradigm Revisited. *Public Administration Review*, 66, no. 4 (July-August): 505-14
- Rutzick, Karen. GAO Employees Move Toward Vote on Union Representation. Government Executive. <http://www.govexec.com/dailyfed/0107/012307r1.htm> (accessed April 4, 2009)
- Thompson, James R. 2006. The Federal Civil Service: The Demise of an Institution. *Public Administrative Review*, 66, no. 4 (July-August): 496-503.

U.S. Government Accountability Office. 2007. *2006 Report on GAO's Use of Provisions in the GAO Personnel Flexibilities Act of 200 and the GAO Human Capital Reform Act of 2004*. Washington, DC: Government Printing Office.

U.S. Government Accountability Office. 2008. *GAO Performance and Accountability Report: Fiscal Year 2007*. Washington, DC: Government Printing Office.

U.S. Office of Management and Budget. 2002. *The President's Management Agenda: Fiscal Year 2002*. Washington, DC: Government Printing Office.

U.S. Office of Personnel Management. 2007. *Alternative Personnel Systems in the Federal Government: A Status Report on Demonstration Projects and Other Performance-Based Pay Systems*. Washington, DC: Government Printing Office.

U.S. Securities and Exchange Commission. 2008. *Testimony Concerning the SEC's Pay-for-Performance System*. Washington, DC: Government Printing Office.
<http://ftp.sec.gov/news/testimony/2008/ts021208dr.htm>

Vroom, Victor H. 1964. *Work and Motivation*. New York: Wiley.

Walker, David M. 2007. GAO and Human Capital Reform: Leading by Example. *Public Personnel Management*, 36, no. 4 (Winter): 317-323.

Appendix A

Differences Between Pay Systems

	Performance Incentives	Grade/Pay Levels	Focuses on	Performance Evaluation/ Rating System	Pay Alignment
GAO	Yes, evaluations assess individual performance and contribution to organizational goals. This, in turn, defines bonuses.	Bands pay by level	Aligning salaries with those of private markets. Improving accountability through pay incentives.	“Five-level performance rating system, based on employee competencies, to evaluate employee”	Aligns pay of individual employees with those of private sector employees, based upon assessment of retained skills and education.
SEC	Yes, evaluations assess individual performance and contribution to organizational goals. This, in turn, defines bonuses.	One system, covering all employees, that uses evaluations and a committee review process to give bonuses.	Aligning salaries with those of private markets through a committee review process that leads to bonus pay.	Two-level rating system where performance is either acceptable or unacceptable. Second-phase involves placing employees into one of four categories based on contributions. A committee will review evaluations and recommend a pay increase. Employees with “unacceptable” ratings will not receive a pay adjustment for the year.	Aligns pay of individual employees with those of private sector employees, based upon assessment of retained skills and education.
FDIC	Yes, based on contributions and comparative performance evaluations.	Two systems: One for senior managers and another for bargaining & non-bargaining unit employees.	Evaluating employees for performance based on “corporate contributions” and meeting organizational mission and objectives.	Employees are assessed for initial competency. If a “meets expectations” rating is received, employee is placed into one of 4 pools with other employees of similar ranking. Comparative: evaluation considers productivity of peers.	Aligns pay of individual employees with those of private sector employees, based upon assessment of retained skills and education.
Agencies under the General Schedule and Merit System	Incentives are much less pronounced. Raises are usually linked to tenure within the service than to individual performance.	15 grades or levels with 10 steps per grade.	Internal equity, external competitiveness, individual pay progression	Employees receive a step each year, according to grade level. Program in place to allow transition to higher grades over time.	Pay aligned with organizational hierarchy. Not highly responsive to market trends
(Milakovich and Gordon 2004, 304-15; U.S. Government Accountability Office 2007; U.S. Office of Personnel Management, 2007; Walker 2007)					

Appendix B

Testing H1: Independent Samples t-Test Comparing Experimental and Control Groups

Group Statistics

Reforms		N	Mean	Std. Deviation	Std. Error Mean
Agencies	Control Group	9	.007479000	.0022548916	.0007516305
	Experimental Group	5	.005555705	.0018229908	.0008152663

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Agencies Equal variances assumed	1.041	.328	1.626	12	.130	.0019232946	.0011828814	-.0006539826	.0045005719
Agencies Equal variances not assumed			1.734	10.057	.113	.0019232946	.0011088767	-.0005455447	.0043921340

Appendix C

Testing H2: Independent Samples t-Test Experimental Group

Group Statistics

Reforms		N	Mean	Std. Deviation	Std. Error Mean
FDICPREPOST	Pre-Intervention	2	.0064300	.00052711	.00037273
	Post-Intervention	4	.0064283	.00257719	.00128859

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
FDICPREPOST Equal variances assumed	2.250	.208	.001	4	.999	.00000171	.00194632	-.00540214	.00540556
FDICPREPOST Equal variances not assumed			.001	3.451	.999	.00000171	.00134142	-.00396863	.00397205

Appendix C Continued

Testing H2: Independent Samples t-Test Experimental Group

Group Statistics

Reforms		N	Mean	Std. Deviation	Std. Error Mean
GAOPREPOST	Pre-Intervention	3	.0019467	.00069051	.00039867
	Post-Intervention	3	.0059878	.00425015	.00245383

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
GAOPREPOST Equal variances assumed	6.747	.060	-1.626	4	.179	-.00404111	.00248600	-.01094335	.00286114
GAOPREPOST Equal variances not assumed			-1.626	2.106	.239	-.00404111	.00248600	-.01423992	.00615770

Appendix C Continued

Testing H2: Independent Samples t-Test Experimental Group

Group Statistics

Reforms		N	Mean	Std. Deviation	Std. Error Mean
SECPREPOST	Pre-Intervention	1	.0039926	.	.
	Post-Intervention	5	.0041445	.00145945	.00065268

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
SECPREPOST									
Equal variances assumed	.	.	-.095	4	.929	-.00015188	.00159874	-.00459070	.00428694
Equal variances not assumed	-.00015188	.	.	.

Appendix D

Testing H3: Independent Samples t-Test Comparing SEC to FDIC and GAO

Group Statistics

Post-Interventional Means	N	Mean	Std. Deviation	Std. Error Mean
SEC - FDIC SEC	5	.004144510	.0014594462	.0006526842
FDIC	4	.006428282	.0025771865	.0012885932

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
SEC - FDIC	1.300	.292	-1.689	7	.135	-2.2837717397E-3	1.3522743665E-3	-5.4813925015E-3	9.1384902204E-4
Equal variances assumed									
Equal variances not assumed			-1.581	4.514	.181	-2.2837717397E-3	1.4444615635E-3	-6.1204218222E-3	1.5528783428E-3

Appendix D Continued

Testing H3: Independent Samples t-Test Comparing SEC to FDIC and GAO

Group Statistics

Post-Interventional Means	N	Mean	Std. Deviation	Std. Error Mean
SEC - GAO SEC	5	.004144510	.0014594462	.0006526842
GAO	3	.005987793	.0042501507	.0024538256

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
SEC - GAO	5.561	.056	-.925	6	.391	-1.8432827714E-3	1.9921511568E-3	-6.7179010462E-3	3.0313355034E-3
Equal variances assumed									
Equal variances not assumed			-.726	2.287	.535	-1.8432827714E-3	2.5391449260E-3	-1.1553228722E-2	7.8666631795E-3

Appendix E

Complaint Level Totals

The categories listed below contain data on a single, and possibly the most descriptive, variable. The “TOTAL” variable represents the actual number of EEOC complaints within the specified agency for a given fiscal year. To make the data more meaningful and applicable across agencies of different sizes, the “TOTAL %” variable was created. This variable was calculated by dividing the total number of complaints by the total number of employees for that same fiscal year. It is the number of complaints per employee.

Experimental Group:

YEAR	GAO TOTAL	GAO TOTAL %	FDIC TOTAL	FDIC TOTAL %	SEC TOTAL	SEC TOTAL %
2003	9	0.27439%	33	0.60573%	13	0.39926%
2004	5	0.15361%	36	0.68027%	25	0.65841%
2005	5	0.15601%	33	0.71848%	17	0.43512%
2006	35	1.07362%	38	0.83498%	13	0.36131%
2007	15	0.46875%	35	0.75464%	11	0.31447%
2008	8	0.25397%	13	0.26321%	11	0.30295%

Control Group:

YEAR	EPA TOTAL	EPA TOTAL %	EEOC TOTAL	EEOC TOTAL %	GSA TOTAL	GSA TOTAL %
2000	N/A	N/A	N/A	N/A	N/A	N/A
2001	N/A	N/A	N/A	N/A	N/A	N/A
2002	N/A	N/A	46	1.65706%	N/A	N/A
2003	74	0.39106%	39	1.50696%	111	0.88060%
2004	72	0.38760%	33	1.33874%	89	0.70652%
2005	69	0.37504%	26	1.10030%	68	0.53687%
2006	76	0.41648%	21	0.95672%	101	0.82991%
2007	64	0.35375%	28	1.27737%	77	0.64188%
2008	73	0.40007%	37	1.67800%	N/A	N/A

YEAR	NASA TOTAL	NASA TOTAL %	NARA TOTAL	NARA TOTAL %	NRC TOTAL	NRC TOTAL %
2000	N/A	N/A	N/A	N/A	N/A	N/A
2001	N/A	N/A	N/A	N/A	N/A	N/A
2002	N/A	N/A	N/A	N/A	N/A	N/A
2003	58	0.30533%	N/A	N/A	9	0.28635%
2004	40	0.20749%	12	0.40282%	12	0.37221%
2005	37	0.19696%	10	0.32862%	10	0.30349%
2006	48	0.26006%	18	0.59642%	13	0.37228%
2007	60	0.32501%	13	0.43874%	11	0.29333%
2008	N/A	N/A	10	0.31857%	13	0.31863%

Appendix E Continued

Complaint Level Totals

YEAR	OPM TOTAL	OPM TOTAL %	SBA TOTAL	SBA TOTAL %	SSA TOTAL	SSA TOTAL %
2000	35	0.93909%	N/A	N/A	N/A	N/A
2001	38	1.06922%	N/A	N/A	N/A	N/A
2002	19	0.52026%	N/A	N/A	N/A	N/A
2003	28	0.78409%	N/A	N/A	N/A	N/A
2004	66	1.80921%	N/A	N/A	N/A	N/A
2005	54	1.05737%	40	0.92550%	N/A	N/A
2006	36	0.68234%	38	0.60625%	394	0.61904%
2007	32	0.55411%	34	0.75606%	402	0.64416%
2008	19	0.32451%	40	0.82833%	466	0.72824%

Appendix F

Means of Experimental and Control Groups

Means - Control Group

Mean

YEAR	EEOC	EPA	GSA	NARA	NASA	NRC	OPM	SBA	SSA	Yearly Average
2000							.0093909			0.009391
2001							.0106922			0.010692
2002	.0165706						.0052026			0.010887
2003	.0150696	.0039106	.0088060		.0030533	.0028635	.0078409			0.005935
2004	.0133874	.0038760	.0070652	.0040282	.0020749	.0037221	.0180921			0.007464
2005	.0110030	.0037504	.0053687	.0032862	.0019696	.0030349	.0105737	.0092550		0.006030
2006	.0095672	.0041648	.0082991	.0059642	.0026006	.0037228	.0068234	.0060625	.0061904	0.005933
2007	.0127737	.0035375	.0064188	.0043874	.0032501	.0029333	.0055411	.0075606	.0064416	0.005872
2008	.0167800	.0040007		.0031857		.0031863	.0032451	.0082833	.0072824	0.005107
Total	.0135931	.0038733	.0071916	.0041704	.0025897	.0032438	.0086002	.0077903	.0066381	0.006410

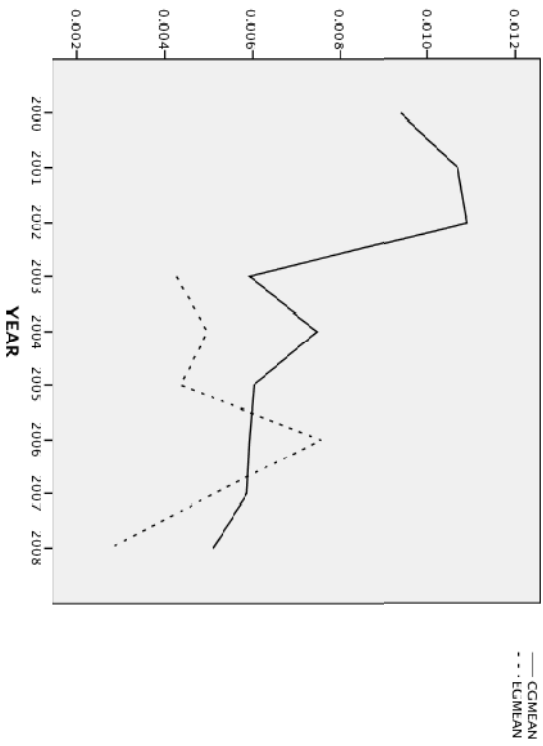
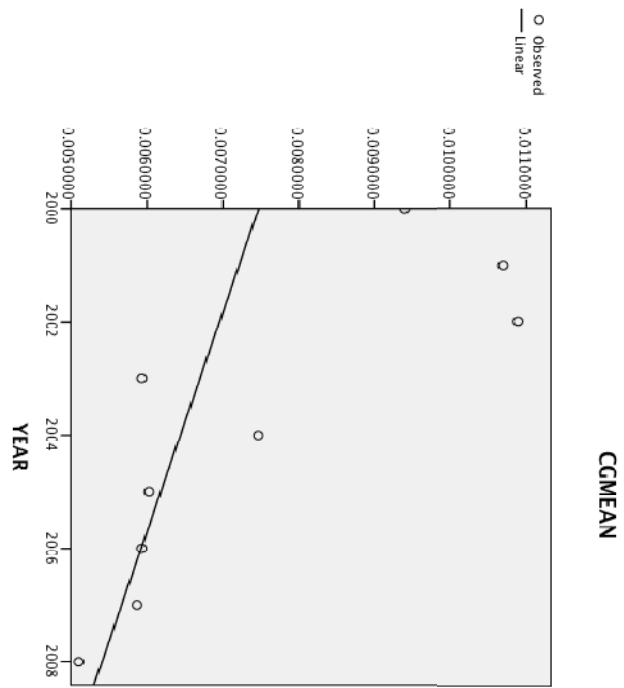
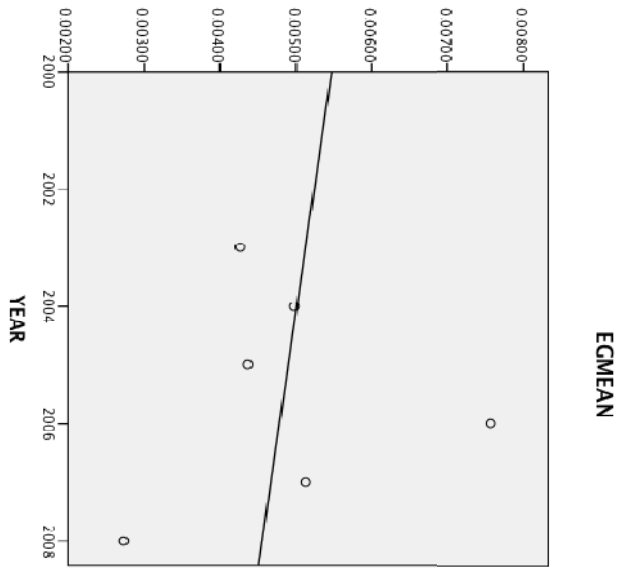
Means - Experimental Group

Mean

YEAR	FDICTOTALPER	GAOTOTALPER	SECTOTALPER	Yearly Average
2003	.0060573	.0027439	.0039926	.0042646
2004	.0068027	.0015361	.0065841	.0049743
2005	.0071848	.0015601	.0043512	.0043654
2006	.0083498	.0107362	.0036131	.0075664
2007	.0075464	.0046875	.0031447	.0051262
2008	.0026321	.0025397	.0030295	.0027338
Total	.0064289	.0039672	.0041192	.0048384

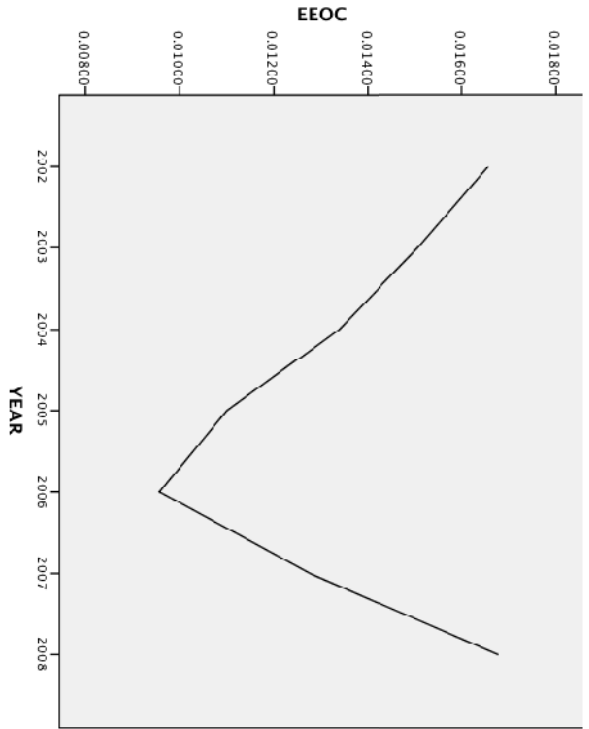
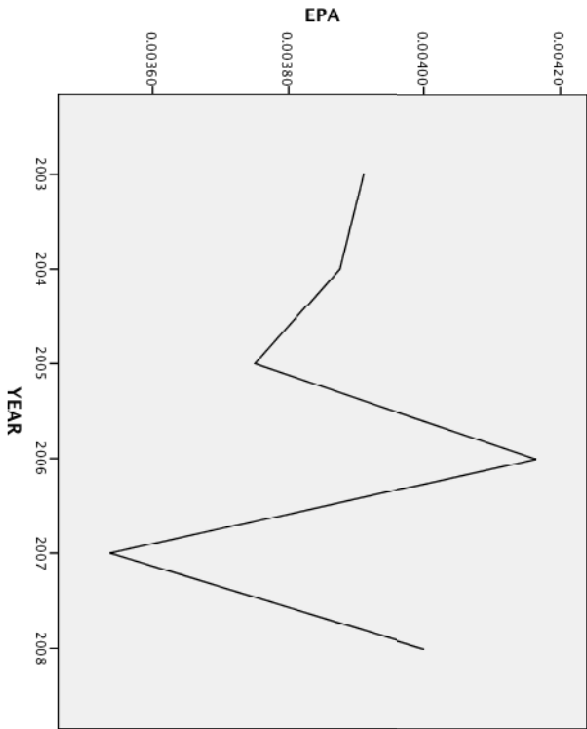
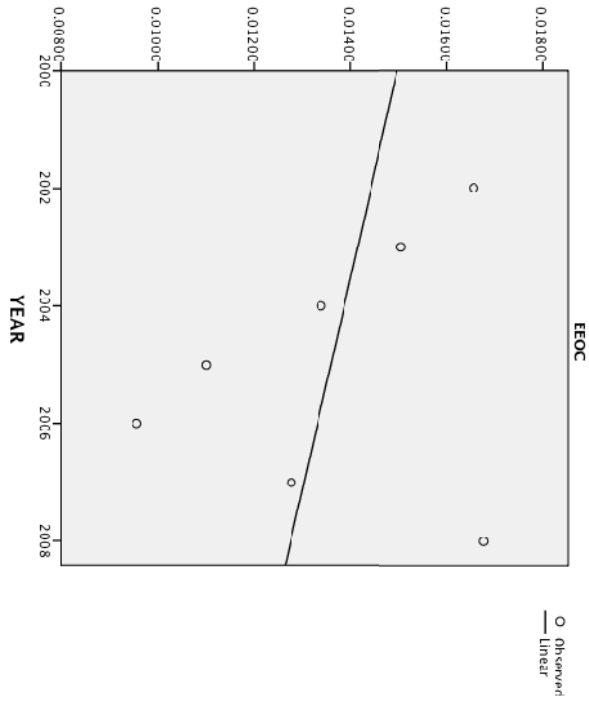
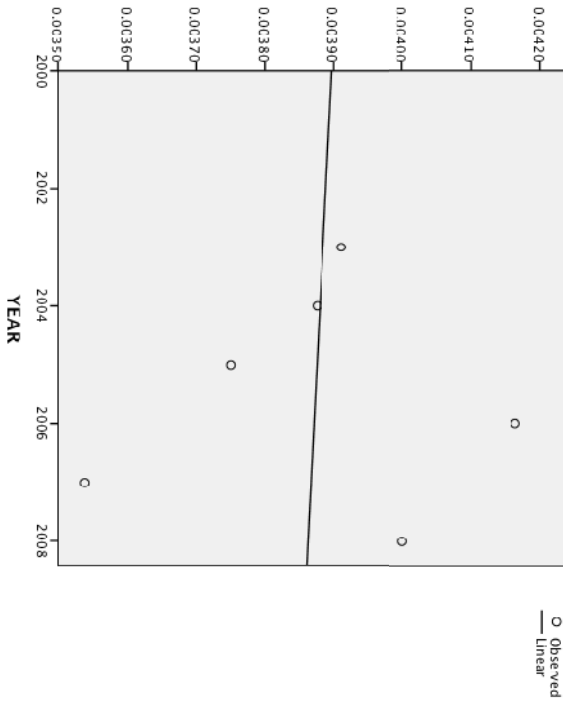
Appendix G

Time Series Analysis and Best Fit of CG and EG



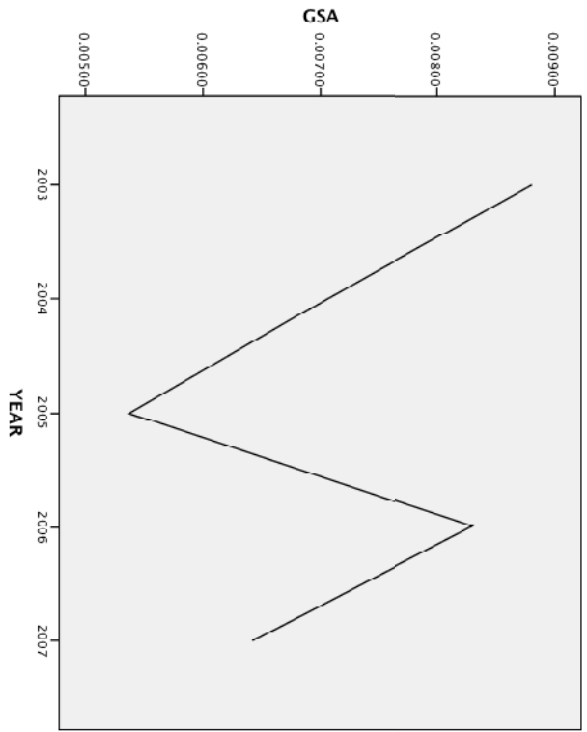
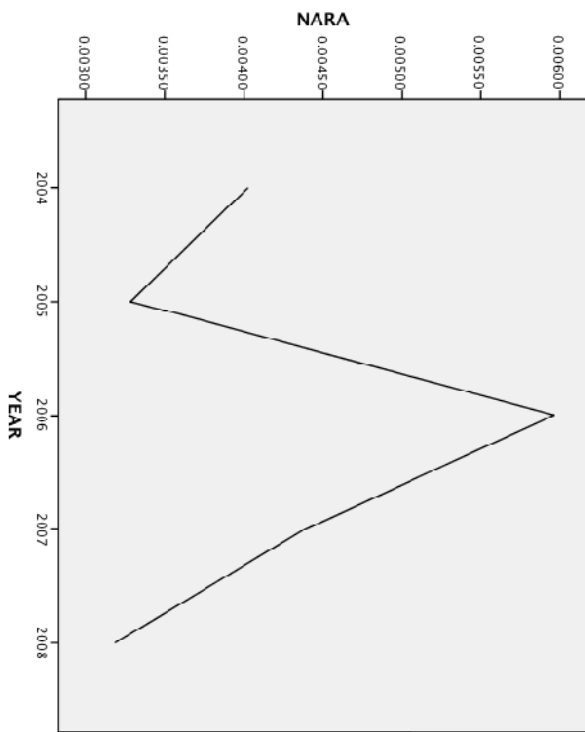
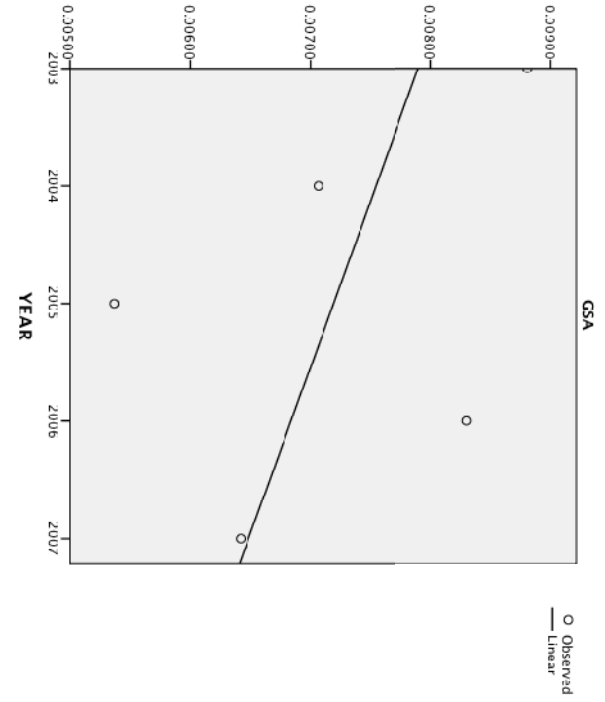
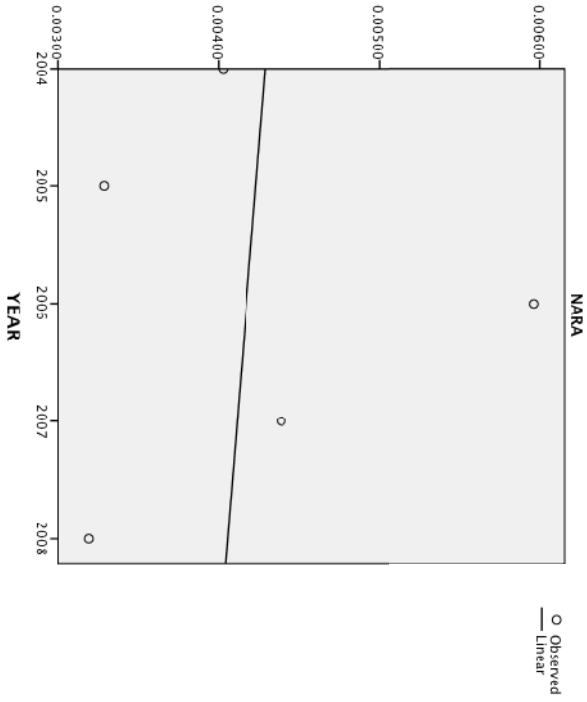
Appendix H

Control Group - Time Series Analysis of Individual Agencies



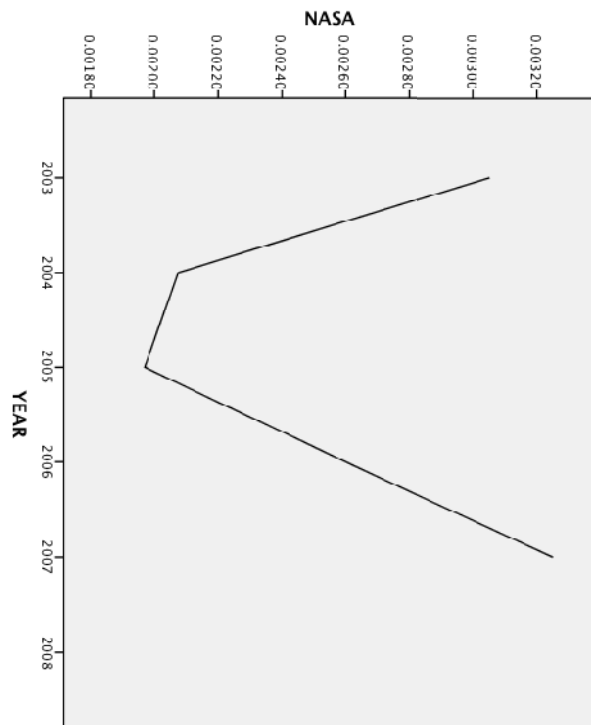
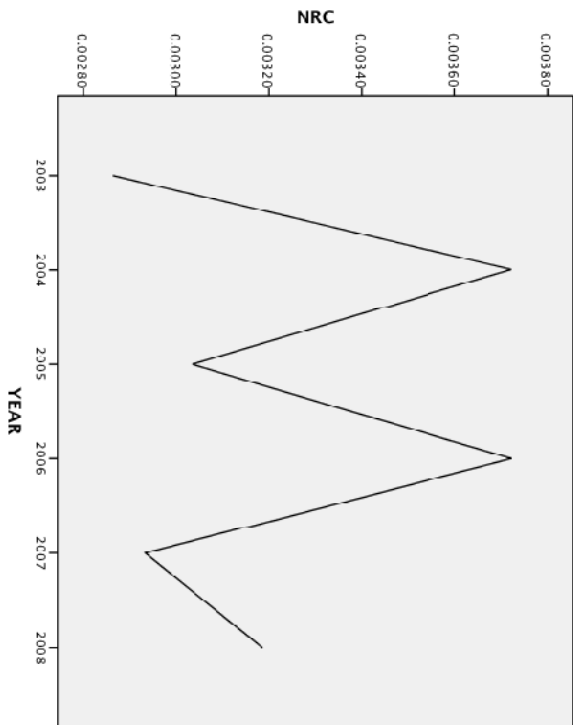
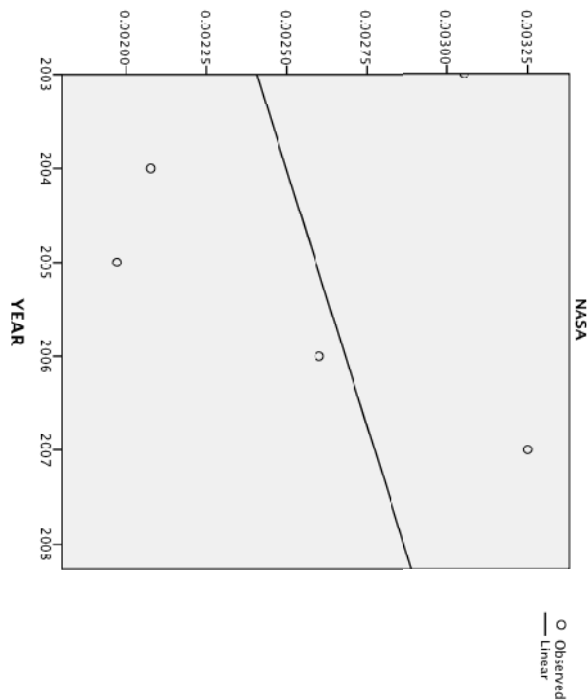
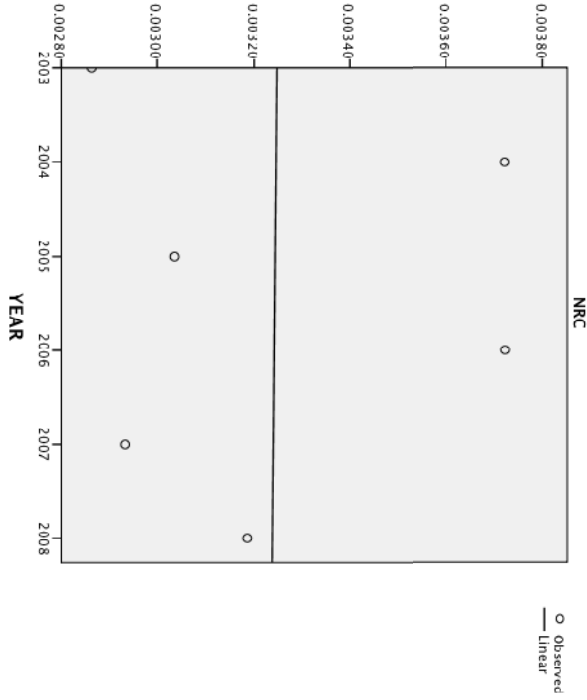
Appendix H Continued

Control Group - Time Series Analysis of Individual Agencies



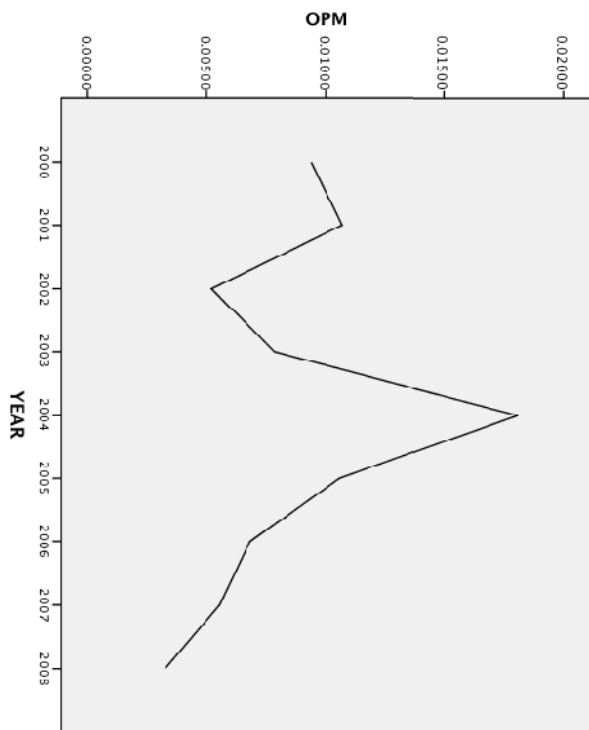
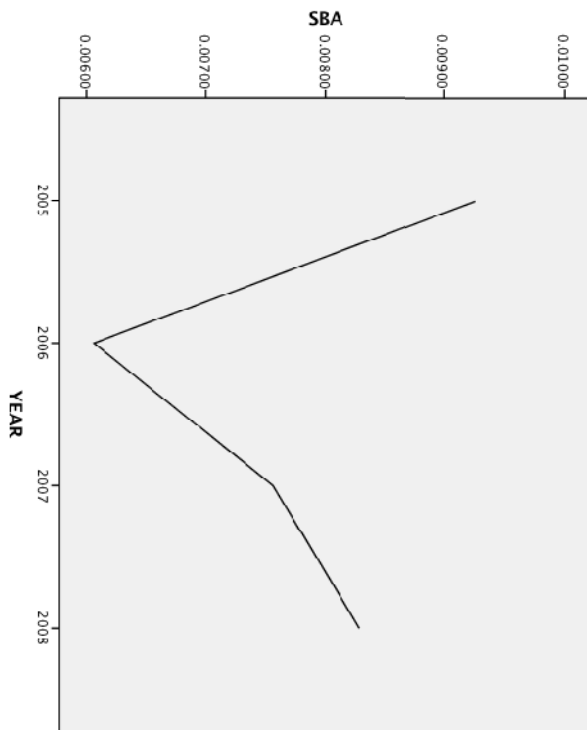
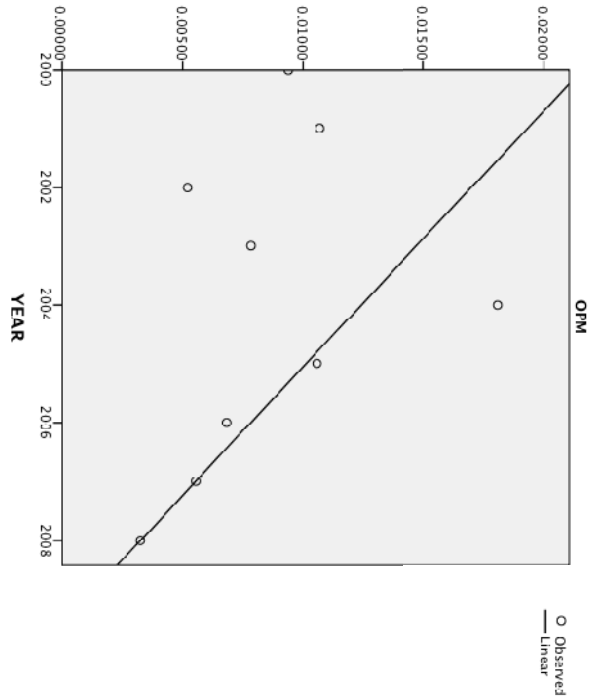
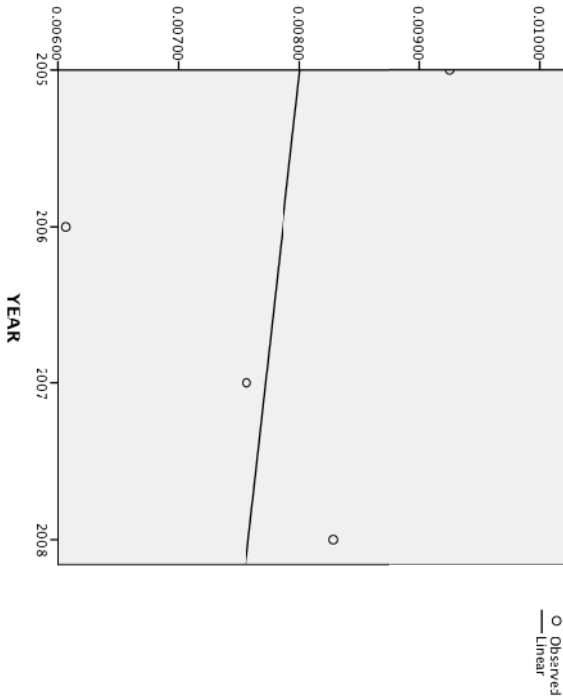
Appendix H Continued

Control Group - Time Series Analysis of Individual Agencies



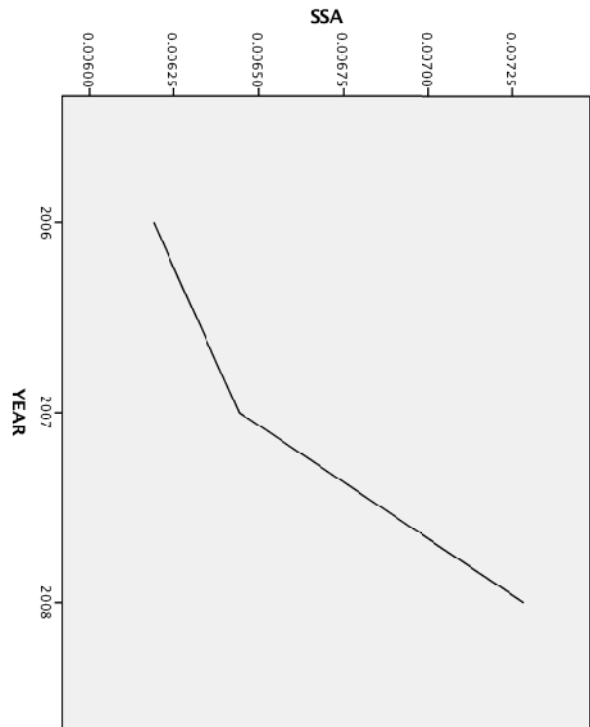
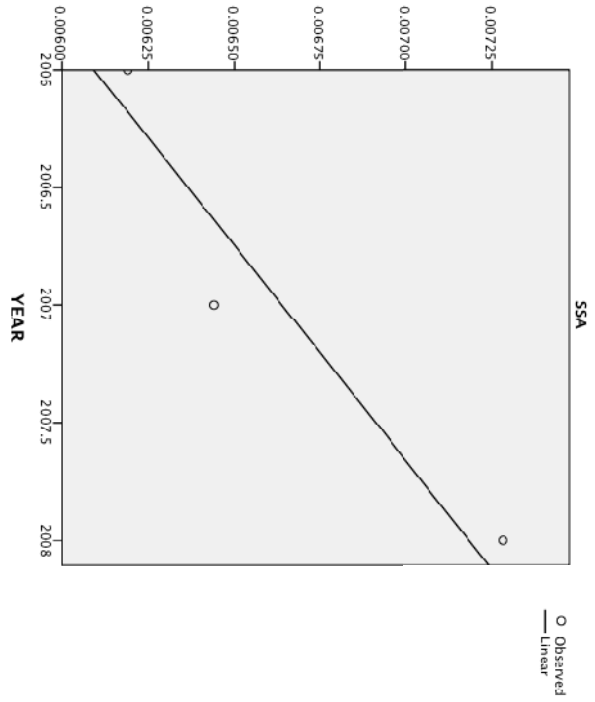
Appendix H Continued

Control Group - Time Series Analysis of Individual Agencies



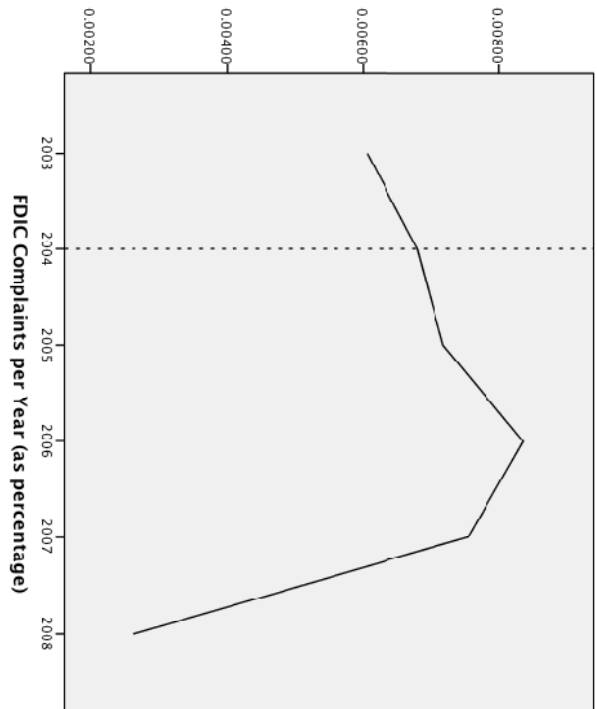
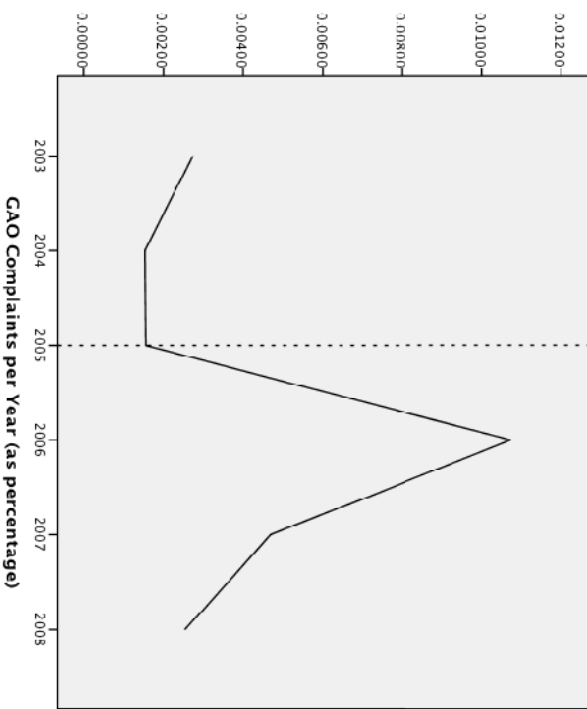
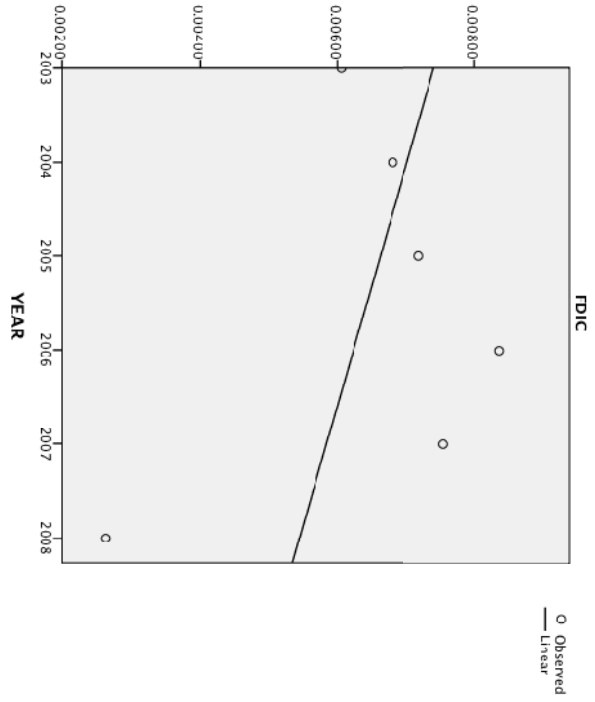
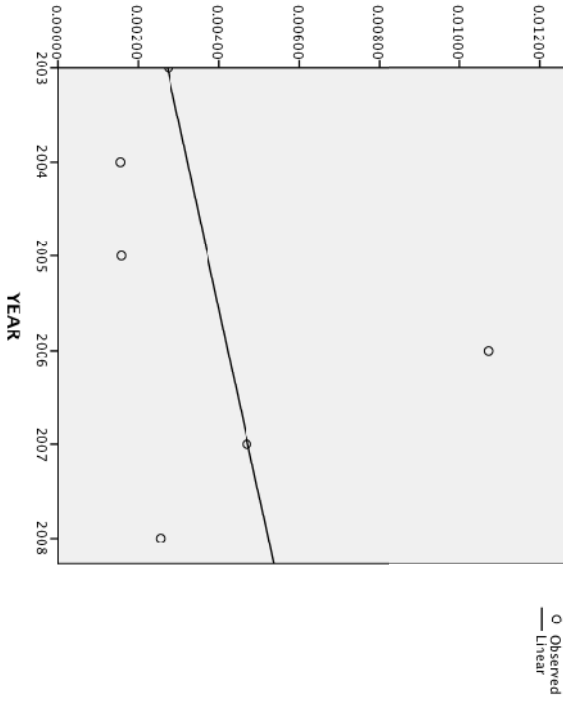
Appendix H Continued

Control Group - Time Series Analysis of Individual Agencies



Appendix I

Experimental Group - Time Series Analysis of Individual Agencies



Appendix I Continued

Experimental Group - Time Series Analysis of Individual Agencies

