The Effectiveness and adoption of market-based state health care expansion programs

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THE EFFECTIVENESS AND ADOPTION OF MARKET-BASED STATE HEALTH CARE EXPANSION PROGRAMS

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ABSTRACT

The Effectiveness and Adoption of Market-Based State Health Care Expansion Programs

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Market-based state health expansion programs are alternatives to government programs like Medicaid and SCHIP which also seek to expand access to health insurance for uninsured populations. These programs either utilize the private health insurance market or function according to market principles. The market-based policies at issue in this research are state high-risk health insurance pools, limited benefit plans, group purchasing arrangements, reinsurance programs, and Health Insurance Flexibility and Accountability waivers. This research addresses two separate but related research questions: 1) Do these market-based programs provide general economic and social benefits for the citizens of a state? 2) What role does citizen ideology and partisanship play in the adoption of market-based programs at the state level?

This research indicates that the implementation of market-based programs at the state level, as measured by an additive index, do provide some general benefits to the people of a state. Regression analyses with panel-corrected standard errors and a Prais-Winsten transformation indicate that market-based programs help to reduce mortalities per capita and emergency outpatients treated. There is also evidence that these market-based
programs are successful in helping to increase the gross state product. Separate analyses focused on the presence and expansiveness of high-risk pools indicate that these programs individually also provide general benefits.

Looking at the second research question regarding the influence of ideology and partisanship on the adoption of market-based programs, the results are mixed. The Cox proportional regression analysis found that having a higher percentage of Democrats in the state legislature contributes to the adoption of market-based health insurance expansion programs, while a higher level of citizen liberalism reduces the probability of market-based programs being adopted. This suggests that a more liberal citizen population is more supportive of government-based programs, but Democratic legislators will nevertheless support the adoption of market-based programs as they require the expenditure of limited financial and political capital but still allow the Democrats to claim credit for advancing access to health care. Anecdotal examples of this could be seen in the 2009 debate over the Obama health care plan.
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INTRODUCTION TO THE STUDY

While the issue of universal health care reform largely faded from the national political agenda following the failure of the Clinton health reforms in the 1990’s, the issue once again became prominent during the 2008 presidential election campaign. Democratic Senator and presidential nominee Barack Obama proposed a comprehensive, government-based program (Barack Obama campaign web site, 2008), while his Republican rival, Senator John McCain, argued for a more market-based approach (John McCain campaign web site, 2008). However, between the years of 1994 and 2008 the issue of health care hardly remained static, especially at the sub-national level. During this period, states took the lead in the area of health care reform, largely through incremental programs targeted toward particular segments of the uninsured population (Patel and Rushefsky, 1999). For states, the focus was on market-based programs which included high-risk health insurance pools, reinsurance plans, limited benefit plans, group purchasing arrangements, and Health Insurance Flexibility and Accountability waivers (State Coverage Initiatives, 2009). Of particular interest in this study are state high-risk health insurance pools -- which are market-based, state-created non-profit organizations principally created to provide insurance coverage to those deemed uninsurable by private companies. This dissertation discusses two complementary but related studies involving the effectiveness and adoption of market-based state health expansion programs, with particular emphasis on state high-risk health insurance pools. The recent experience of the State of Tennessee in trying to enact both government-based and market-based health access expansion programs is a good illustration of these issues.
State-based and Market-based Health Reform in Tennessee

While the Clinton administration’s attempt at enacting universal health care failed in Congress, it did yield some new government-based and market-based programs. One example was in the state of Tennessee, where the government-based TennCare program was created in 1994. The governor at that time, Democrat Ned McWhirter, was seeking a strategy to get Medicaid spending under control after the state experienced a $250 million shortfall. Confronted with a difficult choice between a major tax increase or spending cuts, McWhirter put forth the TennCare program. This program sought to cover hundreds of thousands of uninsured Tennesseans, purportedly for the same cost as what the state was already spending on Medicaid (Wright, 2001).

For a time, the TennCare program appeared to be succeeding in its goals. However, the cost of the program grew, and by 2005, Tennessee’s Medicaid expenditures, including TennCare, represented over 26% of the state’s spending, while at the same time new enrollment in the TennCare Standard program was closed except for children under 19 (Bureau of TennCare, 2004-5). In 2002, these difficulties in the program led Phil Bredesen, the newly elected Tennessee governor (About Phil, n.d.), to begin to pursue strategies for reforming the program in order to save money and limit benefits. Bredesen first promised to find a durable strategy for preserving TennCare, but eventually presented, before a joint session of the Tennessee legislature, a market-based alternative to the TennCare program called Cover Tennessee. The Cover Tennessee program is actually composed of three different programs: CoverTN, CoverKids, and AccessTN. The CoverTN program represents a cost-sharing program where employers, employees, and the state each contribute to the purchasing of employee health insurance. The
CoverKids program provides insurance to uninsured children in families of four making up to $50,000 a year, although higher income families can buy into the program. The third element of AccessTN is a high-risk pool, which provides health insurance at a premium for those who have been denied coverage due to a preexisting condition (Bredesen Unveils, March 27, 2006).

Cover Tennessee was enacted by the legislature in May 2006, with a vote of 78-19 in the House, and 30-1 in the Senate (Seibert, May 18, 2006). A deal was made in November 2006 to reserve 4,500 of 6,000 slots in the new AccessTN risk pool for chronically ill people cut from the rolls of the TennCare program (Medical News Today, November 21, 2006). Meanwhile, as of October 2007, TennCare was given permission by federal authorities to continue operating in much a pared-down form for three years (Chang, 2007).

In 2008, a year after the Cover Tennessee program began offering coverage, the employer-provided coverage element, CoverTN, was found to be missing its enrollment targets by about 20%. Some Tennessee legislators took the opportunity of this announcement to attack the program, being particularly critical of the maximum $25,000 a year payout. Health care advocates also attacked the CoverTN program, calling it a “defined benefit plan that has serious limits.” Meanwhile polling done by the National Federation of Small Business found that 60% of small business supported it (Rodgers, June 15, 2008). However, the long-term efficacy of the program has yet to be determined, particularly in regard to general social and economic benefits. The example of Tennessee’s experience with the TennCare and Cover Tennessee programs sets up the
two questions at the center of this dissertation, both of which are primarily applicable to the market-based Cover Tennessee program.

Description of Research

This dissertation focuses on market-based health insurance programs. Market-based health insurance programs are defined, for the purposes of this research, as programs which seek to expand access to the uninsured by facilitating the ability of individuals to obtain coverage on the private market or via a market-like model rather than through a government-operated program. The market-based programs at issue in this dissertation fall into five types: (1) state high-risk health insurance pools, (2) reinsurance programs, (3) limited benefit plans, (4) group purchasing arrangements, and (5) Health Insurance Flexibility and Accountability waivers.

It is important to note that market-based programs are not referring to efforts that are completely separate from the government. A number of programs referred to as market-based, including high-risk pools and HIFA waivers, are programs which were in some way initiated by the government. All of the market-based programs addressed in this study had to at least receive some form of approval from the state government before implementation could take place. These programs are defined as market-based because they function according to market principles (such as requiring clients to pay premiums for coverage) or expand access to coverage by increasing access to the private market.

While the U.S. has considered implementing universal health care throughout its history, the last twenty years have seen states taking the lead in the area of health care, largely through targeted, incremental programs (Beamer, 2004; Leichter, 2004; Sparer, 2004).
While these programs have been widely adopted throughout the U.S. states, they have not been given the research attention accorded to larger-scale, federally-initiated programs such as Medicaid and SCHIP.

The dissertation will look first at the effectiveness of market-based health expansion programs. For the purposes of this study, effectiveness is defined as providing social and economic benefits which extend beyond the client population being served to the general population of the state. While previous studies have examined the effectiveness of state-level programs in improving the status of the program’s client population (Laudicina, 1988; Currie and Gruber, 1996; Sloan and Conover, 1998; Chollet, 2002; Jacoby and Schneider, 2003; Leichter, 2004; Mead, 2004) there has been only cursory research into the societal impacts that these programs have for general state populations.

The critics of the Cover Tennessee program, even though the program was only recently adopted, have already issued the standard critiques of a market-based program, which are that it is too limited in its funding and enrollment to have any meaningful benefit to the client population or the state has a whole. While previous research has found that market-based programs like Cover Tennessee are limited in the extent to which they can lower the percentage of uninsured in a state, some researchers have argued that these programs can have developmental benefits for a state (Batistella and Kuder, 1993, as cited in Barrilleaux and Brace, 2007). The first primary research question at issue in this dissertation is:

1) To what extent do market-based health access expansion programs have general economic and social benefits for the state as a whole?
The dissertation will next focus on the adoption of market-based health expansion programs. Turning to the issue of policy adoption, there is a vast literature which has found that policy is adopted at the state level due to various internal and external influences (Dawson and Robinson, 1963; Dye, 1966; Cnuddle and McCrone, 1969; Barrilleaux and Miller, 1988; Feiock and West, 1993; Grogan, 1994; Coleman, 1999; Daley and Garand, 2005). Political influences, including legislative party control and ideology, are frequently cited in the literature. Often the hypotheses surrounding these influences are premised on a political party or ideological faction being supportive of a type of policy for ideological reasons (Entman, 1983; Barrilleaux and Miller, 1988; Meier and McFarlane, 1993; Grogan, 1994; Brown, 1995; Appelbaum, 2001; Shipan and Volden, 2006; Weisert and Weisert, 2006). However, the market-based health expansion programs addressed in this study can often defy traditional ideological labels, as they seek to expand access to health insurance coverage (a liberal priority) through largely market-based programs (a conservative preference). Therefore, these particular programs offer a unique opportunity to reexamine traditional theories regarding partisanship, ideology and policy adoption.

The example of Tennessee’s experience with TennCare and Cover Tennessee raises this issue in regard to market-based health expansion programs. The conventional wisdom in health policy research is that Democrats favor more government-oriented health reforms, while Republicans champion reforms that are more market-oriented (Weisert and Weisert, 2006). However, the previous example of Tennessee health care reform notes that both the government-based TennCare program and the market-based Cover Tennessee program were enacted during Democratic administrations. This
suggests that the partisan orientations regarding health care reforms are not as rigid as they are sometimes portrayed. The issue of partisan influence on the adoption of the market-based health care expansion programs is at the center of the second primary research question in this dissertation:

2) What relationship does the level of Democratic control of the legislature and citizen liberalism have with the adoption of market-based health care access expansion programs?

Outline of the Research

The dissertation will consist of five chapters. The first chapter provides background on previous research conducted in the area of access to health insurance. One area of the health policy literature which the research builds on highlights the widespread economic and societal effects of the lack of health insurance. Previous research highlights the fact that lacking access to health care does result in lower individual and societal economic productivity, poorer health outcomes, greater expenses for government due to poorer health, and negative effects on the health infrastructure (Davis, et al, 2007; Hadley, 2003; Wolman and Miller, 2004). However, little research has focused on the effectiveness of the programs designed to address these problems. This research seeks to fill that gap.

The second chapter focuses on this question of the effectiveness of state-level market-based health expansion programs. The effectiveness of government programs has been a prominently studied topic in health policy literature (Flynn, et al, 1997; Sloan and Conover, 1998; Hall, 2000; Abbe, 2002; Chollet, 2002). However, the question of effectiveness has largely been narrowly focused on the impact of the programs on the
specific client population. While the literature makes a persuasive argument that problems like uninsurance create difficulties that extend beyond the uninsured (Davis, et al, 2007; National Academies, 2003; Wolman and Miller, 2004), previous studies have not been particularly active in terms of examining the effect of health expansion programs on these societal consequences.

To study the effects of the programs in this dissertation, five models are utilized using different socioeconomic outcomes: state health spending, mortality, gross state product, emergency outpatients, and expenditures per patient. The study finds that these market-based programs are effective in helping to address the issues of reducing mortality per capita and emergency outpatients treated, while helping to boost the economic productivity of the state as measured by gross state product. The third chapter will summarize the results of the effectiveness analyses in the second chapter, as well as discussing their implications.

The fourth chapter examines how partisanship, ideology and other state-level social and political influences affect whether or not a state adopts market-based health insurance programs. This chapter will employ an event history model to look at the effect of political, social, and need variables on the adoption of market-based state health programs. The percentage of Democratic control of the state legislature was found to be significantly and positively related to the adoption of market-based programs. The adoption study finds that citizen ideology has a significant and negative relationship to the adoption of market-based health insurance programs. These findings taken together suggest that Democrats may pursue more pragmatic policy options in the area of health care, as opposed to adhering to rigid liberal ideology. In the fifth and final chapter, the
study explores how the complementary studies of the effectiveness and adoption of market-based health insurance programs inform each other. The two studies suggest that the market-based health insurance programs, taken as a whole, are effective in providing relief to widespread economic and social problems, while interestingly these programs seem to enjoy support from Democrats but not the liberal public. Considering these results in light of events surrounding the 2009 health care reform debate at the state and national level suggests that these market-based programs may deserve more attention than they have received, and may garner that attention in light of recent policy shifts such as Tennessee’s move from a government-based to a market-based system.

Limits of the Research

This study does face a number of limitations which should be acknowledged. First, the data used in both the effectiveness and adoption studies are compiled from numerous sources, which raise some issues of consistency across variables. However, all of the data has been collected from reputable sources, such as the U.S. Census Bureau, the American Hospital Association, and the Robert Wood Johnson Foundation, which should help minimize any complications.

Turning to the effectiveness model, an issue related to the data is the fact that some of the dependent variables in regard to the effectiveness study are imperfect measures of the phenomenon being studied. Most notably, the variable for the mortality per capita in the state is an imperfect measure of the overall health of a state. However, it is preferable to some composite measures of overall state health that incorporate a variety of factors and are therefore likely to introduce a significant amount of endogeneity into the model.
Another data issue is the fact that state level data is limited in regard to some of the variables that are important for the study. For instance, reliable measures of state-level uninsurance are only available reliably from the early 1990’s onward. This places considerable limitations on the time frame that can be effectively studied in regard to our research questions. However, having data from 1994 through 2003 for all fifty U.S. states still provides a data set robust enough to test the hypotheses in question. There are also methodological issues in regard to the use of a time series cross-sectional data as it relates to the effectiveness study. Most notably, this type of analysis is prone to autocorrelation and biased error terms (Beck and Katz, 1995). The time series model used in the effectiveness study employs a Prais-Winsten transformation to address autocorrelation and utilizes panel-corrected standard errors to address bias in the error terms.

Another issue, looking at the event history model, is that a number of cases are lost from the model due to the nature of the Cox proportional hazard model. The model measures adoption of market-based health programs, and as states cease adopting they drop out of the model, resulting in many cases being lost. However, as the data set covers the years 1989 through 2002, even with the lost cases the data set still seems robust enough to test the hypotheses. An additional issue related to the adoption study, which utilizes a Cox proportional hazard model, is that hazard models are only effective with a limited number of covariates in the model. This was noted by Blossfeld, Hamerle, and Mayer (1989), who wrote that the hazard model should not contain too many parameters as this can result in a loss of estimate precision unless the sample size is quite large. Therefore, in order to maintain parsimony, some potentially useful explanatory variables could not be included in the model. However, the limited number of covariates does force
one to carefully consider which covariates to utilize, so that the researcher assembles the best model he or she can.
CHAPTER 1

BACKGROUND ON RESEARCH

Costs and Consequences of the Uninsured

Uninsurance is a serious and growing problem in the United States. A recent report from the U.S. Census Bureau found that the percentage of Americans without health insurance rose from 15.3 percent in 2005 to 15.8 percent in 2006. In terms of the overall numbers, the uninsured population nationwide increased from 44.8 million to 47 million. For those Americans with health insurance coverage, employment remains the primary source of their insurance, unfortunately the percentage of people covered by employment-based insurance decreased to 59.7 percent in 2006 from 60.2 percent in 2005. Many of those without insurance are children. The percentage of children under the age of 18 who were uninsured increased from 10.9 percent in 2005 to 11.7 percent in 2006. For older Americans, the number of people covered by Medicaid was statistically unchanged between 2005 and 2006 (DeNavas-Walt, et al, 2007).

The issue of uninsurance has remained on the national agenda because of the serious economic and social consequences for the United States. Increases in the uninsured contribute to costly reliance on emergency room care and hospital admissions for preventable conditions. Uninsured people are more likely to undergo duplicate tests, as well as experience delays and errors in test results (Davis, et al, 2007). While many assume that poor individuals who cannot afford coverage can receive assistance through Medicaid, it is important to note that 64% of uninsured, poor adults are ineligible for Medicaid, primarily because childless adults are categorically excluded from Medicaid (Dorn, 2008).
Lost economic value due to uninsurance is estimated to be $65-$130 billion a year. Impaired health due to lack of health insurance is linked to absenteeism and reduced productivity in the workplace. The estimated value for an individual of improved health due to expanding coverage is estimated to be $1645-$3280 annually (National Academies, 2003). Among Americans aged 51 to 59, poor health has been linked to decreasing income and wealth, along with forcing people into early retirement. A general finding across studies is that poor health reduces annual earnings by 15 to 30 percent. Those in poor health are also less likely to work at all compared to someone in excellent health. Even those in poor health who were working made an hourly wage 23% lower than those with better health. Depending on the measure of health used, the improvement of an employee’s health to “good or excellent” from “poor to fair” could boost earnings by 15-20 percent (Hadley, 2003). Mullahy and Sindelar (1993) found that people in good health had earnings 37.7 percent higher than people with poor health conditions.

Lack of health care also takes an economic toll on individuals and families in regard to how much they pay for health care. Uninsured families tend to defer preventative care due to cost concerns, which can result in unsatisfactory health outcomes and more expensive care. The uninsured tend to be charged more for hospital care than the insured because there is no one to negotiate prices. Families with a member lacking health insurance are more likely to have medical expenses in excess of 5-10 percent of their income than those whose members are all insured (Hadley, 2003).

The responsibility for funding health care is divided among a number of levels of government, and tends to be fragmented and ill-defined. The federal Emergency Medical Treatment and Labor Act includes no provisions for paying for emergency room care
aside from billing the patient. Emergency room care for the uninsured is largely uncompensated, and results in financial burdens for hospitals. These pressures have prompted hospital mergers, conversions (public to private, non-profit to for-profit), and closures (Hadley, 2003). Such change can create improvements to health services at the local level, but it can also have negative consequences to communities such as disruption in services, loss of facilities and jobs, and a reduction in state and federal support. Urban areas with substantial rates of uninsured people have fewer beds per capita, offer fewer services for vulnerable populations, and are less likely to have units for specialized care. Uninsurance can also have the effect of forcing health professionals to sacrifice preventative care programs for programs to benefit the uninsured, decreasing the overall level of community health (Hadley, 2003).

The cost of providing health care to the uninsured was estimated at $99 billion in 2001. Uninsured families paid $26 billion out of pocket, $38 billion was paid by public and private insurance for care for those uninsured for part of the year, and the remaining $35 billion went uncompensated. The uninsured also create a drag in the health care system because they tend to be in poor condition when they enroll in Medicare, and thus their costs are higher (Wolman and Miller, 2004).

The growing problem of uninsurance and the lack of success in addressing the problem at the national level led the U.S. states to pursue different strategies to expand coverage. A decrease in federal support and an increase in need have spurred states to become innovators in the area of health care, making strides in areas like regulation, rationing, and innovative/competitive strategies to cut health care costs (Patel and Rushefsky, 1999). States have utilized increased discretion from the federal government
to expand initiatives like the State Children’s Health Insurance Program (SCHIP) or create new programs (Sparer, 2004). While the success of states in implementing reform has been mixed (Sparer, 2004), by the time of the Clinton plan’s congressional demise most state governments had enacted laws to increase portability and access to insurance (Stream, 1999).

The Role of States in Health Care

State and local government activity in health care is not a new trend. States and local governments have taken an active role in public health policy since the 1800’s. States’ initial involvement was primarily geared toward battling the problem of communicable diseases and mental health problems. The twentieth century saw state and local governments begin to deliver personal health services and license hospitals. In the 1960’s, the federal government began to provide support to states for institutions serving the poor, particularly with the creation of the Medicaid program. Medicaid increased revenue to public hospitals and local health departments. As this support was coming in, states increased their role in the regulation and licensing of the health industry, and became involved in hospital rate setting (Patel and Rushefsky, 1999).

Federal support for state health programs diminished in the 1980s, forcing states to shoulder a heavier share of the burden, particularly with regard to the Medicaid program. This decrease in federal support led to static Medicaid funding, while the population of the poor increased. States were ultimately forced to make a tradeoff between cost containment and access to health care. This devolution to the states forced states to become innovators in health care. States are in a unique position to be health care innovators, notably because of the wider latitude they have with which to experiment
with policy (Patel and Rushefsky, 1999). This experimentation is useful because states can enact policies which might not be acceptable in other states, such as employer mandates (Weissert and Weissert, 2006).

However, in the 1980’s many policymakers at the federal level did not in fact see states as credible health care leaders, as they were considered to be lacking the political will to make tough decisions that might anger either payers or providers. Conventional wisdom held that states lacked the fiscal capacity to pursue universal coverage, and any truly meaningful reform would have to originate from Washington, DC. However, the 1990s saw a significant change in the political landscape, with Massachusetts enacting a “play or pay” plan (wherein an employer will either provide coverage to employees or pay a fee to the state), which preceded the current insurance mandate program. Oregon rationed health procedures for a portion of the Medicaid population, and a number of states pursuing universal coverage (Five States, 1994). With this change in the states came greater discretion and latitude from the federal government. This discretion often came in the form of waivers allowing states to forego certain federal requirements related to intergovernmental programs like Medicaid. This change in policy is related to a perceived increase in administrative capacity at the state level. For instance, governors now employ larger and more professional staffs that can provide expertise in managing new programs. States have also benefited from high revenues and savings from lower utilization of social services. Many states recognized this opportunity and used the greater resources to produce a variety of innovative health policies (Sparer, 2004).

One of the major initiatives to come out of the 1990s was the State Children’s Health Insurance Program (SCHIP). This program provided states with federal matching funds
to make it easier for them to expand health insurance coverage for uninsured children by either building upon Medicaid or funding an alternative program. States were also granted authority to provide services directly through expansions of local health department clinics or federally qualified health centers. Additionally, states gained the power to negotiate contracts with hospitals serving low-income families (Patel and Rushefsky, 1999).

The results, however, of initiatives other than SCHIP have been varied. While the goals of SCHIP were fairly ambitious, a number of the other reforms implemented by the states in the 1990’s were modest in scope and impact. Additionally, SCHIP, along with many other state health policies, were financed by the federal government and were thus subject to regulation from Washington. This sort of intergovernmental policymaking tends to encourage incremental policies, rather than sweeping reform (Sparer, 2004). States themselves do face a number of obstacles to regulating insurance and expanding access to the market, including the federal ERISA Act (which limits the states’ ability to regulate self-insured employer coverage), difficulty in organizing small businesses, lack of state financial resources, lack of support for government action to regulate health care, and the political power held by big business. As a result states have sought approaches to reform which are not dependent on significant state funding or strong action by the state (Barrilleaux and Brace, 2007).

However, this is not to say that they are completely powerless to innovate. States do have the means and the will to make positive change in the health care system. Further, these policy innovations can be copied by other states and then diffused throughout the country (Weissert and Weissert, 2006). In addition to government-based efforts such as
SCHIP, a number of states have taken up reforms which seek to increase access to the private insurance market, or at least enact programs which function according to market principles. These approaches will be addressed next.

Market-based Approaches to Expanding Health Care

Barrilleaux and Brace (2007) define market-based health policies in the following manner: “Market-based policies seek to coerce businesses to purchase insurance or, in the case of risk pools, use state leverage to reduce insurance prices (but without imposing a cost on insurers)” (Barrilleaux and Brace, 2007). For the purposes of this research, market-based programs are defined more broadly as programs which seek to make private insurance coverage more accessible to those who need it, or programs enacted by the government which function according to market principles (i.e. clients still have to pay for their coverage). It should be noted that the term market-based is not meant to indicate that these programs are entirely divorced from government involvement. In fact, in most states the programs addressed in this research were made possible, at least in part, by government intervention in the market. Rather than indicating the lack of any relationship with government, the term market-based is meant to denote that these programs promote coverage expansion through the market, as opposed to a government-operated social welfare program such as Medicaid.

Barrilleaux and Brace (2007) note that the story of the American health care system is one of incremental expansion, resulting in a “patchwork” system which, despite numerous efforts at reform in the 20th and early 21st centuries, has left approximately 47 million uninsured. Previous research (Sparer 2003, as cited in Barrilleaux and Brace, 2007) found that the most successful health reforms involved both the federal and state
governments (such as Medicaid and SCHIP) and that that state-level efforts, particularly those which could be described as market-based, were unsuccessful. Unlike the state-based solutions, which assume inherent market failure in health insurance coverage, market-based initiatives seek to make adjustments to the private health care market in order to allow entry to those previously shut out. Advocates see this approach, which depends on voluntary compliance on the part of private insurers, as more efficient, while advocates for more state-based activity argue that such efforts are not substantial enough to increase provision of coverage. Next we will more closely examine one of the market-based programs noted by Barrilleaux and Brace (2007), the state high-risk health insurance pool.

State High-Risk Health Insurance Pools

A key element to states expanding their provision of health care services is the utilization of non-profit organizations. Kettl (1993) notes that state and local governments employ an extensive network of nonprofit contractors in order to deliver many of the social services that citizens demand. The vast majority of these contracts are going to social services in such areas as hospital management and mental health. Many Medicaid programs are also channeled through non-profits at the local level. Often, the federal government has been a catalyst for this movement as they have provided grants to state and local governments for programs with the idea that the money will be utilized through non-profits, due to distrust of politicians at the lower levels (Kettl, 1993).

A survey conducted by the International City/County Management Association\(^1\) found that local governments administering social services often employ a mixed model, where

government employees directly oversee some programs and others are overseen by outside contractors. State and local governments tend to function as holding companies which provide outside organizations with the means to provide services (Kettl, 1993). In addition to contracting out to existing non-profits for services, states have also taken the step of creating their own non-profit entities to expand coverage and improve health care. An example of this innovative phenomenon is state high-risk health insurance pools.

These pools, currently operational in 34 states, act as independent entities, governed by a board of directors and administered by an insurance carrier in the state who offers coverage to the uninsurable population. These pools were originally created with the intent of providing coverage to those who could not receive private coverage due to a preexisting condition. However, this limited scope of mission has been expanded through the years by federal legislation, including the Health Insurance Portability and Accessibility Act and the Trade Adjustment Act (Laudicina, 1988). Today, risk pool associations must create a comprehensive insurance policy that meets the needs of the medically uninsurable and other groups, while at the same time adhering to guidelines on premiums, benefits, and deductibles (Frakt, et al, 2004/2005).

The first pools were established in Connecticut and Minnesota in 1976 (Frakt, et al, 2004/2005). Risk pools allow uninsurable people to obtain coverage, as well as acting as a fallback to others who encounter problems with the insurance industry, such as unreasonably high premiums (Stearns et al, 1997). The target population for these programs tends to be smaller, as the percentage of a state’s population in the individually

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2 Individuals are classified as uninsurable by health insurance companies because their risk premiums are not large enough to compensate an insurer for providing coverage (Morrissey, 2008).
insured market\(^3\) is less than 2% in all states except Minnesota, Nebraska, and Oregon (Achman and Chollet, 2001). Chollet (2002) found that enrollment in risk pools was below 1 percent of the individually insured market. Some states only cover individuals, while others provide coverage to families. For example, Minnesota’s plan only covers individuals, while the plan in Connecticut covers spouses, unmarried children under the age of 19, and other dependents who are unmarried and under 19 (Minnesota Comprehensive Health Association, 2006; Health Reinsurance Association, 2005).

Funding sources for high-risk pools include client premiums, assessments on private insurers, and general state revenue (Frakt, et al, 2004/2005). The federal ERISA law prevents pools from making any assessments on self-insured employer plans,\(^4\) which can account for fifty percent of the market in some states (Abbe, October 2002). States put caps on out-of-pocket patient expenditures anywhere from $2,000 to $20,000. Waiting periods until benefits will be conferred can range from six months to one year, and lifetime benefits range from $350,000 (Wyoming) to $2.8 million (Minnesota) (Achman and Chollet, 2001). Some states put a cap on annual benefits, with three states having benefits amounting to less than $200,000 a year (Chollet, 2002).

**The Need for High-Risk Pools**

Much of the need for these high-risk health insurance pools stems from the fact that the rising costs of health care have caused insurance companies to become more stringent in their underwriting standards, making it difficult for individuals to find health insurance

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\(^3\) The individual insurance market is composed of those individuals who purchase health insurance coverage privately, rather than receiving coverage under an employer plan.

\(^4\) Under a self-insured plan, businesses put money into a fund from which they pay employee medical claims rather than paying premiums to an insurance company. The business then assumes all of the risk for insurance coverage (Park, 2000).
Such stringent standards lead to people being deemed “medically uninsurable,” i.e. having a serious medical condition which is likely to require extensive medical care (Laudicina, 1988). A person may also be considered medically uninsurable if they pay significantly higher premiums due to a medical condition, or if the coverage comes with an elimination rider\(^5\) (State High-Risk Health Insurance Pools, 2005). A 1994 study found that 0.7 percent of the American population (approximately 2 million people) were deemed medically uninsurable by insurance companies (NCPA, 1994). Specific conditions rendering one uninsurable may include: aneurysm, diabetes, AIDS, rheumatoid arthritis, dialysis, spinal disorders, paralysis, psychosis, and hemophilia (AccessWV, 2006). Due to the fact that these high-risk pools behave similarly to private insurance companies, they are best characterized as a market-based program. These programs function based on a market model in that they charge premiums for their coverage, and utilize a network of private sector and non-profit care providers and administrative resources in their operation (Comprehensive Health Insurance, 2007). In the next section, this study will examine other market-based programs included in this study.

### Specific Insurance Expansion Strategies

A number of other market-based strategies have been employed at the state level to address the problem of uninsurance, in addition to the high-risk pools noted above. States are in a unique position to be health care innovators, notably because of the wider latitude they have in which to experiment with policy (Patel and Rushefsky, 1999). Of particular

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\(^5\) An elimination rider allows insurance companies to specifically exclude a particular condition, body part, or system of the body from coverage under an insurance plan (Consumer Guide, 2009).
interest for the purposes of this study is the role of state high-risk health insurance pools. However, a number of other expansion strategies are addressed in the dissertation as well. Another expansion strategy that will be addressed in this study is waivers granted by the federal government to allow states to expand their Medicaid populations. About 98,000 people have gained new coverage through waivers under the Health Insurance Flexibility and Accountability Act of 2001. Most states have chosen to use HIFA waivers to expand Medicaid above the minimum federal requirements (State Coverage Initiatives, 2007). The waivers also contain elements which seek to encourage people to pursue coverage in the private market. Owcharenko (2002) cites the guidelines provided by the Department of Health and Human Services for implementing the HIFA waivers:

The Administration puts a particular emphasis on broad statewide approaches that maximize private health insurance coverage options and target Medicaid and SCHIP resources to populations with income below 200 percent of the Federal poverty level.

A number of states, including Illinois, Idaho, New Mexico, and Oregon have encouraged the purchase of private health insurance by creating or expanding premium assistance programs to try to give the private market a more active role in expanding coverage to the uninsured (Coughlin, et al, 2006). Therefore, while this effort is classified as a market-based approach for the purposes of this research, it could also be characterized as mixed.

Other important strategies a state might rely on would be initiatives such as reinsurance programs, a group purchasing arrangements, and limited benefit plans. A reinsurance program can be used to reduce premiums by shifting some of the expense for high-cost enrollees to a third party (possibly the state). This is designed to lead to lower premiums by reducing incentives for carriers to hold excess reserves. Group purchasing
arrangements are public or private efforts to allow more than one small or large employer and/or individuals to pool together to collectively purchase health insurance. One other type of program employed to address the uninsurance problem is limited-benefit plans. Limited-benefit plans are designed to decrease premiums by limiting the number of covered services in comprehensive health benefit plans (State Coverage Initiatives 2006).

One aspect all of these coverage expansion strategies have in common is that they represent to varying degrees government’s attempt to facilitate improving health coverage by utilizing tools available in the private market. The next chapter will examine the study of the effectiveness of these market-based health insurance programs.
CHAPTER 2
EFFECTIVENESS OF MARKET-BASED STATE HEALTH EXPANSION PROGRAMS

Introduction

This study assesses the general societal and economic effects of market-based state efforts. This study hypothesizes that the implementation of these programs leads to lower state health spending, better overall citizen health, greater economic productivity, and a more sustainable health care system. The findings in this dissertation lend credence to the notion that market-based programs designed to expand health care access to the uninsured will yield tangible economic and social benefits for the state as a whole.

The previous example of the TennCare/Cover Tennessee experience raises this question of whether or not market-based state health expansion programs provide general benefits to the state as a whole. TennCare was created in the wake of the failure of the Clinton health plan in an attempt to provide universal health care within the state of Tennessee, however the program proved financially unsustainable in its original form. Governor Phil Bredesen, rather than using his political capital to preserve the TennCare program, chose to create a narrower, market-based program known as Cover Tennessee. Not long after its implementation, the Cover Tennessee program came under criticism for not meeting its enrollment targets. This highlights the idea (noted in the previous chapter) that the success of these market-based programs is measured narrowly in terms of enrollment and decrease in the uninsured population. However, recent research in the area of health policy (Barrilleaux and Brace, 2007; Battistella and Kuder, 1993) suggest that the effect of these programs should be looked at in a broader sense, as they may have
developmental impacts for a state not accounted for in the narrower measures of enrollment and percentage of uninsured.

This chapter tests the idea that market-based health insurance expansion programs can provide general benefits for the people of a state. It begins with background on the economic and health consequences of uninsurance, as well as previous research on market-based health expansion programs. The hypotheses for the effects of the market-based health insurance expansion programs on the dependent variables are presented. Following the presentation of hypotheses, there is a discussion of the control variables used in the analysis, as well as the research methodology used in the study. The chapter concludes with the results of the analysis of the effects of the market-based programs on the dependent variables.

Background on the Economic and Health Consequences of Uninsurance

In order to assess the effectiveness of market-based health expansion programs in alleviating economic and societal ills created by uninsurance, we must first examine what effects the lack of insurance has on government health spending, the overall health of a state’s population, a state’s overall economic strength, and the sustainability of the state’s medical infrastructure. Government efforts to expand health insurance coverage are promoted on a number of grounds. One is the humanitarian argument that in a nation as wealthy as the United States all citizens should have access to basic health care (Health Care Reform, 2009). However, a more tangible argument that may work in favor of expansion advocates may be that expanding coverage would provide benefits to society as a whole. These benefits could be translated into dollar amounts in the form of
economic gains and better health outcomes. In the following sections, this dissertation reviews the economic ills created when individuals do not have health insurance, which include increases in government health spending, reductions in health outcomes, decreases in economic productivity, and stress on the medical infrastructure.

Effect of Uninsurance on Government Health Spending

The lack of insurance has several effects on government health spending. The responsibility for health care spending is shared by numerous levels of government, a system which is best characterized as fragmented and ill-defined. The literature on uninsurance suggests that lack of health insurance coverage imposes long term costs on the state and federal government, as uninsured people are likely to be in worse physical condition when they reach 65 and enroll in Medicare, thus their cost to Medicare is higher (Wolman and Miller, 2004). Heffler, et al. (2005) found that health care costs are shifting significantly from the private to the public sector, and by 2014 total (both governmental and non-governmental) health spending will represent 18.7 percent of the gross domestic product (GDP), up from 15.3 percent in 2003. Additionally, state and local governments make payments to hospitals through tax appropriations which the Medicare Payment Advisory Committee considers reimbursement for treatment of uninsured patients. It is estimated that state and local governments spent $3.1 billion dollars in tax appropriations in 2001 to reimburse hospitals for the uncompensated care of uninsured patients. State and local governments also bear a financial burden from the uncompensated care of the uninsured through funding of indigent care programs (Hadley and Holahan 2003). These studies indicate that it is essential that government implement
strategies to help contain the growing cost of health care. One method of doing this is to expand coverage to the uninsured to reduce instances of uncompensated emergency care. Some advocates argue for expanding coverage through a government program, while others argue for market-based programs that expand access to coverage in the private market.

Effect of Uninsurance on Health Outcomes

Lack of health insurance also has significant effects on health outcomes. Health outcomes are a change in the health status of an individual, group or population which is attributable to a planned intervention or series of interventions, regardless of whether such an intervention was intended to change health status (WHO, 1998). In regard to health outcomes for a state, people who are uninsured for a full year receive approximately 55% of the medical care of those who did have coverage, even with uncompensated care taken into account. Specifically, uninsured people receive less preventative care, are diagnosed with more advanced diseases, and once diagnosed do not receive adequate care and have higher mortality rates (Hadley and Holahan, 2004).

Looking at health outcomes as they relate to infant mortality (a common measure of health outcomes), Currie and Gruber (1996) found that a 15.1 percentage increase in children eligible for Medicaid between 1984 and 1992 is estimated to have decreased child mortality by 5.1 percent. Levy and Meltzer (2001) found consistent evidence through quasi-experimental studies that health insurance improves health, although the effect is considerably more pronounced for lower-income people than higher income individuals. Dorn (2008) estimated that 137,000 adults between the ages of 25-64 died
due to lack of insurance between 2000 and 2006. In the same article, Dorn noted that providing all uninsured adults between 55 and 64 years of age with health insurance would have lowered mortality in that population by 27 percent (Dorn, 2008). He concludes that in excess of 13,000 people in the 55-64 year old demographic die as a result of being uninsured, “placing uninsured third on a list of leading causes of death for this age group, below only heart disease and cancer” (McWilliams, et al., 2004 as cited in Dorn, 2008).

The negative health outcomes created by the lack of health insurance presents economic and social challenges for the U.S. states. The economic challenges will be addressed in the next section. In regard to the social challenges, the health difficulties created by lack of insurance, particularly premature deaths, have detrimental effects to families and communities which are difficult to quantify. However, the number of deaths themselves provides some hard data to illustrate the humanitarian toll taken by the uninsured problem. Some health expansion advocates argue for the use of market-based health insurance programs, which could serve to increase insurance coverage but also provide an economic development benefit.

Effects of Uninsurance on a State’s Economy

Several studies have examined the economic impacts of the lack of health insurance on a state’s economy. One obvious argument demonstrated in the literature is that impaired health is related to absenteeism at work and reduced job productivity. According to one estimate, almost one-fifth of the working age population lacks health coverage (National Academies 2003). Updating previous estimates of lost economic
productivity due to uninsurance, Hadley and Holahan (2004) found that dollars lost nationally as a result of uninsurance amounts to approximately $103 billion annually, substantially more than the $48 billion which government would need to spend to provide coverage. This additional $48 billion government spending would go toward Medicare, Medicaid, and tax subsidies for private insurance, which would constitute less than 3% of total personal health care spending in the U.S., and would only increase the share of GDP going to health care costs by 0.4% (Hadley and Holahan, 2004).

Studies have also found that poor health reduces annual personal earnings by 15 to 30 percent (Hadley, 2003). Mullahy and Sindelar (1993) found that individuals in good health had earnings 37.7 percent higher than people with poor health conditions. Those in poor health were also less than half as likely to work compared to someone in excellent health, and even if they were working their hourly wage was 23 percent lower. Depending on the measure of health used, improving a person’s health status from “poor or fair” to “good or excellent” or reducing the prevalence of a particular condition could increase personal annual earnings by 15-20 percent. In addition to finding a direct link between poor health and reduced personal income and wealth among Americans aged 51 to 59, it has also been cited as the primary issue leading people to leave the work force prematurely (Hadley, 2003).

Another factor influencing reduced productivity (and hence, a negative impact on a state’s economy) is that, particularly in recent years, increases in health care costs have had a significant impact on employers and their employees. Increased health costs have traditionally been passed on to insurance companies who then pass the costs on to employers who provide health insurance for their employees. Employers, often due to
mandates that they provide health insurance for their workers, are left with difficult tradeoffs: increase health benefits which will then need to be offset by reduced wages or non-wage fringe benefits or pass the increased costs on to employees. This tradeoff will determine the ultimate impact on employment (Flynn, Wade, and Holahan 1997). The employment effects of the cost of health care would be expected to affect economic productivity in a state. Some researchers have argued that market-based programs can have positive developmental effects, partially through its benefits to businesses (Barrilleaux and Brace, 2007).

Effects of Uninsurance on the Medical Infrastructure of a State

In regard to the effects on hospitals and health care costs, uninsured families tend to use fewer preventative health services and defer care due to cost concerns. Forgoing preventative care leads to more costly care later on and less satisfactory outcomes. Hospitals tend to charge uninsured people higher prices than the insured because there is no one to negotiate prices. Families with an uninsured member who suffers an injury or illness are more likely to have medical expenses exceed 5 to 10 percent of their income than insured families. The Emergency Medical Treatment and Labor Act, which requires emergency rooms to provide medical screening and, if necessary, treatment, makes no provision for payment other than billing the patient. Uncompensated hospital services go largely unpaid and create financial burdens for hospitals (Wolman and Miller 2004).

Financial pressures, from uncompensated care and other causes, have prompted hospital mergers, conversions from public to private ownership or from private non-profit to for-profit status, and closures. Such changes can improve health services locally, but
can also cause disruptions, loss of facilities and jobs, and a loss of public dollars flowing to the community. Urban areas with relatively high uninsured rates have fewer beds per capita, offer fewer services for vulnerable populations, and are less likely to have specialized care units. Preventative care programs may be reduced to compensate for increased need to care for uninsured residents, which may decrease the overall health of the community (Wolman and Miller, 2004).

Previous Research on the Effectiveness of Market-Based Health Expansion Programs

While the literature above illustrates that considerable attention has been given to the various consequences of uninsurance, much of the research regarding the effectiveness of market-based health expansion programs has been quite narrow in focus. In this section, the dissertation will discuss previous research into and evaluations of market-based health insurance expansion programs. Recall that for the purposes of this research market-based health expansion programs refer to state high-risk health insurance pools, limited benefit plans, group purchasing arrangements, reinsurance programs, and Health Insurance Flexibility and Accountability waivers. A characteristic which is common across these evaluations is that they are focused on rather narrow program outputs rather than outcomes. As will be discussed later, some recent research has addressed the general developmental effects of these programs.

Previous research on state high-risk health insurance pools indicates that evaluations of these programs have focused on the level of enrollment and the effect on a state’s level of uninsured. The amount of time people spend in a risk pool varies widely (Stearns and Mroz, 1995). The creation of new pools increased enrollment to 190,361 as of the end of
The percentage of the uninsurable actually served by risk pools varies from state to state. In 2000, Minnesota’s pool covered 8% of the uninsurable, while Connecticut’s covered 54% of the uninsurable (Frakt, Pizer, and Wrobel, 2002). The figures are considerably different if one looks at what percentage of the state’s uninsured population is covered by the pools. As of the end of 2006, Minnesota’s pool covered approximately 7.2% of a state’s uninsured population, while Connecticut covered only about 0.64% of the state’s uninsured (Comprehensive Health Insurance, 2007). While these past evaluations provide useful information regarding additional coverage created by the high-risk pools, they do not provide any sense of the general social and economic benefits created by these pools.

Evaluations of other market-based programs have been similarly narrow in terms of their focus on enrollment and effects on the uninsured population. An evaluation of reinsurance programs in three U.S. states focused on “how much benefit it achieve[d] within its target population and at what cost,” as well as the degree to which the programs created market stability and segmented different populations within the insurance market (Bovbjerg, et al, 2008). Friedenzohn (2004) conducted an evaluation of limited-benefit plans which focused heavily on difficulties in achieving significant program enrollments. The author did conclude her study by noting that a full examination of the limited benefit plans would need to consider additional outcomes such as crowd-out, adverse selection, and effects on safety-net providers (Friendenzohn, 2004). An examination of Health Insurance Flexibility and Accountability waivers provided to the State Coverage Initiatives National Meeting reported that “HIFA has expanded coverage, though perhaps not to the degree originally anticipated because of budget constraints” (Sachs 2006, p. 9).
This finding was supported by a study conducted by Coughlin, et al (2006), which found that the ten HIFA demonstrations in place by the end of 2005 had expanded coverage to 300,000 people, however it goes on to note that an obstacle to these programs’ implementation and effectiveness has been budget constraints (Coughlin, et al, 2006).

Research focused on a variety of market-based health expansion strategies found that these policies were successful in one respect (promoting the development of new insurance markets), but less successful in terms of actually decreasing the percentage of uninsured (Hall 2000, as cited Barrilleaux and Brace, 2007). Market-based expansion efforts focused on increasing employer offerings of insurance were successful in increasing the number of those offerings, but due to high costs to employees not many workers availed themselves of such offerings (Sloan and Conover, 1998; Jensen and Morrissey, 1999 as cited in Barrilleaux and Brace, 2007).

This research suggests that the previous evaluations of market-based health insurance programs are in fact too narrowly tailored, and should further explore the general economic, social, and health effects of these programs. Weissert and Weissert (2006) note that government engages in or promotes a number of practices related to health care as they have implications for society as a whole. These include vaccinations and sanitation laws, as the susceptibility to and spread of infectious diseases can have effects on a significant portion of a state’s population. There is also the problem of “free riders,” where healthy people decline coverage, depending on emergency rooms for treatment in the event of a catastrophic condition (Weissert and Weissert, 2006). This study analyzes the effects of market-based health insurance programs on selected economic, social, and
health indicators which apply to a state’s population as a whole. The results of the study indicate that these programs do have effects in all three areas.

Conceptual Framework/Hypotheses/Data

This study expands on the previous research regarding the effectiveness of market-based health expansion programs on improving social and economic conditions. In this section, the hypotheses to be examined are presented. The study utilizes a pooled cross-sectional time series regression model with adjustments to account for the effects of heteroskedasticity in the model. The study examines the effects of these market-based state health expansion programs in 50 U.S. states for the years 1994-2003, for an N of 500. These years were selected for analysis as this period of time was a particularly active one for the enactment of state-level health programs. The cumulative effects of market-based health insurance programs on selected economic, social, and health indicators at the state level are analyzed using cross-sectional time series regression. This is done using an additive index of how many market-based health expansion programs have been implemented in the state. The results indicate that greater adoption of these market-based has positive effects on mortality per capita, the gross state product, and emergency outpatients treated.

In order to test the effectiveness of market based health programs, this study employs five different models in the analysis, which look at the effect of the programs on state health care spending, the state’s economy, overall state health levels and the health care system in the state.
Independent Variable of Interest

The primary independent variable of interest in this study is an index of market-based health expansion programs. This index indicates the degree to which states have implemented the five market-based health expansion programs of interest in the analysis: high-risk pools, limited benefit plans, reinsurance programs, group purchasing arrangements, and Health Insurance Flexibility and Accountability waivers. The index measures the presence of the programs on a 0-5 index, 0 if a state has implemented none of the programs and 5 if a program has implemented all of the possible programs. Information regarding the adoption of these programs in the states was reported by the Robert Wood Johnson Foundation’s web site, State Coverage Initiatives.

This variable allows us to capture an overall measure of state effort to expand access to coverage to the uninsured through market-based programs. As these programs do utilize different mechanisms to expand coverage to different populations within a state, to truly gauge their impact, both in regards to their target populations or the general public, would be difficult. However, this study is less interested in the specific ways in which these programs expand coverage and their individual success than a state’s overall willingness to utilize multiple market-based strategies to address the problem of uninsurance and whether or not this policy effort on the part of the state translates into tangible benefits for the state in terms of lower state spending on health, better overall health outcomes, higher gross state product, and stronger medical infrastructure.

Hypotheses Regarding Independent Variable of Interest

The first model in this analysis looks at the effect of the presence of market-based
state health programs on the percentage of state expenditures devoted to health care. The dependent variable for state health spending is taken from the U.S. Census Bureau Statistical Abstract. A significant portion of these expenditures represent state government reimbursements to hospitals for uncompensated care provided by hospitals. The hypothesis in regard to this dependent variable is that the presence of the market-based state health programs will reduce the percentage of state health spending as the programs do not represent significant additional spending for the state, but are able to reduce the amount of uninsured people utilizing uncompensated care. This reduction of uncompensated care will therefore reduce the need for the state to reimburse hospitals for that care, and fewer uninsured people will translate into lower levels of state spending in other health-related areas. However, it should be noted that most of the market-based programs addressed in this study do not serve individuals who might benefit from social welfare programs like Medicaid, which is the single-largest item in many state budgets (Feldstein, 2007). This study investigates whether market-based programs do have a beneficial relationship with state spending on health care. Formally stated, the first hypothesis is that a greater presence of market-based state health expansion programs will have a negative relationship to state spending on health care.

H1: A greater presence of market-based state health expansion programs will have a negative relationship to state spending on health care.

The second model in this study examines the effect of market-based health programs on the overall health of a state’s citizenry. The variable for overall health used in the analysis is the state mortality rate per 100,000 as reported in the U.S. Census Bureau Statistical Abstract. While this represents a rather gross measure of overall state health, this study contends that healthier populations (i.e. populations with more ready access to
health care) will exhibit lower mortality rates, which is supported by previous research examining the relationship between self-evaluations of health and mortality (Lawrence and Assmann, 1997). It should be noted that measures of mortality due to more specific conditions were utilized in previous versions of the model, with similar results. The primary hypothesis in regard to this dependent variable is that the presence of market-based health programs will serve to lower state mortality rates through greater access to preventative health care, particularly for traditionally underserved populations. Hypothesis 2 is formally stated as a greater presence of market-based state health expansion programs will have a negative relationship to a state’s mortality per capita.

H2: A greater presence of market-based state health expansion programs will have a negative relationship to a state’s mortality per capita.

The third model examines the effect of the presence of the market-based state health programs, controlling for other economic and social factors, on the wealth of a state as measured by the gross state product per capita (as reported in the U.S. Census Bureau Statistical Abstract). The primary hypothesis of the model is that the presence of market-based state health programs will increase the overall wealth of a state by increasing the productivity of the state’s workforce through better health. Hypothesis 3 is formally stated as a greater presence of market-based health expansion programs will have a positive relationship to gross state product.

H3: A greater presence of market-based health expansion programs will have a positive relationship with gross state product.

The fourth model in the analysis investigates the effect of the presence of market-based state health programs on the per capita level of emergency outpatients treated. The dependent variable for emergency outpatients per 1,000 is reported in the American
Hospital Association publication, *Hospital Statistics*. The literature on uninsurance in the United States notes that one negative outcome of people in the United States being uninsured is that uninsured people frequently delay seeking medical care for serious health conditions until the matter becomes critical and they must seek care for the condition in a hospital emergency room. Data released by the Department of Health and Human Services indicated that one-fifth of the 120 emergency room visits in 2006 involved uninsured people (AHRQ, 2009). This can place significant strain on hospitals, both financially and in terms of being able to treat patients in a timely manner. The hypothesis in regard to this dependent variable is that the greater presence of market-based state health programs will reduce the number of emergency outpatients treated in hospitals by allowing people to seek preventative care, thus reducing instances of people delaying care to the point where it becomes an emergency situation. Hypothesis 4 is formally stated as a greater presence of market-based state health expansion programs will have a negative relationship to emergency outpatients treated.

**H4: A greater presence of market-based state health expansion programs will have a negative relationship to emergency outpatients treated.**

The fifth and final model in this analysis looking at the effectiveness of market-based state health programs examines the relationship between the programs and the hospital expenditures per patient. The data for expenditures per patient is reported in the American Hospital Association’s *Hospital Statistics*. The literature suggests that lack of health insurance can increase the level of expenditures per patient due to people delaying care until more expensive care is necessary (Schwartz, 2007). The hypothesis regarding this dependent variable is that expanding access to care through market-based state health programs will have a negative relationship to expenditures per patient, as these programs
will increase access to health care for these traditionally underserved populations and will reduce instances of people delaying care until their condition becomes catastrophic. It should be noted that the literature indicates numerous factors internal to hospitals which can serve to increase incidents of adverse events which can in turn drive up patient costs per day, including “poor quality care, understaffing, and lack of access to skilled care” (Forrest, et al, 2002, p. 24). Garson and Engelhard (2008) also cite evidence that preventative medicine does not actually reduce costs. Despite the conflicting evidence, the hypothesis as formally stated is a greater presence of market-based state health expansion programs will have a negative relationship on expenditures per patient.

**H5: A greater presence of market-based state health expansion programs will have a negative relationship on expenditures per patient.**

The chart below summarizes the hypotheses for the models included in this study:

<table>
<thead>
<tr>
<th>Market-based Health Index</th>
<th>State Spending</th>
<th>Mortality Per Capita</th>
<th>Gross State Product</th>
<th>Emergency Outpatients</th>
<th>Expenditures per Patient</th>
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**Control Variables**

It should be noted that the same control variables are utilized across the five models.
in this study investigating the relationship between market-based health programs and dependent variables. The logic of utilizing the same control variables across models is not that these control variables directly explain variation in the dependent variables, but that these variables affect the relationship between market-based programs and the dependent variables in very particular ways across the models. With this in mind, the control variables can be divided into three categories: Category 1 is control variables that also expand access to insurance in lieu of market-based programs; Category 2 is control variables which hinder access to market-based programs, and Category 3 is control variables which stand to facilitate the creation of general societal and economic benefits through the provision of health care and better implementation of the market-based programs.

Control Variables Which Expand Access to Insurance

In addition to the index of market-based health expansion efforts, the model also seeks to account for effects of government-based efforts to decrease the percentage of uninsured in a state. This is done using independent variables which control for the presence of the State Children’s Health Insurance Program and the use of Medicaid 1115 waivers. These two programs account for the two most significant government initiatives to expand access to health insurance implemented at the state level during the period of study. These variables are based on information regarding the implementation of these programs taken from the Robert Wood Johnson Foundation’s web site State Coverage Initiatives. Previous research by Bernick and Myers (2008) found that, over time, the SCHIP program did contribute to lower levels of uninsurance in the state. Healthy policy
analysts, such as Weissert and Weissert (2006), note that the 1115 waivers have been used to expand coverage for long term care, home health care, mental health care, the poor, and adults between the ages of 19 and 64. However, limited attention has been given to the relationship between the waivers and the level of uninsurance in the state. In their study, Bernick and Myers (2008) did not find a statistically significant relationship between the Medicaid waivers and the level of uninsured in the state. Nevertheless, due to their widespread implementation it is expected that the 1115 waivers would be associated with lower levels of uninsurance.

A measure of the percentage of union membership in a state as reported by the U.S. Census Bureau *Statistical Abstract* is also included in the models. This is important to take into account, as unions have historically been a dependable source of health insurance benefits, and thus the higher the level of unionization in a state the more likely a higher percentage of a state’s population would be expected to have access to health insurance benefits. Unionization has also proven to be a significant variable in previous models of economic development (Brace, 1993). Morrissey (2008) notes that organized labor spurred the proliferation of health coverage in the 20th century, and Feldstein (2007) notes that many large unions provide generous health benefits to their members.

Control Variables Which Serve to Limit Effectiveness of Market-based Programs

Another set of control variables included in the effectiveness models focus on forces which could serve to limit the effectiveness of market-based programs. One measure is the percentage of uninsured individuals residing in a state, as reported in the U.S. Census Bureau’s *Statistical Abstract*. While this study is examining the effect of market-based
Table 3-2: Hypothesized Relationships Between Health Expansion Control Variables and Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>SCHIP</th>
<th>Medicaid 1115</th>
<th>Unionization</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Spending</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mortality Per Capita</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gross State Product</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Emergency Outpatients</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Expenditures per Patient</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

health expansion efforts on indicators other than the uninsurance rate, the level of need in a state could theoretically affect the ability of these market-based initiatives to have any meaningful effect on the dependent variables. For example, if a state has an exceptionally high uninsurance rate which is contributing to a higher rate of mortality in the state, market-based programs would need to be that much more effective in order to overcome the uninsurance problem and improve mortality levels. Previously cited literature laid out the very serious consequences of being uninsured (DeNavas-Walt, et al, 2007; Davis, et al, 2007; National Academies, 2003; Hadley, 2003).

Another variable included in the models to account for the size of the problem the market-based programs are confronting is a measure of the percentage of people living in poverty in the state. The level of poverty in a state is likely to have a significant impact on the dependent variables included in the model, particularly mortality and gross state product. Therefore, a higher level of poverty in a state could be expected to hinder the ability of market-based programs to have a meaningful impact on these dependent variables. Previous research has shown a significant and positive relationship between poverty and uninsurance (Bernick and Myers, 2008), which could also hinder the
effectiveness of market-based programs. The information regarding state poverty is taken from the U.S. Census Bureau’s *Statistical Abstract*.

The percentage of unemployed people in the state as reported in the U.S. Census Bureau *Statistical Abstract* is also included in the analysis. This variable is included in the analysis as it is expected that the larger the size of the unemployed population in a state, the more difficult it will be for the market-based health expansion programs to have a meaningful impact on the dependent variables, particularly as a number of these programs may assist people in obtaining coverage through their employers. The majority of Americans, 59.3%, still receive health insurance through their employer (DeNavas-Walt, et al, 2007). Examined over time, unemployment has been found to have a significant and positive relationship with the uninsured (Bernick and Myers, 2008).

A fourth variable included in this category of control variables is the percentage of a state which is metropolitan. This variable could be relevant to the effect of the market-based health expansion programs on the dependent variables, as metropolitan areas confront a number of challenges in regards to quality and delivery of health care (AMSA.org, 2009). However, it is important to note that these challenges can be counter-balanced to some degree by advantages which metropolitan areas can hold, including higher levels of economic activity (Metropolitan Policy Program, 2009). Therefore, taking into account the demographic character of a state in regards to whether it is more urban or rural could help to clarify the effects of the market-based programs on the dependent variables. The hypothesized relationships between these control variables and the dependent variables are illustrated in Table 3-3 below.
Control Variables Which Help to Facilitate the Creation of the General Societal and Economic Benefits

The third category of control variables focuses on variables which could help to facilitate the creation of general economic and social benefits through market-based programs via better health care provision and program implementation. One variable in this vein is institutional ideology. This is a measure of the liberalism of a state’s government which was developed by Berry, et al (1998). Public policy literature provides evidence that programs are more successfully implemented in situations where the government is more ideologically sympathetic to the program being implemented (Hays, 1996). This research found that more liberal governments more successfully implement liberal programs, while more conservative governments are more successful in implementing programs of a conservative nature. This variable was computed as a weighted average of the AFL-CIO Committee on Political Education Scores for the governor and the state congressional delegation. This variable is on a 0 (very conservative)-100 (very liberal) scale.
The model also seeks to account for the level of health infrastructure in the state. The health infrastructure is measured by the number of hospital beds per 1,000 in the state as reported in the American Hospital Association *Hospital Statistics*. For the market-based state health programs to have the hypothesized effects on the dependent variables, a state must have the infrastructure to successfully deliver the services which the insurance coverage provides individuals access to. Therefore it is hypothesized in this study that the more hospital beds in the state the more effective the market-based health programs will be in providing economic and health care benefits. The American Medical Student Association notes the numerous problems which people in both urban and rural areas can have accessing health care resources that may result in lower quality of life, as does Hadley (2003) and Wolman and Miller (2004). However, it should be noted that there are a number of studies (Fischer, et al, 2000; Bazzoli, et al, 2003) suggest a negative association between hospital capacity and health outcomes.

Another control variable related to capacity included in the analysis is state employees per capita as reported in *The Book of the States*. This variable is included as a measure of state administrative capacity. The hypothesis in regards to this variable is that states with greater administrative capacity will be in a better position to implement and regulate the programs in the interest of improved effectiveness. This improved implementation and regulation will translate into the programs having greater economic and social effects for the state. Hackey (1998) notes the importance of public administrative capacity, as erosion in such capacity may limit the ability to engage in major new initiatives or maintaining existing functions. Under such circumstances government may be overwhelmed by the private sector. Rich, Deye, and Mazur (2004) argue that state
governments lack the administrative capacity to engage in large redistributive programs. While market-based programs are not in need of the same administrative resources as a program like Medicaid, most of them still require some degree of administration action.

<table>
<thead>
<tr>
<th>Table 3-4: Hypothesized Relationships between Variables Which Facilitate Access to Health Care and the Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital Beds per Capita</strong></td>
</tr>
<tr>
<td>State Spending</td>
</tr>
<tr>
<td>Mortality Per Capita</td>
</tr>
<tr>
<td>Gross State Product</td>
</tr>
<tr>
<td>Emergency Outpatients</td>
</tr>
<tr>
<td>Expenditures per Patient</td>
</tr>
</tbody>
</table>

Table 3-4 illustrates the hypothesized relationships between the independent variables of interest and the dependent variables in the analysis.

**Descriptive Statistics for the Effectiveness Models**

**Dependent Variables**

Looking at the descriptive statistics for the dependent variables used to evaluate the socioeconomic effects of market-based health insurance programs, the central value for the dependent variable measuring the percentage of state spending devoted to health was 7.93, indicating that the “middle” state in the data set spent approximately 8% of its
budget on health care related items. This variable was found to have a slight positive 
skew (.710) in relation to the normal distribution. The lowest level of state spending on 
health care in the data set 1.49%, and the highest level was 18.82%. The variable 
representing the level of mortality per 100,000 in a state was found to have a median of 
894.3 and a skewness of -.844. This indicates that the data is centered around 900 deaths 
per 100,000 and is skewed slightly in a negative direction when compared to the normal 
distribution. The lowest level of mortality per capita recorded in a state was 399 and the 
highest level was 1166. The third dependent variable in the effectiveness chapter, gross 
state product in constant (2000) dollars, has a median of 90,700,000,000, with a 
minimum value of 12,300,000,000 and a maximum value of 1,044.800,000,000. This 
variable actually has a significant positive skew (2.77).

The middle value for the level of emergency outpatients treated per capita in the data 
is 358.45, as compared to the minimum value of 140.5 and the maximum value of 610.6. 
This data is slightly positively skewed with a value of .449. The median for the 
dependent variable examining expenditures per patient per day is $907.80 with a 
moderate positive skew of .603. There is significant variability within this data, with a 
minimum value of $560 and a maximum value of $1548.70.

### Independent Variables

Turning our attention to the independent variables in the effectiveness analysis, the
primary variable of interest, the index of market-based health expansion programs, had a mode of 1, indicating that most of the U.S. states during the time period of the study (49.8%) had adopted one of the market-based expansion programs. The most market-based programs adapted by any of the states during the period of study was three (out of a possible five). Turning to another index of interest, measuring the presence and expansiveness of state high-risk health insurance pools, the mode for this variable was 0, indicating that during the period of study (1989-2003) most of the states had not enacted high-risk pools. It should be noted that as of 2009, 34 states have enacted high-risk pools. Interestingly, while almost half of the cases in the analysis did not have high-risk pools, 25.2% had high-risk pools indexed at 4, indicating that they charged Standard Risk Rates between 150% and 175% and were relatively affordable. Thus of those states which did adopt high-risk pools a plurality of them were not priced out of reach for health care consumers.

Looking at the measures of central tendency for the dummy variables controlling for other contributors to the expansion of health care access, the SCHIP dummy variable had a mode of 1 and the Medicaid 1115 variable had a mode of 0, indicating that during the period of study most states had adopted the State Children’s Health Insurance Program but most states had not implemented a Medicaid 1115 waiver. Examining the third variable in the analysis controlling for factors leading to health care expansion, the median of the unionization variable was 13.7%, indicating that, in general, U.S. states tend to be about 14% unionized. The lowest level of unionization was 2.4% and the

In the final model, examining the effect of the presence and accessibility of high-risk pools, as well as other variables, on the expenditures per patient of hospitals in a state, the
highest level in the dataset was 51.6%. This variable had a positive skew of 1.13.

The next group of variables to be examined is those controlling for factors which could inhibit the effective of the market-based health expansion programs. The median for the first of these variables, the percentage of uninsured in the state, was 13.6%. The lowest level of uninsured in a state was 6.8%, while the highest percentage of uninsured

| Table 3-6: Descriptive Statistics for Independent Variables in the Effectiveness Study |
|---------------------------------|--------|--------|--------|--------|--------|
|                                | Median | Mode | Min. | Max. | Skewness |
| Market-based Index              | n/a    | 1     | 0    | 3    | .768    |
| High-Risk Pool Index           | n/a    | 0     | 0    | 5    | .270    |
| Medicaid 1115                  | n/a    | 0     | 0    | 1    | 1.2     |
| SCHIP                          | n/a    | 1     | 0    | 1    | -.359   |
| Unionization                   | 13.7   | n/a   | 2.4  | 51.6 | 1.13    |
| Uninsured                      | 13.6   | n/a   | 6.8  | 26.5 | .694    |
| Poverty                        | 11.6   | n/a   | 4.5  | 26.4 | .773    |
| Unemployment                   | 5      | n/a   | .09  | 10.8 | .138    |
| Metropolitan                   | 70     | n/a   | 23.5 | 100  | -.382   |
| Institutional Ideology         | 43.5   | n/a   | 0    | 97.9 | .129    |
| Beds per Capita                | 3.1    | n/a   | 1.8  | 7    | .955    |
| State Employment per Capita    | 172    | n/a   | 103  | 452  | 2.23    |

in a state was 26.5%. The second variable in this group, the percentage of a state’s population in poverty, had a median of 11.6%, with a minimum of 4.5% and a maximum of 26.4%. The percentage of unemployed in the state, a third variable in the group, had a median of 5%. The minimum and maximum values for this variable were .09% and 10.8%. All three of these variables were positively skewed. The fourth variable controlling for factors inhibiting effectiveness, the percentage of metropolitan area in a state, has a median of 70%, indicating that the “middle” state in the data was mostly metropolitan in nature. The minimum percentage of metropolitan area in a state was 23.5% and the maximum was 100%. This variable had a negative skew.
The final group of independent variables controls for factors which may facilitate the effectiveness of the market-based programs. The median for the first of these controls, the level of governmental liberalism in a state, was 43.5. As this index ranges from 0-100, this indicates that the “middle” value in this data set was actually close the middle of this range. The value indicates that the median state trended more conservative, as a higher score on this index indicates greater liberalism. The lowest value in this variable was 0 and the highest value was 97.9, indicating that this variable does run the full range. The median value for the second variable in this group, beds per capita in a state, was 3.1, indicating that the “middle state” in the data set had approximately 3 hospital beds per 1,000 population. The minimum value for this variable is 1.8 beds per capita, and the highest level of beds per capita was 7.0. The final variable in this group is state employees per capita. The median value for this variable was 172, indicating that the “middle state” in this data set had approximately 172 state employees per 100,000 population. The minimum value in this data set was 103 and the maximum value was 452. All three of these variables were positively skewed.

Tests of Regression Assumptions

Multicollinearity

Two tests were run to check for multicollinearity among the variables included in the effectiveness portion of the dissertation. First bivariate correlations were run to determine if any of the independent variables were correlated above the .8 threshold suggested in the methodology literature. None of the variables exceeded the .8 threshold, but two pairs of variables were found to be highly correlated with each other. The variables for the
percentage of a state’s population uninsured and the percentage of a state’s population in poverty were found to have a fairly high level of correlation (0.63). This is not unexpected, as the literature notes that a significant contributor to uninsurance in America is the inability to pay. The other high level of correlation was found between the variables for beds per capita in a state and the percentage of a state’s population composed of metropolitan areas (-0.53). This finding was also not surprising, as the literature notes that more urban areas tend to suffer from a lack of health care facilities due to closures necessitated by financial pressures. For more information, refer to Exhibit G in the Appendix.

As multicollinearity can seriously bias regression analysis, bivariate regressions were also conducted to test for this problem. While all the relationships were examined, particular attention was paid to those variables which were previously found to be highly correlated. The relationship between poverty and uninsurance was found to have an R Square of .40, which while not inconsiderable does not suggest that the relationship will unduly bias the relationship. The bivariate regression for the variables for beds per capita and percentage of a state composed of metropolitan areas was found to have a relatively low R Square of .27, indicating that this relationship will also not unduly bias the regression results. For more information, refer to Exhibit H in the Appendix.

Test for Outliers/Heteroskedasticity

Due to the use of panel data in this study, a number of the available tests for outliers proved to be problematic. As a result, descriptive statistics were generated to search for outliers. While there was significant variation between states for some of the values, no
significant outliers were found within panels. Refer to Table 3-6 for the descriptive statistics.

The variation among the values for variables among states indicated that the data for the effectiveness study may violate the assumption of homoskedasticity, which the literature suggests is common for panel data. Using the STATA software, the Breusch-Pagan/ Cook-Weisberg test for heteroskedasticity was conducted and did find that the assumption of homoskedasticity was violated. As will be discussed later in the study, this problem was addressed through the use of a Prais-Winston transformation with panel-corrected standard errors. For more information, refer to Exhibit C in the Appendix.

**Test for Normality/Linearity**

Two additional regression assumptions that needed to be examined were the normal distribution of residuals and the linear distribution of residuals. A graph of the Kernel density estimate was generated using the STATA software and compared to the normal curve (refer to Exhibit D in the Appendix). Scatterplots for the residuals of the independent variables were generated to test for linearity. None of the scatterplots suggested that the linearity assumption had been violated, save for the scatterplots generated in regard to the dummy variables for the index of market-based expansion programs, the presence of SCHIP program, and the presence of the Medicaid program (refer to Exhibit E in the Appendix). A traditional assumption of regression analysis is that all the variables be measured at the interval level, which would be a prerequisite for linearity. However, more current methodology literature notes that nominal or ordinal data can be used in regression analysis provided certain conditions are met (Meier and Brudney, 2002). The use of the Prais-Winston regression and panel-corrected standard
errors should help to correct for any issues created by the use of the ordinal dummy variables.

Test for Autocorrelation

A final regression assumption which needed to be examined in this analysis was that there is not autocorrelation of the residuals, either across panels or within panels. Using the STATA software, a Woolridge test was conducted to test for autocorrelation across panels. The results of this analysis indicate a lack of first-order autocorrelation (see Exhibit F). To test for autocorrelations within panels, a generalized least squares model was estimated. Despite the apparent lack of autocorrelation, Prais-Winston regression with panel-corrected standard errors will still be utilized due to the previously noted heteroskedasticity. The work of Beck and Katz (1995) suggests that even if there is no autocorrelation, the results of this analysis will still be accurate.

The preceding tests indicate that the data employed in this portion of the research does meet most of the traditional regression assumptions. The one issue that the data set seems to present is one of heteroskedasticity. As previously noted, this issue will be addressed using Prais-Winston regression with panel-corrected standard errors.

Research Methodology

This portion of the dissertation utilizes a pooled cross-sectional OLS regression model with panel-corrected standard errors, a methodology most notably advocated by Beck and Katz (1995). Stimson (1985) noted that this type of pooled time series analysis could be very robust, “allowing the study of causal dynamics across multiple cases, where the potential cause may appear at different times in different cases” (p. 916). Incorporating
time and space into the model can also help to address numerous threats to validity. However, Stimson also notes that the use of pooled cross-sectional models also raises a number of statistical issues (Stimson, 1985).

Beck and Katz note that the nature of time series cross-sectional data (which looks at the different units at different points in time) makes the use of standard OLS difficult as OLS assumes “all the error processes have the same variance and all of the error processes are independent of each other” (p. 636). Specifically, the analysis could lead to correlated errors and problems of heteroscedasticity (p. 634). A form of generalized least squares developed by Parks (1967) was put forth as a way of addressing these issues, however Beck and Katz found that this method can seriously understate the variability in the sample.

In lieu of the Parks methods, Beck and Katz suggest using panel-corrected standard errors in place of OLS standard errors. Panel-corrected standard errors “pool information across clusters to estimate error variances” (Johnson, 2004, p. 3). These panel-corrected standard errors allow for accurate analysis of either panel heteroscedasticity or contemporaneous correlation of the error terms. This helps to correct the issue raised by Stimson (1985) that standard OLS will often treat cases in pooled data as independent of each other, even though they are in fact related. Studies conducted by Beck and Katz found that panel-corrected standard errors were accurate within 10% of the true variability in the sample, even with serious heteroscedasticity and contemporaneous correlation (p. 641). Notably Beck and Katz found that where standard OLS standard errors did perform well, the PCSE’s still performed well, while PCSE’s were found to perform well in circumstances where OLS standard errors were not efficient. In regard to
the Parks GLS method, Beck and Katz found that PCSE’s were 2% more accurate than 
Parks standard errors. This form of analysis was used to control for heteroskedasticity in 
the data, as well as for autocorrelation of residuals within panels. Further, the standard 
errors are calculated independently for each panel.

Beck and Katz (1995) note that researchers using time series cross-sectional data 
should address temporal issues with the data through the use of lagged dependent 
variables or using a transformation procedure to eliminate serial correlation (p. 645). The 
effectiveness model employed in the dissertation utilizes the Prais-Winston 
transformation. This is a Generalized Least Squares estimator which is used in the 
presence of first order autocorrelation (although serious correlation between panels is not 
anticipated). In this process the first observation is transformed so that it does not have to 
be censored (Stata glossary, n.d.). Originally the Ochrane-Orcutt procedure was 
considered, but the literature indicates that the Cochrane-Orcutt method is problematic 
when the data includes lagged endogenous variables (Betancourt and Kelejian, 1981). In 
the presence of lagged variables, Ochrane-Orcutt can provide inaccurate information as 
the procedure eliminates the first case in the panel. As this research employs lagged 
dependent variables, Prais-Winston would be better in this situation as it uses all the 
observations in the sample, transforming the first data point in the panel to ensure 
homoskedastic standard errors (p. 218). Once this is done time series cross-sectional data 
can be analyzed using OLS with panel-corrected standard errors. This form of analysis 
will allow conclusions to be drawn about the effect of the market-based health insurance 
programs on the dependent variables while remaining cognizant of the fact that each state 
has unique characteristics which will impact the effectiveness.
Selection of Statistical Software

Intercooled STATA 9 was utilized in the analyses of the effectiveness of market-based indicators that standard OLS regression will not be sufficient to generate an unbiased analysis. STATA offers more options for addressing this issue with the data, including the option which was ultimately utilized, Prais Winston regression with panel-corrected standard errors. In general, STATA offers numerous options for dealing specifically with panel data, whereas SPSS is limited in this area.

Analysis

Percentage of State Spending on Health Care

The first model focuses on the relationship between the market-based health care access expansion efforts and the percentage of state spending devoted to health care. In this model, the index of market-based state health expansion programs is not found to be significant at the .05 level.

Control Variables Which May Expand Access to Health Care

The dummy variable for the presence of the State Children’s Health Insurance Program is also not found to be statistically significant in the analysis, along with the control variable for the percentage of union membership in a state. The variable controlling for the use of Medicaid 1115 waivers in the model is found to be statistically significant and in the negative direction, as hypothesized.

Control Variables Which May Hinder The Effectiveness of Market-based Programs

The variable for the percentage of uninsured people in a state, the percentage of people in poverty, and the percentage of a state composed of metropolitan areas are found
to be statistically significant and positive in the analysis. All three of these findings indicate that these variables hinder the effectiveness of the market-based programs.

### Table 3-7: Regression Results for Effectiveness on Percentage of State Spending on Health Care

|                     | Coefficient | Std. Err. | Z     | P>|z| |
|---------------------|-------------|-----------|-------|-----|
| Market Index        | .204        | .158      | 1.30  | .20 |
| Category 1          |             |           |       |     |
| SCHIP               | .016        | .190      | .0.08 | .93 |
| M1115               | -.892       | .222      | -4.03 | .000*** |
| Union Members       | -.005       | .016      | -0.32 | .75 |
| Category 2          |             |           |       |     |
| Uninsured           | .081        | .030      | 2.75  | .006** |
| Poverty             | .086        | .033      | 2.62  | .009*** |
| Unemployment        | -.015       | .060      | -0.25 | .810 |
| Metropolitan        | .028        | .008      | 3.38  | .001*** |
| Category 3          |             |           |       |     |
| Institutional       | -.002       | .004      | -0.61 | .54 |
| Ideology            |             |           |       |     |
| Hospital Beds       | .634        | .166      | 3.81  | .000*** |
| State Employees     | .005        | .002      | 2.68  | .007** |
| Constant            | 1.57        | 1.26      | 1.25  | .21 |

Interestingly, the control variable for the percentage of the unemployed in a state is not found to be statistically significant in the analysis.

Control Variables Which May Facilitate the Effectiveness of Market-based Programs

The variable for institutional ideology is not found to be statistically significant in the analysis, which indicates that the liberalism of state government did not affect the percentage of state spending devoted to health care.

Two of the control variables were found to be significant but not in the hypothesized direction. The control variable measuring the number of beds per 100,000 is found to be significant and in the positive direction. This runs counter to the hypothesis, which proposed that a stronger medical infrastructure in a state would translate into lower levels of health spending. Another control variable looking at employment, this one examining state employment per capita, is found to be statistically significant and positive in the model. As this variable is included as a proxy for the administrative capacity of state
government, it suggests that greater operational and regulatory capacity on the part of the state translates into higher state health spending. Both of these findings suggest not only that these variables do not help to facilitate the effectiveness of the market-based programs, but may actually hinder it.

**Mortality Per Capita**

The variable for the index of market-based health expansion programs is found to be statistically significant and negative, indicating that the effort of states to expand access to health care through market-based programs helps to increase the overall level of health in a state, as evidenced by a lower mortality rate.

**Control Variables Which May Expand Access to Health Care**

In this model, the dummy variable controlling for the presence of the SCHIP program is found to be statistically significant, though not in the hypothesized direction. According to the model, the presence of the children’s health program was positively related to mortality in the state, indicating that the presence of the program is associated with more deaths in a state. In this model, the dummy variable controlling for the use of Medicaid 1115 waivers and the variable for the percentage of a state’s population which are union members were not found to be statistically significant.

**Control Variables Which May Hinder the Effectiveness of the Market-based Health Programs**

In the model examining the dependent variable of mortality in the state, the variable for the percentage of uninsured in a state is found to be statistically significant and negative, suggesting that having more uninsured people in a state decreases the death rate. Two other control variables, measuring the percentage of people in poverty and the
percentage of metropolitan area in the state, however, are statistically significant and in the hypothesized positive direction. A fourth socioeconomic variable, for the percentage of the unemployed in a state, is not found to be statistically significant.

Control Variables Which May Facilitate the Effectiveness of the Market-based Health Programs

Among this category of control variables, the variable measuring governmental liberalism is found to be statistically significant though not in the hypothesized direction. The analysis found that the presence of a more liberal state government is positively associated with mortality in the state. The variable for state employees per capita is also found to be significant, but in the hypothesized direction. The level of per capita state employment, which was included in the analysis as a proxy for state administrative capacity, is found to have a significant and negative relationship to mortality.

| Table 3-8: Regression Results for Effectiveness on Mortality per Capita |
|------------------------------------------|------------------|-------|---------|----------|
| **Coefficient** | **Std. Err.** | **Z** | **P>z** |
| **Market Index** | -7.79 | 4.01 | -1.94 | 0.052* |
| **Category 1** |
| SCHIP | 13.43 | 4.77 | 2.82 | 0.005** |
| M1115 | 9.10 | 5.19 | 1.75 | 0.080 |
| **Union Members** | -7.27 | .420 | -1.73 | 0.084 |
| **Category 2** |
| Uninsured | -1.82 | .791 | -2.30 | 0.02* |
| Poverty | 4.17 | .819 | 5.09 | 0.000*** |
| Unemployment | -1.79 | 1.47 | -1.22 | 0.22 |
| Metropolitan | .759 | .201 | 3.78 | .000*** |
| **Category 3** |
| Institutional Ideology | .486 | .086 | 5.64 | 0.000*** |
| Hospital Beds | 73.68 | 3.81 | 19.33 | 0.000*** |
| State Employees | -7.29 | .058 | -12.60 | .000*** |
| Constant | 676.19 | 29.65 | 22.80 | 0.000 |

The variable measuring the strength of the health infrastructure in a state, beds per capita, is found to be statistically significant in the analysis, though not in the hypothesized direction. The relationship between hospital beds per capita and the
morality level in a state is significant and positive, indicating a stronger health infrastructure is positively associated with higher levels of mortality.

**Gross State Product Per Capita**

The following table provides the results of the regression analysis examining the relationship between the presence and expansiveness of high-risk pools and the level of expenditures per patient in the state.

|                      | Coefficient | Std. Err. | Z    | P>|z| |
|----------------------|-------------|-----------|------|-----|
| Market Index         | 5.99        | 3.09      | 1.94 | 0.053*|
| Category 1           |             |           |      |     |
| SCHIP                | 13.26       | 3.70      | 3.59 | 0.000***|
| M1115                | .152        | 3.95      | 0.04 | .969 |
| Union Members        | 1.98        | .338      | 5.87 | 0.000***|
| Category 2           |             |           |      |     |
| Uninsured            | 1.49        | .622      | 2.39 | .017*|
| Poverty              | 2.72        | .607      | 4.48 | .000***|
| Unemployment         | 2.18        | 1.09      | 2.00 | 0.045*|
| Metropolitan         | 3.27        | .161      | 20.27| .000***|
| Category 3           |             |           |      |     |
| Institutional Ideology | .054     | .065      | 0.83 | 0.404 |
| Hospital Beds        | 17.27       | 2.76      | 6.26 | .000***|
| State Employees      | -0.815      | .048      | -17.04| .000***|
| Constant             | -126.53     | 20.50     | -6.17| 0.000***|

The third model examines the relationship between the index of market-based state health programs and gross state product per capita. The market-based health program index variable is statistically significant and positive in this model, indicating that more effort put forth by states in terms of the adoption of state health expansion programs translates into economic benefits for the state as a whole.

**Control Variables Which May Expand Access to Health Care**

The dummy variable controlling for the presence of the SCHIP program is found to be
statistically significant and positive in the model. This supports the hypothesis that the presence of the program to expand access to health care for uninsured children has positive economic effects for a state. The control variable for the percentage of a state’s population that is union members is also found to be statistically significant and in the hypothesized direction, indicating that a higher level of union members in a state benefits the people of a state economically. The dummy variable for the Medicaid 1115 waivers is not found to be statistically significant.

Control Variables Which May Hinder the Effectiveness of Market-based Health Programs

The variables for the percentage of a state’s population that is uninsured and a state’s population that is in poverty are both found to be statistically significant, but not in the hypothesized direction. Both variables are found to have a positive relationship with gross state product, whereas they were hypothesized to have a negative relationship. The result for the variable for the percentage of unemployed people in the state is also difficult to explain. This variable is also statistically significant, but was also found not to be in the hypothesized direction. The final control variable in the analysis is the variable for the percentage of a state which is metropolitan in nature. This variable is found to be positive and statistically significant in the analysis, which was not as hypothesized but is not entirely counterintuitive as metropolitan areas tend to be transportation and manufacturing centers and thus generate economic activity.

Control Variables Which May Facilitate the Effectiveness of the Market-based Programs

The level of governmental liberalism was not found to have a significant relationship
with the gross state product of a state. The variable for beds per capita is significant and positive in the model, indicating that a stronger medical infrastructure in a state helps to foster better economic conditions, as hypothesized. The variable for the percentage of state employment is also found to be statistically significant in the analysis, but not in the hypothesized direction. The variable is found to have a negative relationship with gross state product, indicating that a higher level of state administrative capacity does not yield economic benefits for a state.

Emergency Outpatients Treated

|                      | Coefficient | Std. Err. | Z     | P>|z|
|----------------------|-------------|-----------|-------|-----|
| Market Index         | -11.35      | 3.59      | -3.16 | 0.002** |
| Category 1           |             |           |       |     |
| SCHIP                | 4.71        | 4.24      | 1.11  | 0.267 |
| M1115                | 5.26        | 5.18      | 5.18  | 0.309 |
| Union Members        | -.569       | .326      | -1.74 | 0.081 |
| Category 2           |             |           |       |     |
| Uninsured            | -2.77       | .687      | -4.03 | .000*** |
| Poverty              | 3.15        | .746      | 4.21  | .000*** |
| Unemployment         | 3.98        | 1.35      | 2.94  | 0.003** |
| Metropolitan         | -.495       | .195      | -2.54 | .011** |
| Category 3           |             |           |       |     |
| Institutional Ideology | .140       | .081      | 1.72  | .086 |
| Hospital Beds        | 14.28       | 3.22      | 4.43  | .000*** |
| State Employees      | -.326       | .059      | -5.53 | .000*** |
| Constant             | 391.77      | 30.10     | 13.02 | 0.000 |

The variable for the index of market-based state health programs is found to have a significant and negative relationship to emergency outpatients treated, which indicates that market-based programs are effective in reducing reliance on emergency rooms.

Control Variables Which May Expand Access to Health Care

The dummy variables controlling for the presence of the State Children’s Health
Insurance Program and Medicaid 1115 waivers are not found to be statistically significant in the analysis. Another variable related to health care access, the variable for the percentage of a state’s population that are members of unions, is found to be statistically significant in the analysis, and in this case negative. This supports the hypothesis that in states which are more heavily unionized people have greater access to preventative health coverage.

Control Variables Which May Hinder the Effectiveness of the Market-based Programs

Two control variables in this category, percentage of people in poverty and percentage unemployed, are statistically significant and in the hypothesized (positive) direction. This indicates that having more people impoverished and more people on the unemployment rolls leads to more emergency room usage. One control variable which is statistically significant in the analysis (but not in the hypothesized direction) is the variable for the percentage of a state’s population which is uninsured. This variable is found to be negative in the analysis, which is counterintuitive since one would expect a higher percentage of uninsured people to translate into higher levels of emergency room usage. The final variable in the analysis, the percentage of a state composed of metropolitan areas, is also found to be statistically significant and negative in the analysis. This is rather counterintuitive, as it was hypothesized that a larger metropolitan area in a state would translate into higher levels of emergency room usage.

Control Variables Which May Facilitate the Effectiveness of the Market-based Programs

Institutional ideology is found not to be significant in the analysis, again indicating that the ideology of state government does not have a meaningful association with stress being placed on the medical infrastructure. The variable for state employees per capita is
found to be statistically significant and negative in the analysis, which supports the hypothesis that a state’s administrative capacity may facilitate a higher level of effectiveness in regards to the market-based health expansion programs. The variable for measuring a state’s medical capacity, beds per capita, is also found to be statistically significant in the analysis, although in this case not in the hypothesized direction. The analysis finds a positive relationship between hospital beds per capita and emergency room utilization.

**Expenditures per Patient**

The final model in this portion of the study examines the role of market-based health expansion programs on hospital expenditures per patient. In this model, the variable for the index of market-based health expansion programs is not found to be significant. The finding for the market-based health program index in this model supports the finding in the model examining the percentage of state spending devoted to health care, indicating that these programs do not have a significant effect on the cost of providing health care.

**Control Variables Which May Expand Access to Health Care**

One of the dummy variables controlling for the use of government-based health care, representing Medicaid 1115 waivers, is not found to be statistically significant in the analysis, which makes it unclear how, if at all, these programs affect hospital costs for treating patients. Interestingly, the variable controlling for the presence of the SCHIP program was found to be statistically significant, but not in the hypothesized direction. The presence of the SCHIP program was found to be significant and positive, indicating that the presence of the program is positively associated with an increase in expenditures per patient in the state.
Table 3-11: Regression Results for Effectiveness on Expenditures per Capita

| Category       | Coefficient | Std. Err. | Z      | P>|z|     |
|----------------|-------------|-----------|--------|--------|
| Market Index   | 5.52        | 6.34      | 0.87   | 0.384  |
| Category 1     |             |           |        |        |
| SCHIP          | 83.42       | 8.08      | 10.32  | 0.000***|
| M1115          | 5.10        | 8.50      | 0.60   | .548   |
| Union Members  | 2.87        | .715      | 4.02   | 0.000***|
| Category 2     |             |           |        |        |
| Uninsured     | -9.85       | 1.30      | -7.57  | .000***|
| Poverty        | 4.64        | 1.32      | 3.50   | .000***|
| Unemployment   | 4.58        | 2.53      | 1.81   | 0.070  |
| Metropolitan   | 3.66        | .316      | 11.55  | .000***|
| Category 3     |             |           |        |        |
| Institutional Ideology | .849 | .149 | 5.72 | 0.000*** |
| Hospital Beds  | 91.81       | 6.75      | 13.61  | .000***|
| State Employees| -.029       | .118      | -0.25  | .805   |
| Constant       | 316.63      | 52.88     | 5.99   | 0.000***|

The percentage of a state’s population that belongs to unions is also found to be significant in the analysis, though in the positive direction. This is counterintuitive, as it was hypothesized that higher levels of unionization would result in lower expenditures per patient due to greater access to health care.

Control Variables Which May Hinder the Effectiveness of the Market-based Programs

The variable for the percentage of uninsured in a state is statistically significant in the analysis, although again not in the hypothesized direction. The analysis suggests that a higher level of uninsured people in a state translates into lower expenses per patient. The variable for the percentage of people in a state in poverty is also found to be statistically significant, but this time in the hypothesized, positive direction. Another variable in the analysis, the percentage of a state which is composed of metropolitan areas, was found to be statistically significant and in the hypothesized direction. The variable is found to have a positive relationship with expenditures per patient, indicating that such areas tend to experience higher health care costs. A final variable in this category was the variable for
the percentage of unemployed people in a state, which was not found to be statistically significant.

Control Variables Which May Facilitate the Effectiveness of Market-based Health Programs

The variable for institutional ideology is found to be statistically significant in this analysis, however it was found to have a positive relationship with expenditures per patient. This suggests that a more liberal government contributes to higher health care costs. Another variable related to capacity, hospital beds per capita, was also found to be statistically significant and positive in the analysis. The variable included to measure a state government’s administrative capacity, state employees per capita, was not found to be statistically significant in the analysis.

Study of the Effectiveness of State High-Risk Health Insurance Pools

As this study is particularly interested in the role of state high-risk health insurance pools, a complementary analysis was conducted examining the effectiveness of the pools in regard to improving performance in state health care spending, overall health, economic productivity, and health infrastructure. These models seek to examine, not only the effects of the presence of the high-risk pools, but also the effects of the level of expansiveness of the programs in regard to their affordability. This market-based program is of particular interest as the high-risk pools are the most widely adopted programs at issue in this study.

One issue that has served to limit the effectiveness of high-risk pools is the fact that these programs charge premiums which can be set at levels considerably above average market value in the state (Achman and Chollet, 2001). In this portion of the study, the
high-risk health insurance pools, which vary significantly from state to state, were also indexed according to their maximum standard risk rate allowed by law (in essence the maximum percentage of the average insurance premium in the state which the risk pool is allowed to charge clients). States that permit a lower SSR receive a higher score on the index, as the lower the SSR the more affordable the high-risk coverage is to purchase. Those states that have no maximum SSR rate received a 1 on the high-risk pool index, as there is no legal ceiling to how expensive the coverage may become. States with a maximum SSR of 250% received a 2, and those states with a maximum SSR of 200% received a 3. The states with a maximum SSR between 150-175% received a 4 on the index, with the most generous states, those with an SSR below 150%, receiving the highest score of 5 on the index.

The purpose of this study is to examine how the accessibility of a market-based health expansion program (in terms of its affordability) affects its ability to have a meaningful effect on indicators such as state health care spending, state mortality, gross state product, emergency patients treated, and expenditures per patient. The primary hypothesis of interest in this study is that the more affordable the high-risk pool is (in terms of having a lower maximum standard risk rate) the more effective the program will be. This is a particularly important hypothesis to test in regard to market-based health expansion efforts, as these programs are not designed, like Medicaid and SCHIP, to provide health care to those who have an inability to pay. This is especially true of high-risk pools, where clients are by design paying above the average market rate for coverage.

This study utilizes the same control variables as were used in the previous study of market-based expansion efforts. The hypotheses in regard to these variables are the same.
as those in the previous study, as they are expected to have the same effects on the relationship between the presence and expansiveness of high-risk pools and the dependent variables. The purpose of the study is to focus more narrowly on this one particular program, and to what degree it is effective in regard to improving the social and economic measures.

The high-risk pools are of special interest because, as noted previously, they represent a hybrid of government-based programs and market-based initiatives. The pools are created through legislative or regulatory action, but then largely function as a private firm would, charging premiums and placing certain limitations on coverage. In a number of states, legislators or other government officials may serve on the board overseeing the pools. The governor has statutory authority to appoint the members of the governing board in a number of states. However, representatives of private health insurance firms are often included on the boards as well (Comprehensive Health Insurance, 2007). A fair amount of research has been done in terms of examining high-risk pools regarding their viability for meaningfully expanding access to health care (Achman and Chollet, 2001; Abbe, 2002). However, as was the case for the other market-based health expansion programs, not much research attention has been devoted to the other potential developmental effects of these programs. This study makes an attempt to fill this gap. In the first model, examining the dependent variable of percentage of state general revenue devoted to health care, the primary independent variable of interest, the index measuring the presence and affordability of the high-risk pools, is found to be statistically significant. However, the variable does not perform in the hypothesized direction. The
variable is found to have positive relationship to the percentage of state health care spending.

Table 3-12: Regression Results for Effectiveness on Percentage of State Spending on Health Care (High-Risk Pools)

| Variable              | Coefficient | Std. Err. | Z    | P>|z|  |
|-----------------------|-------------|-----------|------|------|
| HR Pool Index         | .652        | .104      | 6.30 | 0.000*** |
| Category 1            |             |           |      |      |
| SCHIP                 | -.102       | .197      | -0.52| 0.605 |
| M1115                 | -1.02       | .220      | -4.62| 0.000*** |
| Union Members         | .005        | .018      | 0.27 | 0.785 |
| Category 2            |             |           |      |      |
| Uninsured             | .092        | .032      | 2.90 | .004** |
| Poverty               | .113        | .033      | 3.41 | .001** |
| Unemployment          | .014        | .061      | 0.23 | 0.815 |
| Metropolitan          | .041        | .009      | 4.74 | .000*** |
| Category 3            |             |           |      |      |
| Institutional Ideology| -.002       | .004      | -0.52| 0.60  |
| Hospital Beds         | .591        | .172      | 3.44 | .001** |
| State Employees       | .006        | .002      | 2.62 | .009** |
| Constant              | -.507       | 1.34      | -0.38| 0.705 |

In the second model in this study, looking at the dependent variable for mortality per capita in a state, the variable for the presence and affordability of the high-risk pools is found to be statistically significant and in the hypothesized direction. This finding indicates that the state high-risk health insurance pools do show some success in improving overall state health, as evidenced by a reduction in mortality per capita.

The third analysis in this study looks at the effect of the high-risk pool index and other variables on the economic productivity of a state as measured by its gross state product. In this model, the variable for the presence and affordability of high-risk pools was found to be statistically significant, but not in the hypothesized direction. The results of this analysis actually indicate that the presence of more expansive high-risk pools has a negative relationship to gross state product.
Table 3-13: Regression Results for Effectiveness on Mortality per Capita (High-Risk Pools)

| Coefficient | Std. Err. | Z     | P>|z| |
|-------------|-----------|-------|------|
| HR Pool Index | -9.07 | 2.87 | -3.16 | 0.002** |
| Category 1   |           |       |      |
| SCHIP        | 13.59 | 4.69 | 2.90 | 0.004** |
| M1115        | 7.26 | 5.16 | 1.41 | 0.160 |
| Union Members | -5.45 | .413 | -1.32 | 0.186 |
| Category 2   |           |       |      |
| Uninsured    | -1.99 | .780 | -2.55 | 0.011** |
| Poverty      | 4.25 | .805 | 5.28 | .000*** |
| Unemployment | -1.58 | 1.46 | -1.08 | 0.279 |
| Metropolitan | .566 | .203 | 2.79 | .005** |
| Category 3   |           |       |      |
| Institutional Ideology | .506 | .085 | 5.98 | .000*** |
| Hospital Beds | 75.67 | 3.80 | 19.90 | .000*** |
| State Employees | -7.40 | .057 | -12.96 | .000*** |
| Constant     | 686.97 | 29.35 | 23.41 | 0.000*** |

Table 3-14: Regression Results for Effectiveness on Gross State Product (High-Risk Pools)

| Coefficient | Std. Err. | Z     | P>|z| |
|-------------|-----------|-------|------|
| HR Pool Index | -7.12 | 2.39 | -2.98 | 0.003** |
| Category 1   |           |       |      |
| SCHIP        | 14.66 | 3.78 | 3.87 | 0.000*** |
| M1115        | .627 | 4.14 | 0.15 | 0.88 |
| Union Members | 1.65 | .344 | 4.81 | 0.000*** |
| Category 2   |           |       |      |
| Uninsured    | 1.20 | .622 | 1.92 | 0.055 |
| Poverty      | 2.53 | .614 | 4.12 | .000*** |
| Unemployment | 1.80 | 1.09 | 1.64 | 0.10 |
| Metropolitan | 3.35 | .173 | 19.43 | .000*** |
| Category 3   |           |       |      |
| Institutional Ideology | -.009 | .064 | -.14 | 0.89 |
| Hospital Beds | 16.74 | 2.99 | 5.60 | .000*** |
| State Employees | -.838 | .057 | -14.65 | .000*** |
| Constant     | -95.42 | 23.30 | -4.10 | 0.000*** |

In the model examining the dependent variable of emergency outpatients treated, the variable for the presence and affordability of high-risk pools is statistically significant and in the hypothesized direction. This indicates that high-risk pools do have an effect in terms of reducing reliance on emergency room care, by providing people greater access to preventative medical care. This is a potentially very important finding, as reducing
reliance on emergency room care can serve to reduce financial pressures on hospitals, which can be beneficial to the health infrastructure in a state in a number of ways.

The results of this analysis can be found in the table below.

### Table 3-15: Regression Results for Effectiveness on Emergency Outpatients Treated (High-Risk Pools)

|                     | Coefficient | Std. Err. | Z     | P>|z|  |
|---------------------|-------------|-----------|-------|------|---|
| HR Pool Index       | -6.78       | 2.39      | -2.84 | 0.005**|
| Category 1          |             |           |       |      |   |
| SCHIP               | 3.57        | 4.15      | 0.86  | 0.39 |   |
| M1115               | 2.10        | 5.19      | 0.40  | 0.69 |   |
| Union Members       | -.475       | .328      | -1.45 | 0.147|   |
| Category 2          |             |           |       |      |   |
| Uninsured           | -2.79       | .674      | -4.14 | .000***|
| Poverty             | 2.84        | .738      | 3.85  | .000***|
| Unemployment        | 4.01        | 1.34      | 3.00  | .003***|
| Metropolitan        | -.617       | .205      | -3.00 | .003**|
| Category 3          |             |           |       |      |   |
| Institutional       | .148        | .081      | 1.83  | 0.07 |   |
| Ideology            |             |           |       |      |   |
| Hospital Beds       | 12.16       | 3.08      | 3.95  | .000***|
| State Employees     | -.349       | .058      | -6.01 | .000***|
| Constant            | 411.35      | 30.52     | 13.48 | 0.000***|

In the final model, examining the effect of the presence and accessibility of high-risk pools, as well as other variables, on the expenditures per patient of hospitals in a state, the variable for the presence and accessibility of high-risk pools was found to be statistically significant and in the hypothesized direction. The analysis indicates that high-risk pools have a negative relationship to expenditures per capita, providing evidence that the programs serve to reduce the cost of treating people in a state.

Both the analyses focused on market-based programs in general and the high-risk pools in particular provide evidence that those market-based programs provide positive developmental social and economic effects. The next chapter will discuss the results regarding the effects of market-based programs and high-risk pools in greater depth, as well as examining the results of the control variables. This discussion will shed more
light on the effects of the programs on the dependent variables, as well as what effects the control variables have on the relationship between the indexes and the dependent variables. The results of the analysis for the final model examining the relationship between high-risk pools and expenditures per patient are below.

Table 3-16: Regression Results for Expenditures per Patient (High-Risk Pools)

|                           | Coefficient | Std. Err. | Z    | P>|z|  |
|---------------------------|-------------|-----------|------|------|---|
| HR Pool Index             | -13.76      | 4.77      | -2.88| 0.004*** |
| Category 1                |             |           |      |      |   |
| SCHIP                     | 87.22       | 8.23      | 10.60| 0.000*** |
| M1115                     | -.514       | 8.67      | -0.06| 0.953 |
| Union Members             | 2.87        | .706      | 4.07 | 0.000*** |
| Category 2                |             |           |      |      |   |
| Uninsured                | -.835       | 1.30      | -6.40| .000*** |
| Poverty                   | 4.55        | 1.35      | 3.36 | .001** |
| Unemployment              | 5.09        | 2.51      | 2.03 | 0.042*  |
| Metropolitan              | 3.47        | .332      | 10.46 | .000*** |
| Category 3                |             |           |      |      |   |
| Institutional Ideology    | .767        | .148      | 5.19 | 0.000*** |
| Hospital Beds             | 88.85       | 6.98      | 12.72 | .000*** |
| State Employees           | -.071       | .123      | -0.58 | .563 |
| Constant                  | 347.44      | 55.89     | 6.22 | 0.000*** |
CHAPTER 3

INTERPRETATION OF THE FINDINGS FOR THE EFFECTIVENESS STUDY

Market-based Health Program Index/High-Risk Pool Index

Percentage of State Spending Devoted to Health Care

Looking at the relationship between the presence of market-based programs and the percentage of state spending devoted to health care, the analysis found that this relationship was not statistically significant. This may be due to the fact that most of the programs included in the index do little to assist those individuals who would be eligible for assistance under government-based programs.

In regard to the relationship between the high-risk pool index and percentage of state health spending, the relationship was found to be statistically significant but not in the hypothesized direction. The results of the analysis indicate that the presence and expansiveness of a high-risk pool increases the percentage of state spending devoted to health care. This finding is not exactly counterintuitive, however, as high-risk pools do require some significant degree of state spending in the implementation of the pools and, in some states, for the operation of the pool. These pools also extend coverage to people who are likely to utilize frequent and extensive health care over the course of their life. These factors could result in higher, rather than lower, levels of state spending. Other factors which may be contributing to this positive relationship may include limited disenrollment from the program, statutory limits on premiums which can be charged, and the fact that the pools regularly operate at a loss (Morrissey, 2008). In 2003, the premiums collected by high-risk pools covered only about 55-59% of operating expenses (Comprehensive Health Insurance, 2006 as cited by Morrissey, 2008).
Mortality per Capita

Focusing on the model examining the dependent variable of state mortality per capita, the index of market-based programs was found to have a statistically significant and negative relationship to the dependent variable. This lends credence to the notion that greater access to health care through these programs translates into better health outcomes through greater access to preventative care and other health services.

The previous finding is supported by the finding regarding the relationship between the high-risk index and the dependent variable. This is logical, because, as previously noted, high-risk pools predominantly serve people who require considerable amounts of health care, without which chronic conditions could degenerate into catastrophic conditions. This finding would seem to indicate that the pools are successful in this goal, possibly through increasing access to preventative health care.

Gross State Product

The findings concerning the relationships between the index of market-based programs/ high-risk pool index and the gross state product are conflicting. The analysis indicates that a greater presence of market-based programs in a state has a statistically significant and positive relationship to the gross product of a state. This lends support to the hypothesis that the presence of these programs benefit the economy of a state (Barrilleaux and Brace, 2007; Battistella and Kuder, 1993; Hall, 2000).

However, this economic benefit was not found in the analysis of the relationship between the high-risk pool index and the gross state product. In that model, the presence and expansiveness of high-risk pools was found to be significantly related to gross state product, but not in the hypothesized direction. This analysis suggests that high-risk pools
actually exert a drag on a state’s economy. One potential explanation for this finding in regard to high-risk pools is that part of the funding for the pools comes from assessments on private insurers, taxes on hospitals, and other charges which could be seen as drains on the economy of a state. This may also be a by-product of the losses incurred by the pools due to inadequate funding (Morrissey, 2008). More research should be conducted to examine economic gains versus economic losses in regard to high-risk pools.

Emergency Outpatients Treated

Examining the relationship between the presence of market-based health expansion programs and emergency room utilization, the presence of the market-based programs was found to significantly reduce emergency outpatients treated per capita in a state. This supports the hypothesis that these programs serve to improve access to preventative health care and reduce the need for uncompensated emergency room care. If these programs do have this effect, it suggests that they can play a significant role in reducing the pressures on hospital finances and resources created by the uninsured’s reliance on emergency room care. Reducing these pressures could serve to generate a number of other positive effects, which should be considered in future research.

The hypothesis that market-based programs can decrease dependence on emergency room care is also supported by the statistically significant and negative relationship between the high-risk pool index and emergency outpatients treated per capita. Individuals deemed to be high-risk and medically uninsurable by insurance companies may have no alternative but to seek extensive and expensive care in emergency rooms on a regular basis due to their lack of coverage. Therefore, extending coverage to such individuals through high-risk pools and allowing them to receive regular treatment would
be expected to take some of the pressure off of emergency rooms. This benefit to emergency rooms could have important positive effects for health care in a state in general.

**Expenditures per Capita**

The benefits that hospitals gained from market-based programs in general in terms of emergency room usage do not seem to translate to hospital expenditures per patient. This indicates that these programs do not have a meaningful impact in terms of reducing hospitals' costs for providing health care. This supports the finding for this variable in regard to the model looking at the percentage of state spending devoted to health care.

This may be due to the fact that these programs do allow those who have previously been denied access to health care to receive it, including certain high-risk individuals who may require extensive and expensive health care. One interesting finding from a study by Levit, et al (2003) was that increased hospital utilization between the years 2000 and 2001 resulted in an increase in hospital labor costs in areas such as “nursing, pharmacology, imaging technology, and lab technology.” This resulted in growth of average hospital employee earnings in that year of 6.1 percent (Levit, et al, 2002). Research also indicates that preventative health care does not necessarily save money (Garson and Engelhard, 2008). If increases in utilization do have these kinds of effects on hospitals, then it stands to reason that programs to expand access to health care do not necessarily result in lower levels of health spending by states or hospitals.

Interestingly, the index measuring the presence and expansiveness of high-risk pools was found to have a significant and negative relationship to expenditures per patient. This is interesting, as high-risk pools are intended to extend coverage to people who are most
in need of regular, extensive, and expensive health care. Thus, one could anticipate that allowing such individuals to have greater access to health care could increase expenditures. However, this finding supports the stated hypothesis that the presence and greater expansiveness of high-risk pools help to alleviate the level of expenditures by allowing people to take advantage of preventative care, which obviates the need for more expensive catastrophic care in the future. This lends some support to the hypothesis that extending access to preventative care to uninsured individuals, particularly those who are in serious need of medical care, can serve to prevent such individuals from requiring more extensive and expensive medical care in the future. It should also be noted that most high-risk pools include disease management programs, which helps to prevent chronic conditions from becoming catastrophic (Comprehensive Health Insurance, 2007).

In regard to the indexes of market-based health expansion programs and high-risk pools, the two indexes perform similarly in the models for two of the dependent variables. In the models measuring effects on mortality per capita and emergency outpatients treated per capita, the two indexes have negative relationships to the dependent variables. This indicates that both higher levels of overall state effort in regard to implementing market-based health expansion efforts and the effect of one type of market-based health expansion effort, the high-risk pool, were statistically significant in reducing mortalities and emergency room usage in a state.

The findings in regard to these independent variables, however, did differ in their performance in the other models. In the models examining the percentage of state spending devoted to health care, the index of market-based health expansion programs was not statistically significant, while the index of high-risk pools was found to be
statistically significant and positive in the analysis. However, in the case of high-risk pools there is some statistical evidence that the presence and level of expansiveness of these programs may drive up the cost of state health spending. While counter to the formally stated hypothesis, this finding is not counterintuitive. Some high-risk pools do require a portion of general revenue funds to finance the deficit created by the fact that premiums taken in are not equal to the medical costs incurred by program clients (Howitt, 2008).

Control Variables that Expand Access to Health Care

Looking at the first category of control variables, which, like the market-based programs, may expand access to health care, there is some evidence that the SCHIP and Medicaid 1115 programs may contribute to the provision of general social and economic benefits. Looking at the dependent variable for state spending, there is statistical evidence that the Medicaid 1115 waivers are contributing to lower state spending in both the market-based and high-risk pool models. The variable controlling for the presence of the SCHIP program and the variable for the percentage of a state’s population that belong to unions were found to positively contribute to economic productivity in a state. However, the other relationships in this category of control variables were found not to be significant or the relationships were not in the hypothesized direction. Future research should focus on the degree to which federally-based programs are successful in providing general benefits to the people of a state, as well as the degree to which unions are still a powerful actor in the health care area.

The table below summarizes the statistical results for the analysis examining the relationship between market-based programs and the dependent variables.
Control Variables That May Hinder the Effectiveness of Market-based Programs

Looking at the control variables which may constrain access to health care and thus make it more difficult for the market-based health insurance programs to provide general economic and social benefits to the population of a state, the variable for the percent uninsured was found to be significant and positive in relation to state spending, providing evidence that a higher level of uninsurance in a state can increase state spending on health care. The variable for the percentage of a state’s population in poverty was found to have a statistically significant relationship with four of the dependent variables, and all of these relationships were in the hypothesized direction. The poverty variable was found to have a significant and positive relationship with state spending on health, mortality per capita, emergency outpatients treated, and expenditures per patient. These findings
indicate that poverty is a powerful societal force in a state and does appear to stand in opposition to the ability of market-based health expansion programs and other such efforts to deliver economic and social benefits. The control variable for the percentage of unemployed people in a state was found to have a significant and positive relationship to emergency room utilization, and the variable for the percentage of metropolitan area in a state was related to increases in state health care spending, mortality, and expenditures per patient. While the relationships between these control variables and the dependent variables were mixed, there is some convincing evidence that these variables may constrain the benefits of any health expansion program, including market-based programs.

Control Variables Which May Facilitate the Creation of Benefits through Improved Program Implementation

The control variables expected to create the conditions that would better permit programs such as the market-based programs to deliver social and economic benefits performed most counterintuitively. This was particularly true of the variable for hospital beds per capita in a state, which was included in the analysis as a measure of state medical infrastructure. This variable was found to have statistically significant and positive relationships with state health spending, mortality per capita, emergency outpatients treated, and expenditures per capita. It was hypothesized that a stronger health infrastructure would be effective in alleviating these problems, acting in conjunction with programs such as the market-based health expansion programs. Most of the findings suggest the opposite, although the relationship between hospital beds per capita and gross state product was as hypothesized, indicating that stronger medical infrastructure does
contribute to better economic productivity. The variable for state employment per capita (included in the analysis as a measure of state administrative capacity) performs more in line with the hypotheses, however, it still had counterintuitive relationships with the percentage of state spending on health care (positive) and gross state productive (negative). However, the results do indicate state administrative capacity does facilitate the creation of social and economic benefits by reducing mortality per capita and emergency outpatients treated. A third variable in this category, the variable for government liberalism, was not statistically significant in its relationship to three of the dependent variables. In the relationships where the institutional ideology variable was significant (mortality per capita and expenditures per capita) the results were positive as opposed to negative. Taken as a whole, these variables do not appear to be effective in facilitating the sort of social and economic benefits discussed in this research. These variables are most in need of careful study.

The preceding analyses indicate that market-based health expansion programs can be successful in providing general economic and societal benefits to a state, such as reducing overall mortality, boosting economic productivity, and reducing reliance on emergency room usage. However, the adoption of these programs throughout the United States has been relatively limited. As suggested by previous research and the events of the national health reform debate of 2009, there are significant partisan and ideological differences of opinion in regard to how to best expand access to health care. Liberal Democrats advocate a plan which includes a federally-administered insurance program, while conservative Republicans argue for reforms in the existing private insurance system.
Table 4-2: Summary of Effectiveness Results

<table>
<thead>
<tr>
<th>Category</th>
<th>High-Risk Pool Index</th>
<th>SCHIP</th>
<th>Medicaid 1115</th>
<th>Unionization</th>
<th>Category 2 Controls</th>
<th>Category 3 Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State Spending on Health Care</td>
<td>Mortality per Capita</td>
<td>Gross State Product</td>
<td>Emergency Outpatients Treated</td>
<td>Expenditures per Patient</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Positive (NH)</td>
<td>Negative (H)</td>
<td>Negative (NH)</td>
<td>Negative (H)</td>
<td>Negative (H)</td>
<td></td>
</tr>
<tr>
<td>Category 1 Controls</td>
<td>Not Significant</td>
<td>Positive (NH)</td>
<td>Positive (H)</td>
<td>Not Significant</td>
<td>Positive (NH)</td>
<td></td>
</tr>
<tr>
<td>SCHIP</td>
<td>Negative (H)</td>
<td>Not Significant</td>
<td>Not Significant</td>
<td>Not Significant</td>
<td>Not Significant</td>
<td></td>
</tr>
<tr>
<td>Medicaid 1115</td>
<td>Not Significant</td>
<td>Positive (H)</td>
<td>Not Significant</td>
<td>Negative (H)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unionization</td>
<td>Not Significant</td>
<td>Positive (H)</td>
<td>Not Significant</td>
<td>Positive (H)</td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Category 2 Controls</th>
<th>Category 3 Controls</th>
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<tbody>
<tr>
<td></td>
<td>Uninsured</td>
<td>Beds Per Capita</td>
</tr>
<tr>
<td></td>
<td>Positive (H)</td>
<td>Positive (NH)</td>
</tr>
<tr>
<td></td>
<td>Negative (NH)</td>
<td>Positive (NH)</td>
</tr>
<tr>
<td></td>
<td>Not Significant</td>
<td>Positive (H)</td>
</tr>
<tr>
<td></td>
<td>Positive (H)</td>
<td>Positive (H)</td>
</tr>
<tr>
<td></td>
<td>Not Significant</td>
<td>Positive (NH)</td>
</tr>
<tr>
<td>Poverty</td>
<td>Positive (H)</td>
<td>Negative (NH)</td>
</tr>
<tr>
<td></td>
<td>Positive (H)</td>
<td>Positive (H)</td>
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<tr>
<td></td>
<td>Not Significant</td>
<td>Not Significant</td>
</tr>
<tr>
<td></td>
<td>Positive (H)</td>
<td>Positive (H)</td>
</tr>
<tr>
<td></td>
<td>Metropolitan</td>
<td>Positive (H)</td>
</tr>
<tr>
<td></td>
<td>Positive (H)</td>
<td>Positive (NH)</td>
</tr>
<tr>
<td></td>
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<td>Positive (H)</td>
<td>Negative (NH)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>State Employment per Capita</th>
<th>Institutional Ideology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive (NH)</td>
<td>Not Significant</td>
</tr>
<tr>
<td></td>
<td>Negative (H)</td>
<td>Positive (NH)</td>
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<td></td>
<td>Negative (NH)</td>
<td>Not Significant</td>
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<tr>
<td></td>
<td>Negative (H)</td>
<td>Not Significant</td>
</tr>
</tbody>
</table>

However, these divisions may not be as cut and dried as they appear at first glance.

After all, it was a Democratic Sen. Kent Conrad of South Dakota, who proposed the idea of regional non-profit cooperatives which people could buy into in order to purchase insurance as an alternative to the federally-operated program put forth by the Obama administration. In fact, a number of conservative Democrats, or “blue dogs,” were critical of the Obama administration’s public option to allow people to receive coverage directly from the federal government. Also, the opening example of the TennCare and Cover Tennessee programs illustrated how a Democratic governor transitioned from a broader, government-based program to a more narrowly focused market-based approach. This is
indicative that the environment in which health care policy is made is increasingly complex politically, with some Democrats advocating for what would conventionally be considered a conservative approach to health care expansion. Given the results of the previous analyses, perhaps these Democrats, like Governor Bredesen of Tennessee, have come to view market-based reforms as a meaningful alternative to the government-based programs they may find difficult to sell to their constituents. In the next chapter, this dissertation will examine the role of Democratic control of the state legislature and citizen ideology, in addition to other political and societal variables, in the adoption of market-based programs. This study will examine the commonly held position that the degree to which market-based reforms can gain traction is determined by the ideological nature of the states and partisan makeup of the legislature.
CHAPTER 4
ADOPTION OF MARKET-BASED STATE
HEALTH INSURANCE PROGRAM

Introduction

During the 1990’s and early 2000’s states adopted a number of incremental, market-based programs to address the growing problem of the uninsured, including high-risk pools, reinsurance programs, limited benefit plans, group purchasing arrangements, and HIFA waivers. Based on the results presented in Chapters Three and Four, these programs have been effective in producing general socioeconomic benefits for a state, yet they have not been as widely adopted throughout the United States as more government-based programs such as the State Children’s Health Insurance Plan. Part of this could be attributed to the fact that many of the programs under consideration were only implemented in the wake of the failure of the Clinton health care plan, so there has been a relatively limited amount of time for the knowledge of the program’s effects to spread. Another factor, as noted in Chapter Three, is that the evaluations of the market-based programs to this point have been focused on relatively narrow outputs. However, as evidenced by the significant body of policy adoption literature, there are many factors at the state level which affect whether or not states choose to adopt different programs. It is anticipated that a stronger understanding of the factors which lead to the adoption of market-based health insurance programs would help to understand the nature of the programs and the socioeconomic effects they create at the state-level. For example, looking at the citizen ideology covariate included in the adoption model, finding that market-based health insurance programs are more favored by liberal or conservative
policymakers could influence the way we interpret the programs’ results in areas such as state spending, mortality, gross state product, emergency outpatients treated, and expenditures per patient.

This chapter examines the political, economic, and social factors which contribute to the adoption of market-based health expansion programs. The primary hypothesis for this model is that states with a more liberal citizen ideology and a higher percentage of Democratic lawmakers are less likely to adopt state high-risk health insurance pools and other market-based health expansion programs.

This issue is again raised by the experience of the TennCare and Cover Tennessee programs. The TennCare program, an effort toward universal health care within the boundaries of Tennessee, was enacted by Democratic governor Ned McWhirter. This is not surprising as traditionally Democratic policy makers have been more supportive of government-based efforts to expand access to health care, such as Medicaid, Medicare, and SCHIP. However, it must also be noted that it was also a Democratic governor, Phil Bredesen, who sacrificed efforts to preserve TennCare as a broad-based health care program in order to enact the more narrowly focused, market-based Cover Tennessee program. This disconnect between the commonly accepted health policy paradigm (i.e. Democrats favor more broad-based government programs) was also seen in the 2009 congressional debate over the health reform plan proposed by the Obama administration. During the course of this debate, numerous more fiscally conservative members of the Democratic party raised serious concerns about the proposed national health care plan. Particular concern was focused on the notion of the public option, a federally-operated
alternative to private health insurance, with many Democrats expressing skepticism or outright opposition.

All of this highlights the complicated relationships between ideology, partisanship, and health care policy. It should be noted that the role of ideology in the adoption of market-based programs can be particularly complicated due to the nature of the programs. Market-based health program utilize the private market rather than relying on the expansion of government-based care, however these programs are still intended to expand access to health care which is a traditionally liberal policy goal. In this chapter, the influence of ideology, partisanship and other political and socioeconomic factors on the adoption of market-based state health access expansion programs will be analyzed using a Cox proportional hazard model. This analysis will hopefully shed additional light on the counterintuitive findings regarding the institutional ideology variable in the previous analysis, as well as provide some statistical context for the previous example of the TennCare/Cover Tennessee program.

Model Development

Throughout recent U.S. history, expanding access to health care, particularly for the poor or underprivileged, has been a cause championed by liberal Democrats (Weissert and Weissert, 2006). However, recent scholarship in the area of health care, including a paper by Barrilleaux and Brace (2007), note that recent efforts to expand health care have employed not only traditional government programs but also efforts to utilize market-based methods. When it comes to the adoption of those programs that encourage taking advantage of the private market, they may not be championed by liberals, but rather by
conservatives who see such programs as being good for businesses, particularly small businesses. This study seeks to evaluate the role of partisanship and ideology in the adoption of market-based state health programs, controlling for a number of political independent variables. The model also seeks to control for social and need-based variables, such as the percentage of citizens in a state without health insurance, the percentage of minorities in the state, the percentage of small businesses offering coverage to employees, and the percentage of people in the state who are members of unions.

Literature on the Effects of Ideology and Party Affiliation on Policy Development

Ideology has been found to play a significant role in problem definition and agenda-setting (Weissert and Weissert, 2006). Ideology frequently acts as a cue to help legislators and members of the general public decide the degree to which government action is necessary and acceptable. A number of researchers note that liberal politicians would be expected to support reforms in the area of health care involving more government activity (Erikson, Wright, and McIver, 1993 as cited in Barrilleaux and Brace, 2007). However, the previously cited story of the government-based and market-based health reforms in Tennessee demonstrate that the relationships between ideology, party affiliation, and policy development are not always clear. This study seeks to build upon this literature by investigating the degree to which ideology affects the adoption of market-based health care expansion programs, utilizing the citizen ideology measure developed by Berry, et al, (1998).

It should be noted that the literature is mixed in terms of the role of ideology in state public policy. Some studies do reinforce the idea that state legislators will adopt policies
based on traditional liberal or conservative ideologies, with more liberal legislators supporting more liberal public policy and vice versa. Entman (1983) evaluated how the personal ideologies of legislators in Connecticut and North Carolina affected their role-call voting. Entman noted that previous research indicated that the impact of ideology is blunted by the electoral process or socialization of constituents to focus on factors other than voting records when evaluating incumbents. This research suggests that legislators may have a certain amount of leeway to incorporate their own preferences into voting decisions. To investigate the degree to which this is true, Entman used a questionnaire to gauge where legislators in the two states fit on the “liberal-conservative” continuum. Constituent ideological preferences are controlled for using district-level measures of electoral support for Democratic candidates.

The dependent variable for the study was the percentage of times legislators cast liberal votes (as defined by interest group ratings). In the results for both North Carolina and Connecticut, legislator ideology was found to have a statistically significant effect. However, it should be noted that in the case of Connecticut, political party accounted for much of the variation in roll-call voting. In North Carolina, party accounted for virtually none of the variance, while ideology accounted for 20-25% of the variance in roll-call voting. In North Carolina, it was found that more concrete policy beliefs have a greater impact than philosophical ideology. However, in Connecticut, ideology was more of an influence than policy stance. Entman found little evidence that constituent attitudes affect legislator ideology, although ideology seems to largely be a function of party. In regard to North Carolina, ideology seems to be largely a product of income and urbanization.
Ultimately Entman concludes that “economic development, party competition, and elite ideological liberalism seem to reinforce policy decisions” (p. 178).

Barrilleaux and Miller (1988) investigated the link between liberalism and state Medicaid spending. Ideology was measured in the study using ADA ratings of a states’ congressional delegation. They found that Medicaid spending as a proportion of state personal income grew by 0.17% with each percentage increase in liberalism (Barrilleaux and Miller, 1988, p.1098). Berry and Berry (1992) investigated factors which influenced adoption of taxes during the twentieth century, including whether or not the state was controlled by a liberal party. Their analysis did indicate that between 1919 and 1939, states under complete liberal control with centralized values in other areas were much more likely to adopt an income tax, as opposed to a state under heavy conservative control.

Meier and McFarlane (1993) used two different ideology measures, looking at conservatism and liberalism to investigate the impact of institutional liberalism on funding for abortion. The authors used the Holbrook (1984) measure of conservatism (sum of coalition scores) and the New Deal liberalism score created by Rosenstone (economic liberalism) (1983). Meier and McFarlane hypothesized that more conservative states would have lower levels of funding for abortion, while more liberal states would have higher funding levels. New Deal liberalism was found to have a statistically significant and negative effect on abortion funding at the state level, which provides evidence that economic liberals are not necessarily sympathetic to the positions of social liberals on issues like abortion. Grogan (1994) used measures of political culture and political party control to measure the effect of ideology on state Medicaid spending.
While Grogan hypothesized that the legislators’ ideological preferences would be constrained by the size of their constituency and pressure from interest groups, she found that ideology was statistically significant and negative for all three dimensions of Medicaid spending (categorical eligibility, financial eligibility, and benefit coverage). While Grogan initially hypothesized that the ideology measures (which were valued higher with higher levels of conservatism) would only be significant in the model examining categorical eligibility, she found that state politicians have more ability to satisfy their ideological preferences, and revised her model to emphasize the importance of ideology in all three models.

Brown (1995) investigated the influence of state party control on state welfare benefits. The study is particularly interested in the role played by coalitions within political parties, and the relative importance of the different groups making up those coalitions. In conducting this research, Brown controls for the liberalism of state party elites using the Erikson, Wright, and McIver (1993) measure of ideology. Brown hypothesized that greater party elite liberalism will lead to more generosity in social welfare benefits. The results of Brown’s pooled cross-sectional (panel) analysis found that elite liberalism had the expected relationship with social welfare benefits. Welfare effort was greater in the presence of greater elite liberalism. Shipan and Volden (2006) hypothesized that liberal governments which are more favorable toward activist policy will be more likely to enact stricter restrictions on smoking. In their analysis, Shipan and Volden did find that states with higher levels of liberal ideology are more likely to enact smoking restrictions.
It is important to note, however, that a number of studies suggest that ideology is not always a significant factor in policy adoption. One study conducted by Plotnick and Winters (1985) sought to combine economic and political models explaining support for income redistribution. In their model they used two different indicators of liberalism: the Americans for Democratic Action index and AFL-CIO’s index of House and Senate voting records. In their analysis, the authors found the link between liberal party control and redistribution to be insignificant. Plotnick and Winters suggest that this variable's influence is only felt through its interaction with other variables.

It should be noted that the variable for institutional ideology included in the previous study was not found to be statistically significant in three of the analyses, and in the analyses where the variable did prove to be significant it was not in the hypothesized direction. The variable for institutional ideology was found to be statistically significant and positive in regard to mortality per capita and expenditures per patient, which indicates that a greater level of liberalism in the state legislature actually works in opposition to the socioeconomic benefits market-based health insurance programs can create.

In addition to evaluating the role of the ideology of government, studies have also examined the influence of citizen ideology. The results have been mixed. Some analyses found that the ideology of the citizenry is not significantly related to state policy priorities. Jacoby and Schneider (2003) suggest this is because the general public does not look at different policies as liberal or conservative, thus state governments do not enact policy based on the ideological nature of the general public. Public opinion is instead evaluated based on political party affiliation. Appelbaum (2001) used two studies
to examine two questions regarding decisions on programs to aid the poor. The first question is to what degree public perception of the deservingness of a group affects public support for providing aid to the group. The second question is how support for aid is affected by people’s perception of the level of fault that the needy group bears for their current position. Political ideology is included as a moderating variable in these two studies, drawing on prior research which indicated that people with a more conservative ideology felt the poor were not deserving of help. The results of OLS regression found, irrespective of whether the recipients were seen as deserving or not, liberals were more likely to recommend the provision of liberal policies. However, respondents were found to be more likely to recommend providing liberal policies when the group at issue was considered more deserving. In the second study, liberals were once again found more inclined than conservatives to recommend more liberal policies, whether an individual’s social situation is viewed more as their own individual fault, society’s fault, or the fault of the culture. Ideology was also strongly connected to the decision not to provide any benefits, with conservatives much more likely to recommend this than liberals (Appelbaum, 2001).

Kousser (2002) used the McIver, et al. measure of public ideology to investigate the effect of the public’s political leanings on state Medicaid spending. Kousser hypothesized that ideology would not have a significant effect due to lack of public salience. This hypothesis was confirmed by a cross-sectional regression analysis which did not find a statistically significant relationship between the ideology measure and Medicaid spending. Sapat (2004) investigated previous findings that more liberal states enact more pro-environment regulation using the McIver, et al measure. In Sapat’s probit model, the
variable for public opinion liberalism was not found to be statistically significant. Sapat suggests that this is due to the fact that administrative agencies are more insulated from interest group influence than politicians.

Rudolph and Evans (2005) found that ideology moderates the effect of political trust on public support for government spending, both in distributive and redistributive programs. Previous research has suggested that ideology is a powerful influence on people’s attitudes toward government spending. Based on previous findings, Rudolph and Evans hypothesized that liberals will be more supportive of increased distributive and redistributive spending. The authors used Herington’s sacrifice-based theory of political trust, which argues that political trust is activated when individuals are asked to sacrifice their own material self-interest or ideological principle for others. To test the effects of ideology, the researchers use a five point scale, from 1 (very conservative) to 5 (very liberal). The researchers found a statistically significant interaction between political trust and conservatism, indicating that ideology moderates support for both distributive and redistributive policies. Political trust failed to increase liberals’ support for distributive policy, but increased liberals’ support for some redistributive programs (but not others). The results indicate that political trust is more influential among conservatives as opposed to liberals. The authors note that the influence of political trust in increasing support for distributive and redistributive spending is evidence that trust can help to overcome ideology.

These two significant findings raise a number of issues regarding traditional hypotheses about ideology and health care. Hays (1996) hypothesized that states with strong ideological or political support for adoption of a new law will adopt the law in a
more comprehensive fashion and those with strong opposition to the law would adopt less comprehensively, if at all. Traditionally, increasing access to health care has been a policy priority of liberals, so it was hypothesized in the effectiveness study that a higher level of liberal ideology would result in improved health care outcomes. However, the statistical analyses would seem to indicate the opposite, that in fact the presence of stronger liberal ideology either did not make a difference in the results or worked against the creation of the hypothesized outcomes. It should be noted that most of the market-based programs considered in this study became prevalent in the United States following the failure of the Clinton health plan, when the states had to take greater responsibility for expanding health care access. Therefore one could argue that information regarding the effectiveness of these programs has not had sufficient time to disseminate across the country. However, at least one of the market-based programs under consideration, state high-risk health insurance pools, has been present in the U.S. since the late 1970’s and early 1980’s. Therefore, one would presume that this program has been in existence long enough for states to have gathered sufficient information to evaluate whether or not they are worth implementing in their own state. If that is the case, there must be other variables differentiating adopting from non-adopting states. While other variables measuring political factors and problem severity are included in the analyses, based on previous adoption research and the findings of the effectiveness study, the adoption study to follow will be particularly focused on the relationship between partisanship, ideology and the adoption of both market-based programs in general and high-risk pools specifically.
Getting a better sense of what role ideology plays in both the effectiveness and adoption of these market-based health expansion efforts stands to improve our understanding of policy in the U.S. states in a number of ways. Debates over the efficacy of policy in academic research, the popular media, and in general conversation are frequently viewed through the prism of conservatism versus liberalism. The debate over the Obama administration’s health care plan in 2009 often assumed the traditional narrative of liberals in favor of government intervention on one side and conservative opponents of such intervention on the other. However, to characterize the Obama plan as merely a “big government” plan is to ignore the aspects of the plan promoting the expansion of employer-based insurance and other aspects of the private market.

Similarly, characterizing the market-based programs along liberal versus conservative lines ignores their ideological complexity, indeed the growing ideological complexity of American public policy in general. Students of public policy must acknowledge that as problems such as lack of access to health care have continued to grow, policy makers have been forced to become less reliant on old policy paradigms and look to new ones such as governing by network. Rethemeyer and Hatmaker (2007), in their discussion of policy networks, note that less bureaucratically centralized government grew out of trends which included a decline in the power of political parties. Examining whether ideology has a clear influence on the adoption of these market-based health insurance expansion programs will allow us to get a better sense of what to degree these old ideological regimes are being broken down.

Along with ideology, party affiliation has been found to be an important factor in determining people’s views on government-based versus market-based programs.
Republicans have traditionally opposed government intervention in solving domestic social problems, preferring that the market be utilized to address such problems. Democrats on the other hand are much more inclined to distrust the ability of the market to address problems and reject market-based solutions in favor of government-based programs (Weissert and Weissert, 2006). Jacoby and Schneider (2003) actually found that party affiliation was a better predictor of what policies will be enacted in a state, as the general public does not tend to evaluate policies according to ideology and thus politicians do not tend to support policies based on where they fit on the traditional conservative-liberal perspective. Hwang and Gray (1990) examined the role of party control on education policy and found that Democratic Party control did not have a significant impact due to the bipartisan nature of education, although the level of voter participation in the state was found to be significant. To evaluate the influence of party affiliation on the adoption of market-based programs, this study includes a variable measuring the percentage of state legislators belonging to the Democratic party. This data was taken from the U.S. Census Bureau *Statistical Abstract*.

This chapter of the dissertation will be primarily concerned with the role of party affiliation (particularly Democratic control of the state legislature) and the level of liberal ideology held by the state’s population in the adoption of market-based programs. However, this analysis will also employ a number of covariates to control for other factors which could have a significant influence on adoption. Control covariates related to the political character of a state include the level of political competition, the influence of Southern as opposed to non-Southern states, and the level of lobbyist activity in a state as it relates to health care. The model also includes covariates to account for the role of
the need for health expansion programs in the state. These covariates include: the percentage of small businesses providing coverage to their employees, the percentage of minorities in a state, the percentage of the state’s population belonging to unions, and a gross measure of the percentage of a state’s population which is uninsured.

Research Questions

This chapter examines the influence of political and socioeconomic variables on the adoption of market-based health insurance expansion programs. The primary research questions at issue in this chapter of the dissertation are:

1. What is the effect of Democratic Party control of the state legislature on the adoption of market-based health expansion programs?
2. What is the effect of liberal citizen ideology on the adoption of market-based health expansion programs?

This model will also address questions in regard to the control variables:

3. What is the effect of political competition on the adoption of market-based health expansion programs?
4. What is the effect of Southern politics on the adoption of market-based health expansion programs?
5. What is the effect of a stronger lobbyist presence related to health care in a state on the adoption of market-based health expansion programs?
6. What is the effect of the racial composition of a state on the adoption of market-based health expansion programs?
7. What is the effect of a higher level of small businesses providing insurance coverage on the adoption of market-based health expansion programs?
8. What is the effect of the level of union membership on the adoption of market-based health expansion programs?
9. What is the effect of a higher percentage of uninsured people in a state on the adoption of market-based health expansion programs?

Research Design

The adoption chapter utilizes a Cox proportional hazard model. This is a form of event
history analysis, in which we study “how the duration spent in one social state affects the probability some entity will make a transition to another social state” (Box-Steffensmeier and Jones, 1997, p. 1414). Box-Steffensmeier and Jones note that hazard modeling is preferable to regression methods because traditional regression methods fail to adequately differentiate between states when investigating a process taking place over time (such as policy adoption). They argue that this is due to the fact that the effect of the duration between the start point and adoption is not adequately taken into account (Box-Steffensmeier and Jones, 1997).

Event history analysis seeks to do just that, and is proposed as an alternative to cross-sectional analysis (which cannot model a process over time) and panel design (which could provide inaccurate impressions about how a change takes place). The first key concept in regards to event history analysis is the survivor function, which looks at the probability that the event of interest has survived beyond the end of the measured time period (Box-Steffensmeier and Jones, 1997). In the case of the dissertation study, the survivor function is examining the probability that a state has not enacted an event by the end of the time period of interest (1989-2003). The second concept which is important to event history analysis is the occurrence of the event of interest, in this case the adoption of one of the market-based health expansion programs. The third key concept in regards to event history analysis is the hazard rate, which according to Box-Steffensmeier and Jones (1997) “reflects the rate at which a duration or episode ends in the interval” considering it did not previously terminate” (p. 1419). Put another way, the hazard rate reflects the risk of an event occurring given it has not happened already.
In order, to assess the hazard rate, Box-Steffensmeier and Jones (1997) note the importance of selecting an appropriate starting point. For the purposes of this study, the starting point selected was 1989, as the 1990’s were a decade of significant state-level action in the area of health care, spurred in part by the development and defeat of the Clinton plan (Sparer, 2004). The authors note that it is also very important that the dependent variable be appropriately formatted. Often the dependent variable is formatted as a binary variable (0 if a change has not occurred, 1 if it has occurred). The dependent variable can also be a continuous variable measuring the amount of time that elapses before a change (Steffensmeier and Jones, 1997). The form of event history used in this analysis, the Cox proportional hazard model, utilizes a binary dependent variable, however the model is specified with a duration measure to account for the effect of time.

The Cox model is one of several proportional hazard models which seeks to measure the hazard rate while addressing the issue of time dependency in such a way that it does not unduly bias the results. According to Box-Steffensmeier and Jones (1997), the proportional hazard “refers to the effect of any covariant having a proportional and constant effect” which is not influenced by time (p. 1433). As time is already accounted for in the Duration measure, one wants to make sure that the influence of the covariates included in the model is not also owing to the passage of time. To interpret the hazard rate for each covariate (as reported by STATA), one subtracts 1 from the hazard rate. For instance, suppose that STATA reports a hazard rate of .93 for one of the covariates. You would subtract .93 from 1 to get -.07. This indicates that this covariate decreases the chance of adoption by approximately 7%. However, if a hazard rate of 1.14 is reported, you would subtract 1 from this number get .14. This indicates that the covariate increases
the chance of adoption by approximately 14%. It is important to remember that since the
enactment of a program is the hazard in the analysis, a covariate having a positive
relationship to the dependent variable indicates that the covariate increases the likelihood
of the enactment of market-based state health expansion program. A negative value
indicates a lower probability of adoption.

Box-Steppensmeier and Jones (1997) note that the use of models like the Cox
proportional hazard model, which utilizes time-invariant covariates (or covariates whose
influence remains proportional across time), can yield valuable information about the
social world. They note that in interpreting results, one must be mindful that the estimates
for covariates “reflect an underlying longitudinal process” and “reflect how risk increases
or decreases across time” for some units relative to others (p. 1439).

Dependent Variable

The dependent variable is a dichotomous measure showing whether there has been the
adoption of a market-based health expansion program (a coding of “1” will be used to
indicate when an adoption has occurred in that year, a coding of “0” will be used to
indicate when an adoption has not occurred in that year). The data on whether these
programs have been adopted at the state level and what year they were adopted was
reported by the Robert Wood Johnson Foundation’ website State Coverage Initiatives. It
is important to note that this Cox regression analysis is a multiple failure model. This is
necessary as it is theoretically possible that a state could adopt as many as five different
programs during the period of interest. The analyses of the cases are clustered by
adoption, as the adoption process is unique for each state. Thus, for each state, the
duration variable begins at 0 and counts up 1 for each year that the state does not adopt a market-based health expansion variable. When the state does adopt one of the five market-based health expansion variables, the duration variable was reset at 0. This process was repeated until the end of the period of study or until the last adoption of a market-based health expansion program within a state. It should be noted that in the Cox regression analysis, states were censored from the analysis after the last adoption in the state. Including cases within a state that did not lead to a failure by the end of the period of study made no difference to the results of the analysis. To test this, the analysis was run using these additional cases and the results proved to be the same.

As discussed by Hansford and Spriggs (2006), the Cox proportional regression analysis has observed and unobserved dependent variables.

The observed dependent variable measures whether an event occurred at a particular point in time, or put differently, the length of time before an event occurs. The unobserved dependent variable is the hazard rate, or instantaneous risk that the event will occur at time t, conditional on the event not having occurred previously. A hazard rate is essentially analogous to a probability, except that the hazard rate does not have an upward bound of one (Hansford and Spriggs, 2006).

Thus, in this analysis, as the hazard rate increases the probability of a market-based health expansion program being adopted increases, and when the hazard rate decreases the probability of adoption decreases. Interpreting the coefficients, a positive coefficient indicates a covariate increases the probability of an adoption occurring and a negative coefficient indicates a decreased probability of an adoption occurring.

Political Variables

Existing literature suggests that programs to expand health care garner more support
from politically liberal populations, but this support is tempered by public skepticism (Weissert and Weissert, 2006, p. 325). However, researchers like Barrilleaux and Brace (2007) note that market-based approaches to expanding health care tend to be favored more by conservative political forces. This is due to the fact that market-based approaches still seek to utilize the private insurance market by expanding access, while liberals tend to be distrustful of the private market. At the same time, conservatives are opposed to too much government intervention in the marketplace. To test this hypothesis, this study utilizes the measure of citizen ideology developed by Berry, et al. (1998). This measure is computed by taking interest group ratings for incumbents in a state legislative district, interest group ratings for challengers in a state legislative district, and comparing the election returns for each candidate to create a measure of the ideology of people in the district. The district level measures are then averaged to create a state-level measure. The ideology index goes from 0 (very conservative) to 100 (very liberal).

**H1:** A higher level of citizen liberalism will have a negative relationship to the adoption of market-based state health expansion programs.

Another variable measures to what degree the legislature of a state is under Democratic control. This variable is the percentage of Democrats in the state legislature. Again, Democrats are not expected to be supporters of market-based programs, as the Democratic Party has historically championed government-based programs such Medicaid, Medicare, and the State Children’s Health Insurance Program (Weissert and Weissert, 2006). Also, in the past two decades it has been Democratic presidents, Bill Clinton and now Barack Obama, who have put forth proposals for universal health care.

**H2:** There will be a negative relationship between Democratic control of the legislature and the adoption of market-based state health expansion programs.
Previously cited literature (Bowling and Ferguson, 2001) noted that a state of divided government can increase the likelihood of adopting health policy. This is due to the fact that if party control of government is more closely divided between the Democratic and Republican parties, politicians from both sides will be more active in trying to court voters, in part through the creation of new programs (Key, 1949). One method of measuring whether or not a government is divided is the margin between the majority and minority parties in the legislature. This variable is measured as the difference between the percentage of seats held by the majority party and the percentage of seats held by the minority party. The hypothesis in regard to this variable is that a state of divided government will increase the likelihood for adoption of market-based state health programs. The data for whether or not a state has divided political control in a given year is reported by the U.S. Census Bureau *Statistical Abstract*.

**H3: The presence of divided government in the state will have a positive relationship to the adoption of market-based state health expansion programs.**

The fourth political variable included in the analysis takes into account whether or not the state under consideration is a Southern state. Researchers in the area of political culture (Elazar, 1966; Johnson, 1976; Morgan and Watson, 1991) all found that the vast majority of southern states have traditionalistic political cultures which view government as a “means of maintaining the existing order” (Elazar, 1966 as quoted in Koven and Mausolff, 2002, p. 69). These traditionalistic states would be most likely to oppose major government intervention in the private health care market, and thus more likely to support market-based programs which require less direct government intervention. Also, southern states have historically been opposed to change enforced by the federal government. Therefore, one would expect that Southern states would be more likely to adopt market-
based programs to expand health care as an alternative to more top-down, government-based programs.

*H4: Southern states will be more likely to adopt market-based state health expansion programs than non-Southern states.*

Three additional political covariates included in the analysis examine the role of the presence of health care-related lobbyists in a state, as previous literature as indicated that they can have a significant influence on public policy (Gray, Lowery, Fellowes, and McAtee, 2004). The covariates are coded as the percentage of lobbyists in a state which represent a particular interest related to health care. The three lobbying interests examined are lobbyists for groups seeking to expand health care, lobbyists representing the interests of employers in the state, and lobbyists representing the interests of the insurance companies. While these categories of lobbyists represent divergent interests, they are all hypothesized to contribute to the adoption of market-based health insurance expansion programs. Advocates for health care expansion reform would be expected to support a variety of strategies for expanding coverage, including government-based and market-based efforts. Lobbyists representing the interests of employers would be hypothesized to support the adoption of the market-based health insurance reforms because the majority are designed to either directly or indirectly benefit small employers. In regard to the insurance industry, most of these reforms seek to expand access to the private insurance industry in some way, which would have the effect of enlarging their customer base. Even those programs which establish an alternative mechanism, such as high-risk pools, are not intended as competition to the insurance industry but as a way to expand access to insurance with placing expensive mandates on health insurance.
companies. Therefore lobbyists representing the insurance industry would be expected to support the adoption of market-based programs.

\textit{H5: A higher percentage of lobbyists in a state representing the interests of health care expansion advocates will have a positive relationship with the adoption of market-based health expansion programs.}

\textit{H6: A higher percentage of lobbyists in a state representing the interests of employers will have a positive relationship with the adoption of market-based health expansion programs.}

\textit{H7: A higher percentage of lobbyists in a state representing the interests of the insurance industry will have a positive relationship with the adoption of market-based health expansion programs.}

\textbf{Need Variables}

This study also seeks to account for variables which could affect the need for market-based incremental health programs. One important social variable which can create a greater need for health care expansion, according to the literature, is the racial composition of a state. The literature notes that minorities are more likely to both suffer from serious health conditions and to lack adequate access to health care (Brown, et al, 2000; Longest, 2006). Therefore, one could hypothesize that states with larger minority populations would have more need for programs to expand access to health care, and thus would be more likely to adopt such programs. This study tests this hypothesis by utilizing a measure of the percentage of minorities (non-white citizens in a state) as reported in the U.S. Census Bureau \textit{Statistical Abstract}. It is hypothesized that states with larger populations of minorities will be more likely to adopt market-based state health programs.
Another variable related to need is the percentage of small employers in a state that provide health insurance benefits to their employees, as reported by the Medical Expenditure Panel Survey. Analysts like Morrissey (2008) have noted the difficulties that small employers can face when trying to cover their employees, particularly in regard to affordability. This variable is particularly relevant to the issue of the adoption of market-based state health expansion programs, as many of these programs are created with the goal of allowing small businesses or other types of small organizations to provide health insurance coverage to underserved populations. Uninsured small business employees could be viewed as a key client population in terms of market-based programs. Thus a state with a lower percentage of small businesses which provide such coverage would seem to have greater need of market-based state health expansion programs. This study hypothesizes that states with a higher percentage of small employers that provide health insurance coverage to employees will be less likely to adopt market-based state health programs due to a lower level of need.

A third variable related to need is the gross level of uninsured people in the state. The literature has laid out a good case for the myriad of social ills created by lack of insurance coverage (Davis, et al, 2007; National Academies, 2003; Hadley, 2003; Wolman and Miller, 2004). While the variable for the percentage of small employers in a state which provides coverage to their employees is expected to be a better explanatory covariate for the purposes of this analysis, this study does seek to test the relationship between the
overall level of uninsured and the adoption of market-based programs. As these programs are touted as an alternative to the more traditional government-based programs, one could argue that a higher level of uninsured in a state will encourage adoption of these programs.

\textit{H10: A higher overall level of uninsured in a state will have a positive relationship with the adoption of market-based state health expansion programs.}

A fourth variable examining the need for market-based state health programs is the percentage of a state’s population that is members of unions. Historically, being a member of a union has been an important source of health coverage for many Americans (Feldstein, 2007; Morrissey, 2008, p. 11). Thus, the hypothesis in regard to this variable is that the higher the percentage of unionization in a state, the less likely the state would have a need for market-based health insurance programs. The data regarding the percentage of a state’s population that is union members was taken from the U.S. Census Bureau \textit{Statistical Abstract}.

\textit{H11: A higher level of union membership in a state will have a negative relationship with the adoption of market-based state health expansion programs.}

| Table 5-1: Descriptive Statistics for Covariates in the Adoption Study |
|-----------------|-----|-----|-----|-----|-----|
|                 | Median | Mode | Min. | Max. | Skewness |
| Majority Control | 23.6 | n/a | 2.7 | 86.8 | 1.02 |
| Citizen Ideology | 44.4 | n/a | 9.3 | 72.9 | .011 |
| Democratic Control | 53 | n/a | 11 | 91 | .227 |
| Southern States | n/a | 0 | 0 | 1 | 1.05 |
| Minority Population | 17.9 | n/a | 1.6 | 56 | .763 |
| Small Business | 40.8 | n/a | 29.4 | 58.7 | .384 |
| Unionization | 12.6 | n/a | 2.9 | 47.2 | 1.55 |
### Table 5-2: Hypothesized Relationships between Covariates and Adoption of Market-Based Programs

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Hypothesized Relationship to Adoption of Market-Based Health Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citizen Liberalism</td>
<td>-</td>
</tr>
<tr>
<td>Democratic Control</td>
<td>-</td>
</tr>
<tr>
<td>Divided Government</td>
<td>-</td>
</tr>
<tr>
<td>Southern State</td>
<td>-</td>
</tr>
<tr>
<td>Health Expansion Advocates</td>
<td>+</td>
</tr>
<tr>
<td>Employer Advocates</td>
<td>+</td>
</tr>
<tr>
<td>Insurance Advocates</td>
<td>+</td>
</tr>
<tr>
<td>Minority Population</td>
<td>+</td>
</tr>
<tr>
<td>Small Business</td>
<td>+</td>
</tr>
<tr>
<td>Union Membership</td>
<td>-</td>
</tr>
<tr>
<td>Percentage Uninsured</td>
<td>+</td>
</tr>
</tbody>
</table>

Reviewing the descriptive statistics for the adoption study, the first group of covariates measure political factors affecting the adoption of market-based programs.

One variable in this vein, the level of citizen liberalism in a state, was 44.4 (on a range of 0-100). This indicates, similarly to the institutional ideology variable used in the effectiveness study, that state citizens trended slightly conservative. The minimum level of citizen ideology in the data set was 9.3 and a maximum value was 72.9. A second political variable, the percentage of Democrats in the state legislature, had a median of 53%, with a minimum of 11% and a maximum of 91%. The variable measuring the percentage difference between the majority and minority party in the legislature had a median of 23.6%, with a minimum of 2.7% and a maximum of 86.8%. The final political variable in the adoption is the dummy variable representing whether a state is Southern or non-Southern, which had a mode of 0. Interestingly, all of these variables were positively skewed to various degrees.

The remaining variables in this analysis focus on socioeconomic factors affecting the adoption of market-based programs. The first variable in this group, the percentage of
minority population in a state, had a median of 17.9%, with a minimum of 1.6% and a maximum of 56%. The second socioeconomic variable, the percentage of small employers providing coverage to their employees, had a median of 40.8%, indicating that in general a little less than half of the small employers in a state provide coverage to their employees. The minimum for this variable was 29.4% and the maximum was 58.7%. The final variable in this group, the percentage of unionization in state, had a median of 12.6%, with a minimum of 2.9% and a maximum of 47.2%. All of these variables were positively skewed to various degrees.

Selection of Statistical Software

The analyses for both portions of this dissertation were completed with Intercooled STATA version 9. This software offered clear benefits to other available software packages, particularly SPSS. In regard to the Cox proportional hazard model, the STATA software allows for the use of robust standard errors. The use of these robust standard errors allows for a more accurate estimation of the true relationship between the covariates included in the model and the adoption or non-adoption of market-based health insurance expansion programs. While the option of using the Cox proportional hazard model is available in SPSS as well, the use of default standard errors is more likely to produce biased statistical results.

Test for Proportionality/Correlation

The key concern in regard to whether a covariate is appropriate to use in a Cox proportional hazard regression model is whether or not the effect of the covariate on the
dependent variable is proportional across time. A key assumption of the Cox model is that the effect of the covariates does not increase or decrease as the duration increases (Box-Steffensmeier and Jones, 1997). As duration is already accounted for in the model, if a covariate’s effect varies across time the results of the model will be biased. Therefore it is important to conduct a diagnostic to investigate whether there is any evidence that the effects of the covariates are not proportional. One common diagnostic is to use Schoenfeld residuals, which can be generated by statistical software packages like STATA (Box-Steffensmeier and Jones, 2004).

A statistical test can then be run using these residuals to test the proportional hazard assumption. Once you have the Schoenfeld residuals, one can censor those cases where a “failure” (in this case the adoption of a market-based program) did not occur. One can then create a variable containing the ranked order of survival time (in this case the ranked order of the “Duration” variable). A test of correlation can then be run between the ranked order of survival time and the residuals. If any statistically significant correlations are found that indicates that the proportional hazard assumption is violated (Kim, n.d.). No statistically significant correlations were found when this analysis was run, indicating that none of these covariates violate the proportional hazard assumption. The results of this analysis can be found in Exhibit K of the Appendix.

Correlation tests were also run on the independent variables to determine whether or not any of them were highly correlated with each other, thereby biasing the analysis. None of the variables were found to be correlated above the .8 threshold, indicating that we can be confident that the analysis is not being biased. The results of these bivariate correlations can be found in Exhibit L of the Appendix. Bivariate regression analyses
were also run on the covariates in the analysis to further test for endogeneity. These analyses found that the relationships had adjusted R-squares well below .5, indicating that endogeneity is not an issue likely to affect the Cox regression analysis. The results of the bivariate regression analyses can be found in Exhibit M of the Appendix.

Analysis

The table below shows the results of the Cox Proportional Hazard analysis examining the effect of the covariates of interest on the adoption of market-based health expansion programs. These results provide support for a number of political and social covariates being important to the analysis, but also indicate a number are not significant.

Table 5-3: Cox Results for the Model of the Adoption of Market-based Programs (First Version)

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Hazard Rate</th>
<th>Robust Standard Error</th>
<th>Z</th>
<th>P&gt;Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divided Government</td>
<td>1.01</td>
<td>.008</td>
<td>1.34</td>
<td>0.18</td>
</tr>
<tr>
<td>Democratic Control</td>
<td>2.29</td>
<td>.534</td>
<td>3.54</td>
<td>0.000</td>
</tr>
<tr>
<td>Citizen Ideology</td>
<td>1.00</td>
<td>.011</td>
<td>0.06</td>
<td>0.95</td>
</tr>
<tr>
<td>Southern States</td>
<td>.401</td>
<td>.126</td>
<td>-2.91</td>
<td>0.004</td>
</tr>
<tr>
<td>Health Expansion Advocates</td>
<td>1.17</td>
<td>6.94</td>
<td>0.03</td>
<td>0.98</td>
</tr>
<tr>
<td>Employer Advocates</td>
<td>9.13e+23</td>
<td>2.89e+25</td>
<td>1.74</td>
<td>0.081</td>
</tr>
<tr>
<td>Insurance Advocates</td>
<td>5.57e-06</td>
<td>.00008</td>
<td>-0.84</td>
<td>0.400</td>
</tr>
<tr>
<td>Small Business</td>
<td>.965</td>
<td>.029</td>
<td>-1.20</td>
<td>0.232</td>
</tr>
<tr>
<td>Minority</td>
<td>1.03</td>
<td>.015</td>
<td>2.24</td>
<td>0.025</td>
</tr>
<tr>
<td>Union Membership</td>
<td>1.00</td>
<td>.028</td>
<td>0.15</td>
<td>0.883</td>
</tr>
<tr>
<td>Uninsured</td>
<td>1.01</td>
<td>.060</td>
<td>0.23</td>
<td>0.818</td>
</tr>
</tbody>
</table>

No. of subjects=309
No. of failures=51
Time at risk=1458
Wald Chi-square=39.04
P>0.0001
Log pseudolikelihood=207.85
The results of the Cox regression analysis are decidedly mixed. There are a number of significant covariates, but also a number of covariates demonstrating a low level of statistical significance and/or substantive significance. It is possible that these variables demonstrating very low levels of significance are obscuring the significance of other variables. Therefore, a second, more parsimonious model was run, omitting some of the lower performing variables. The interest group variables were omitted by from the second model because all three demonstrated either low statistical significance, low substantive significance in terms of the hazard ratio, or both. The gross measure of the percentage uninsured in the state was also omitted from the second analysis as it did not prove to be statistically significant and it is possible that that the variable is obscuring the significance of the other covariates, particularly the percentage of small employers in a state providing health coverage.

Table 5-4: Cox Regression Results for the Adoption of Market-based Health Insurance Programs

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Hazard Rate</th>
<th>Robust Standard Error</th>
<th>Z</th>
<th>P&gt;Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divided Government</td>
<td>.999</td>
<td>.007</td>
<td>-0.09</td>
<td>0.93</td>
</tr>
<tr>
<td>Democratic Control</td>
<td>1.07</td>
<td>.013</td>
<td>5.41</td>
<td>0.000</td>
</tr>
<tr>
<td>Citizen Ideology</td>
<td>.973</td>
<td>.013</td>
<td>-2.00</td>
<td>0.05</td>
</tr>
<tr>
<td>Southern States</td>
<td>.156</td>
<td>.078</td>
<td>-3.71</td>
<td>0.000</td>
</tr>
<tr>
<td>Small Business</td>
<td>.956</td>
<td>.018</td>
<td>-2.44</td>
<td>0.02</td>
</tr>
<tr>
<td>Minority</td>
<td>1.03</td>
<td>.011</td>
<td>3.06</td>
<td>0.002</td>
</tr>
<tr>
<td>Union Membership</td>
<td>1.00</td>
<td>.027</td>
<td>-0.01</td>
<td>0.993</td>
</tr>
</tbody>
</table>

No. of subjects=309
No. of failures=51
Time at Risk=1458
Wald Chi-Square=43.02
P>.0000
Log pseudolikelihood=-205.17
Political Variables

The results of the analysis indicate that a greater level of Democratic control of the legislature increases the probability of market-based health programs being adopted. This runs counter to the hypothesis that Democrats oppose efforts that depend on the private health insurance market or market principles. However, there is anecdotal evidence that Democrats, under certain conditions, do support more market-oriented approaches to expanding health care, such as tax incentives. This was particularly true in the wake of the failure of the Clinton health care program. In the absence of a political environment where there is a strong push for more government-based health care, it has been argued the Democrats will support whatever policies can gain enough support to pass, which may include the market-based programs. It is important to note that there is evidence that, in the aftermath of the Clinton plan, Democrats have become more receptive to tax-based coverage subsidies, with such ideologically opposed figures as Democrat Lloyd Bentsen and Republican Dick Armey coming out in favor of tax credits to expand coverage in the early 21st century. Democratic movement on the issue could be seen somewhat during the 2000 presidential election, with Vice President Al Gore incorporating a small tax credit proposal in his health care platform (Toner and Stolberg 2002).

In 2001, with the passage of the Bush tax cut and a possible recession approaching, Democrats were forced to accept that tax credits were their best option for expanding access to health care. That year, then-Republican senator James Jeffords proposed the REACH Act, which offered $1000 tax credits for individuals and $2500 tax credits families to aid them in paying for health insurance coverage. While the REACH Act failed to get anywhere in Congress, it marked a political breakthrough because Jeffords
was joined by a number of Democrats in championing the bill. In 2002, Democrats like Senate Majority Leader Tom Daschle were critical of the use of tax credits, but their actual legislative behavior said otherwise (Toner and Stolberg 2002).

In Fiscal Year 2003 the president proposed a budget with a tax credit for the uninsured worth $89 billion over ten years. Democrats opposed the measure because the credit was primarily targeted at the individual market and the party was concerned that it would cause people to leave employer-provided plans. Meanwhile, the Democrats were successful in inserting a refundable tax credit for workers displaced by trade deals into the Trade Adjustment Act. A bipartisan proposal was made to use the tax credit for individual and employer-provided coverage. The president’s budget proposal failed, but a tax credit was included in the Trade Adjustment Act (Cunningham, 2002).

While there is evidence that Democratic control of the state legislature contributes to adoption of market-based programs, the covariate for citizen ideology supported the hypothesis that a higher level of citizen liberalism will stand in opposition to the adoption of the market-based programs. This supports the contention that states with a more strongly liberal citizenry are less accepting of these market-based programs, seeing them as less effective competitors to government-based programs. This finding does highlight the ideological divide in the Democratic Party. While the Democratic Party is conventionally associated with liberal policies, the debate over the Obama administration’s health care plan has highlighted the fact that there is a significant portion of the Democratic party which has conservative tendencies, particularly in regard to issues like health care which many people can find threatening. The conflicting findings
between Democratic control of government and citizen ideology highlight statistically the policy differences between Democratic politicians and die-hard liberal populations.

Looking at the covariate for the presence of divided government, the finding for this covariate indicates that the presence of divided government in a state has no statistically significant effect on the probability of market-based programs being enacted. It was expected that this kind of program would be more likely to pass under conditions of divided government, as these programs do combine elements of liberal and conservative policy. However, the findings indicate that lack of partisan unity in government did not have a significant effect on the passage of these programs.

The covariate for whether or not a state is a Southern state did not perform as hypothesized in the analysis. Southern states were expected to be more amenable to the adoption of market-based health care programs, as they represent an alternative to more coercive government-based efforts. However, the results indicate that Southern states are less likely to adopt market-based programs. While this finding deserves closer study, this finding may stem from the fact that Southern states may view even the market-based programs as an unacceptable intrusion into the private market. Recall that while these programs emphasize the role of the private market and behave according to market principles, the programs do require some degree of government action. The politicians and population of Southern states may look negatively upon even limited government intrusion.

Need Variables

Looking at the covariates related to need, the analysis indicates that the higher the
percentage of small businesses in a state which provide health insurance benefits to their employees, the less likely these programs are to be enacted. This supports the hypothesis that a higher percentage of small employers providing health care benefits to their employees reduces the need for market-based programs.

The covariate for the percentage of minorities in the state also fits into the hypothesis. The literature notes the fact that minority populations in the states and the nation as a whole are both at greater risk for serious medical conditions and often have more difficulty accessing medical care (Brown, et al, 2000; Longest, 2006). Therefore it was hypothesized that a higher minority population in a state would have a positive effect on the adoption of market-based state health expansion efforts. This hypothesis was supported by the analysis, which did find a positive relationship between the percentage of minorities in a state and the adoption of market-based programs. This seems to support the broader idea that the greater the level of need a state faces in regard to access to health care, the more likely a state will adopt a program to address it. This finding should be further researched, however, as the literature does suggest that the factors which lead to a higher uninsured rate among minority populations (notably ability to pay) would limit the ability of the market-based programs to help.

The final covariate in this model is the percentage of a state’s population which are union members. This covariate was not found to be statistically significant in the analysis, suggesting that unions may no longer be the force in the provision of health care that they once were. This has been suggested by the discussion of the Obama health care reform being partially funded by taxation of union health care plans, dubbed by some as “cadillac plans.”
Discussion of Cox Regression Results

The results of the Cox regression analysis indicate that the adoption of market-based health expansion programs is politically driven, as well as being influenced by the need for health expansion programs. The results note an interesting conflict between the covariate for Democratic control of the state legislature and the level of citizen ideology in the state. The level of Democratic control of the legislature was found to be significant and positive in the analysis, while the level of citizen liberalism was found to be significant and negative. This is a notable finding as conventional wisdom associates the Democratic party with more liberal policies. Thus it was hypothesized that both of these variables would have a negative relationship with the adoption of market-based programs. The fact that the results for both of these covariates were statistically significant but in the opposite directions indicate that the Democratic Party is not beholden to liberal ideology. This highlights the fact that there is a significant conservative wing of the Democratic Party, as was illustrated by the debate over the health care reform plan proposed by the Obama administration. Conservative Democrats, particularly those from the southern part of the United States known as “blue dogs,” were a significant part of the opposition to Obama’s proposal. As President Obama’s proposal called for, in part, an expansion of publicly provided health care, it had strong support among the liberal wing of the Democratic Party. This is indicative of how complex and divisive the health insurance issue can be, as even Democrats, who widely agree that health insurance should be accessible to all, had difficulty uniting behind a reform plan proposed by a president of their own party at the time of this writing. However, Democrats, like their Republican counterparts, also face opposition to universal health
care from constituents concerned about the effect a major change in the American health care system will have on their own coverage. Therefore, Democrats as a party are constrained by their conservative elements, while support for more broad-based health care reform is strong in highly liberal areas.

However, this explanation of the findings for Democratic control of the legislature and citizen ideology complicates to some degree the explanation of the covariate for Southern states. The analysis indicates a statistically significant and negative relationship between states in the Southern part of the U.S. and the adoption of market-based programs. It was hypothesized that Southern states, with a more conservative political ideology and an opposition to government intervention in the marketplace, would be supportive of market-based health expansion programs. However, while these programs are not purely market-based and do involve some government action, it is possible that even this more moderate intervention in the private marketplace is not palatable to populations in the South. Thus, Democratic support for market-based health expansion programs could be seen as splitting the difference between the conservative South and more liberal regions.

The significant results of the analysis for the covariates measuring the need for health expansion programs were as hypothesized. The percentage of small employers providing coverage to their employees was found to be significant and negative. This supports the hypothesis that, as market-based programs are designed in a manner to directly or indirectly benefit small businesses, the higher the percentage of small employers that already provide coverage to their employees, the less need there is for market-based programs. Conversely, the higher the percentage of minorities living in a state, the more likely a state will adopt a market-based program. This supports the hypothesis that, as
minorities are in greater need of access to health care, states with higher minority populations will more actively pursue programs with the goal of expanding access to health care. While these programs are narrower in their impacts as opposed to government-based programs, states with populations of great need would be expected to pursue a variety of options. The covariate for the percentage of unionized people in a state was not found to be statistically significant, suggesting that need as it relates to market-based programs should be measured in more targeted ways.

The findings of this analysis indicate that Democrats are supportive of market-based programs, which can be viewed as conservative in nature and do not enjoy a great deal of support among liberal constituencies. While this support among Democrats may be due to the fact that these programs are seen as effective, it may also be due to the fact that Democrats recognize the need to expand access to health care and often face difficulty in getting broader, more government-based programs adopted. Thus Democrats may gravitate toward more pragmatic solutions which can be passed and allow them to claim a political victory. However, the relationship between party affiliation and ideological policy preferences is deserving of further study, particularly in terms of the moderating effects of the need for a policy.
CHAPTER 5
DISCUSSION OF THE ADOPTION AND EFFECTIVENESS OF MARKET-BASED PROGRAMS

The overall purpose of this dissertation was to investigate the effectiveness of market-based approaches in expanding access to health care, as well as what factors contribute (or stand in opposition to) the adoption of these programs at the state level. In this chapter, the results of the market-based effectiveness and adoption analyses are discussed in regard to how they relate to each other, and what these results say about the nature of these programs and suggest about the future of American health policy.

It would seem that the five market-based health expansion programs at issue in this dissertation, taken as a whole, were successful in helping to bring about positive developmental effects for the U.S. states, despite their often narrow focus. The programs contributed to reducing mortality per capita, boosting gross state product, and bringing down the level of emergency outpatients treated per capita. The adoption study sought to determine whether or not partisan affiliation and ideology could explain the limited adoption of these market-based health expansion efforts across the U.S. The results of this study indicates that a higher percentage of Democrats in the state legislature was positively related with the adoption of market-based programs, but the level of citizen ideology in the state was negatively related to the adoption of these programs. In terms of the control covariates, Southern states and the percentage of small businesses providing health care to their employees were negatively related with the adoption of market-based programs, and the presence of a higher percentage of minorities in a state is positively related with the adoption of these programs. Taken together, these findings suggest
Democrats pursue more centrist approaches to expanding access to health care due to a higher level of need in the state, and these programs actually do provide general socioeconomic benefits for the people of a state.

If these market-based expansion programs are in fact effective in delivering general societal benefits for the people of a state, that then raises the policy issue of whether government should pursue health care expansion through these market-based programs or through government-based programs. While this study does not seek to systematically compare the effectiveness of market-based as opposed to government-based health care programs, there is anecdotal evidence at the state level which suggests that efforts to take a more government-based approach to expand health care have ultimately resulted in the government retreating to more incremental, market-based programs. One recent example comes from the state of Tennessee, which implemented a government-based, universal health care program in the wake of the Clinton health care plan which proved financially and politically unsustainable and was eventually replaced by a market-based program, which promoted the expansion of employer-offered coverage and established a state high-risk health insurance pool. In the following section, the example of TennCare and Cover Tennessee is explored and suggests that, at the state level, market-based efforts will ultimately prove more effective because they can enjoy more longevity.

Government versus Market-based Health Care Expansion: TennCare and Cover Tennessee

The findings regarding the analysis of the effectiveness and adoption of market-based programs are supported anecdotally by Tennessee’s experience with TennCare and the
Cover Tennessee programs. This example illustrates how a Democratic gubernatorial administration sought to expand access to health care through a government-based program in the wake of the Clinton program’s failure, and how that program was eventually replaced with a narrower, more market-based collection of programs by another Democratic governor. The example of TennCare and Cover Tennessee also illustrates that in the face of political pressure, Democratic politicians will pursue more moderate policy options as opposed to continuing liberal programs initiated by their predecessor.

Since the advent of the Obama administration, there has been a perception that the U.S. is again moving toward developing a national health care program for the first time since the Clinton plan in 1993. In the last few years, a number of states have implemented or considered implementing some form of universal health care. This might lead one to wonder if the market-based programs examined in this analysis are really policy solutions in their own right, or stopgaps until such universal coverage can be achieved. At the state level, the Tennessee example indicates that states may lack the political and economic stability to sustain government-based universal health care in the long term, making market-based initiatives a good alternative solution. It is also illustrative of the idea that Democratic politicians may pursue liberal policies at a time where the base is greatly energized, but will pursue more pragmatic solutions when such programs become politically and fiscally unsustainable. These are issues deserving of more in-depth study.

Discussion

The example of the TennCare/Cover Tennessee program is instructive as it illustrates
how a Democratic state set out on a path to enact a more progressive, government-based initiative, and pursued a market-based alternative when that program proved unsustainable. It also illustrates how the Cover Tennessee program was quickly attacked for not succeeding according to rather narrow criteria for effectiveness, such as not meeting enrollment targets or having limited payouts. However, as was noted in the discussion of previous evaluations of market-based initiatives, if previous researchers were correct in their proposition that market-based programs can have developmental benefits, for a state to really gauge whether these market-based programs are effective one must evaluate them more broadly.

The Tennessee experience also suggests that a lack of political stability or support at the state level will make any effort at long-term universal health care policy difficult to sustain. While it may be feasible to enact universal health care at the national level because of the broader base of political support and greater stability, the example of TennCare suggests that a universal, government-based model at the state level will be very difficult to preserve. However, as noted in the previous literature, the problem of uninsurance takes a serious toll at the state level, and state legislators can ill afford not to take action. Therefore, an alternative to a universal model may be more incremental, market-based reforms. While these programs may not have the numbers in terms of enrollment or benefits that programs such as TennCare might have, the preceding statistical evidence suggests that taken as a whole they may be able to deliver indirect developmental benefits to the people of a state that may go unaccounted for.

The policy debate regarding government-based versus market-based health care is unlikely to be resolved in the near future. What the preceding research suggests is that the
market-based health expansion programs do present a meaningful alternative to
government-based programs in terms of providing general societal benefits to the people
of the implementing states.

The example of TennCare and Cover Tennessee as well as the results of the previous
analysis of the adoption of these market-based programs, highlights the fact that the
market-based health expansion programs fit into a new policy paradigm wherein
government seeks to address social problems by utilizing the private sector and non-profit
organizations, one example of which is governing by network. Such programs may allow
Democrats who may not be able to sell their constituents on liberal, government-based
programs to still take action on the health care issue. There is a substantial body of
literature on the role of ideology in state policy which indicates that ideology has long
had an inconsistent influence of the enactment of policy (Entman, 1983; Barrilleaux and
Miller, 1988; Berry and Berry, 1992; Meier and McFarlane, 1993; Grogan, 1994; Brown,
1995; Shipan and Volden, 2006; Plotnick and Winters, 1985; Jacoby and Schneider,
2003; Appelbaum, 2001; Kousser, 2002; Sapat, 2004; Rudolph and Evans, 2005; Hays,
1996). A higher presence of conservatism or liberalism in a state legislature or general
population did not always lead to the policy enactments or outcomes hypothesized, as
politicians can be constrained by the values of their constituency. This was borne out by
the analyses in Chapters Two and Four.

The need for more pragmatic solutions to social problems could explain the
gravitation toward more market-oriented policy models, such as governing by network, a
concept which was co-developed by Stephen Goldsmith, a former Republican mayor of
Indianapolis (Eggers, 1993). High-risk pools, a market-based program which has been
prominent in this dissertation and which was implemented as part of the Cover Tennessee program, fits well into this paradigm.

These programs have aspects which are appealing to both conservatives and liberals. Its conservative appeal stems from the fact that the pools largely do not require an extensive state bureaucracy, a significant utilization of state funds, or an undue government intervention into the private market. Rather than taking high-risk individuals entirely out of the private insurance market, these programs are creating a system wherein these individuals can receive the coverage they need without the insurance companies being forced to accept undue financial risk. From a liberal perspective, high-risk pools still represent a government effort to help those who are in dire need of coverage but have been denied it. This cross-ideological appeal may account for why high-risk pools have diffused among traditionalist states like Texas (government represents “a means of maintaining the existing order”), moralist states like California (“government is considered a legitimate instrument for promoting social welfare”), and individualistic states like Illinois (“government was instituted for strictly utilitarian reasons to handle functions demanded by the people it served”) (Elazar, 1966 as quoted in Koven and Mausolff, 2002, p. 69). This diverse appeal is suggested by the findings of the adoption analysis in Chapter Four, which indicate that market-based health expansion programs are more likely to be found in states with a higher percentage of Democrats in the legislature, as well as in states with a higher minority population.

This dissertation finds evidence through the study of market-based program effectiveness that these programs can actually produce some of the general developmental effects suggested by previous researchers (Barrilleaux and Brace, 2007),
including reducing mortality per capita, increasing gross state product, and reducing reliance on emergency room care. If the results of the effectiveness analysis hold true, it would explain why these programs would be adopted in the presence of a more strongly Democratic state legislature, despite a lack of support among liberal citizens. The findings of the adoption study in Chapter Four suggest that the market-based health expansion programs do not fit into the traditional liberal-driven policy paradigm. Perhaps more importantly, this dissertation indicates that these programs can have significant cumulative benefits for the state, despite the fact that individually these programs are small in scale. More research should be done to examine the nexus between the effectiveness of these market-based programs and their adoption, to determine to what degree the effectiveness of these programs is driving their support among conservative and liberal politicians alike.

Next Steps

Additional research should attempt to compare the effectiveness of market-based programs and government-based programs. As noted in Chapter Two, evaluations of health care expansion programs, both market-based and government-based, have been narrowly focused on outputs such as client enrollment, with little attention given to the general socioeconomic impacts. More research should be done in terms of the general effects of both the government-based and market-based programs so that a meaningful comparison can be made.

Future analyses of the effectiveness of market-based reforms should include additional variables to take into account the unique characteristics of a state’s health insurance market. These characteristics, particular to each state, may influence the degree to which
the market-based programs affect the dependent variables. Future research should also
better parse out the unique characteristics of a state’s population and of the market-based
programs themselves. Each state has unique social and economic characteristics which
could affect the levels of the dependent variables and the degree to which the market-
based health expansion programs can provide aid to that population.

Also, each type of market-based program is unique, with important differences among
programs. This was addressed to a certain extent in the effectiveness analysis of the high-
risk pools, which took into account the different levels of accessibility in terms of cost.
Future research should build on this by taking into account differences among limited
benefit plans, reinsurance programs, group purchasing arrangements, the HIFA waivers,
and the high-risk pools. Research growing out of this dissertation should also go more in
depth into identifying and analyzing the channels through which market-based programs
can exert their effects on a state population. The effectiveness study tried to identify
independent control variables which would capture this, but more specific controls could
be utilized in future research.

Continuing this research could expand our understanding of the true benefits we attain
from pursuing policies in areas like the expansion of health insurance coverage, whether
through a government program or a market-based initiative. Often the benefits of these
programs are discussed in terms of enrollment or cost savings to the state. Many argue
that society in general wins if more people have access to services like health care, but it
has not been a well-studied topic in the social sciences. Establishing in a comprehensive
and quantitative manner that helping the uninsured to receive coverage truly does benefit
everyone could reduce societal resistance to such efforts. Also, demonstrating that these
general benefits for society can be created through programs that utilize the market as well as government programs could help to weaken the sort of ideological entrenchment that was seen in the 2009 health care debate. This research is applicable to other areas of social policy as well, and research of this kind should be used to exam the effects of programs administered by non-profit and for-profit organizations in areas like education, job placement, and the environment.

What the preceding research can contribute to the conversation regarding health care in America is that there is some evidence that these market-based programs, while limited in scale and incremental, can have meaningful effects. One inference you can draw from this is that the uninsured is a population composed of many segments of the American public, each facing unique issues and challenges. Any plan to provide health care universally must recognize this fact, otherwise some segment of the uninsured could still slip through cracks in the system.

In conclusion, the experience of the American health care system since 1993 suggests that it is moving toward a hybrid of publicly and privately provided health care. Based on current data, lack of access to health care remains a serious and growing problem in the U.S., and is having wider societal and economic impacts for the country. By that same token, there is some evidence that even smaller-scale, market-based health expansion efforts, taken as a whole, positively affect some of these outcomes. The results of the preceding research also suggest that the adoption of these programs are supported by Democratic lawmakers, indicating that there is support for market-based health access expansion efforts from those who traditionally would champion more government-based solutions.
As was exhibited in the health reform debate of 2009, there is a regrettable lack of common ground in terms of how to expand access to health care in a politically charged environment. However, the debate will never be able to move beyond partisan conflict until we truly understand what programs, government-based and market-based, truly aid the uninsured and what costs or benefits these programs hold for society as a whole. This dissertation will hopefully serve as a small first step in moving that research agenda forward. In the meantime, in the absence of the implementation of universal health care at the national level, policymakers, including Democrats, will continue to promote more incremental, market-based efforts, even though more liberal groups continue to champion government-based efforts. Further research should be done to build upon the evidence that these programs, in the aggregate, do provide positive developmental effects for a state, such improving health, as improving economic productivity, and relieving the pressure on hospital emergency rooms.
### APPENDIX

#### SUPPLEMENTARY INFORMATION

Exhibit A

**Market-based Health Insurance Programs and the States Which Adopted Them Prior to 2003**

<table>
<thead>
<tr>
<th>Reinsurance Programs</th>
<th>Limited Benefit Plans</th>
<th>Group Purchasing Arrangements</th>
<th>Health Insurance Flexibility and Accountability Waivers</th>
<th>High-Risk Pools</th>
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</thead>
<tbody>
<tr>
<td>Arizona</td>
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</table>
### Exhibit B

**Variables, Sources, Coding and Level of Measurement for the Independent and Dependent Variables in the Study of the Effectiveness of State Market-Based Health Insurance Programs**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Data Source</th>
<th>Description</th>
<th>Level of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market-based Health Index</td>
<td>The Robert Wood Johnson Foundation State Coverage Initiatives web site</td>
<td>Additive index of how many of the market-based health expansion programs have been implemented in the state. Ranges from 0 to 5.</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Index of State High-Risk Health Insurance Pools</td>
<td>The Robert Wood Johnson Foundation State Coverage Initiatives web site</td>
<td>Index measuring the presence and affordability of high-risk pools in a state. Ranges from 0 (absence of a pool) to 5 (pool operates and offers coverage at 150% of average market rate).</td>
<td>Ordinal</td>
</tr>
<tr>
<td>SCHIP/Medicaid 1115 waivers</td>
<td>The Robert Wood Johnson Foundation State Coverage Initiatives web site</td>
<td>Ordinal variables indicating the presence or absence of the SCHIP program and Medicaid 1115 waivers in a state (0=absence of programs, 1=presence).</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Institutional Ideology</td>
<td>Web Site of Dr. Richard Fording, University of Kentucky</td>
<td>Index of the level of liberalism of the legislature in a state (0=highly conservative, 100=highly liberal).</td>
<td>Interval</td>
</tr>
<tr>
<td>Percentage of Uninsured in a State</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Percentage of a state’s total population which does not have health insurance in a given year</td>
<td>Ratio</td>
</tr>
<tr>
<td>Percentage of a State’s Population in Poverty</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Percentage of a state’s total population living below the federal poverty level in a given year</td>
<td>Ratio</td>
</tr>
<tr>
<td>Percentage of a State Population that is Unemployed</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Percentage of a state’s total population that is without employment in a given year</td>
<td>Ratio</td>
</tr>
<tr>
<td>Hospital Beds Per Capita</td>
<td>American Hospital Association Statistical Abstracts</td>
<td>Total number of hospital beds in a state divided by the total state population</td>
<td>Ratio</td>
</tr>
<tr>
<td>State Employees Per Capita</td>
<td>The Book of the States</td>
<td>Total number of people in a state employed by the state government divided by the population</td>
<td>Ratio</td>
</tr>
<tr>
<td>Percentage of a State’s Population Belonging to Unions</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Total number of people in a state belonging to a labor union divided by the total state population</td>
<td>Ratio</td>
</tr>
<tr>
<td>Percentage of a State Composed of Metropolitan Areas</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Total square miles of area in a state constituting a metropolitan area divided by the total number of square miles in a state</td>
<td>Ratio</td>
</tr>
</tbody>
</table>
### Exhibit B, cont’d.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of State Spending Devoted to Health Care</td>
<td>U.S. Census Bureau <em>Statistical Abstract</em></td>
<td>Total amount of state general revenue spent on health care-related items divided by total state revenue spent for a given year.</td>
</tr>
<tr>
<td>Mortality Per Capita</td>
<td>U.S. Census Bureau <em>Statistical Abstract</em></td>
<td>Total number of deaths in a state divided by the population of a state for a given year.</td>
</tr>
<tr>
<td>Gross State Product Per Capita</td>
<td>U.S. Census Bureau <em>Statistical Abstract</em></td>
<td>Total value of goods and services produced in a state divided by the population of the state for a given year.</td>
</tr>
<tr>
<td>Emergency Outpatients Treated Per Capita</td>
<td>American Hospital Association <em>Hospital Statistics</em></td>
<td>Total number of outpatients treated in a state’s hospital emergency rooms divided by a state’s population for a given year.</td>
</tr>
<tr>
<td>Expenditures Per Patient</td>
<td>American Hospital Association <em>Hospital Statistics</em></td>
<td>Total amount spent on the treatment of patients in hospitals divided by the number of patients treated in hospitals in the state for a given year.</td>
</tr>
</tbody>
</table>
Exhibit C

Test for Outliers/Heteroskedasticity in Study of the Effectiveness of

Market-based Health Insurance Reforms

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of SpendLag

\[
\chi^2(1) = 32.08 \\
\text{Prob} > \chi^2 = 0.0000
\]
Exhibit D

Tests for Normality and Linearity in Study of Effectiveness of
Market-based Health Insurance Programs

Test for Normality of Residuals
Exhibit E

Test for Linearity

Exhibit E, cont’d.
Exhibit E, cont’d.

Exhibit E, cont’d.

Exhibit E, cont’d.
Exhibit E, cont’d.
Exhibit F

Test for Autocorrelation in the Study of the Effectiveness of Market-based Health Insurance Programs

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation

\[ F(1, 49) = 1.821 \]

Prob > F = 0.1834
Exhibit G

Test of Correlations for the Study of the Effectiveness of Market-based Health Insurance Programs

<table>
<thead>
<tr>
<th></th>
<th>Market-based Programs</th>
<th>Mortality</th>
<th>State Spending</th>
<th>Poverty</th>
<th>Unemployment</th>
<th>Uninsured</th>
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<th>Gross State Product</th>
<th>Unionization</th>
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<td>State Spending</td>
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<td>M1115</td>
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<td>Institutional Ideology</td>
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<td>Expenditures Per Patient</td>
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<tr>
<td>Gross State Product</td>
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<td>Unionization</td>
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<td>State Employees Per Capita</td>
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<td>1.00</td>
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<td>-0.20</td>
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## Exhibit H

**Bivariate Regressions to Test for Correlations of Variables in the Effectiveness Study with High Bivariate Correlations**

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Poverty</th>
<th>Uninsured</th>
<th>Beds per Capita</th>
<th>Mortality</th>
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<tbody>
<tr>
<td>Poverty</td>
<td>---------</td>
<td>Prob&gt;F=0.000; R-sq=0.40</td>
<td>Prob&gt;F=0.000; R-sq=0.03</td>
<td>Prob&gt;F=0.000; R-sq=0.07</td>
</tr>
<tr>
<td>Uninsured</td>
<td>Prob&gt;F=0.000; R-sq=0.40</td>
<td>---------</td>
<td>Prob&gt;F=0.000; R-sq=0.02</td>
<td>Prob&gt;F=0.01; R-sq=0.01</td>
</tr>
<tr>
<td>Beds per Capita</td>
<td>Prob&gt;F=0.002; R-sq=0.02</td>
<td>Prob&gt;F=0.000; R-sq=0.05</td>
<td>---------</td>
<td>Prob&gt;F=0.10</td>
</tr>
<tr>
<td>Mortality</td>
<td>Prob&gt;F=0.000; R-sq=0.07</td>
<td>Prob&gt;F=0.004; R-sq=0.02</td>
<td>Prob&gt;F=0.081; R-sq=0.009</td>
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Exhibit I

Variables, Sources, Coding and Level of Measurement for the

Independent Variables in the Study of the Adoption of State
Market-based Health Insurance Programs

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Source</th>
<th>Description</th>
<th>Level of Measurement</th>
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<tbody>
<tr>
<td>Majority Control of the Legislature</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Percentage difference between the majority party in the state legislature and the minority party in the state legislature.</td>
<td>Interval</td>
</tr>
<tr>
<td>Democratic Control of the Legislature</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Percentage of seats in the state legislature held by Democrats.</td>
<td>Interval</td>
</tr>
<tr>
<td>Citizen Ideology</td>
<td>Web Site of Dr. Richard Fording, University of Kentucky</td>
<td>Index of the liberalism of the general population of a state (0=highly conservative; 100=highly liberal)</td>
<td>Interval</td>
</tr>
<tr>
<td>Percentage of Small Businesses Offering Insurance</td>
<td>Medical Expenditures Panel Survey (multiple years)</td>
<td>Percentage of the total small businesses (less than 50 employees) that provide insurance coverage to their employees.</td>
<td>Ratio</td>
</tr>
<tr>
<td>Percentage of Minorities in the State</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Percentage of the total citizens in a state that are non-white.</td>
<td>Ratio</td>
</tr>
<tr>
<td>Percentage of a State’s Population that are Members of Unions</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Percentage of a state’s population that belong to labor unions.</td>
<td>Ratio</td>
</tr>
<tr>
<td>Southern States</td>
<td>U.S. Census Bureau Statistical Abstract</td>
<td>Dummy variable indicating whether a state is Southern or non-Southern state.</td>
<td>Ordinal (dummy variable)</td>
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</table>
Exhibit J

Correlation between Rank of Duration and Schoenfeld Residuals

(Test of Proportionality Assumption)

<table>
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<th>Covariate</th>
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<th>Small Business</th>
<th>Union Population</th>
<th>Citizen Ideology</th>
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<tr>
<td>Pearson Corr.</td>
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<td>.275</td>
<td>-.074</td>
<td>-.059</td>
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<td>.318</td>
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<tr>
<td>Sig.</td>
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<td>.092</td>
<td>.362</td>
<td>.389</td>
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Exhibit K

Bivariate Correlations Between Covariates in the Cox Regression Model of Adoption

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<th>Small Business</th>
<th>Union Population</th>
<th>Citizen Ideology</th>
<th>Democratic Control</th>
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<td>1 (.000)</td>
<td>.172 (.002)</td>
<td>-.471 (.000)</td>
<td>-.190 (.001)</td>
<td>-.372 (.000)</td>
<td>.591 (.000)</td>
<td>.401 (.000)</td>
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<td>Minority Population</td>
<td>.172 (.002)</td>
<td>1 (.000)</td>
<td>-.376 (.000)</td>
<td>-.131 (.013)</td>
<td>-.361 (.000)</td>
<td>.264 (.000)</td>
<td>-.045 (.221)</td>
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<tr>
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<td>-.471 (.000)</td>
<td>-.376 (.000)</td>
<td>1 (.000)</td>
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<td>.336 (.000)</td>
<td>-.365 (.000)</td>
<td>-.376 (.000)</td>
</tr>
<tr>
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<td>-.131 (.013)</td>
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<td>-.131 (.013)</td>
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<tr>
<td>Citizen Ideology</td>
<td>-.372 (.000)</td>
<td>-.361 (.000)</td>
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<td>.562 (.000)</td>
<td>1 (.000)</td>
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<td>Democratic Control</td>
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### Exhibit L

**Bivariate Regression Results for the Relationships Between Covariates in**

in the Cox Regression Model of Adoption

**(Adjusted R-Squares and Significance)**

<table>
<thead>
<tr>
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<th>Small Business</th>
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<td>.128 (.000)</td>
<td>.083 (.000)</td>
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Journal Articles


**Books**


Government/Non-profit Agencies


No Author. Multiple Years. The Book of the States. Chicago: Council of State Governments.


Think Tanks


Working Papers


Reference Documents


Other Web Sites


VITA

Graduate College
University of Nevada, Las Vegas

Nathan Myers

Degrees: Bachelor of Arts, Political Science, 2003
Knox College

Master of Public Administration, 2003
University of Illinois at Springfield

Special Honors and Awards:
Excellence in Graduate Student Teaching Award, 2008
1st Place in Humanities Section of the Graduate Student and
Professional Association Research Forum, 2007
Recipient of Public Administration Graduate
Association Academic Award, 2007
Recipient of Greenspun College Scholarship, 2006-2007

Publications:
Bernick, Ethan and Nathan Myers. 2008. “Treatment or Placebo:
Are State Programs Decreasing the Number of Uninsured?”

Myers, Nathan and Christopher Stream. “Risky Business: The Effectiveness of
State Health Expansion Programs.” Journal of Health Policy, Politics, and Law.
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Policy.” PA Times. Vol. 32, no. 7

Dissertation: The Effectiveness and Adoption of Market-based State Health Care
Expansion Programs

Dissertation Examination Committee:
Chairperson, Chris Stream, Ph.D.
Committee Member, Lee Bernick, Ph.D.
Committee Member, Anna Lukemeyer, Ph.D.
Graduate Faculty Representative, David Damore, Ph.D.