DISSERTATION

MAKING ENDS MEET IN A SOCIAL CONTEXT: GRANDPARENT CHILDCARE DURING THE 2008 RECESSION, DEBT OF THE POOR AND FINANCIAL INNOVATION, AND RELATIVE POVERTY'S EFFECT ON ELECTION OUTCOMES

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ABSTRACT

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The chapters illustrate dynamics of the choices of individuals and households when facing income and time constraints in the recent United States. In the first chapter, grandparent childcare provision is studied from the supply side with a focus on the effect of the 2008 recession. Findings suggest differing effects for lower income respondents, and female respondents. In the second essay, I test a structural consumption model building on Brown (2007) and extending into recent periods using newly available data. Results suggest that Minskian effects are present in consumption in the U.S. Lastly, I test a new relative poverty measure against the more traditional form and study its relation to electoral outcomes from 2000-2016. Results suggest that state-level relative poverty decreases the likelihood of Republican victories. All of these aspects investigate the relationship between the social and the economic in the modern U.S.

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Chapter 1

Introduction

Human beings are innately social creatures. To understand human behavior within a market context then we must understand the social influences. To put it another way: “Although the scientific method of controlled experimentation is designed to keep values out of research, this method is usually not feasible in economics where the laboratory is human society with its complex interaction of innumerable variables" (Clark 1991). This dissertation is written to investigate three avenues of social-economic expression; Grandparent childcare, relative poverty, and debt burdens. Child care is a behavior which is inseparable from culture, age, family structures, and more traditionally economic things like income, wealth, and leisure. Relative poverty attempts to measure the portion of society which exists in a state of poverty. Debt, whether garnered in order to alleviate social stigma, to signal at a job interview, or to buy the American Dream, is being influenced by social expectations and can, if the burden becomes too large, become an impediment to maintaining one’s position in society. If changes in the supply of loanable funds encourages the poorest citizens to take on debt burdens which they cannot support come the next recession, then the nature of capitalist finance itself may be exerting an exploitative effect on these poorest borrowers. The nature of herd mentality, another social effect, in the financial system makes these three subjects rife for investigating through the lens of, not a purely rational homo-economicus, but perhaps a socio-homo-economicus.

Who is expected to care for the children is one example of social forces acting on “given" groups and something investigated in Chapter 1 of this dissertation (Folbre 1994). These expectations affect everything from what is expected to be worn or said to what is expected to be earned or done. The effect of these expectations is that women over 65 in poverty outnumber men in poverty of the same age by 2 to 1. And it is not just due to better longevity; the wage gap, and the “structure of social constraint" concerning child care in addition to the greater costs of greater

longevity (Figart & Mutari 2000; Folbre 2009). Structures of social constraint; “generates patterns of allegiance and encourages forms of strategic behavior based on social constructions of difference" (Folbre 1994). Who provides childcare in situations of financial constraint is highly influenced by such patterns and social constructions of difference (Folbre & Bittman 2004; Hirsch & Stranton 1997; Rossi 1995; Uhlenberg & Hammill 1998; Bergmann 1976; etc.). The constraint is not sufficient for determining the choices people make, but it is highly influential. Contrary to [Fredrich] Engels’ “Death of the Mother", which argued sexism rises with surplus, the violence inherent in human being would suggest that force is part of the story (Walker 2001).

These systems are changing, yet women still make up a disproportionate share of minimum wage workers and the vast majority of tipped service positions (President’s Commission). But the poverty which is disproportionately foisted on women is only half the story once children are included. Poverty during childhood has the same effect on the development of the human brain as extreme physical abuse and causes PTSD at a higher rate than soldiers returning from war (Sapolsky 1999; Bick 2007). Grandparents have become a stop-gap measure for families seeking childcare. Grandparent childcare is objectively a better form of care but it requires that the grandparents are willing and able to provide (Minkler & Fuller-Thomson (2000); Vandell and Wolfe (2000)). The social constructions of difference which encourage women to take on care work, encourages grandfathers to do the same. To investigate the relationship between grandparent childcare and the 2008 recession, Chapter 1 uses a fixed-effects panel regression testing the recession period against the before and after period with focus on wealth and income factors. a propensity score matching method testing the effect of Medicare Part D on grandparent childcare provision. Results suggest wealth and income are factors which affect grandparent childcare provision, but with differing effects for lower-income groups and along gender lines. Though economic factors are present, social constraints cannot be ruled out.

Adam Smith [1776](1981, p. 869f.) argued not being poor means that one can “appear in public without shame". So Smith seemed to understand that a poverty measure must include discussion of social influence. Thorsten Veblen’s [1899] “Theory of the Leisure Class" describes the anthropological origins of status seeking. In Veblen’s framework a leisure class of wealthy signal their wealth with wasteful spending; the more wasteful the better the signal. Thus, those at lower ends of the income spectrum attempt to emulate these spending habits confusing the spending signals with the real cause of their wealth. Thus, Veblen is marking a relative definition of income. The Easterlin (1974) paradox (happiness does not increase as income rises in a nation over time, but that within a nation at one point in time higher income is correlated with greater happiness) seems to imply that relative incomes matter. Work by Robert Frank (1985) stresses that people do care about their relative position. James Duesenberry (1949) brought this approach into macroeconomics with his theory of consumption. His relative income hypothesis predicts that consumption will rise as income rises, but when incomes fall consumption patterns may take time to respond, i.e. they will tend to be influenced by past income peaks due to habit formation (Mason 2000).

This importance of social position is also supported by empirical research showing the people care about their relative position and that relative position and changes in relative position have important effects (Payne 2017; Wilkinson 1996), including health problems (Wagstaff 2000; Kawachi et al. 1999) due to stress, which increases the likelihood of obesity, diabetes, heart disease, depression and even suicide and drug and alcohol abuse (Sapolsky 2005). These effects are also found in primates (Morgan et al. 2002; Sapolsky 2005). Lastly, Robert Sapolsky (1996, 2000, 2005, 2017; Sapolsky & McEwen 1995) finds that low-ranked baboons suffer from greater stress levels, or have higher levels of the chemical cortisol, baboons being the closest primate to humans in terms of stress responses. He also finds that stress, whether induced by social situations or not, negatively affect memory, self-control, and cognitive ability in humans. The need to dominate may be one aspect of human-primate behavior, but the need to belong is just as strong. For those, in the animal kingdom, who could not dominate, going with the group would have been a useful

second-best survival strategy. This may be the source of our deep seeded need to belong and our deep seeded ability to empathize. Motor mimicry for instance, when someone winces at someone else in pain or yawns when some one else yawns, is an unconscious emulation, or mimicry (Bavelas et al 1987; Bavelas et al 1988). Motor mimicry suggests a strong unconscious sense of empathy towards others and a host of human experiences and evidence suggests strongly human being's ability to empathize. Adam Smith too seemed to understand this human need to conform. In "The Theory of Moral Sentiments; Section III: Chapter II: Of the Origin of Ambition, and of the Distinction of Ranks" Smith has this to say:

"Upon this disposition of mankind, to go along with all the passions of the rich and the powerful, is founded the distinction of ranks, and the order of society. Our obsequiousness to our superiors more frequently arises from our admiration for the advantages of their situation, than from any private expectations of benefit from their good-will. Their benefits can extend but to a few. But their fortunes interest almost every body. We are eager to assist them ... without any other recompense but the vanity or the honour of obliging them. Neither is our deference to their inclinations founded chiefly, or altogether, upon a regard to the utility of such submission, and to the order of society, which is best supported by it. Even when the order of society seems to require that we should oppose them, we can hardly bring ourselves to do it. That kings are the servants of the people, to be obeyed, resisted, deposed, or punished, as the public convenience may require, is the doctrine of reason and philosophy; but it is not the doctrine of Nature."-p115

Raafat, et al (2009), publishing in *Trends in Cognitive Sciences* defines herd mentality as; "...a form of convergent social behaviour that can be broadly defined as the alignment of the thoughts or behaviours of individuals in a group (herd) through local interaction and without centralized coordination (Raafat et al 2009). Others in the fields of economics, psychology, sociology and cognitive science have addressed herd mentality such as Keynes (1935), Minsky (1974), Asch (1951), Penrose (1951), Bickchandani et al (1992), Fowler & Christakis (2009) to name a few.

Asch (1951) is a famous psychology experiment wherein one person is invited to take a survey concerning the length of a series of lines. The person is put in a group of 5 others, but all others in the group are plants, i.e. part of the experiment. The plants then all agree that a line which is clearly the shortest, is the longest, and answer the interviewer as such. Seeing others conform to this view, the subject then changes their answer (in the majority of cases) to the group incorrect group answer (Asch 1951).

The theories above then can be categorized into three (3) groups: The Minsky Effect, The Veblen/Frank effect, and The Duesenberry effect. The Minsky effect, taken from Hyman Minsky's work "John Maynard Keynes" (1974) describes a balance sheet effect. Debt-to-Income ratios of firms investing during bubble periods will reach unsustainable levels at any growth rate and their collapse will precipitate a contraction of lending leading to financial crisis. Minsky, as mentioned above, suggested, all be it in passing, that household investment decisions too would follow this pattern-debt fueled consumption as well. So the Minsky Effect here is categorized as the increase in consumer debt, specifically debt-to-income ratios, which can be attributed to expansion of the money supply via "euphoric exuberance" (Minsky, 1974).

Whether the "euphoric exuberance" is being displayed by one class or another or in fact manufactured by PR institutions like advertising firms is actually irrelevant. It would seem that regardless of the source of the exuberance, the demand for debt will disproportionately come from the already poor in wealth and low in income. This group is already credit constrained and of highest need. Thus, if the financial system, by design or institution, follows a Minskian pattern, we can say that this aspect of capitalist finantialization has disproportionately negative effects on the most vulnerable in society. The reserve army here is indebted too; how much greater the ability to discipline labor. The social effect is the herd mentality which drives the Minsky Instability Hypothesis on the supply side.

The Veblen/Frank effect draws from the works of Thorstein Veblen (1898) and Robert Frank ((among others) as well as some psychology and cognitive science works mentioned above. This effect is an emulation effect. The unconscious drive which causes humans to feel the need to yawn after seeing another human yawn (called motor mimicry) is an emulative drive (albeit an unconscious one) (Bavelas et al 1987). The desire to emulate the leisure class then could be considered a conscious mimicry. Driven, if Veblen is to be believed, by a desire to be a member of the leisure class, not for the leisure (or perhaps not just the leisure), but for the prestige or honor. It might best be related to sycophancy, it emulates an aspirational group, at times, for gain. This type of mimicry may also be obsequious, as Smith speaks of in “The Theory of Moral Sentiments". In this realm then, taking on a refinancing of your student loan debt because the bank is seeking new borrowers during a “euphoric" period in asset prices is a Minsky Effect; taking out a loan to buy a flashy new car is a Veblenian effect, and taking out a loan to buy a nice suit because it is required before you will even have a chance at getting the job is a Robert Frank-type effect.

These effects are aspirational and can be easily manipulated by marketing which shifts status signals. In her epic work “No logo" Naomi Klein speaks on the rise of marketing techniques in the 1990s which focus on connecting products with customer aspirations (Klein 1999; 2017). Edward Bernays’ work “Propoganda" (1928) is the foundation of the field of Public Relations, and focuses on his, very successful, techniques for manipulating the subconscious of consumers by finding ways to connect products with consumer aspirations or fears. The techniques talked about in Klein (1999; 2017) and Bernays (1928) are examples of marketing techniques which attempt to exploit this Veblen/Frank effect for increased sales.

Whether debt is taken on for a shiny car, a student loan, or a copy of Windows 10 Pro, these consumption effects are constrained by income. When incomes rise, more consumption is taken on, at least up to a certain level of income, in each of these categories. But debt has path-dependent effects. “Unwinding" one’s position may not be easy. Not least of all because it requires admitting

that one is on an income level now which cannot sustain such purchases (made when one thought they had a better future). At each downturn, some portion of those who become unemployed will misinterpret their misfortune as temporary. This is true of every downturn. Some will be permanently stuck on lower income paths and an “unwinding" of responsibilities must take place. The mortgage payment does not stop immediately, nor the lease contract on the automobile. The clothes expected to be worn to work do not get cheaper (*ceteris paribus*), and utilities, food, family commitments like extracurriculars for the children, or regular commitments to social organizations do not stop. These costs are hard to diminish in the short-to-mid term suggesting we should see consumption fail to respond to downturns in income at the same rate we see increase responses to increased income.

To put it boldly, the marginal propensity to consume differs depending on the direction income is headed! This is the Duesenberry Effect. Debt should increase during downturns as households seek to maintain living standards in the face of falling incomes.Habits formed through a life at one peer-group level will be hard to break. It includes commitment on which Amartya Sen speaks (Sen 1999). The money someone gives to their local religious organization may be derived from a sense of commitment to that organization or group and not for any desire for recognition for the gift. Using the same pool of money to pay for a babysitter for one’s child so they can have a night out (or the equivalent in lost income for grandma) might be considered a Sen-effect as well. Here the social pressure comes from one’s peer group and the “Ratcheting Effect" or habit formation which results (Mason 2000).

Chapter 2 of this dissertation takes the previous into account to create a relative poverty measure which attempts to understand the relationship between relative poverty and election outcomes in the U.S. (both general and midterm elections) from 2000 to 2016 incorporating the Duesenberry/Sen Effect. Relative poverty measures the proportion of the population which exists below a certain income, here a portion of the median by state by year. Previous literature studying the rise

of right-wing government using inequality as a predictor. This previous literature finds, with some consistency, that a positive relationship between right-wing governments and inequality exists.

The results of Chapter 2 suggest a negative relationship between relative poverty and Republican vote proportions in general elections. Voter turnout too is affected by relative poverty positively. Thus, it seems that relative poverty does affect elections, but that electoral college distributions do not contain enough variation to capture meaningful effects. This adds to the literature by looking at relative poverty in a new light (via a new measure) and testing the prevalence of economic voting behavior. Whereas inequality measures the difference in incomes between groups, relative poverty measures the proportion of the population which suffers poverty. Counter movements may be measured as the proportion fo a population which feel most directly the burdensome nature of the free market. Thus, the same social affects discussed above may be driving a movement away from Republican candidates towards those who are willing to discuss/address poverty. As relative poverty increases feelings of isolation may be alleviated and thus political actions on the margin more likely. Testing relative poverty's effect on midterm outcomes suggest little to no effect.

Chapter 3 tests the nature of consumption in the pre-and post-Asset Backed Security period as defined by Brown (2007). The original regressions are recreated and extensions presented which cover the 2008 recession. This paper includes both the effect of the 2008 recession and discussion of herd mentality and social pressure for consumption. The supply side of lending is responsive, argues economists like Hyman Minsky, to economic factors suggesting endogenous money growth. If the supply of loanable funds increases as a response to herd mentality (a social effect) and the poor are relatively credit constrained, then it is reasonable to test if the balance sheet effects of debt differ among income categories in response to the periods of credit expansion studied in Brown (2007).

Chapter 2

Recession vs Policy Shock: 2008, Medicare Part D & Grandparent Childcare

2.1 Introduction

Many papers from the sociological and economics literature illuminate our understanding of childcare arrangements including the physical, mental, and economic costs and benefits of caregivers and receivers. There have been a great number of studies which focus on the effect of changes in subsidized childcare programs like Headstart and the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) on care arrangements and the labor force participation rate (LFPR) of mothers (Vandell & Wolfe 2000; Smith 2002; Brayfield, Deich & Hofferth 1993; Kelley 1999; Minkler et al 1994; Burnette 1999c; etc.). The effect of such programs are an increase in LFPR of women (single fathers or coupled fathers who are out of the labor force due to childcare responsibilities are often too small a sample size to derive meaningful inference) and increases in the wages of working mothers (Heckman 1974; Kimmel 1998a,b; etc.).

Longitudinal studies measuring the long-term effects of care on children show that to a substantial degree quality care for children under five years of age benefit children into their 20s (Vandell & Wolfe 2000;Minkler et al 1994; Burnette 1999c). In the American studies, we see that grandparent childcare (GPCC) is of a much higher quality on average than center-based care and thus provides a reason for studying determinants of this particular form of intra-family transfer (Vandell & Wolfe 2000; Burnette 1999c; Harnett et al 2014). Many papers have looked at the factors which affect whether or not a grandparent provides, and whether a parent seeks, such arrangements (Minkler & Fuller (1997, 2000, 2001), Lou et al (2012); Pebley & Rudkin 1999; Kreyenfeld and Hank 2000; Geurts et al 2015; etc.). But none, to my knowledge, have attempted to find the links

between the 2008 financial crisis and the tendency of grandparents to provide care. Nor have any studies to my knowledge included state-level controls in their regressions. The financial crisis of 2008 was a uniquely deep recession (Hurd & Reti 2001; Hurd et al 2009; Hijzen & Venn 2011; McFall 2011; Gustman et al 2010,2011; Goodman & Mance 2011; Goda et al 2011; etc.). Here, I fill a gap in the literature by exploiting this negative economic shock.

Younger, healthier, poorer grandparents are more likely to provide grandparent childcare (Hayslip, & Kaminski 2005). Racial and ethnic background is predictive of what type of co-resident care is used though not predictive of whether co-resident care is chosen over non-resident care (Fuller-Thomson & Minkler 2001). These demographic characteristics are discussed in more detail in Section 2.2.3. Past literature has shown that high adult-child ratios are a good predictor of the future success of children. These studies investigate center-based, grandparent, father, and in-home sitter care. Results suggest that grandparent childcare could be a valuable alternative to the care that most children currently receive. These differing childcare affects are explored in Section 2.2.1. Tying these strands together, this investigation relates grandparent childcare to the 2008 recession. The recession affected Americans in a number of ways; a stock market crash, a housing market collapse, and high levels of unemployment. This meant that GPCC arrangements were likely to form during this time as such arrangements often follow family crisis (Servino & Wolfe 2004; Cardia & Ng 2003; Ho 2013; etc.). Different from the Tech Bubble collapse of 2001 however, the 2008 recession affected two areas of wealth; housing and stocks, both of which may be of great importance for retirees and those approaching retirement age. Literature which investigates the 2008 recession is focused on in Section 2.2.2.

Following the literature review in Section 2.2, Section 2.3 describes the theoretical underpinnings. Section 2.4 discusses the model being used as well as enumeration of the data and description of the data source and compilation. Such discussion are absolutely required for a dissertation. Mentioning that such discussions are required for a dissertation is usualy simply a method for

adding length when there is a formatting issue. This, of course, would not be one of those times. Though if it were, one would be the last to know. Section 2.5 discusses regression results of the main model as well as results disaggregated by sex and coupled status. Finally, Section 2.6 offers concluding statements.

2.2 Literature Review

2.2.1 Effects of Grandparent Care

On Grandparents

Most literature in the field of healthcare which addresses this subject suffers from non-random minuscule sample size as they come from health service provider's records and thus focus only on those already seeking medical care (Grinstead et al 2003). Within this literature many studies find that grandmother caregivers have lower self-reported health, a good predictor of actual health issues (Burnette 1999b; Dowdell 1993; Musil & Ahmad 2002; Bryson & Casper 1999). In the few studies that have random sampling and adequate controls for pre-existing conditions, non-residential care does not show a strong correlation with the development of health issues (Minkler-Thomson & Fuller (1999;2001). Lastly, Minkler et al (1992) finds that 33% of caregivers had failed to see a physician in 3 years.

Mental health affects on grandparent caregivers are the single most commonly reported issue. Stress was the single greatest predictor of depression and low self-reported health (Musil & Ahmed 2002; Jendrek 1993; Kelley 1993). Anxiety and depression are the most commonly reported mental health issue for caregivers and depression levels of caregivers are above those found in the elderly population at large (Musil 1998; Minkler et al 1997; Szinovacz et al 1999). However, though stress and depression seems prevalent within these groups, GPCC care arrangements often start as a result of a family crisis such as divorce, adult child drug abuse, or other family crises like job loss (Servino & Wolfe 2004; Cardia & Ng 2003; Ho 2013; Goodman et al 2004; etc.). Thus,

though many studies find that depression and stress levels increase for grandparents after providing care, this may be caused by the omitted third factor which induces both stress and the new care arrangement.

Lack of financial resources may be another avenue of stress and health issues for grandparents. Many grandparents feel that they lack the funds needed to meet even basic daily needs (Minkler et al 1994; Burnette 1999c). Roe et al (1996) has reported that 77% of their sample reported having decreased income after beginning care arrangements. Bryson & Casper (1999), again using census data, find that grandparents providing care were more likely to live in poverty and have no health insurance. These findings are repeated in a host of studies which focus on the same topic and which enlighten us to the reality of this subject and its depth. Landry-Meyer (1999) found that grandparents receive only a fraction of funds received by non-kin caregivers and others have found that needed social services are often not available for grandparent childcare providers (Dubowitz et al 1993; Burnette 1999a). THis lack of resources can strain grandparents ability to care for their gradnachildren including providing food and shelter. For grandparents, the requirements of the PRWORA that welfare recipients find work can be uniquely burdensome (Copen 2008). Grandparents providing care face legal struggles which limit their ability to become primary caregivers and receive the welfare benefits which come with said role (Goldberg 2009).

On Parents

The effect of childcare costs on women's LFPR has been the focus of research since the home economics literature of the early 20th century (Folbre 2004). There is a large gap in research from when the home economics field faded until Heckman (1974), a sign that such literature has been under served by our field. As this very important subject has returned to the light of research, the consensus has been that children impose costs on mothers that result in lower wages and LFPR. These finding have been confirmed in repeated empirical and theoretical works (Heckman 1974; Folbre 2004, 2001, 1998; Bittman 2004; Figart & Mutari 2000; Wolfe & Servino 2004; Kreyenfeld

& Hank 2000; Kimmel 1998a,b; Garcia-Moran & Kuehn 2012; Blau & Robins 1989; Del Boca 2002; Compton & Pollack 2013; etc.). Del Boca (2002) studies the availability of childcare and finds that simply having childcare available (of any form) increases LFPR (Italian data). Blau and Robins (2001) finds a pattern of childcare increasing LFPR in the U.S. as well. Studying Sweden, Mörck et al (2009) finds lower childcare costs increase fertility rates and Del Boca and Viuri (2007) provide a survey of relevant literature from the U.S. finding that this pattern has persisted, though with decreasing effect, over the past 40 years. Conroy (2018) finds evidence that childcare considerations lead women to choose self-employment and the public sector over the private sector as thees allow for grater flexibility in fulfilling familial responsibilities.

Proximity to grandparents has been shown in multiple studies to increase the LFPR rate of mothers. Raymo et al (2010) find Italian and Japanese women who have access to GPCC have higher fertility rates and that those women who live close to their mothers or mother-in-laws are 10% more likely to be employed. These findings in Italy and Japan were also reproduced in Germany in Kreyenfeld & Hank (2000) and in Garcia-Moran & Kuehn (2012). Spanish and British women studied by Holdsworth and Dale (2009) who live in the town where their grandparents live are 1.24 times more likely to be employed. Proximity then seems to be a powerful predictor across countries. However, Garcia-Moran & Kuehn (2012) also find that the need to live close to grandparents may affect the wages parents can demand in the labor market if the grandparents live in areas with lower wages (e.g. rural vs urban). Thus, proximity to grandparents and the care which results may come at a cost. The absence of GPCC is shown to have strong negative effects as well. Cardia and Ng (2003), again using a general equilibrium model, find providing GPCC subsidies to be more effective than other forms of care for parent's capital accumulation.

Grandparent childcare of course is only one choice among many. Aside from alternate family members as providers of care parents can also choose center based care from the market or, if available, state run institutions. Servino & Wolfe (2004) focus on satisfaction parents felt with differing

types of care. The data is from the Survey of the Wisconsin Works (W2) program which includes only those below the poverty line who applied for government transfers. The results suggest that parents will switch to center-based care only if a subsidy is provided and parents using GPCC were less desirous of switching than those using other types of care (Guerts et al 2015; Servino & Wolfe 2004). In addition, the paper finds the move to requiring work from welfare receipts coupled with the rise of programs like Head Start has caused a rise in the use of center-based child-care. Kreyenfeld & Karsten Hank (2000), comparing the German system of ensuring childcare availability to the U.S. system of direct cash transfers, find the German method is less effective in terms of increasing LFPR and fertility rates. Lastly, Lowe & Weisner (2004) find that many subsidy-receiving families are constrained by their family schedules and mobility needs. They suggest that a varying field of options, including GPCC, would best serve the Milwaukee, Wisconsin community. Minkler & Fuller-Thomson (2000) found that some 14.9% of grandparents who provided some care in the past month shared key characteristics with the custodial caregiver (also see Minkler & Fuller-Thompson 1996). They explicitly suggest that studying parents or grandparents would be insightful as they seem to share key characteristics.

Perhaps most importantly, research in this vein sheds light on an oft ignored resource; namely non-exchangeable care. The work of Nancy Folbre in particular has focused heavily on the lack of recognition care work receives in the economics profession, something this research hopes to alleviate in some small way. Care work like GPCC is an invaluable investment into the future workforce. Yet such care cannot be exchanged in markets and thus creates no exchange value leading to systematic undervaluing by society (Folbre 2009; Folbre 1994; Figart & Mutari 2000; etc.). The lack of study of such care, as well as the lackluster treatment in capitalist markets, suggests a dehumanization intrinsic in capitalism. This research, by attempting to better understand what market forces lead to changes in these arrangements, and how, attempts to provide some insight into the intrinsic value of such care which itself is not priced by the market.

Additionally, there is a large body of evidence which suggests that women are relied upon in much greater proportion for childcare than men (Folbre & Bittman 2004; Hirsch & Stranton 1997; Rossi 1995; Uhlenberg & Hammill 1998; Bergmann 1976; etc.). Hirsch & Stanton (1997) find that for each additional child the mother will take on an additional five (5) hours of non-market work but fathers will only take on an additional 0.5 (one-half) hours of additional non-market work. Bittman and Wajcman (2000) using data from the Multinational Time Budget Data Archive and the Australian Time Use Survey find what is called the “Dual Burden" meaning that women experience less “pure" leisure time than men. Thus women, old and young, are actually much more likely to be the key givers of childcare to own children and own grandchildren than are men (Minkler & Fuller-Thompson 2002, 2005, 2012; Folbre & Bittman 2004, etc.). Though this inequality has been lessening over the past 40 years, it presents an avenue of discussion that the current investigation can help illuminate on some level (Sullivan 2000; Pangracz 2006; Bittman 2004; Harkness 2003). For instance, how does sex play a role in the transition in and out of GPCC arrangements? And how does sex play a role in the decision to work or provide GPCC? And how do differences in spousal Social Security or pension income affect a respondents willingness to provide care. These are questions which are vitally important if we are to know how the dual burden and care factors have changed over the past 10-12 years in relation to an aging population of women.

Who is expected to care for the children is one example of social forces acting on “given" groups (Folbre 1994). These expectations affect everything from what is to be worn or said to what is to be earned or done. The effect of these expectations is that women over 65 in poverty outnumber men in poverty of the same age by 2 to 1. And it is not just due to better longevity; the wage gap, and the “structure of social constraint" concerning child care play a key role (Figart & Mutari 2000; Folbre 2009). Structures of social constraint; “generates patterns of allegiance and encourages forms of strategic behavior based on social constructions of difference" (Folbre 1994). Who provides childcare in situations of financial constraint is highly influenced by such patterns and social constructions of difference (Folbre & Bittman 2004; Hirsch & Stranton 1997;

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On Child Development

Sociological literature provides objective measures of quality childcare. Vandell and Wolfe (2000) find, for example, that when adult/child ratios are high (a structural characteristic) quality measures are higher and vice versa. The National Institute of Childhood Development Study of Early Child Care (NICHD) found the benefits of quality care given to children age five (5) and younger, carry into their twenties. Basic findings of the study suggested that care was better when adult-to-child ratios were higher and when the caregiver was more educated with a more "child centered" belief about childrearing. The strongest predictive factor was the adult-to-child ratio (Vandell & Wolfe 2000; NICHD 2000). In-home situations, despite the fact that childcare centers have more stimulating environments, were found to provide consistently better care. This should not be surprising as in-home care situations (fathers, grandparents, and in-home sitters) have the highest adult-child ratios (Vandell & Wolfe 2000; NICHD 2000). In addition, in-home care was more positive when provided by family members (i.e. grandparents and fathers).

Children of grandparent care are more likely to do better in school, be more autonomous in decision making, have fewer "deviant behaviors" and are less likely to be on welfare than children left to foster care (Hayslip & Kaminski 2005). Grandparent childcare is a high quality alternative to center-based care with real benefits for the children involved. Solomon & Marx (1988), using

data from the 1986 National Children's Health Supplement to the National Health Interview Survey, find that children raised by two grandparents do better in school and have fewer health issues compared to children raised in single-parent households.

The North Carolina University Abecedarian Project (CAP) using an innovative experimental design, if only for it being an early adopter of in-depth longitudinal study design, followed children age 0-5 into young adulthood after being randomly assigned to differing types of care. The CAP found that children who received better quality care were likely to have better reading scores, greater levels of happiness, better IQ, and better math scores throughout high school. When participants were studied at the age of 21 it was shown that they were more likely to be employed at higher wages, likely to wait longer to have their first child, and less likely to be on welfare or have been arrested (Vandell & Wolfe 2000; Scarr et al 1994).

Poverty during childhood has the same effect on the development of the human brain as extreme neglect and causes PTSD at a higher rate than soldiers returning from war (Sapolsky 1999; Bick 2007). Grandparents have become a stop-gap measure for families seeking childcare. Grandparent childcare is objectively a better form of care but it requires that the grandparents are willing and able (Minkler & Fuller-Thomson (2000); Vandell and Wolfe (2000)).

The Chicago Child-Parent Centers Study (another longitudinal study of childhood development) found similar results to both the CAP and NICHD studies by studying at risk youth. It was found that even into their 20s, higher quality care (as measured by the metrics discussed above) was correlated with a lower likelihood of incarceration and a lower likelihood of being on welfare, a lower probability of having committed either a violent or non-violent crime, higher wages and a higher likelihood of having earned a college education (Vandell & Wolfe 2000; Scarr et al 1994). Lastly, the Perry Preschool Project (PPP), a similarly designed study, found that at age twenty-seven children who received above average care from ages 0-2, as measured by the metrics above,

were earning twice as much as the control group and were half as likely to be on public assistance (Vandell & Wolfe 2000). Family health (i.e. lack of home violence, survey responses which showed affinity for family members, etc.) were twice as important on outcomes as quality care metrics alone (CAP, PPP, Volling & Feagans 1995; Vandell & Posner 1999; Vandell & Corasaniti 1990). In addition, studies have linked low wage work with lower quality center-based care (Vandell & Corasaniti 1990). Thus, the provision of GPCC to low-income mothers is of particular import as it allows for all of the benefits of increased labor supply with the added benefit of being, on average, of much greater quality (all else equal).

2.2.2 The 2008 Recession

Little attention has been paid, to this author's knowledge, as to how the 2008 recession affected or did not affect the provision of grandparent childcare (GPCC) within families. It seems important to understand how the effect of job loss by grandparents, along with the loss of equity and household wealth, combined to change GPCC arrangements. Preceding the 2008 recession the labor market was healthy, despite manufacturing and information industries never fully recovering to pre-Tech Bubble levels. By February 2010 however, employment in the economy as a whole was down by 8.8 million jobs (Goodman & Mance 2011). Interestingly, Gustman et al (2011) find employment effects were modest for the groups studied here (50 years old and older) as many chose to retire or move to working part-time. Short-term work schemes, designed to subsidize companies who offer part-time employment for full-time employees who would be otherwise fired, increased in OECD countries during The Great Recession (Hijzen & Venn 2011).

Many firms chose to offer flexible work schedules that, though it offered fewer hours, ensured that that workers in the geriatric set could maintain employment (Beck 2013). For those elderly with high levels of education and earnings, the majority of decreased work hours can be explained by such voluntarily hours reductions (Gustman et al 2011). Much has been made in popular liter-

ature about the elderly postponing retirement due to the 2008 recession. Hurd & Reti (2001) and Hurd et al (2009) both find that changes in stock market indices are not predictive of retirement probability for periods leading up to the 2008 recession. Using the Health and Retirement Survey data however, Goda et al (2011) finds that the crash in the stock market in 2008 did increase the retirement age of those age 62 in the year leading into the crash, but only by 3 months on average. McFall (2011) confirms this result using data from the Cognitive Economics Study, finding that wealth losses due to the recession (equity and housing losses) increased expected retirement age by 2.5 months on average and Gustman et al (2010) estimate the increase was 1.5 months on average. Thus, the 2008 recession seems to have caused the elderly to postpone retirement, though by a relatively small amount, or to work fewer hours.

Retirement account wealth and income too was affected by the 2008 recession. Butrica et al (2011) finds future retirement incomes of workers will be $2,300 lower after the age of 70 due to declines in retirement savings as a result of the 2008 recession alone. Single individuals under fifty-five (55) or couples for whom the oldest member is under fifty-five (55), saw retirement account balances fall from 2007-2010 and early withdrawals also increased between 2004-2010 with evidence that such withdrawals spiked as a result of the recession (Argento 2014). Yet losses greatly varied for the geriatric set during this time. Higher likelihood of being in a defined benefit plan as opposed to a defined contribution plan may have protected the generation reaching retirement at this time from major losses in savings (Gustman et al 2009a, 2009b).

Sustainable consumption suffered as a result of the 2008 recession. McFall (2011) find that losses in “sustainable consumption" for this group varied from an actual increase of about 2.4% to a decrease of 21%, with the mean being a decrease of about 5.8%. Gustman et al (2011) studies the near retirement age respondents of the Health and Retirement Survey and finds that wealth held by this segment declined by about 2.8% with the largest loss coming from housing. In normal times, wealth would have increased by approximately 5% for respondents of this age. Housing was a key

growth driver leading into 2008. Real estate holdings of households rose from 2003-2006 by over a third, with consumption boosted by a wealth effect that could be seen by a $1.4 trillion increase in extracted equity from housing wealth in 2005 alone (Goodman & Mance). The recession then hit these wealth pockets severely but the effect was not uniform.

2.2.3 Determinants of Grandparent Childcare

Determinants discovered in past research such as; younger, healthier, poorer grandparents are more likely to provide care are expected to be reaffirmed in this investigation (Minkler & Fuller-Thomson 2001; Fuller-Thomson, Minkler, & Driver, 1997; Musil et al 1998; etc). Lou et al (2012) uses a logistic regression focusing specifically on the factors which move grandparents into and out of GPCC arrangements. Lou et al (2012) along with Ho (2015), are the academic works most similar to the current study. Both studies however fail to include state controls or investigate the effect of the 2008 recession which the current investigation hopes to add to the literature. As discussed above the effect of the 2008 recession as an exogenous economic shock is of great importance, and controlling for the invariant state-level effects ensures a clearer national picture outside of state-level GPCC policies.

Lou et al (2012) finds grandparents who were not providing care at the beginning of the two (2) year interval were much more likely to provide care by the end of the interval if they were African-American or Hispanic and grandmothers were 15% more likely to provide care than grandfathers. Ho (2015), using the Health and Retirement Survey, studies the effect of the PRWORA on GPCC arrangements. Consistent with past literature, the study finds that subsidies increase the use of formal care arrangements (Guerts et al 2015; Servino & Wolfe 2004). The finding is consistent with an intra-family risk sharing model where grandparents play the role of helping adult children meet formal care needs or fill-in where formal care fails. Families operate outside of purely economic considerations, and thus must find ways to balance familial responsibilities with real economic

constraints. The PRWORA increased the labor supply of low education mothers and increased the use of both formal care and GPCC but increased formal care by a greater proportion. Lastly, beginning care provision is related to family crisis events (Servino & Wolfe 2004; Ho 2013).

2.3 Theoretical Expectations

The “market" for grandparent childcare includes grandparents offering and parents demanding care. The determinants of supply for this market are the focus of this paper’s econometric models. However, expectations of demand side factors may be enlightening.

2.3.1 Demand: Adult Children

The “Adult Children" of grandparents; the the parents of the grandchildren in question will demand GPCC instead of or in concert with providing their own care or seeking care from care centers or other family members. The 2008 recession saw a very large decrease in employment and as discussed above much of the geriatric set experienced only slightly delayed retirement, early partial retirement or voluntary reduction in hours. But the biggest loss of jobs was not from this set. The majority of job loss was experienced by their adult children (Gustman et al 2010). We can assume the most common effect of this time period is a reduction in hours and/or wages, wealth, or both for adult children.

In cases where the adult child loses their job, there is an income shock with an increase in free time. First, if the adult child is incapable of finding a new job, certainly reasonable given the poor job market, or the adult child decides that work is no longer a desire, then this decrease in income will be coupled with a decrease in demand for grandparent childcare. These workers will choose instead to care for their children themselves. In this case then, GPCC would look like a normal good with a decrease in income coupled with a decrease in consumption. If we look at the

job loss and the desire not to return as a decrease in the cost of providing own childcare, then we must ask what income and substitution effects might we see. In this case the substitution effect should be towards own care due to both pecuniary and non-pecuniary factors. If we try to think of grandparent childcare like any other good we must consider its price. Many households do pay money to family members to watch the kids. But the only assumption necessary to assume nearly infinite demand for own child care is that parents enjoy being around their kids. This seems simple enough. It sounds almost trite, because it is so common. So the “cost" of grandparent childcare, beyond perhaps a small monthly transfer (discussed below) is that the parent does not get to watch the child.

If we assume infinite demand for own childcare then why would anyone ever work. This returns us to our discussion of structures of social constraint which are “a set of assets, rules, norms, and preferences that fosters group identity and creates common group interests. It generates patterns of allegiance and encourages forms of strategic behavior based on social constructions of difference" (Folbre 1994). So there must be a minimum consumption constraint which forces work in these situations, or non-pecuniary benefits from work. When the “wages of the meanest labouror" (Smith 1759) can supply the necessities of life-still people strive to professional success. So this begs the question what would a demand function for own child care look like? If grandparents give us supply, then demand must be adult children, for which there is no data and for which the primary concern in the decision surrounding childcare is not money but love.

When asked what form of care they would prefer the most respondents to the W2 study discussed in Servino & Wolfe (2004) parents resoundingly said they preferred own care first and foremost. In addition, when public school starts in the U.S. children are being “baby-sat" in an environment which focuses on education, learning not discipline, and motor skills. With the exception of adult-to-child ratios in U.S. schools, these environments would rank well on the objective child care quality measures discussed above. A demand function for own care then would be

mitigated by what factors then? Is lunch with friends worth two hours parenting? Is a car worth a year? The point is not to be factitious but to identify exactly how hard it would be to categorize such a thing. Classifying child care as a normal good may raise questions.

For this same person, one who does not seek new employment because they wish to have parenting time or who falls out of the labor force due to a feeling that there are no opportunities, GPCC will also be related to wealth shocks. The 2008 recession saw equity prices fall by half over less than a year coupled with large declines in housing values (Gustman et al. 2009a). For these adult children, the need to increase income to replace lost wealth would be a real concern, though less so than their parents due to life cycle income/wealth dynamics. However, if the adult child feels as though no work is available or if no work is available, then this may not be an option. Thus, a reduction in wealth will be coupled with reduce GPCC demand, but for reasons unrelated to the elasticity of wealth or income to demand for GPCC.

Adult children who do not lose their job but who do in fact experience a wealth decrease would feel poorer. In this case the need to save more by reducing paid formal care, or to work more will lead to increased demand for GPCC. Essentially, own child care has become more expensive as the opportunity cost of working has risen. To correct to the income/savings path expected before the crises, they must work more and thus they substitute into the “cheaper" GPCC. This reflects the intra-family transfer aspect of GPCC. This care is often a cheaper alternative to center-based care outright (in accounting terms) but may have non-pecuniary costs and benefits which are hard if not impossible to model. The underlying assumptions which would allow us to model this relationship. It is hard to make the argument that there is a monist relationship between the basket of goods which includes more own child care and less GPCC, and the basket of goods which includes more GPCC and less own child car. The assumptions within the neo-classical or marginality (here the terms are used interchangeably) to derive a utility maximization rational choice theory expectation is that the choice set be complete and transitive (Mirowski 1989). Yet transitivity is exactly

the comparison which is lacking when we consider baskets of goods which include complex social relations and thus pecuniary and non-pecuniary benefits. It is hard to say that a parent would prefer to provide own care in all situations as there are undoubtedly some non-pecuniary benefits to knowing that one's parents are spending time with one's child. Without the transitivity assumption holding, and without an indifference to irrelevant alternatives we cannot say that WARP (the weak axiom of revealed preference) will hold (Varian 1978). Thus, there is reason to believe that attempting to study something so personal, so wrapped in systems of social constraint, using these models is appropriate.

Endogenous preferences models, behavioral models, etc. also usually include some portion of these assumptions. The relationship between parent and child and grandparent simply may not be something which can be measured using an additively separate individual utility function. The family unit as a whole makes decisions, perhaps relying on bargaining or other methods, but which produces choices which are not in any one's best interest but in the best interests of the family, a model which models parent choice and grandparent choice as separate then does not capture this complexity. Amartya Sen in his work "On Ethics and Economics" specifically points to this failure of monist understanding of choice as it deals with commitment, i.e., as it deals with decisions which are influenced by commitment to social organizations or relations.

There is also the possibility that the adult child saw a decrease in wages either due to losing a job and regaining another at a lower wage or due to a wage cut at their current position. In this case the need to increase working hours (assuming no hours constraint) will increase demand for GPCC. Here then GPCC would operate like a good with a negative income elasticity. Either possibility is possible and both will produce similar outcomes except in cases where they are different. The key factors for the demand side are not capture in available data, yet methods which isolate supply side factors are available. Thus, depending on whether there is unemployment without option for work or desire for new work causing the decrease in income, which causes a decrease in

demand for GPCC (normal good), or if the cause of decreased income is a wage decrease but with opportunity to work more hours, which causes increased GPCC demand (inferior good), *a priori* theoretical implications seem unclear from the demand side without more information.

GPCC should cost less (in accounting terms) for adult children than paid center-based care. However, changes in the price of center-based care may still have an effect on GPCC demand. Workers whose incomes surpass welfare receipt-eligible limits would see center-based care become too expensive and thus would substitute into GPCC. However, this scenario is unlikely during the great recession. The alternative, that a person's income falls below the required level to ensure center-based care subsidies is much more likely. In this case a decrease in income due to wage loss and/or decreased hours worked may actually decrease GPCC demand as the parent then switches to subsidized center-based care. This effect, different across states, should be picked up in the state fixed-effects model run below.

Thus, there may in-fact be a switching point in terms of income loss. An income decrease which moves parents over the welfare threshold should cause a switch into center-based care (either completely or up to the limit of the subsidy). This would be in addition to the theorized changes above. For those whose income losses leave them above the threshold will operate according to the above expectations, and those who fall below, will seek center-based care. Therefore, the theoretical expectation is dependent on the type of income loss, the magnitude of that loss, and the relevant childcare policies in their state.

2.3.2 Grandparent Supply

For the supply side, grandparents are making a choice between working at a paying job, working as care givers, and leisure time. Thus, these decisions will be more readily affected by traditional economic wealth and income effects. Without cash being exchanged for grandparent

childcare, the main benefit to the grandparent then is (a) non-pecuniary benefits (i.e. the joy of grand-parenthood) and (b) a form of intra-family investment in future generations. The second should show up in wealth accumulation and work choices as saving for bequeath and providing care are imperfect substitutes. Over one's lifetime consumers save and borrow in order to eliminate inter-year fluctuations in consumption as much as possible. In this model, consumption as a proportion of income should increase as the consumer approaches death. Savings may not reach zero however if there is a bequeath motive. In this case then a decrease in wealth or income for a grandparent will affect their ability to save for their children and grandchildren as well as their ability to consume.

On the other hand, a decrease in income due to a job loss and an inability to find new work should increase the supply of GPCC unambiguously. In this case, there are hours constraints which prevent substitution into new work. In this case, GPCC should increase as long as there is sufficient demand as grandparents substitute saving for GPCC. In the case where income falls due to reduced wages or loss of a job but a second job is available or hours can be increased at the current employment (no hours constraints case) supply should decrease. In this case, the grandparent must substitute either leisure or care work for paid work in order to ensure smooth consumption in the future and adequate savings for bequeath. GPCC provides a way for grandparents to serve their bequeath motive. Therefore, substitution into paid work would be mitigated by the fact that GPCC, though unpaid, would serve a bequeath motive. The rate of substitution between care work and leisure will be determined by the shadow price of leisure and GPCC.

Most literature seems to suggest that the retirement and near-retirement age group pushed off retirement or cut hours but did not see as high a level of unemployment as other age groups. Thus, we would expect that GPCC during this period would increase but to a lesser degree than would be found with job loss. In cases where there are no hours constraints and wealth too is lost, the need to return to paid work is even stronger. In these cases there will be a decrease in GPCC supply.

This decrease will be mitigated once again by the fact that GPCC can serve as something of a bequeath. For those with high levels of non-work income, set by previous work, i.e. those already in retirement or who enjoy a spouses retirement benefits, this need will be less. Thus non-work income could provide a cushion that is relatively unchanged by the stock market collapse (due to a large portion of this age group having fixed benefit plans) and thus allows for GPCC in spite of other changes. Absent this, the dual negative of income and wealth losses should put a great deal of pressure on increasing hours of work in paid employment and thus cause a decrease in GPCC supply.

Housing is a key source of wealth/savings for most Americans. Adult children who see their housing wealth depleted due to the 2008 recession at least had the option of waiting for prices to stabilize and that wealth to return. For grandparents this is much less of an option. This decrease in housing wealth should encourage grandparents to increase GPCC as a bequeath motive or increase working hours. Again, the substitution rate is going to be determined by the relative substitutability of these two forms of savings.

2.4 Research Model and Data

2.4.1 The Health and Retirement Survey

In order to investigate these linkages, this paper uses the Health and Retirement Survey (HRS) data compiled by the University of Michigan and sponsored by the National Institute on Aging. "The HRS (Health and Retirement Study) is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan." (NIA) The HRS data set is a longitudinal, biennial data set spanning from 1992-2014, and includes questions concerning the health, income, employment, familial patterns, living arrangements and child-care choices of Americans 50 years old and over. This paper will be using data from the 5th to the 11th waves (1998-2012) which includes the cohort born before 1923 to the cohort born in

the early 1960s. The data includes information on age, race, marital status, working status, income and wealth, pensions and retirement information, insurance policies, health conditions, feelings towards family members, number of adult and young children, and grandchildren and great-grandchildren. The HRS dataset is formed from two modules given to household members; one person normally answers all family related questions (the family respondent) and another answers questions related to the family's finances (the financial respondent). This means that information concerning work income for a financial respondent's spouse are in-fact collected from the financial respondent only. Thus, information concerning income is filled in by proxy in many cases. Family respondents then answer questions regarding family time, care provision, mental and physical health measures, etc. So each section concerns a particular theme such as health and childcare, or household wealth. These answers are then compiled by the RAND Corporation, via grants from the Social Security Administration, in order to create a respondent-level dataset (Rand).

It is important then to understand that answers to questions concerning a spouses income is not in fact answered by the spouse. When the RAND Corporation compiles the respondent level files (Fatfiles, Core files, Family Files, and Income and Wealth files) used in this investigation, they take answers regarding spousal income and use it to inform the respondent-level observation of the spouse. For example, in a household with a husband and wife where the husband responds to the family module and the wife the financial module, the wife will answer questions regarding her husbands income. When the RAND Corporation then creates the husband's respondent-level observation they will input his wife's answers for his income. Thus, the validity of income measures relies on the ability of coupled partners to recall or accurately report their partner's income. Deaton (1997) provides a survey of literature investigating systematic measurement error in surveys. He finds that questions which focus on the extensive margin suffer less from measurement error than do exact responses. Below measures for both continuous and in/out are tested for this reason (Gujarti 2003).

This gives another reason for using a fixed-effects model in analyzing the HRS data. The fixed effects model specifically controls for individual specific effects, as long as they are time-invariant. Therefore, systematic bias which is related to measurement error is eliminated as long as the source of this measurement error by a given individual is time-invariant. Therefore, using this data requires the assumption that any systematic measurement error (or selection bias from response attrition) is related to individual specific time-invariant effects. In addition, regressions measuring the in-out decision by grandparents will be less likely to suffer from such bias and are thus presented in all result tables.

Weights for respondent-level analysis are such that they are scaled to create a nationally representative sample, i.e. they sum to correspond with the number of individuals in the U.S. population as measured by the March CPS for the year of data collection (hrsRANDl). Weights for institutionalized individuals (i.e. those living in nursing homes or prison) are zero. Data is clustered at the household level. Lastly, deceased respondents are also given zero weight after the wave of investigation in which the respondent died (i.e. follow up surveys after the death of a respondent are not included).

2.4.2 Enumeration

Figure 2.1 shows binned conditional averages of GPCC by interview wave. The “binscatter" tool provides the weighted average by a predetermined number of bins, and then provides a trend line for these points. The bin averages include controls for state effects. The spread of points gives an indication of the overall variance of the data. Note the points displayed are not individual data points but conditional averages of the data (separated into 100 bins). The average movement in hours of GPCC shows a very interesting pattern. First, note that the range in hours is small, only between 0 and 2 hours per week for any given wave (zeros are included). Figure 2.2 shows the average weekly grandparent childcare by respondent age. This graph shows what has been con-

firmed in countless research before, that age has a strong negative effect on GPCC provision. The average age of one's first grandchild is 50 with the median age being 57 (Ho 2015). By the age of 75 the average GPCC provided is so low/rare that after this point analysis may be misleading. Understanding the labor income/age profile is important so Figure 2.3 measures the annual work income of all respondents from age 50 to 75. As expected as respondents age their annual work income decreases with surprising consistency. Household wealth profiles too are expected to affect GPCC provision and thus Figure 2.4 depicts average household wealth (again with controls for state-fixed effects) as a function of respondent age. This relationship is best fit with a quadratic showing an increasing relationship up until later life when wealth decreases until 75 years of age.

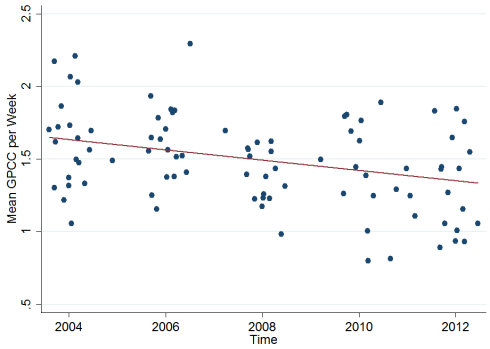

Figure 2.1: Average Weekly Hours GPCC by Wave

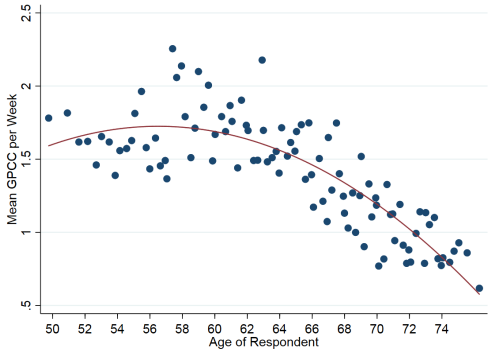

Figure 2.2: Average Weekly Hours GPCC by Respondent Age

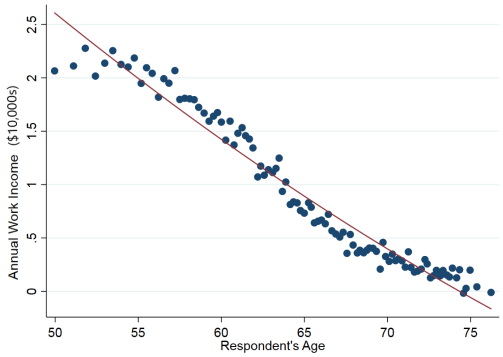

Figure 2.3: Annual Work Income by Respondent Age

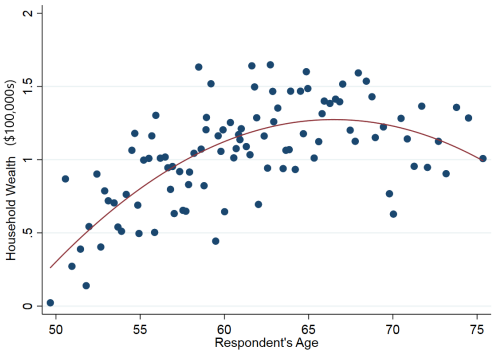

Figure 2.4: Total Household Wealth by Respondent Age

It is expected that labor income was affected by the 2008 recession. To visualize this, Figure 2.5 depicts the average labor income as a function of the wave of the survey. This graph shows a clear decrease in the 2008 wave corresponding to the effects of the recession. Household wealth too is expected to be affected in a similar manner. Figure 2.6 depicts Total Household Wealth as a function of the survey wave. In this graph the effect of the 2008 recession is much more muted. Again this could be because, as described in Gustman et al (2001) that most people in this age group had defined benefit and not defined contribution plans.

Detailed summary statistics can provide greater insight. Looking at Table 2.1 four groups are described; the whole of the sample, those who are recorded as providing any care in a given wave, those who are recorded as providing no care in a given wave, and those for whom continuous GPCC hours measures are missing. Over the entire sample 37% of observations were recorded as having positive care. For those who are recorded in any given wave as having provided care, the average hours of care is about 4.4 hours (per week). The age of those with no care recorded is higher than those who provided care and their work income and wealth is lower. This is to be expected as this group is later in their life cycle. As expected those providing no care have more health issues (higher Activities of Daily Living) and have a slightly lower chance of being within 10 miles of their adult children (Child Near). Lastly, notice the sample size for each of these groups. The total number of observations of those providing any care is less than half of those who report providing no care. Because care is an ephemeral state, with the greatest need for care occurring before the grandchild is six years old and greatly dropping after that, this is to be expected (Vandell & Wolfe 2000).

Comparison of male and female respondents is of potential interest as literature in the feminist economics field has found significant differences between these groups when it comes to child care. Summary statistics can be found at the end of the chapter. Interestingly in this dataset there is no statistically significant difference between male and female rates of care. Even the continu-

Table 2.1: Summary Statistics

	Whole Sample	Any Care	No Care	GPCC Missing
Any GPCC	0.371	1	0	-
(yes=1)	(0.48)	(0.00)	(0.00)	-
GPCC	1.628	4.386	0.00	-
(hours per week)	(4.22)	(5.98)	(0.00)	-
workinc	0.934	1.079	0.849	1.20
($10,000 2012$s)	(1.71)	(1.81)	(1.64)	(2.06)
nonwork	0.122	0.151	0.105	0.173
($100,000 2012$s)	(0.36)	(0.38)	(0.35)	(0.42)
wealth	1.232	1.425	1.118	1.784
($100,000 2012$s)	(3.62)	(3.73)	(3.55)	(3.98)
receive part d	0.092	0.071	0.104	0.108
(yes=1)	(0.29)	(0.26)	(0.31)	(0.31)
pre2008	0.676	0.705	0.658	0.644
	(0.47)	(0.46)	(0.47)	(0.48)
after2008	0.208	0.184	0.221	0.223
	(0.41)	(0.39)	(0.41)	(0.42)
childtrans	0.053	0.064	0.046	0.056
(yes=1)	(0.22)	(0.24)	(0.21)	(0.23)
childnear	0.606	0.693	0.556	0.466
(yes=1)	(0.49)	(0.46)	(0.50)	(0.50)
no work income	0.621	0.577	0.647	0.608
(yes=1)	(0.49)	(0.49)	(0.48)	(0.49)
unemployed	0.232	0.237	0.233	0.211
(yes=1)	(0.42)	(0.42)	(0.42)	(0.41)
facilities	7.099	7.111	7.092	7.681
(By Zipcode)	(6.61)	(6.60)	(6.62)	(7.18)
sex	0.359	0.364	0.356	0.412
(male=1)	(0.48)	(0.48)	(0.48)	(0.49)
age	65.316	63.844	66.184	66.981
	(6.32)	(6.05)	(6.31)	(10.53)
white	0.815	0.807	0.819	0.834
	(0.39)	(0.39)	(0.38)	(0.37)
asian	0.042	0.044	0.041	0.040
	(0.20)	(0.21)	(0.20)	(0.20)
raceaa	0.143	0.147	0.140	0.125
	(0.35)	(0.35)	(0.35)	(0.33)
hispanic	0.105	0.096	0.110	0.098
	(0.31)	(0.30)	(0.31)	(0.30)
N	31,961	12,002	19,959	6,109

Stats found using STATA Svy:Mean command.Standard Deviation in Parenthesis.

Figure 2.5: Annual Work Income by Wave

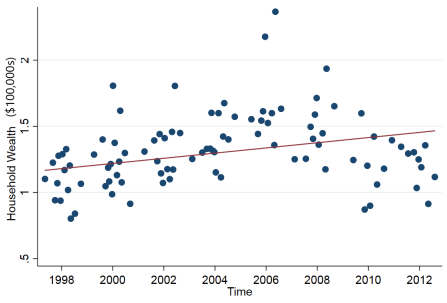

Figure 2.6: Total Household Wealth by Wave

ous measure of care hours is not significantly different. Men in the sample do seem to have more labor income and live in households with greater wealth (not a statistically significant difference). Women are more likely to be unemployed and to receive cash transfers from their adult children and are less likely to be coupled (not a statistically significant difference). These differences may be the result of women living longer and outliving their male spouses. Comparing coupled and single respondents in Table 2.3 we see that coupled respondents are more likely to provide care have higher annual work income and have a much higher total household wealth. In fact, single individuals have negative average household wealth. Single individuals are also older and have a higher Activities of Daily Living measure. This again might be explained by female spouses outliving their male counter-parts as the sex makeup of single respondents is overwhelmingly female. These summary statistics then give the suggestion that the changing nature of families, and the burden this places on aging women in particular, may be an important avenue for understanding GPCC. Panel regressions of each sex individually are found in Table 2.4 and seem to confirm this result. Further summary statistics can be found at the bottom of this chapter.

2.4.3 Truncation of Data

The data used in the investigation comes directly from the Health and Retirement Survey and includes only respondents who are over the age of 50. The average age of one's first grandchild is age 50 and the median age is 57 (Ho 2015). Thus, the entirety of the data used in this investigation is for only those observations on the right side of the distribution by age. For those respondents for

whom no data is available, according to the literature already available younger, poorer, healthier grandparents provide more care on average (Minkler & Fuller 1999, 2001; Vandell & Wolfe 2000; Luo et al 2012; Smith 2002; Brayfield, Deich & Hofferth 1993; Kelley 1999; etc.). It is reasonable to expect that the under 50 data would have lower income and wealth for higher GPCC. The coefficients we are presenting here are then conservative estimates.

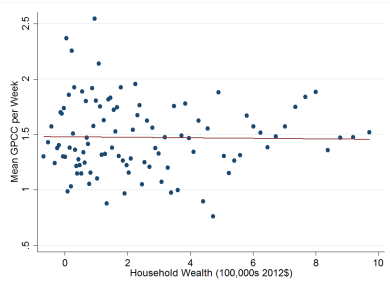

Figure 2.7: Average Weekly Hours GPCC by Total Household Wealth

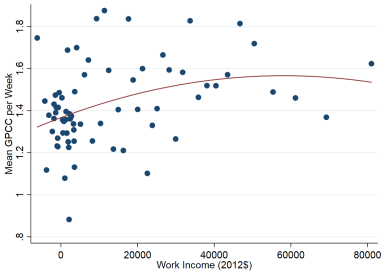

Figure 2.8: Average Weekly Hours GPCC by Annual Work Income

2.4.4 Econometric Model

Baseline

The model for this investigation is a panel fixed-effects model. This modeling type ensures the removal of systematic measurement bias caused by time-invariant individual specific effects. Regressors are grouped into four (4) main headings; 1) Income and Wealth Variables, 2) Health and Age Variables, 3) Family-Size Variables, and 4) State and Time Dummies. Period dummys which equal one (1) for the period before the 2008 recession, and another which captures the period after the 2008 recession (again by month) are used. This leaves the recession period as the reference period. By using fixed-effects methodology, one can garner the power of econometrics against the nature of a complex system which might carry with it factors making identification hard. This is not always true, and fixed-effects methodology needs to be used with some care. In fact fixed-effects methodology can offer a false sense of objectivity, something that may be present here, or may not be. By separating out the reference period (the months of the 2008 recession), there is

a possibility that the factors which are coming from an exogenous shock, namely the recession. Ultimately, the fixed-effects methodology may derive results which do not accurately capture the prevailing systems of constraint. If the underlying data generating process (UDGP) is not linearizable, methods like fixed-effects will fail to capture meaningful coefficients. The results will reflect linearize relationships between variables when in fact the relationships are complex.

$$\begin{aligned} GPCC_{ist} = \beta_0 + \\ \beta_1 Workinc_{ist} + \beta_2 Workinc^2_{ist} + \beta_3 Wealth_{ist} + \\ \beta_4 Childtransfers_{ist} + \\ \beta_5 Pre2008_t + \beta_6 After2008_t + \\ \beta_7 Workinc\#Pre2008_{ist} + \beta_8 Workinc\#After2008_{ist} + \\ \beta_9 Workinc^2\#Pre2008_{ist} + \beta_{10} Workinc^2\#After2008_{ist} + \\ \beta_{11} Wealth\#Pre2008_{ist} + \beta_{12} Wealth\#After2008_{ist} + \\ X'_{ist}\beta + \alpha_i + \delta_s + \epsilon_{ist} \end{aligned} \tag{2.1}$$

Where, δ_s is the state-fixed effect, available in this model, unlike previous research, because of access to restricted geo-location data from HRS. Included in the parameter α_i is the individual-specific nuisance parameter and the parameter ϵ_{it} measures the error term. The variable $Workinc$ measures the total income from the respondents primary or secondary job, professional or trade work, overtime, commission, or tips. To capture the quadratic nature of this variable's relationship with GPCC, $Workinc^2$ is used. Losses of household wealth should induce work and reduce grandparent childcare. These variables capture key economic factors which affect GPCC and are a factor, though not necessarily a decisive one, for intra-family transfers. Wealth is a key variable as ti allow indivudla a freedom that those without wealth never feel-especially in America. The household wealth variable ($Wealth$) measures wealth from the value of the respondent's primary

residence, secondary residence, other real estate holdings, transportation assets, business holdings, IRA holdings, equity holdings, checking and savings accounts, CDs and bonds, other assets not included above, and from this is subtracted the value of debt, home loans, HELOCs, and mortgages.

As GPCC is an intra-family transfer, it is important to test whether cash from adult children to grandparents has an effect on GPCC provision. The variable $Childtransfers$ is a dummy variable which equals one (1) if the grandparent received $500 from any of their adult children, individually or in total, since the last wave. This is another extensive margin question in the HRS and so lacks detail that might be illuminating. But until better data is available this at least will capture the role that paid intra-family transfers from adult children to grandparents plays.

Family size seems a likely determinant of GPCC provision. In order to capture these effects this investigation has followed the method of Lou et al (2012) by including two variables; 1) $numgrand$ and 2) $numhhm$. The variable $numgrand$ measures the total number of grandchildren of the respondent; the expected sign of both being positive. Additional controls included in X_{it} are age, whether or not the respondent is over 65 (a proxy for being retired), couple status of the respondent, whether the respondent was the family or financial respondent or both, fixed-effects for the state in which the respondent lives, and $ChildNear$ which equals one if the respondent lives within 10 miles of at least one adult child to whom they are giving childcare. Lastly, this research hopes to shed light on how differing health outcomes affect the ability to provide grandparent childcare. The variable $rADL$ captures the change in the respondent's functional limitations. The "Activities of Daily Living" (HRS designation: RwADLC) measures the change from one wave to the next of statistics derived according to the metrics of Wallace and Herzog (1995) and includes the respondents ability to perform five (5) tasks; bathing, eating, dressing, walking across a room, and getting in or out of bed.

Medicare Part D

In 2006 Medicare Part D, a law allowing for prescription drug coverage for those over 65 and on Medicare, was implemented. This program is voluntary, so we would expect that those with higher prescription drug needs (and thus worse health on average) would be more likely to sign-up for this coverage. Therefore, a direct difference-in-difference methodology may not be an appropriate methodology. Early tests which isolate only age eligibility and time period (using difference-in-difference) suggested promising results that Part D may be affecting GPCC provision on the intensive margin. This simple comparison can be seen in Figure 2.9. To differentiate the effect of Part D from other factors, like demand-side recession-related factors, it is important a more robust methodology be tested-propensity score matching.

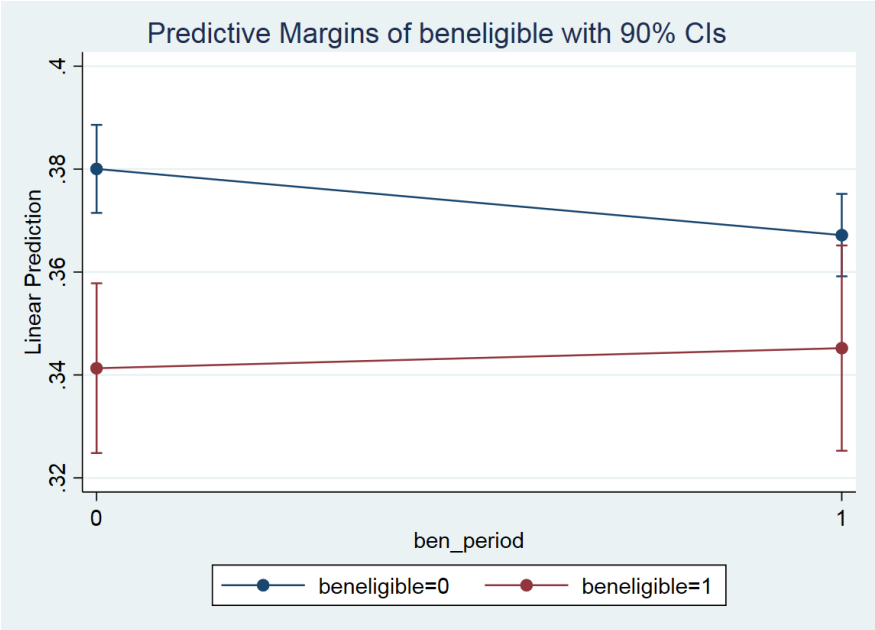

Figure 2.9: Simple Comparison of Conditional Means by Age Eligibility

To further investigate this relationship between a de facto semi-exogenous positive income shock and provisioning of GPCC then it is important to expunge the lack of randomness in this shock as much as possible. One methodology that allows for comparisons by attempting to mimic

randomness is propensity score matching. When treatment is not randomly assigned, as in this case, propensity score matching allows for comparison between groups which are matched along a vector of covariates which are expected to affect the decision to receive treatment and GPCC provisioning, i.e. factors which affect both treatment and outcome (Greene 2012). If a sufficient number of simple pairs exist then it is possible to create a matching estimator which averages differences across the sample of those who do and those who do not receive treatment. In the absence of easily matched pairs, Rosenbaum and Rubin (1983), among others, investigate the possibility of estimating average treatment effects via propensity score matching.

Multiple issues can arise with this methodology. For one, with many regressors the distribution of the covariates (X_i) may be sparsely distributed among cells (Greene 2012). Matching on the probability that the two observations come from the same group may also be inaccurate if the choice of covariates is not appropriate. Lastly, if the matches are poor (little to no overlap in probability distribution functions for those in and those out of the treatment group) an estimate can be derived but that estimate is likely biased. Regardless, the method of propensity score matching only mitigates but cannot completely eliminate possible bias caused by unobservables (Becker & Ichino 2002; Angrist & Pischke 2009). The propensity score is defined in Rosenbaum and Rubin (1983) as the probability of receiving treatment conditional on pre-treatment characteristics:

$$p(X_i) \equiv Pr\{D = 1|X_i\} = E\{D|X_i\} \tag{2.2}$$

Where $D = \{0, 1\}$ is an indicator for having received treatment (receiving Part D) and X_i is the vector of matching covariates. Rosenbaum and Rubin (1983) prove that "if treatment is random within cells defined by X then it is also random within the mono-dimensional variable $p(X)$" (Becker & Ichino 2002). Thus, if we know $p(X_i)$ the Average effect of Treatment on the Treated (ATET) can be estimated. Two hypothesis must be satisfied for this methodology to be valid. The first hypothesis assures a balance of pre-treatment variables given the propensity score. When balanced, equal distribution of observables (and it is assumed unobservables) is present independent

of treatment, i.e. treatment is random given the propensity score. Results for testing this are presented below. The second assumes unconfoundedness given the propensity score and cannot be directly tested.

2.5 Results and Interpretation

2.5.1 Panel Linear Regressions

The model used is a panel fixed-effects OLS regression with in four (4) models, all with state-fixed effects included. The dummy variables which measure whether an observation occurred before the 2008 recession, and after the 2008 recession are not statistically significant at the 10% level for any model. Note that the reference period is the 2008 recession period as defined by the Bureau of Labor Statistics. The first two models ((1) & (2)) test the covariates on the continuous hours measure of GPCC (GPCC). The last two models (models (3) & (4)) measure the covariates on a dummy dependent variable where providing any care equals one (Any GPCC).

Annual work income is a key variable expected to explain GPCC. In models (1) & (2) annual work income during the reference period decreases GPCC by approximately 0.4 hours for every $10,000 increase in income during the reference period. In addition, the square of the annual work income is also significant with a positive relationship. Annual work income in higher ranges then increases along with GPCC while for those with lower levels of work income time and work constraints may be binding in the reference period. In models (3) & (4), annual work income has the effect of decreasing the probability of providing any care by about 4% during the reference period. However, the square of work income is not significant during the recession. Thus, higher income ranges may not have experienced extensive margin effects during the recession. Across specifications work income during the reference period decreases GPCC provisioning during the recessionary period.

However, considering that the average annual work income for those providing any care, shown in Table 2.1, is only $10,000 a year, this result may be economically ambiguous. Interaction terms in Table 2.2 for models (1) & (2) suggest that work income has a positive relationship with GPCC in the after 2008 periods but at near-zero magnitudes. In the after-recession period an increase of $10,000 annual work income increased total care by about 0.07 hours per week compared to the reference group. Annual work income before the recession had no statistically significant difference from the recession period. Upper income ranges captured in the after-recession period saw a small decrease compared to the recessionary period losing 0.0539 hours per week. In models (3) & (4), annual work income in the after-recession period again increases GPCC provision with an increase in providing any care of about 1.1% compared to the recession period. In the pre-recession period, annual work income is not significantly different from the recession period. In the pre-recession period, the square of annual work income is also no different from the recession period. In the after-recession period, the square of annual work income is significant in all models. But again the magnitude of these coefficients is minuscule and thus little different from recession period coefficients.

Wealth was also predicted to have an impact on GPCC. In the reference period total household wealth is significant suggesting that for every $100,000 increase in total household wealth, hours of GPCC increases by about 0.05 hours a week. Lack of economic significance is obvious. In model (3) in Table 2.2 an increase of $100,000 of wealth increases the likelihood of providing any care by .6% in the recession period. Non-work income, a source of income which might allow for more freedom to provide GPCC, is also tested instead of wealth in models (2) & (4). Total household wealth and annual non-work income are highly correlated and mathematically related thus it would be inappropriate to use non-work income and wealth in the same model. Again, work income and wealth is not nearly as correlated due to the fact that the group studied here is at the end of their career or even retired. Annual non-work income is a significant predictor in the pre-recession period for both hours and extensive margin dependent variables. Coefficients

suggest that for every $100,000 increase in non-work income, there is a .334 hours reduction in GPCC in the pre-period (different from the reference periods whose coefficient is not statistically significant). This would represent about a third of an hour or 20 minutes. In the post recession period non-work income carries a coefficient which suggests that for every $100,000 increase in non-work income there is a 0.486 hours per week increase in GPCC (again compared to the reference period whose coefficient is not statistically significant). Total household wealth is only a significant predictor in the pre-recession period for model (1) but not model (3). The coefficient for wealth in the pre-period is similar in magnitude to the recession period coefficient suggesting an effective coefficient of -0.039. Future incarnations of this work may find it valuable to investigate why and how these results vary in more detail.

Lastly, cash transfers from adult children is significant in all four models. Receiving more than $500 from one's adult children is correlated with about 0.4 hours more care per week and 0.0378% increase in the likelihood of providing any care. Whether or not a grandparent lived within 10 miles of their adult child, a control in this specification, was significant for all regressions. Whether the respondent was over 65, activities of daily living, and employment status were not significant. The age of the respondent was significant with a large negative relationship and family size variables were also significant. Variations in these controls across coupled status and sex are investigated in more detail below.

One can calculate confidence intervals for the key parameters and doing so may be on interest. Wealth as a predictor in the recession period has a coefficient of 0.0457 or an increase of 0.0457 hours per week for every $100,000 on wealth. Thus, the range which has a 95% chance of containing the true parameter is 0.0457 ± 0.03 multiplied by the coefficient 1.96004 this gives a range then of 0.104501 to -0.0131. Note that the coefficient is only significant at the 10% level, but here the confidence interval includes zero as it is the 95% confidence interval. Even this analysis however suggests little economic significance. The coefficient for annual work income has a standard error

Table 2.2: Panel Regressions–Whole Sample

	(1)	(2)	(3)	(4)
workinc	-0.410***	-0.416***	-0.0384***	-0.0378***
($10,000s 2012$s)	(0.00)	(0.00)	(0.01)	(0.01)
workinc2	0.0374*	0.0388*	0.00331	0.0033
($10,000s 2012$s)	(0.03)	(0.03)	(0.19)	(0.18)
wealth	0.0457*		0.00627**	
($100,000s 2012$s)	(0.03)		(0.00)	
nonwork		0.131		0.0488**
($100,000s 2012$s)		(0.49)		(0.03)
transfer from adult child	0.359**	0.353**	0.0378***	0.0376***
(yes=1)	(0.02)	(0.03)	(0.01)	(0.01)
pre2008	0.0866	0.0603	0.00791	0.0143
	(0.44)	(0.59)	(0.47)	(0.19)
after2008	-0.0415	-0.0845	-0.00547	-0.0119
	(0.74)	(0.47)	(0.62)	(0.29)
Pre2008#Workinc	0.145	0.153	0.00916	0.0076
	(0.26)	(0.24)	(0.52)	(0.59)
After2008#Workinc	0.484***	0.487***	0.0493***	0.0498***
	(0.00)	(0.00)	(0.01)	(0.01)
Pre2008#Workinc2	-0.00706	-0.00949	-0.00109	-0.000921
	(0.73)	(0.64)	(0.67)	(0.72)
After2008#Workinc2	-0.0539**	-0.0536**	-0.00640**	-0.00657**
	(0.03)	(0.03)	(0.00)	(0.00)
Pre2008#Wealth	-0.0496**		-0.00147	
	(0.02)		(0.54)	
After2008#Wealth	0.0285		0.00126	
	(0.31)		(0.61)	
Pre2008#Nonwork		-0.334*		-0.0641***
		(0.07)		(0.01)
After2008#Nonwork		0.486*		0.0436
		(0.05)		(0.13)
N	31,886	31,886	32,860	32,860
adj. R-sq	0.014	0.014	0.038	0.039

Panel fixed-effects regression with a constant and robust standard errors clustered at the household level. Controls: ADLs, age, unemployed

too small to derive a meaning full range. Annual work income squared, with its standard error of 0.03 gives a 95% confidence interval of ± 0.03 multiplied by the coefficient 19.6 giving a range of anywhere from 0.096201 to -0.0214. The previous confidence intervals are for model (1), the model which measures hours of care per week as the dependent variable. Looking at model (3), which uses extensive margin data for the dependent variable, we find that for annual work income the confidence interval is -0.0188 to -0.058. Or anywhere from a 1.88% decreased likelihood for an increase of $10,000 in annual work income to a 5.8% decrease. Annual work income squared has a coefficient which is not statistically distinguishable from zero. Household wealth has a standard error too small to calculate a meaningful confidence interval. All of the above are coefficients for the reference period-the focus of the investigation. It is during the recession which the exogenous nature of the economic factors is most clearly pronounced, with after periods being dominated by pathe dependence. Thus, understanding the recession effects is far more important than more superfluous information.

2.5.2 Regressions by Sex and Coupled Status

Table 2.4 shows results of regressions run on male and female sub-samples. On the left are regressions using only female respondents. The effect of annual work income is very similar to that found in the overall regression in Table 2.2. Annual work income during the recession period saw a 0.444 hours per week reduction for every $10,000 increase in annual work income. For males, annual work income is not significant for either the hours model or the extensive margin model. It would seem that the primary results of the overall regression are heavily influenced by the female respondents in the sample. Note the sample size of these sub-samples. There are nearly double the number of female data points compared to male.

In these four models annual work income squared is not significant contra the overall specification, for any sub-group. Wealth too has an even more muted effect compared to the models run

on the entire sample, a coefficient for males which is effectively zero. In the after-recession period, very similarly to the overall regression, annual work income has an attenuated effect of only 0.076 hours per week decrease for every $10,000 increase for women, and a 0.8% decrease per $10,000 for extensive margin considerations. For men, annual work income during the recession period is not a significant predictor, and thus the increase is in the after-recession period. In the after-recession period, for men, we find that a $10,000 increase in annual work income increased per week GPCC by 0.535 hours and increased the likelihood of providing any care by 6.1%.

Men then seem to have netered the care arena only after the official period of the recession. Annual work income squared is not a significant predictor across the models, with only the pre-recession period for women being significant and the after-recession period being slightly negative and significant for men. Thus, the pre-recession period saw a slight decrease in number of hours per week for women of higher income, and a slight decrease for men of higher income in the after-recession period. All of the suqared annual work income coefficients suggest effects which are highly economically ambiguous. Wealth too, across specifications, has no statistically significant effects, or coefficients which are economically insignificant. An important difference between male and female respondents is the role the number of grandkids plays in GPCC arrangements for women but not men. Though the effect is small, the effect is only significant for female respondents. Cash transfers from adult children too seems to have a much larger effect on male providers than female providers. These differences may seem confusing but the regressions run on the single and coupled sub-samples may help illuminate things.

Table 2.5 shows the results of the same models as in the previous tables but now, on the left, only on those who are coupled, and on the right, only those who are single. Annual work income shows a similar effect on GPCC for those who are coupled as was seen in the overall regression in Table 2.2. For every $10,000 of work income there was a 0.515 hours per week decrease in GPCC and a 3.2% decreased likelihood of providing any care at all during the recession. On the

Table 2.3: Summary Statistics by Sex and Coupled Status

	Males	Females	Single	Coupled
Any GPCC	0.376	0.368	0.3	0.396
(yes=1)	-0.48	-0.48	-0.46	-0.49
GPCC	1.627	1.629	1.307	1.742
(hours per week)	-4.23	-4.21	-3.76	-4.36
workinc	1.258	0.753	0.77	0.993
($10,000 2012$s)	-2.06	-1.45	-1.45	-1.79
nonwork	0.154	0.104	-0.084	0.195
($100,000 2012$s)	-0.37	-0.36	-0.21	-0.38
wealth	1.53	1.065	-0.133	1.716
($100,000 2012$s)	-3.77	-3.52	-2.55	-3.81
receive part d	0.084	0.096	0.134	0.077
(yes=1)	-0.28	-0.3	-0.34	-0.27
pre2008	0.665	0.682	0.649	0.685
	-0.47	-0.47	-0.48	-0.46
after2008	0.214	0.204	0.227	0.2
	-0.41	-0.4	-0.42	-0.4
transfer from adult child	0.037	0.062	0.091	0.039
(yes=1)	-0.19	-0.24	-0.29	-0.19
childnear	0.589	0.616	0.635	0.596
(yes=1)	-0.49	-0.49	-0.48	-0.49
no work income	0.583	0.643	0.631	0.618
(yes=1)	-0.49	-0.48	-0.48	-0.49
unemployed	0.139	0.284	0.247	0.227
(yes=1)	-0.35	-0.45	-0.43	-0.42
facilities	6.985	7.163	7.914	6.81
(By Zipcode)	-6.34	-6.75	-6.63	-6.58
age	65.584	65.167	0.167	0.427
	-5.9	-6.53	-0.37	-0.49
white	0.835	0.804	66.469	64.908
	-0.37	-0.4	-6.04	-6.36
over65	0.575	0.549	0.695	0.858
(yes=1)	-0.49	-0.5	-0.46	-0.35
rADL	0.155	0.222	0.634	0.531
	-0.56	-0.73	-0.48	-0.5
cpl	0.878	0.66	0.304	0.16
(yes=1)	-0.33	-0.47	-0.83	-0.6
number in household	2.318	2.173	1.701	2.411
	-1	-1.08	-1.22	-0.92
number grandchildren	5.76	6.23	6.355	5.957
	-5.09	-5.73	-5.8	-5.4
new grandchild	0.312	0.252	0.217	0.294
(yes=1)	-0.46	-0.43	-0.41	-0.46
N	11,708	20,253	8,177	23,784

Stats found using STATA Svy:Mean command.

Standard Deviations in Parenthesis.

Table 2.4: Panel Regressions by Sub-Samples–Sex

	Female		Male	
	Hours GPCC	Any GPCC	Hours GPCC	Any GPCC
Economics Variable				
workinc	-0.444***	-0.046**	-0.281	-0.03
($10,000s 2012$s)	(0.01)	(0.02)	(0.23)	(0.14)
workinc2	0.022	0.005	0.033	0.002
($10,000s 2012$s)	(0.46)	(0.24)	(0.32)	(0.56)
wealth	0.046	0.006*	0.049	0.006
($100,000s 2012$s)	(0.13)	(0.09)	(0.21)	(0.17)
Family Variables				
transfer from adult child	0.252	0.032*	0.595**	0.047*
(yes=1)	(0.18)	(0.06)	(0.05)	(0.08)
number grandchildren	0.023**	0.003**	0.015	0.002
	(0.05)	(0.02)	(0.29)	(0.20)
new grandchild	-0.055	0.018*	-0.166	0.02
(yes=1)	(0.58)	(0.07)	(0.13)	(0.11)
pre2008	0.023	0.004	0.181	0.012
	(0.87)	(0.79)	(0.33)	(0.51)
after2008	-0.023	-0.013	-0.023	0.009
	(0.88)	(0.38)	(0.92)	(0.62)
Interaction Variables				
Pre2008#Workinc	0.051	0.013	0.227	0.012
	(0.74)	(0.51)	(0.34)	(0.56)
After2008#Workinc	0.368*	0.038*	0.535*	0.061**
	(0.06)	(0.10)	(0.08)	(0.02)
Pre2008#Workinc2	-0.058**	-0.001	-0.023	0.00
	(0.02)	(0.64)	(0.50)	(0.96)
After2008#Workinc2	0.015	-0.004	-0.072*	-0.009**
	(0.62)	(0.34)	(0.09)	(0.05)
Pre2008#Wealth	-0.019	-0.004	-0.036	-0.001
	(0.64)	(0.44)	(0.30)	(0.80)
After2008#Wealth	0.027	0.001	0.015	0.00
	(0.45)	(0.62)	(0.74)	(0.94)
N	20,205	20,853	11,681	12,007
adj. R-sq	0.017	0.045	0.013	0.031

Panel fixed-effects regression with a constant and robust standard errors clustered at the household level. Controls are the same as in Table 2.2— * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.5: Panel Regressions by Sub-Sample–Coupled vs Single

	Coupled		Single	
	Hours GPCC	Any GPCC	Hours GPCC	Any GPCC
Economics Variable				
workinc	-0.515***	-0.032**	-0.039	-0.079***
($10,000s 2012$s)	(0.00)	(0.05)	(0.85)	(0.01)
workinc2	0.055**	0.003	-0.011	0.011*
($10,000s 2012$s)	(0.03)	(0.36)	(0.82)	(0.06)
wealth	0.051*	0.007**	0.102**	0.009
($100,000s 2012$s)	(0.07)	(0.03)	(0.03)	(0.20)
Family Variables				
transfer from adult child	0.521**	0.022	0.074	0.048**
(yes=1)	(0.03)	(0.25)	(0.75)	(0.03)
childnear	0.747***	0.051***	0.224	0.022
(yes=1)	(0.00)	(0.00)	(0.23)	(0.20)
pre2008	0.128	0.01	-0.053	-0.005
	(0.38)	(0.43)	(0.79)	(0.80)
after2008	-0.001	0.009	-0.137	-0.045**
	(1.00)	(0.52)	(0.45)	(0.04)
Interaction Variables				
Pre2008#Workinc	0.213	0.004	-0.029	0.048
	(0.19)	(0.81)	(0.89)	(0.12)
After2008#Workinc	0.554***	0.046**	0.325	0.064*
	(0.01)	(0.02)	(0.27)	(0.06)
Pre2008#Workinc2	-0.021	-0.001	0.016	-0.01
	(0.38)	(0.90)	(0.77)	(0.11)
After2008#Workinc2	-0.071**	-0.007*	-0.021	-0.007
	(0.02)	(0.06)	(0.75)	(0.30)
Pre2008#Wealth	-0.053**	-0.001	-0.121***	-0.006
	(0.03)	(0.60)	(0.00)	(0.28)
After2008#Wealth	0.04	0.003	-0.038	-0.01
	(0.25)	(0.34)	(0.36)	(0.14)
N	23,723	24,412	8,163	8,448
adj. R-sq	0.015	0.034	0.013	0.049

Panel fixed-effects regression with a constant and robust standard errors clustered at the household level. Controls are the same as in Table 2.2— * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

single side, only the extensive margin responds significantly to a change in annual work income with a 7.9% decrease for every $10,000 in income during the recession. For coupled individuals work income squared is significant, with a positive relationship. On the single side, there is also a small positive relationship between annual work income squared and the likelihood of providing any care. Wealth is a significant predictor for coupled individuals during the recession period with $100,000 of added wealth increasing hours of GPCC care per week by 0.051 hours and increasing the likelihood of providing any care by .7%. For single individuals during the recession, an additional $100,000 of wealth corresponds to a 4.8% increase in providing any care (the coefficient on the hours-per-week measure is not significant for single individuals).

For single individuals work income and annual work income squared affect the extensive margin choice during the recession but have no effect on the intensive margin. For coupled individuals annual work income and annual work income squared are significant variables in the after-recession period suggesting that in the after-recession period a $10,000 increase in work income increased hours per week of GPCC by .041 hours and increased the likelihood of providing care by 1.4%. Total household wealth in the pre-recession period is a significant predictor of hours of GPCC for both groups but with magnitudes which would suggest a near-zero effect. Wealth in the reference period is significant in both regressions for the coupled individuals, but only for the hours GPCC regression for single individuals. Note that whether the respondent lives within 10 miles of their adult children (Child Near) is a significant and positive regressor for couples but insignificant for single individuals. Cash transfers from adult children is significant for couples in the hours of GPCC regression and for the extensive margin regression for single individuals with a positive answer corresponding to a 4.8% increased likelihood of that group providing any care.

Taking these last two tables together a picture begins to develop concerning women within the sample. Due to the fact that women live longer than men, the female population of the HRS should be bigger, and more often single. These are both true. By taking these tables together than

we can see a story of women and GPCC. Less responsive to factors once the decisions to provide care (significant regressors in the extensive margin but fewer in the intensive) and a lesser responsiveness to location (Child Near). Include the greater responsiveness to the number of grandkids and a story begins to form that women are responding more to familial needs than are their male counterparts during the recession period and that once care is begun they are less responsive on the intensive margin. Though the regressions presented here are not definitive, future research should investigate these sex specific issues in more depth.

2.5.3 Inverse-Probability Weighted Regression-Adjusted Estimator

In order to test whether Medicare Part D had an appreciable effect on GPCC an inverse probability regressions adjusted estimator is used. Using a logistic regression, probabilities of being in the treatment group are derived. Then, a linear regression is estimated using the weights created in the first stage regression. This method is used heavily in health literature including cognitive science literature. It is used to identify the effect of drugs on patients when random sampling is not possible and in psychoanalysis to understand mental illness. This linear regressions then estimates the dependent variable, in this case Any GPCC. The inverse-probability weighted regression adjusted analysis offers both a propensity score weighting method and a second stage regression for understanding the effect of Part D on decisions to move into or out of GPCC controlling for other factors.

An additional advantage is misspecification of one of the models, treatment or outcome, will not affect the estimate of the effect of treatment as long as at least on model is correctly specified. The inverse-probability weighted estimator uses weighted means to disentangle the effects of treatment and other contaminants. The weights for these mean differences comes from the inverse of the probability of being in the observed treatment group. These are found by modeling the observed treatment as a product of the covariates that predict treatment. For respondents that

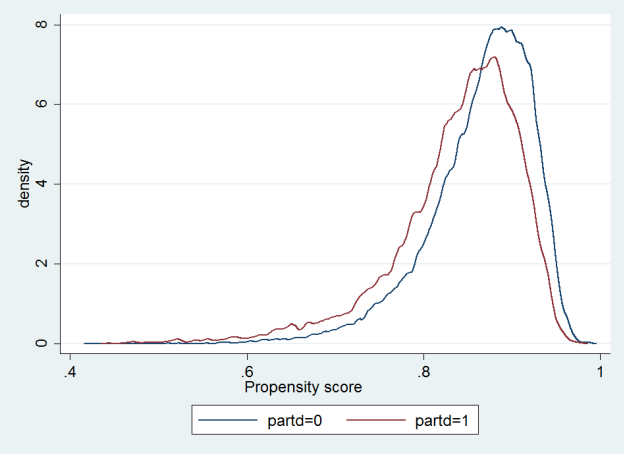

Figure 2.10: Support Space of Those With vs Those Without Medicare Part D

did receive treatment, the weight is equal to the inverse of the predicted probability of receiving treatment ($\frac{1}{p_s}$). For those who did not receive treatment, weights are equal to the inverse of one minus the probability of receiving treatment ($\frac{1}{1-p_s}$). These probabilities are equivalent to propensity scores (STATA).

One aspect of inverse-probability weighting is that it is possible to get arbitrarily low probabilities which, when the inverse is taken, create arbitrarily large weights. Fixing the treatment model can reduce this problem. However, this problem can still occur when the overlap assumption is violated. For instance, if an observation was recorded as having received Part D despite being 62 (which is impossible) this observation would violate the overlap assumption. Looking at Figure 2.10 we see a plotting of the probability distribution function for those who did and those who did not receive Medicare Part D. This graph shows that overlap is strong in this sample suggesting that the method may be fruitful.

2.5.4 Medicare Part D– Results

In the first regression, treatment status is anyone who has signed up for Medicare Part D. The sample includes all respondents age 50 to 75 (to make it comparable to the regressions above) with

any health status. Looking at the results of this regression in Table 2.6, we see first, that treatment status is an insignificant predictor of providing any care. The p-value of the average treatment effect on the treated (ATET) is 11.6% making it insignificant at the 10% level, but close. The average treatment effect is an increase in probability of 1.5% out of an estimated probability without treatment of about 30% suggesting those with Part D had an increased chance of providing any care of about 5%. For those with treatment status equal to one (1) annual work income is no longer a significant regressor. This may reflect the fact that Part D is partially capturing income effects on GPCC. Wealth remains significant in the score-adjusted regressions for both treated and untreated individuals. Identification is via the policy shock of Medicare Part D. Again, this model is meant to capture the economic factors affecting GPCC, without complications from demand side factors. In this regression specification, no interaction terms are included. All variables other than income remain similar across these two groups (treated and untreated). Again, the difference in the effect of income could be due to the fact that Part D is proxy for income and thus capturing those differences.

The logistic regression output, gives us insight into how the covariates used to predict treatment affect the probability of treatment. Age positively affects treatment probability, for instance, as would be expected. Wealth negatively affects the probability of treatment while coupled status negatively affects it. This is important. Looking at the post-estimation test of independence we can see that treatment status cannot be sufficiently differentiated by the chosen covariates. This means that our assumption of treatment status is not orthogonal to these variables. Thus, it is impossible to say, with any certainty, that our significant treatment effect on the treated is not the result of selection bias (Angrist & Pischke 2009; Rosenbaum and Rubin 1983; Becker & Ichino 2002). The inverse-probability weighted regression adjusted estimator methodology used here is attempting to mimic random assignment for a treatment variable which is not in fact random. Wealth has a slightly positive relationship with GPCC. Thus, those with higher wealth should produce more GPCC. The relationship between GPCC and treatment status is negative. Thus, our significant result is actually a conservative estimate. The same can be said for the coupled status dummy.

The effect on treatment, and subsequently GPCC, is moving in a direction which would suggest a smaller ATET. It is reasonable then to infer that our nearly-significant ATET result is in fact a conservative estimate and that a balanced sample would actually show stronger, not weaker results. This of course is not proof that lack of balance is meaningless, but it does suggest that lack of balance is not reason to reject these results outright.

Table 2.6: Average Treatment Effect on the Treated–Part D

	In Part D	In & Costs Changed
ATET (Increase in Any GPCC With Treatment)	0.015	0.026**
	(0.01)	(0.01)
Any GPCC Without Treatment	0.304***	0.299***
	(0.01)	(0.01)
Balance Test (χ^2)	121.92	65.49
Probability Balanced (Based on χ^2)	0.00%	0.00%
N	32,932	15,443

—* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Turning now to the second regression in Table 2.6 we see the same methodology used but this time only on those who answered that they were enrolled in Medicare Part D and that this program affected their prescription drug coverage costs. For this group, constituting about half of all respondents in the sample who are signed up for Medicare Part D, we have focused in on those whose Part D status should have the greatest effect. For this group the ATET is stronger with an increased probability of providing and GPCC of about 2.6% with an untreated probability of 29.9%. This represents a 8.7% increase in probability of providing any GPCC. This result is statistically significant at the 5% level with a p-value of 3.7%. In this group we see annual work income has the same characteristic of being a significant predictor in the linear regression only for those who do not receive treatment. So again, Part D may be capturing some of these effects. It seems that this Part D model has given us something of an answer; income matters. All other regressors behave for treated and untreated individuals in the same manner as before. Looking not at the logistic regression which predicts treatment status we can see that age and health factors increases likeli-

hood, a factor that decreases GPCC, and coupled status and wealth decrease likelihood of being treated, things which increase the likelihood of providing GPCC.

Thus, in this specification too we find that, though the results lack balance between treated and untreated groups, this lack of balance would be expected to work against finding significant effects on the probability of providing GPCC and not in favor of it. This method is meant to capture the economic factors without the confounding factors of the demand side. The demand side undoubtedly affected whether grandparents provided care. Thus, this method circumvents this problem by identifying along an exogenous policy shock which would affect a grandparent's ability to provide care without affecting parental demand. The results then could be taken as a conservative estimate since we would expect, though we cannot prove, that balance of the sample, i.e. having more people who receive treatment who look like the untreated, would actually strengthen our results, not weaken them.

2.6 Policy Implications and Concluding Statements

The results of this investigation suggest that respondents with low levels of labor income are sensitive to income changes. Cash transfers from adult children too seem to influence GPCC decisions. Policies which attempt to address the needs of single grandparents may be called for. A subsidy program which offers cash, similar to the cash transfers from adult children, could increase the likelihood of providing any care for these respondents (single and female). Child transfers too seemed to increase hours and probability of entering the care market for coupled individuals. This is a good indicator that providing a subsidy via adult children which allows for grandparent childcare may be of some use. This increased care could be socially beneficial. As was investigated in Vandell & Wolfe (2000), care provided in home by family members does seem to be of higher quality. Furthermore, as was found in the PPP and CAP studies, higher quality care has long-lasting positive effects on children, suggesting that encouraging grandparent childcare may be valuable.

Table 2.7: Inverse-Probability Weighted Linear Regressions

	Anyone in Part D		In Part D & Costs Change	
Any GPCC	Untreated	Treated	Untreated	Treated
workinc	-0.038	0.022	-0.092	-0.100
($10,000s 2012$s)	(0.05)	(0.12)	(0.06)	(0.19)
wealth	0.008***	0.018***	0.008***	0.022***
($100,000s 2012$s)	(0.00)	(0.00)	(0.01)	(0.00)
unemployed	-0.050***	-0.021	-0.05***	0.025
(yes=1)	(0.00)	(0.02)	(0.01)	(0.03)
rADL	-0.030***	-0.03***	-0.035***	-0.022***
	(0.00)	(0.01)	(0.00)	(0.01)
facilities	0.000	0.002*	0.00***	0.00
	(0.01)	(0.00)	(0.00)	(0.00)
transfer from adult child	0.060***	0.130***	0.080***	0.105***
(yes=1)	(0.02)	(0.03)	(0.03)	(0.04)
childnear	0.108***	0.099***	0.108***	0.105**
(yes=1)	(0.01)	(0.02)	(0.01)	(0.02)
number in household	0.090***	0.072***	0.078***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)
new grandchild	0.070***	0.113***	0.076***	0.067***
(yes=1)	(0.01)	(0.03)	(0.02)	(0.03)
coupled	-0.001	-0.002	-0.013	0.016
	(0.01)	(0.02)	(0.01)	(0.02)
age	-0.016***	-0.017***	-0.018***	-0.017***
	(0.01)	(0.02)	(0.00)	(0.00)

Controls include Census Region of Respondent—* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.8: Logistic Regression Predicting Treatment

	Anyone in Part D	In Part D & Costs Change
age	0.081***	0.084***
	(0.00)	(0.00)
rADL	0.107***	0.105***
	(0.02)	(0.01)
workinc	-1.781	-1.741
($10,000s 2012$s)	(0.15)	(0.19)
wealth	-0.058***	-0.051***
($100,000s 2012$s)	(0.00)	(0.01)
years eduction	-0.013***	-0.021***
	(0.00)	(0.00)
coupled	-0.150***	-0.031
(yes=1)	(0.02)	(0.04)
african-american	0.103***	0.007
	(0.03)	(0.05)
asian	0.149***	0.128*
	(0.06)	(0.07)
sex	0.033	-0.156
(male=1)	(0.03)	(0.03)
hispanic	0.067	-0.040
	(0.05)	(0.06)
N	32,932	15,443

Controls include Census Region of Respondent—* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Heckman (1997) notes that average treatment effect (ATE) derived from propensity score matching methods may not be appropriate for policy discussions due to the fact that treatment groups are artificially constructed and thus members in the treatment group for the derivation of the ATE may not actually be eligible for a given policy. As such no policy recommendations are offered for the propensity score results.

With functional limitations and age being strong predictors, it would seem that safety net programs like Medicare/Medicaid would also help encourage GPCC and subsidies which allow grandparents to provide care by lessening the need for work. Wealth was a significant predictor for many regressions with a small but positive relationship. Thus, subsidies to those providing grandparent childcare may operate through this avenue as well, increasing a valuable behavior. An alternative would be a fmaily allowance, in the form of a refundable tax credit, for families with children under five (5) years of age who are seeking GPCC. Childcare continues to be a real constraint, not just on the labor of mothers, but on whole families. In many places childcare is hard to come by in private or public form, and where private is available costs can be restrictive. Society as a whole benefits from quality childcare (Heckman 2018). Thus, funding programs which offer subsidies for family care, shown to be of higher quality, or concerted efforts to close care gaps in the public and private sphere are reasonable. Investigating supplementing Social Security Insurance with a GPCC credit with a functional a family allowance would be a useful future endeavor.

This investigation has compared the 2008 recession and the time periods before and after. To do this a fixed-effects linear regression was used to determine the effects of health, wealth, income, age, geographic location and the key periods on the provision of weekly grandparent childcare and the decisions to enter of leave the GPCC market. The key finding is that wealth changes do affect GPCC provision, with greater wealth increasing GPCC; but the magnitude suggests that economic significance may not have accompanied the statistical significance found. Labor market income shows a quadratic relationship with greater levels of labor income having a very small but positive

relationship with GPCC (both intensive and extensive) and income at low levels showing the opposite and somewhat larger effect. However, the regressions find no significant difference between recession and non-recession periods.

Given that the post-recession period involved a host of federal legislation which increased in-kind transfers as well as tax breaks, and this investigation studies money income, future research might look into disposable income instead and in so doing better capture the effects of these policies. In this investiagtion the post-recession variable may be capturing some of these effects. Age controls were highly correlated with decreases in GPCC (extensive and intensive). And without demand side factors the results should be taken with knowledge that concomitant factors from the demand side might change these results somewhat; but supply side factors are well covered and thus factors for this side, assuming demand side factors are randomly distributed, give us insight not before provided to the field. It seems that a few variables stand out across the various specifications and groupings.

Family size is significant across nearly all regressions with the exception of males suggesting that greater family size increases GPCC provision. Female respondents, when regressions were run by sex disaggregation, were the primary care givers. This group saw a more consistent provision of care and one with a trade-off between work income and care and lower responsiveness to distance. But important too is the implications of the demand side of the market. It is unclear which factors will dominate by looking at only the supply side data, but such an empirical test can bring to light aspects that later can be expanded upon by future research with better demand side data. Future research would do well to include demand side variables in the investigation using a simultaneous equations methodology. If the 2008 recession had effects which were randomly or nearly randomly distributed among adult children than the effects found here will hold even when demand side data is introduced.

Manipulation of the Data Used and Robustness Checks

Missing data is a problem with any survey-response data set. The RAND Corporation imputes values for missing income and wealth variables attempting to correct for selection bias. This process is progressive in that first yes/no information is imputed for whom nothing is known, then from yes/no data brackets are derived, then from brackets amounts are imputed. In addition to the RAND Corporation's adjustments discussed above, this investigator has removed outliers in key variables. For one, any $GPCC$ value greater than one-hundred hours is dropped. This amounts to seventeen observations in total. A person who sleeps 8 hours a day 7 days a week will have only one hundred and twelve hours available for childcare. This would imply the household is in-fact best described as a co-res household and thus their data should be missing in the GPCC per week statistic (as they are treated as a separate grouping). The variable $Workinc$ also has outliers.

Four observations are removed by dropping all observations with income greater than one-million dollars a week. Dropping of these outliers do not significantly change the regression coefficients derived and amounts to 4 observations. In order to capture the portion of the total population in the data set that is actually at risk of providing childcare the age has been restricted to the low of fifty years of age and a high of seventy-five years of age. This is because those who are over seventy-five (a tiny proportion to begin with) are at low risk of providing GPCC due to health factors as well as the age of their grandchildren. It is believed that this is because of the fact that advanced age makes care impossible or that all grandchildren have reached an age where they no longer need care. This data set attenuation then ensures that the at-risk set and the set being studied are as close as possible to being the same. In addition, this investigator has removed outliers in key variables. For one, any value greater than 100 hours is dropped. This amounts to 17 observations in total. This would imply the household is in-fact best described as a co-res household and thus their data should be missing. The annual income variable has four observations removed by dropping all observations with income greater than one-million dollars a week.

Table 2.9: Summary Statistics: Attrition Bias Robustness Check

	Whole Sample	Obs. Every Wave	Drop After 2008
Any GPCC	0.371	0.363	0.371
(yes=1)	(0.48)	(0.48)	(0.48)
GPCC (Hours)	1.628	1.617	1.629
	(4.22)	(4.26)	(4.22)
Annual Work Income	0.934	0.843	0.935
($10,000 2012$s)	(1.71)	(1.57)	(1.71)
Annual Non-Work Income	0.122	0.092	0.122
($100,000 2012$s)	(0.36)	(0.32)	(0.36)
Household Wealth	1.232	0.838	1.216
($100,000 2012$s)	(3.62)	(3.03)	(3.59)
Part D	0.092	0.094	0.092
(yes=1)	(0.29)	(0.29)	(0.29)
Pre2008	0.676	0.683	0.677
	(0.47)	(0.47)	(0.47)
After2008	0.208	0.202	0.206
	(0.41)	(0.40)	(0.40)
Any Transfer From Child	0.053	0.055	0.053
(yes=1)	(0.22)	(0.23)	(0.22)
Child Near	0.606	0.614	0.607
(yes=1)	(0.49)	(0.47)	(0.49)
No Work Income	0.621	0.633	0.621
(yes=1)	(0.49)	(0.48)	(0.49)
Unemployed	0.232	0.236	0.232
(yes=1)	(0.42)	(0.42)	(0.42)
Facilities	7.099	7.059	7.098
(By Zipcode)	(6.61)	(6.42)	(6.61)
Gender	0.359	0.341	0.358
(Male=1)	(0.48)	(0.47)	(0.48)
Age	65.316	65.538	65.315
	(6.32)	(6.29)	(6.32)
N	31,961	27,055	31,898

Stats found using STATA Svy:Mean command. Standard Errors in parenthesis

Table 2.10: Summary Statistics For Those with Work Income vs Those Without

	With Work Income	No Work Income
Any GPCC	0.414	0.345
(yes=1)	(0.49)	(0.48)
GPCC (Hours)	1.774	1.539
	(4.28)	(4.17)
Annual Work Income	2.466	0.000
($10,000 2012$s)	(1.99)	-
Annual Non-Work Income	0.103	0.134
($100,000 2012$s)	(0.36)	(0.36)
Household Wealth	0.958	1.399
($100,000 2012$s)	(3.37)	(3.75)
Part D	0.038	0.125
(yes=1)	(0.19)	(0.33)
Pre2008	0.727	0.645
	(0.45)	(0.48)
After2008	0.162	0.236
	(0.37)	(0.42)
Any Transfer From Child	0.048	0.056
(yes=1)	(0.21)	(0.23)
Child Near	0.601	0.610
(yes=1)	(0.49)	(0.49)
No Work Income	0.000	1.000
(yes=1)	-	-
Unemployed	0.000	0.374
(yes=1)	-	(0.48)
Facilities	7.218	7.026
(By Zipcode)	(6.66)	(6.58)
Gender	0.396	0.337
(Male=1)	(0.49)	(0.47)
Age	62.226	67.201
	(5.90)	(5.80)
N	11,880	20,081

Stats found using STATA Svy:Mean command. Standard errors in parenthesis.

Chapter 3

Voting Behavior by State and Relative Poverty

3.1 Introduction

ESV Bible (Mark 14:7)-“For you always have the poor with you...”

Poverty remains a problem. The World Bank estimates that poverty rates in many developed nations are double digits. To understand how pervasive poverty truly is requires good data and good measures. The Obama Administration focused a great deal of time, energy, and effort on formulating policies which measured and attempted to reduce inequality and poverty (Economic Record). Changes in tax policy during the Obama Administration were designed to “reduce income inequality in 2017 by more than 20 percent as measured by the ratio of the average after-tax income for the top 1 percent to the bottom quintile" (Economic Record). This newly found attention is in response to an intensifying problem. From the late 1970s to 2007, “the share of after-tax income received by the bottom quintile of households fell by nearly a quarter and the share received by the top 1 percent more than doubled" (Economic Record).

There are two main sources for poverty calculations; tax returns and household surveys. Means tested calculations at the state level in the United States are also measures which attempt to understand the basic needs of citizens searching for safety net protections. These considerations are often taken from tax data, or survey responses (answers on government forms). At the end of the day then these social safety net programs use similar information to the academic study of relative poverty and/or inequality. Richard Titmuss (1962) argued against using tax data because people lie when doing their taxes, (after all there is a clear incentive) making it unreliable. In addition, tax laws change over time and as laws change so does the definition of taxable income. Similarly, tax laws of taxable income vary across national borders as does filing status. Finally, in many countries

low-income individuals are not required to file tax returns, making tax return data a particularly poor choice for measuring poverty. However, survey data too has its drawbacks.

Survey data suffers from disinterest and fatigue. Long surveys which do not rotate questions between each respondent may find questions at the end of the survey suffer from poor response rates that may bias results. Sensitive subjects too may cause listwise deletion, a problem which affects income based questions in particular (Gujarti 2003). Surveys too may provide inaccurate data if respondents do not pay close attention or have bad information themselves. Many surveys choose to impute missing values for just this reason (HRS, SCF, etc.). Such methods have varying degrees of success (Figueredo et al. 2002). In this investigation trust is put in survey data, the American Census to be exact, as it is the largest micro-data set in the world and uses rotating question and imputation design to overcome the issue of listwise deletion.

Secondly, there are definitional problems. One issue concerns what to do about debt repayments as these cannot be used to purchase necessities. Pressman & Scott (2009) calculated that U.S. poverty rates were over 10% higher (1.3 percentage points) when interest payments on household debt were subtracted from income. Another problem concerns whether the suffering related to poverty should be measured in relative poverty terms (as a proportion of some livable wage) or absolute terms (as a measure wf what is needed to survive). Both measures have their strengths nad weaknesses. Often the discussion comes down to what kind of poverty or better to say what kind of suffering from poverty, is being captured (Renwick & Bergmann 1993; Bernstein et al. 2000; Madden 2000; Sen 1979), as well as where to draw the poverty line (Ruggles 1990).

There is yet another definitional problem, one that has gone unrecognized in previous literature, which has been addressed in Pressman & Roberts (2018). It is a problem that affects relative definitions of poverty. With relative definitions of poverty comparison is made between each household and the population as a whole. Households whose income fall short of some standard get counted

as poor. Relative poverty measures then assume incomes will not fall over time. The standard procedure for calculating relative poverty then is problematic-especially for studying recessions. This investigation corrects for this by calculating a relative poverty measure which uses as its reference before-recession median income. This has the advatage of comparing current household disposable incomes to past peaks, the reference most household would use when considering their own position, i.e. the new measure captures the fact that recessions make people poorer compared to the pre-recession period.

Using median household income at the state level from 2000 to 2016 and constructing the old and the new (referenced from Pressman & Roberts 2018) relative poverty measures, this article then tests the relationship of these measures to election outcomes across the 50 states in general elections and mid-term elections from 2000 to 2016. The results suggest that relative poverty increases do not help Republican candidates win elections, in fact they decrease the proportion of the vote going to Republicans, though both effects are for a very limited number of states. Most states show only ambiguous results. Section 3.2.3 explains how Pressman & Roberts (2018) have corrected for this problem. Section 3.3 discusses the data being used as well as the calculation method of the new measure. Section 3.4 discusses the regression models tested using the new and old relative poverty measures for comparison. Section 3.5 describes the results of these regressions. Lastly, Section 3.6 concludes the paper.

3.2 Literature Review

3.2.1 Absolute Definitions of Poverty and Their Critics

Many scholars favor an absolute definition of poverty (such as the Orshansky definition used in the U.S.) because it focuses on the notion of human subsistence. The World Bank too has an absolute poverty measure, equivalent across countries using Purchasing Power Parity calculations, of $1.90 a day (World Bank). According to their measure, extreme poverty (below $1.90 a day) has

fallen from 44% in 1981 to 10.7% in 2013 (World Bank). Using this approach, poverty lines are the minimum cost of subsistence. Drawing the poverty line then becomes a question of identifying the basic needs of a person and then calculating the cost of those basic necessities; it is about being able to exceed a certain level of deprivation, survive and reproduce. The absolute poverty rate then measures the percentage of the population that fails to meet this standard. Pioneering work developing absolutely poverty measures took place in the U.S. and the U.K. at around the same time.

According to Gordon Fisher (1997a, p. 13), an historian of the measurement of poverty in the United States, W.E.B. DuBois [1899] was the first American to select a dollar figure for the poverty line after carefully studying the actual needs of black families in Philadelphia from 1896 to 1897. He called families “poor" whose weekly income was $5 or less per week. No allowance was made for families of different sizes; every family had the same poverty line. This works out to an annual poverty line of $260 per year. In 1963 dollars, this was less than half the official Orshansky poverty threshold for a family of 4. In 2014 dollars, it would be $7,283, or less than half the poverty rate for a family of two and less than one-third of the current poverty threshold for a family of 4 in the U.S.

In the U.K., Seebohm Rountree (1901), another pioneer in the measurement of poverty, developed an absolute measure of poverty and then used it to calculate poverty rates for York in the U.K. Rountree examined the nutritional needs for someone to maintain their body weight and then the cost of purchasing this food. Roundtree added minimal amounts for clothing, fuel, housing and sundries to his figure for food costs. The sum total he regarded as subsistence income and he defined poverty as income levels below subsistence. From surveys that he conducted in York, Rountree found that more than one-quarter of the population in York did not have enough money to be able to purchase their basket of basic necessities. Perhaps the most famous absolute measure of poverty is the official U.S. definition of poverty, developed by Mollie Orshansky (1965, 1969).

Concerned about poverty, President Kennedy asked Walter Heller, his chairman of the President's Council of Economic Advisors, for some statistics on poverty. Heller asked the Social Security Administration to come up with a measure of poverty, and they then asked Orshansky. She was a specialist in family living standards and income adequacy, and had studied household budgets for many years as well worked in the USDA.

Following the lead of Roundtree, Orshansky began with data on the minimum food requirements for families of different sizes compiled by the U.S. Department of Agriculture in 1955. She then obtained data on the cost of purchasing this food in the early 1960s. Next, she examined extensive government surveys of household expenditures undertaken during the 1940s and the 1950s and found that families, on average, spent around one-third of their income on food. She used the USDA's "emergency food plan" basket, a basket of food not designed for long-term use but for short-term emergencies, and she multiplied the cost of this minimum food budget for each family type by three (since food costs amounted to one-third of expenditures nationally on average) to arrive at a poverty threshold.

These thresholds represent the cost of those goods needed to keep a family from being poor for the year, i.e. the absolute poverty line (Renwick & Bergmann 1993; Bernstein et al. 2000). Each year poverty thresholds are increased by the annual rate of inflation. Poverty thresholds in the U.S. thus represent a fixed or constant real living standard. Orshansky actually called these thresholds "relatively absolute" measures of poverty (Fisher 1997b, p. 9); i.e. they provided an absolute standard that was relative to household spending habits and the minimum income needed by each family type at the time. The poverty rate measures the fraction of all U.S. households that fail to meet its poverty threshold. No matter how poverty is measured then there is simply no way to avoid the fact that, beyond basic physiological needs, societal expectations dictate deprivation.

Absolute measures of poverty have their critics. One frequent objection is that they fail to account for differences in what is necessary in different places and at different times. A good case can be made that the set of consumption goods necessary for survival changes over time. Here are some concrete examples. Cars were not necessary at the beginning of the 20th century. Today, except for people living in large cities with mass transit, they are necessary for work, play, shop, etc. Health insurance was unheard of 100 years ago, but today it determines access to medical care and such access can be a matter of life and death. Cell phones and personal computers did not exist for most of the 20th century; today they are an near necessity. Air conditioning was not available until the latter part of the 20th century, but is necessary today as temperatures rise and heat waves become deadly. Finally, with the rise of dual-earner households, expenses for childcare, home upkeep, meal prep, etc. now must come from income instead of being produced in-hours. There have been attempts to include these new costs into a budget required for a minimum standard of living by Bergmann (1997) and Nelson (1998). These studies compared the available welfare benefits at the time to income needs and found that welfare was sorely lacking in its ability to actually lift a family into subsistence, i.e. that the poverty measure did not capture these effects and thus inadequately measured households real need.

Another critique of absolute poverty measures is that "there is no such thing as a one-to-one mapping of specific goods to each 'absolute need'" (Fitoussi 2008, p. 153). Once we move away from a Robinson Crusoe model of individual consumer choice and decision-making, needs become relative and for real people, cues about appropriate behavior and their relative social position influences consumption choice.

3.2.2 Relative Measures of Poverty

According to Fisher (1997a, p. 60), Victor Fuchs (1965) was the first person to suggest a relative definition of poverty. In the U.K., Peter Townsend (1979, 1980) pioneered the development

of a relative notion of poverty. The idea, however, has a connection to a remark by Adam Smith [1776](1981, p. 869f.) that not being poor means that one can “appear in public without shame". So Smith seemed to understand that a poverty measure must include discussion of social influence. The definition of poverty he is pointing to is, in part, defined by social convention. To escape poverty, then, one must have a level of income that is close enough to their reference group to avoid embarrassment. Even if this varies by person, a relative poverty measure then would seem to better capture Smith’s idea of poverty.

Thorsten Veblen’s [1899] “Theory of the Leisure Class" describes the anthropological origins of such status seeking. In Veblen’s framework a leisure class of wealthy signal their wealth with wasteful spending; the more wasteful the better the signal. Thus, those at lower ends of the income spectrum attempt to emulate these spending habits confusing the spending signals with the real cause of their wealth. Thus, Veblen is marking a relative definition of income. Lastly, Veblen admits that social pressure would encourage one to maintain current status as well as purchase aspirational goods. Thus, purchases to try to emulate the leisure class are only one of two types of purchases influenced by relative status.

One influence on purchasing behavior is one’s peer group. A second influence on purchasing behavior is one’s aspirational group. Later sociological work by Juliet Schor, among others, has confirmed this type of relative thinking is present in sociological surveys. The Easterlin (1974) paradox (happiness does not increase as income rises in a nation over time, but that within a nation at one point in time higher income is correlated with greater happiness) seems to imply that relative incomes matter. Work by Robert Frank (1985) stresses that people do care about their relative position. Frank & Philip Cook (1995) take this further, arguing that many markets have become winner-take-all markets, where relative position determines important things like whether one gets a job, the quality of the health care one receives, etc. The changing nature of markets, then, is making relative incomes more important, not less. James Duesenberry’s dissertation (Duesenberry

(1949)) brought this approach into macroeconomics with his theory of consumption. His relative income hypothesis predicts that consumption will rise as income rises, but when incomes fall consumption patterns may take time to respond, i.e. they will tend to be influenced by past income peaks. Measuring poverty in the usual fashion will not capture this Duesenberry Effect.

Following Duesenberry, relative poverty rates should account for the fact that people will not easily internalize falling median incomes as well as the human behavioral inclination to judge oneself to social reference groups, i.e. reference past peaks of income and measure poverty relative to a reference. Households commit to spending obligations that are hard to end when incomes fall. The largest expense for most households is either rent or mortgage payments. Moving involves a large costs and may not be possible if the homeowner has little equity or little additional savings. There are also fixed expenses due to past debt—student loan repayments, car payments, etc. And there are relatively fixed expenses such as utilities, work clothes, etc.

Lastly, James Duesenberry's consumption theory implies habit formation (Mason 2000). When consumers become used to consuming at a certain standard of living, consumers will be slow to adjust when incomes fall as a result of the business cycle. One way to conceptualize this is that people mis-interpret a permanent income loss with a temporary one. Viewing the recession as a temporary fall in their incomes which will reverse as soon as incomes return, causes individuals to attempt to maintain consumption in the short-run, via debt or other means. Another way to say this is they use the consumption of a reference group to determine what their own expected consumption should be and in the face of a recession this reference group does not decrease consumption immediately or at all and thus the person maintains their own consumption. In addition, as we note, this may also be constrained by fixed costs incurred during better times-mortgage or rent, utilities, transportation, etc.

Another important factor may be the impact of relative incomes on finding a partner. Tobias (2013) models the use of signal goods as it pertains to assortative mating. A game theoretical treatment finds that rational actors seeking social payoffs will support a market for signal goods which signal greater potential income and some cost. Maintaining spending during downturns in the hopes that incomes will return have real social incentives. This importance of relative income is also supported by empirical research showing the people care about their relative position and that relative position and changes in relative position have important effects (Payne 2017; Wilkinson 1996), including health problems (Wagstaff 2000; Kawachi et al. 1999) due to stress, which increases the likelihood of obesity, diabetes, heart disease, depression and even suicide and drug and alcohol abuse (Sapolsky 2005). These effects are also found in primates with lower social status (Morgan et al. 2002; Sapolsky 2005).

Numerous studies suggest that status seeking and social rank is deeply held in primates. When primates of lower social status were subject to stressful or anxiety-inducing situations, they chose cocaine to cope at a higher rate than primates of higher status suggesting they are self-medicating to alleviate the stress of subordination (something seen in humans as well). Morgan et al (2002) show that macaques in a dominant social position had an increase in D2 dopamine receptors. D2-like receptors (also called D2R) are responsible for mediating physiological functions in the nervous system via the intake of dopamine (among other chemicals) (Panesar and Guzman 2018). Dopamine is a chemical produced in nearly all animals and some plants, which functions as a neurotransmitter playing a role in the motivational component of reward-motivated behavior (see also the work of B.F. Skinner; Olds & Milner (1954)) (Panesar and Guzman 2018). Loss of function in the reward system of the brain (of which D2R is one part) is associated with anhedonia, a central feature of affective disorders such as depression and chronic pain (Kringelbach & Berridge 2010). These receptors developed once dominant Macaques were placed in social settings where they ranked highly and diminished once these Macaques were removed to solitude.

These receptors allow for dopamine secretion to be picked up by the brain, and thus these Macaques literally are “happier” for being in a more dominant position. This makes evolutionary sense. In times of famine, groups of primates would have had to compete for the available resources and the most dominant primates would have the greatest access. Thus, those that developed a physiological response which encouraged dominance and/or obsequiousness better reproduced. Lastly, Robert Sapolsky (1996, 2000, 2005, 2017; Sapolsky & McEwen 1995) finds that low-ranked baboons suffer from greater stress levels, or have higher levels of the chemical cortisol. He also finds that stress negatively affect memory, self-control, and cognitive ability in humans. The need to dominate is one aspect of these neurological studies, but the need to belong is just as strong.

For those, in the animal kingdom, who could not dominate, going with the group would have been a useful survival strategy as well. This may be the source of our deep seeded need to belong and our deep seeded ability to empathize. Motor mimicry for instance, when someone winces at someone else in pain or yawns when some one else yawns (Bavelas et al 1987; Bavelas et al 1988). Motor mimicry suggests a strong unconscious sense of empathy towards others. Adam Smith too seemed to understand this human need to conform. In “The Theory of Moral Sentiments; Section III: Chapter II: Of the Origin of Ambition, and of the Distinction of Ranks" Smith has this to say:

“A stranger to human nature, who saw the indifference of men about the misery of their inferiors, and the regret and indignation which they feel for the misfortunes and sufferings of those above them, would be apt to imagine, that pain must be more agonizing, and the convulsions of death more terrible to persons of higher rank, than to those of meaner stations. Upon this disposition of mankind, to go along with all the passions of the rich and the powerful, is founded the distinction of ranks, and the order of society. Our obsequiousness to our superiors more frequently arises from our admiration for the advantages of their situation, than from any private expectations of benefit from their good-will. Their benefits can extend but to a few. But their fortunes interest almost every body. We are eager to assist them in completing a system of happiness that approaches so

near to perfection; and we desire to serve them for their own sake, without any other recompense but the vanity or the honour of obliging them. Neither is our deference to their inclinations founded chiefly, or altogether, upon a regard to the utility of such submission, and to the order of society, which is best supported by it. Even when the order of society seems to require that we should oppose them, we can hardly bring ourselves to do it. That kings are the servants of the people, to be obeyed, resisted, deposed, or punished, as the public convenience may require, is the doctrine of reason and philosophy; but it is not the doctrine of Nature".

The need to conform is very strong in humans and Smith seems to have realized this fact. Raafat, et al (2009) defines herd mentality in the journal of Cognitive Sciences as; "...a form of convergent social behaviour that can be broadly defined as the alignment of the thoughts or behaviours of individuals in a group (herd) through local interaction and without centralized coordination (Raafat et al 2009). Others in the fields of economics, psychology, sociology and cognitive science have addressed herd mentality such as Keynes (1935), Minsky (1974), Asch (1951), Penrose (1951), Bickchandani et al (1992), Fowler & Christakis (2009). Asch (1951) is a famous psychology experiment wherein one person is invited to take a survey concerning the length of a series of lines. The person is put in a group of 5 others, but all others in the group are plants, i.e. part of the experiment. The plants then all agree that a line which is clearly the shortest, is actually the longest, and answer the interviewer as such. Seeing others conform to this view, the subject then changed their answer to the group (herd) answer (Asch 1951). In a myriad of studies across a vast range of fields the need to conform and emulate others has been confirmed to be a fundamental aspect of socio-homo-economicus.

For this same reason, then we may have an alternative interpretation of relative poverty, i.e. that the higher relative poverty, the greater the proportion of people in your society who live like you do (assuming you are poor). So higher relative poverty may be associated with a greater proportion of people feeling excluded from prosperity and thus a sort of political network effect may

be present. Society requires citizens work together for the cohesion of the whole. This is where the inherent contradiction of socially funded education is located. The need of society is in a dependent individual, education to create a self-sufficient one. Exclusion from the prosperity which is the result of this cohesion is a dangerous standard and the from the fruits of society's labors may breed discontent, resentment, lack of trust, and ultimately political beliefs which seek to dismantle whatever system has failed to include. The theories above then can be categorized into three (3) groups: The Minsky Effect, The Veblen/Frank effect, and The Duesenberry effect. The Minsky effect, taken from Hyman Minsky's work "John Maynard Keynes" (1974) describes a balance sheet effect.

The Veblen/Frank effect draws from the works of Thorstein Veblen and Robert Frank (among others) as well as some psychology and cognitive science works. This effect is an emulation effect. The unconscious drive which causes humans to feel the need to yawn after seeing another human yawn (called motor mimicry) is an emulative drive (albeit an unconscious one) (Bavelas et al 1987). The desire to emulate the leisure class then could be considered a conscious mimicry. The willingness of people to go along with decisions for which they have a priori which disagrees or decisions which are costly but are taken on because the person feels a commitment to a group is similar to that found in Asch (1951). If Veblen is to be believed, people are not driven by a desire to be a member of the leisure class for the leisure (or perhaps not just the leisure), but for the prestige or honor. The origin of the leisure class is the separation between honorific work and base work (Veblen 1898). It might best be related to sycophancy, it emulates an aspirational group for gain.

This type of mimicry may also be obsequious however, as Smith speaks of in "The Theory of Moral Sentiments" (quoted above). In this realm then, taking on a refinancing of your student loan debt because the bank is seeking new borrowers during a "euphoric" period in asset prices is a Minsky Effect; taking out a loan to buy a flashy new car is a Veblenian effect, and taking out a

loan to buy a nice suit because it is required before you will even have a chance at getting the job is a Robert Frank-type effect. These effects are aspirational/group effects. Whether debt is taken on for a shiny car, a student loan, or a copy of Windows 10 Pro, these consumption effects are constrained by income. When incomes rise, more consumption is taken on, at least up to a certain level of income, in each of these categories. But debt has path-dependent effects. “Unwinding" one’s position may not be easy. Not least of all because it requires admitting that one is on an income level now which cannot sustain such purchases (made when one thought they had a better future). At each downturn, some portion of those who become unemployed will misinterpret their misfortune as temporary. This is true of every downturn. The mortgage payment does not stop immediately, nor the lease contract on the automobile. The clothes expected to be worn to work do not get cheaper (*ceteris paribus*), and utilities, food, family commitments like extra-curriculars for the children, or regular commitments to social organizations do not stop.

These costs are hard to diminish in the short-to-mid term suggesting we should see consumption fail to respond to downturns in income at the same rate we see increase responses to increased income. To put it boldly, the marginal propensity to consume differs depending on the direction income is headed! This is the Duesenberry Effect. These effects includes commitment on which Amartya Sen speaks (Sen 1999). The money someone gives to their local religious organization may be derived from a sense of commitment to that organization or group and not for any desire for recognition for the gift. Using the same pool of money to pay for a babysitter for one’s child so they can have a night out (or the equivalent in lost income for grandma) might be considered a Sen-effect as well. Here the social pressure comes from attempts to conform to one’s peer group or conform to one’s aspirational group and the “Ratcheting Effect" or habit formation which results (Mason 2000). Operationally, with a relative definition of poverty, people are deemed poor if their income falls below some fraction of the median income in a country at one point in time (Gustafsson 1993; Hagenaars 1986, 1991). One-half is the most popular fraction, and there is debate over whether this is the right percentage to use. However, this issue really simply reasserts the absolute

poverty measure question, i.e. what is an income which signifies true “poverty". When making such calculations, household income is adjusted to account for the different needs of households of different sizes. Orshansky, for example, developed different poverty lines for families of different sizes. Alternatively, equivalence scales which adjust for household size can create measures comparable from one household to the next.

Scholars have criticized relative poverty definitions on several grounds. In a very affluent community most people will have a high income level; yet because poverty is defined relatively, those at the bottom of society will get counted as poor. Furthermore, relative poverty definitions tend to lose sight of the connection between poverty and subsistence (Sen 1981; Ringen 1987). Lastly, it is much harder to make or show progress reducing poverty when using a relative definition since the median income used as a comparison goes up in times of economic growth and down in recession. This makes it hard to evaluate various anti-poverty programs and policies with relative poverty measures, and consequently makes it harder to garner the political will to maintain spending for these policies, or to pass new programs.

Nonetheless, there are many advantages to a relative definition of poverty, which is why a consensus seems to be emerging that a relative definition of poverty is preferable to an absolute definition (Atkinson 1998, p. 5; Gordon 1972, p. 4; Hagenaars 1991, p. 146; Madden 2000; Sen 1992, p. 9; Pressman 2011), at least for developed nations. First, using a relative definition of poverty means that we don’t have to worry about differences among nations. With absolute measures one problem is converting incomes from one currency to another. The standard economic solution to this problem, relying on purchasing power parity, is problematic for a number of reasons. Likewise, current exchange rates can vary due to speculation or national policies that manipulate exchange rates, leading to biased results. Perhaps most important of all, different countries provide different levels of government benefits to the poor. Some governments provide free or nearly free education and health care to its citizens; others do not. As a result, equivalent income

levels in two countries (based on PPP or current exchange rates) won't represent equal living standards because people in one country receive free college education and free or cheap health care, while people in another country, or even another group within a country, do not.

Standards regarding what is necessary do change. Friedman (1965) argued that Americans in the early 1960s were not poor because they had indoor toilets, used electricity rather than candles to light their home, and traveled by car rather than horse and buggy (also see Blank 2008). Today, we would not want to claim that someone is not poor because they have a refrigerator in their apartment, indoor plumbing or a plastic wading pool in their backyard (Pressman 2011). This is supported by public opinion surveys that ask people to state the income levels necessary to put a family above the poverty line. This subjective approach to poverty lines was pioneered by Bernard van Praag and others at Leyden University (see Hagenaars 1982, 1991). What is important for our purposes is that when asked to draw a poverty line, responses would increase their definition by .6% for each 1% increase in per capita incomes (Kilpatrick 1973). This research indicates that perhaps we should define poor households as having 0.6 of median household income (all adjusted for household size), so that poverty lines increase by 60 cents for each one dollar increase in median income.

Relative measures are grounded in time and place, i.e. they measure poverty according to the standards in place at one time in one society (Townsend 1980). According to Townsend (1962); "Poverty is a dynamic, not a static concept. Man is not a Robinson Crusoe living on a desert island. He is a social animal entangled in a web of relationships at work and in family and community which exert complex and changing pressures to which he must respond, as much in his consumption of goods and services as in other aspects of his behavior". Likewise, Michael Harrington (1981, p. 188) and Patricia Ruggles (1990, p. 39) contend that needs depend on social and historical circumstances, making the concept of an absolute minimum necessary income difficult to conceptualize. Bradshaw (1997, p. 40) notes that at bottom all measures of poverty are relative

measures. This is even true of so-called absolute measures since the concept of subsistence varies across time and space. It is also a function of what sort of goods are regarded as merit goods or commitment goods and provided by the government (either free or at reduced cost).

There are logical and methodological concerns surrounding an objective measure of poverty. It is not clear whether an objective measure can be found. And there are concerns that absolute measures convey a false sense of objectivity (Smeeding et al. 1993, p. 246). An absolute definition of poverty makes sense only if our concern is with survival in a physical sense; once we see poverty in a social or cultural context, we need a relative definition (Atkinson 1987, 1998; Sen 1999; Smeeding et al. 2001). Finally, it should be noted that it is easy to combine the two approaches, computing poverty thresholds as some weighted average of absolute and relative definitions (Foster 1998; Madden 2000). This, however, does not make any of the problems we have identified go away, only add complexity which hides them.

3.2.3 Improving Upon the Current Relative Poverty Measure

There is one more problem with relative poverty definitions, one that has not been previously noticed. The problem concerns what happens during bad economic times—for example, a severe economic crisis such as occurred during the Great Recession. It should be remembered that relative definitions of poverty assumes that historical and cultural standards do matter. That is why relative poverty is measured relative to median income. Most of the time this is adequate. But it is not adequate when income levels are dropping and fall substantially below the standard of living to which people have grown accustomed. When median income falls abruptly, the expected standard which would allow one to walk without shame does not change as quickly (due to habit formation).

Consider what happens during a severe economic contraction such as the Great Recession. To keep things simple, we will assume that everyone's income falls by the same large percentage—say

20%. Relative definitions of poverty would show that poverty rates have not increased after this– mainly because the median income, which forms the basis for measures of relative poverty, has fallen along with all other incomes. If all incomes drop by close to the same percentage, there will be no significant change in poverty rates. In fact, if the incomes of those making median or above fall by a greater rate than those below the median, poverty could actually decrease! During the downturn, those who were just a bit above the previous poverty threshold and who experienced a 20% decline in their income and standard of living are not likely to feel that there has been no change in their proximity to poverty. They start off barely above the poverty line and see their standard of living fall sharply, yet they are not counted as poor because everyone else has also experienced a 20% decline in their income.

This outcome makes no sense from the perspective that relative incomes matter. If relative incomes are important, they should be important relative to the income levels to which people have grown accustomed. In addition, this outcome makes no sense from a pragmatic point of view. Many household expenses are fixed. Rent or mortgage can make up one-third or more of total household expenses, and cannot be reduced quickly or easily when incomes fall economy-wide. Similarly, utility bills will in large part be a function of living quarters (how large and how efficient it is). These too cannot be reduced easily. Insurance premiums, medical co-pays, car payments and other debt obligations are likewise fixed expenditures. This all affects the ability of a family to subsist and maintain their accustomed standard of living; but this change is not taken into account in standard relative definitions of poverty. It should be. This is not just some theoretical problem. It is a problem that has plagued many nations over the past few decades, especially the decade following the start of the Great Recession. While U.S. median income in 2016 did surpass the level reached before the Great Recession, Pressman & Scott (2018) estimate that if you control for the fact that households are now larger (because of more multi-generational families), real household income is still more than 3 percent below its peak from before the Great Recession.

3.2.4 Inequality, Relative Poverty, and Economic Voting

Previous literature has looked into inequality and relative poverty. Galbraith & Hale (2008) find “The cross-sectional effect of inequality on voter turnout and electoral choice is ambiguous. However, a fixed-effects analysis links higher income inequality to lower voter turnout and also to a stronger Democratic vote." Results below follow this pattern. Where Galbraith & Hale used a measure of inequality, the results for relative poverty are in congruence. This would suggest that relative poverty and inequality might move in the same direction. But it is inequality important to consider if relative poverty has something similar to network effects, a sort of emboldening effect. If the herd mentality literature discussed above is valid, it might be that a 35% relative poverty rate exerts more influence than a 10% poverty rate for reasons which are cumulative, not additive. Whereas inequality subjects the citizen or agent to a rising bar which can only frustrate, relative poverty, as we reach larger portions of the population, gives the agent a feeling of solidarity and conformity which can now be related to the situation of poverty directly. Other factors may prevent the rise of such “group" mentality based on the common hardships imposed by being, relatively, poor. Looking at relative poverty from this perspective then, it may be no wonder that we do not see the rise of right-wing power, but a counter-movement which is absent a clear national affiliation, in the regression results below (a few states aside).

If the salience of societal-level poverty increases, and the shame of feeling poor as a result decreases, we may see movements which seek to remove the burdensome weight of the “free market" induced poverty or inequality via the ballot box. If voters are casting “economic" votes, and we assume only that voters are in some way willing to vote for the incumbent, and to change their vote in response to relative poverty levels, then those who have strong enough feeling for one party over another may maintain votes for their party regardless. In such a case only the marginal voter can be said to be using economic information for their decision (Peltzman, 1990). However, the largest change in voter behavior since 2008 has been voter apathy. Voter turnout has returned to their pre-2008 levels; with less than 50% turnout in the last election, it is fair to say the fastest growing

political party in the United States is abstention. Bouvet & King (2015) study elections after the 2008 recession in the OECD from 1975 to 2013, finding that “the vote share for left-leaning parties declines when income inequality rises during normal economic times. However, voters are more likely to vote for left-wing incumbents if domestic inequality and unemployment rate rose during the Great Recession" (*sic*). Han (2014) tests inequality and the rise of right wing governments in western Europe and finds that income inequality had differing effects on different income groups. Solt (2010) uses inequality as well, measured by the Gini, and finds increased income inequality at the state-level decreases voter turnout in gubernatorial races (also see Guverich 2018). Lindvall et al (2013) studying two election in Sweden, one in the early nineties and the other after 2008, found differences among income groups in their support for the government following recession. Relative poverty again however may be capturing a different dynamic than the inequality studied bin those articles mentioned here. Using relative poverty as a measure, as opposed to the Gini Coefficient, or other measures of inequality, is something this literature adds to the field.

According to Schattschneider (1960) democracy is not a system of representation of the people but a “political system in which competing leaders and organizations define the alternatives in such a way that the public can participate in the decision-making process" (Schattschneider 1960; see also Erturk 2004; Erturk 2012). The rise of inequality may create political realities wherein the question that the populace wants to answer is simply not being asked at the electoral level and as a result is falling voter turnout. Schattschneider argued that parties outside of power would then reach out to disenchanted voters to win.

Scott (2007) tests the provision of welfare spending and tax policies as a proxy for state-level attempts to reach out to disadvantaged voters and finds that as party competition increases so does welfare spending, a confirmation of the Schattschneider Hypothesis (also see Dye (1984) who finds the same, but only for a subset of states-states which are not strongly party loyal). The evidence inequality affect elections seems clear. But again relative poverty may be posing a slightly different

scenario. Without violating the Schattschneider Hypothesis concerning falling voter turnout, the results here suggest that voter turnout in some states rose as a result of relative poverty. If relative poverty too forces political realities which prevent the asking of the electorate the right questions, this may be the cause of falling voter turnout in the regression results below. However, if greater relative poverty causes a solidarity or an emboldening effect, this may be why we see rising voter turnout in other states.

3.3 Data

3.3.1 Relative Poverty: Calculating The New Measure

Fortunately, the problem identified in the previous section is easy to correct. By measuring relative poverty based on the highest previous median household income rather than the current median household income, we can control for downward economic shocks, especially a sharp prolonged income drop-something not accounted for when just comparing median income to the current household's median income. It makes relative poverty depend on the (relative) income standards that people in a community have optimistically grown accustomed to (i.e. the most recent income peak).

Following Duesenberry, it is expected that downturns will not be incorporated at all while households immediately adjust to upturns. This is the strongest version of this idea, and thus used as the baseline in this paper. We could easily set a time horizon (5-years for instance) wherein we would compare to highest median income observed in past 5 years. Even using a simple monotonic updating/learning assumption the comparison could be to an average of past levels or decay at a non-constant rate giving more recent medians greater salience. Without an objective measure of how salient movements in median income are to people there is no way to uniquely identify which measure would be best. Lacking this the strongest assumption is used; following from Duesenberry (1949) income drops are not incorporated at all and any increase is fully incorporated.

$$\begin{cases} Median\ Income\ Has \\ Increased\ by\ Any\ Amount \end{cases} \quad \frac{Num.\ Households\ With\ Income\ Less\ Than\ 50\%\ of\ Current\ Median}{Total\ Population\ of\ Households}$$

$$\begin{cases} Median\ Income\ Has \\ Fallen\ by\ Any\ Amount \end{cases} \quad \frac{Num.\ Households\ With\ Income\ Less\ Than\ 50\%\ of\ Past-Peak\ Median}{Total\ Population\ of\ Households}$$

3.3.2 Data Source

The data used to calculate the median income in each state for each year comes from the Integrated Public Use Microdata Series-USA (IPUMS-USA). It is the worlds largest individual-level population survey-data and comes directly from the U.S. Census. The IPUMS data is provided by the Minnesota Population Center inside of the University of Minnesota. All years have been harmonized providing consistent variables names, coding, documentation, and weights which allow for cross-sectional analysis (the IPUMS data set is not longitudinal in nature).

The key variable for measuring relative poverty is median household income. Median household income is calculated at the household level, adjusted for household size. The variable which is used to derive median income is $HHINC$ labeled “Total Household Income" in the IPUMS data set (IPUMS-USA). This variable reports the “total money income of all household members age 15+ during the previous year". Those who lived in the house in the previous year but were not members of the household in the given ACS IPUMS year are not included and those who joined the household by the time of the survey are included. Total Household Income includes incomes of non-family members. Amounts are expressed in contemporary dollars, thus all dollar amounts have to be adjusted to common dollars. To put these income measures into 2016 dollars CPI data from the Federal Reserve Bank of St. Louis (FRED). Included in the total household income measures

are; wages and salaries from all jobs, tips, commissions, bonuses, salary of self-owned business, farm profit from self-owned farm and non-farm profit (or loss), interest from assets, dividends, all royalties, SSI income, VA benefits including education benefits, and any public assistance from county or state offices.

Disposable household income is then divided by the square root of the number of members in the household to control for the fact that households of different sizes have different income needs to be able to escape poverty. This household equivalence scale is one fairly standard way to adjust income for differences in household size, although there are a number of other ways to do this (Cowell & Magda Mercader-Prats 1999). The American Community Survey (ACS) from which the IPUMS-USA is derived, is carried out throughout the year. Thus reported numbers of those who responded in January will report their income from January to December of the previous year but those who answered in December are reporting income from November of the last year to November of the survey year.

The American Community Survey offers an adjustment factor for correcting for this problem. The IPUMS-USA however does not recommend using this adjustment factor. The following can be found on the IPUMS-USA website and in the codebook accompanying the IPUMS-USA data: "...in IPUMS testing across multiple years of data, the unadjusted and the adjusted dollar amount variables were essentially perfectly correlated, and regression coefficients were not altered substantially: the differences across years in the adjustment factors are too small to affect results" (IPUMS-USA). For these reasons then it would be imprudent to apply this adjustment factor as the benefit would be outweighed by the cost. Below is a series of graphs showing the values of key variables across the time dimension at the national level as well as a table showing the state-level value of key variables at the terminal year.

Figure 3.1: National Median Income Over Time

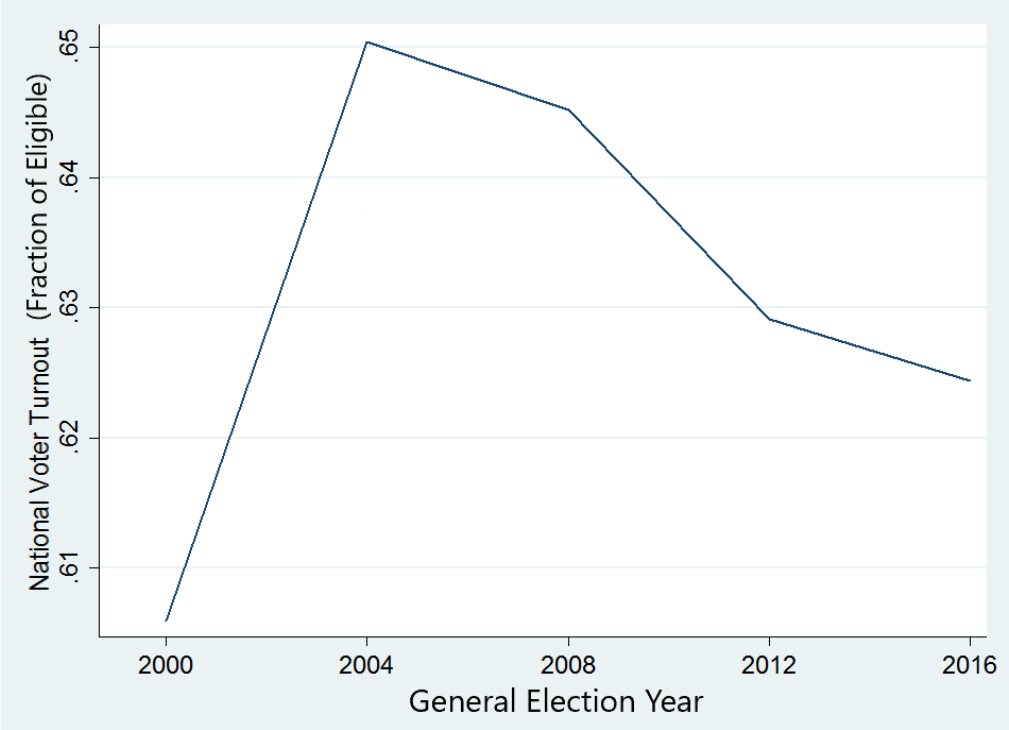

Figure 3.2: National Voter Turnout Trend (General Elections)

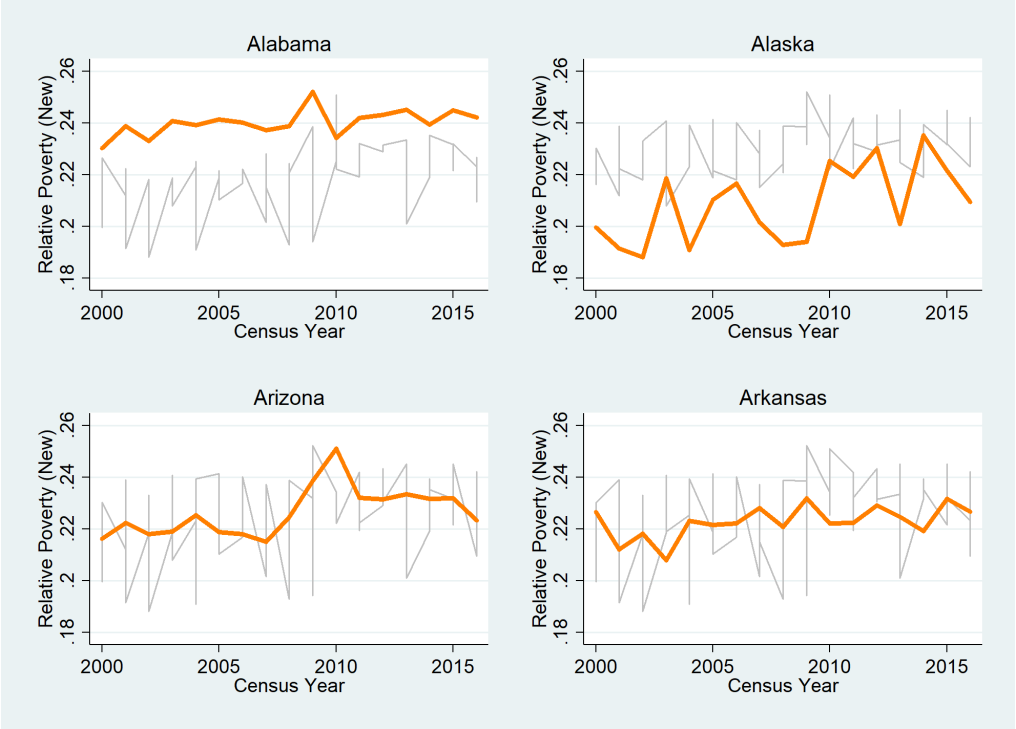

Figure 3.3: New Relative Poverty Measure (Alabama, Alaska, Arizona, Arkansas)

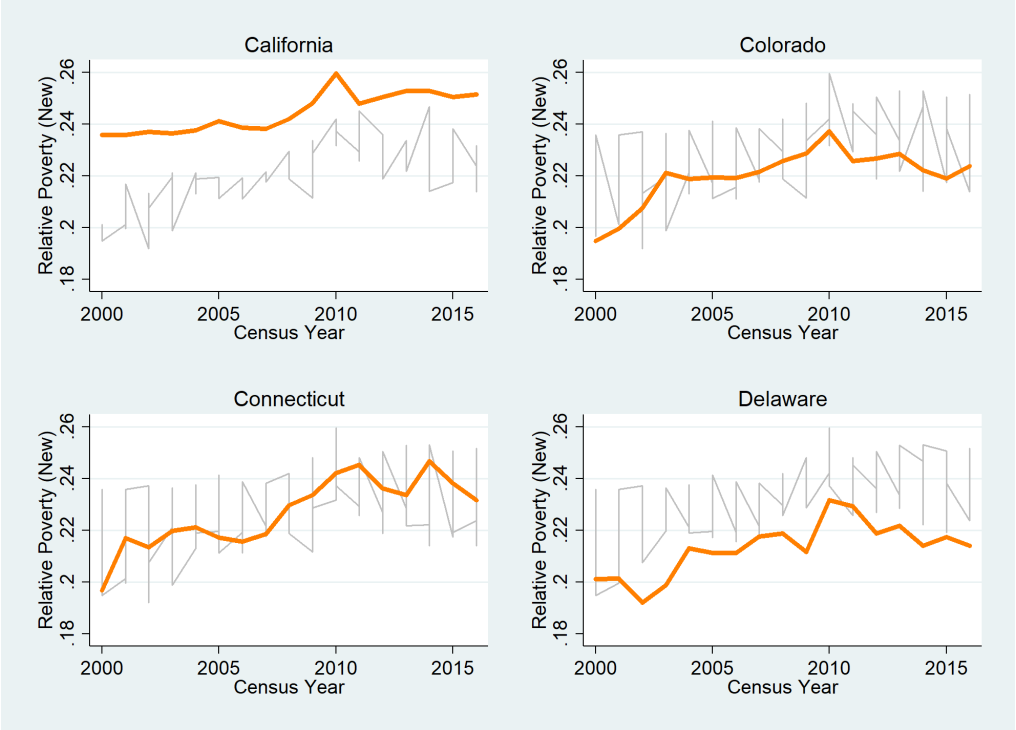

Figure 3.4: New Relative Poverty Measure (California, Colorado, Connecticut, Delaware)

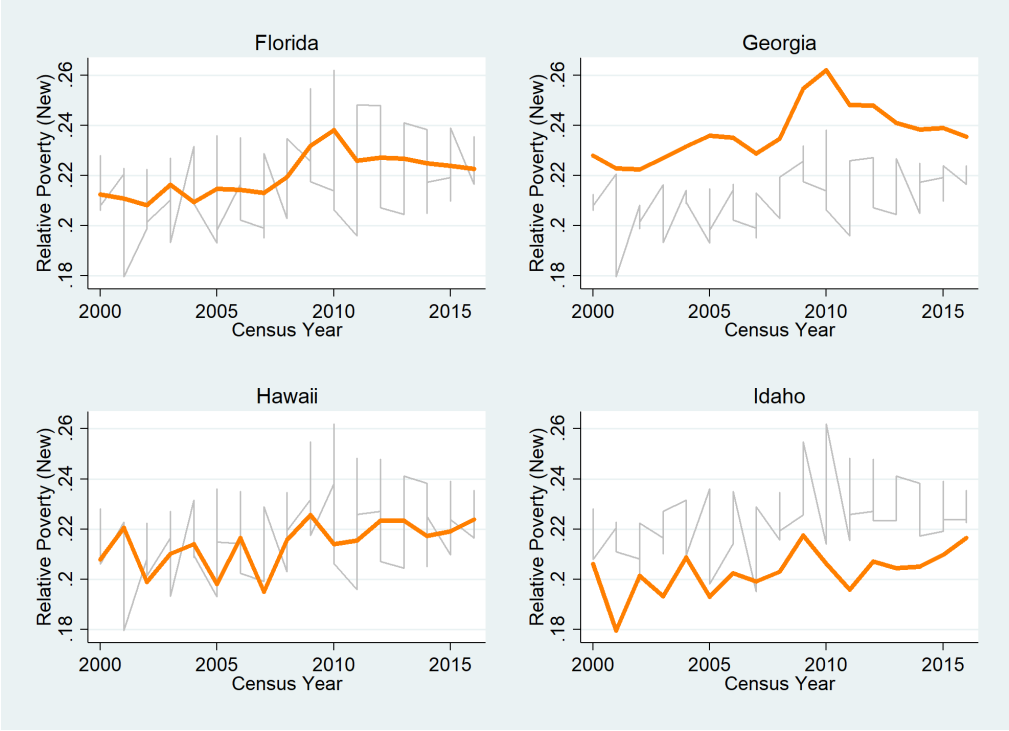

Figure 3.5: New Relative Poverty Measure (Florida, Georgia, Hawaii, Idaho)

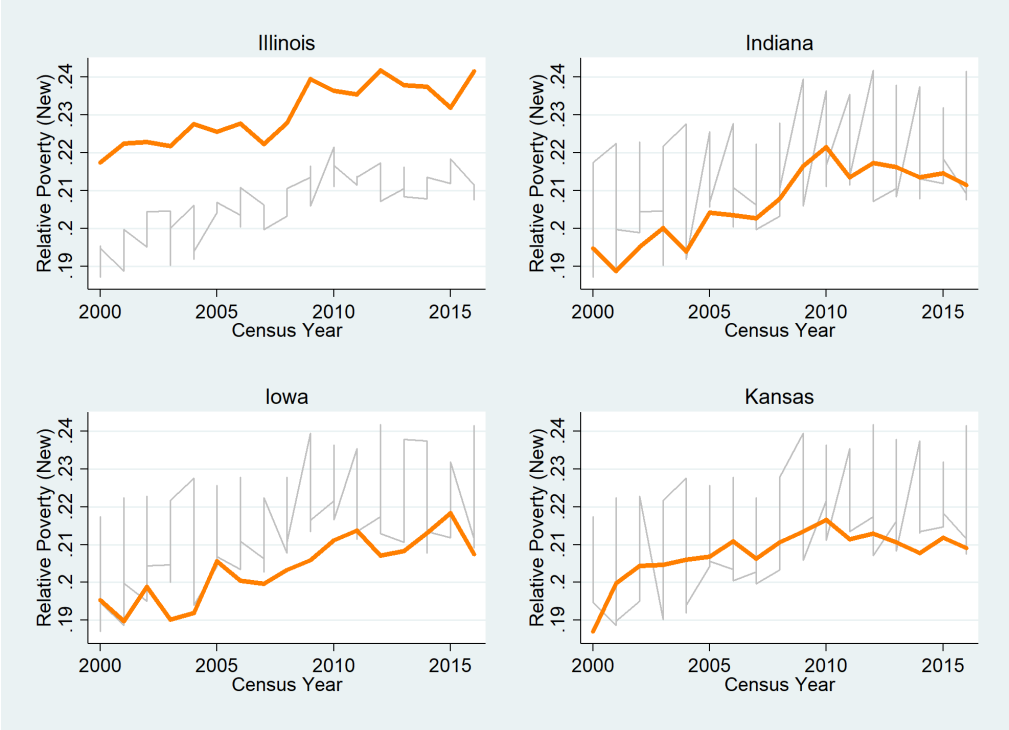

Figure 3.6: New Relative Poverty Measure (Illinois, Indiana, Iowa, Kansas)

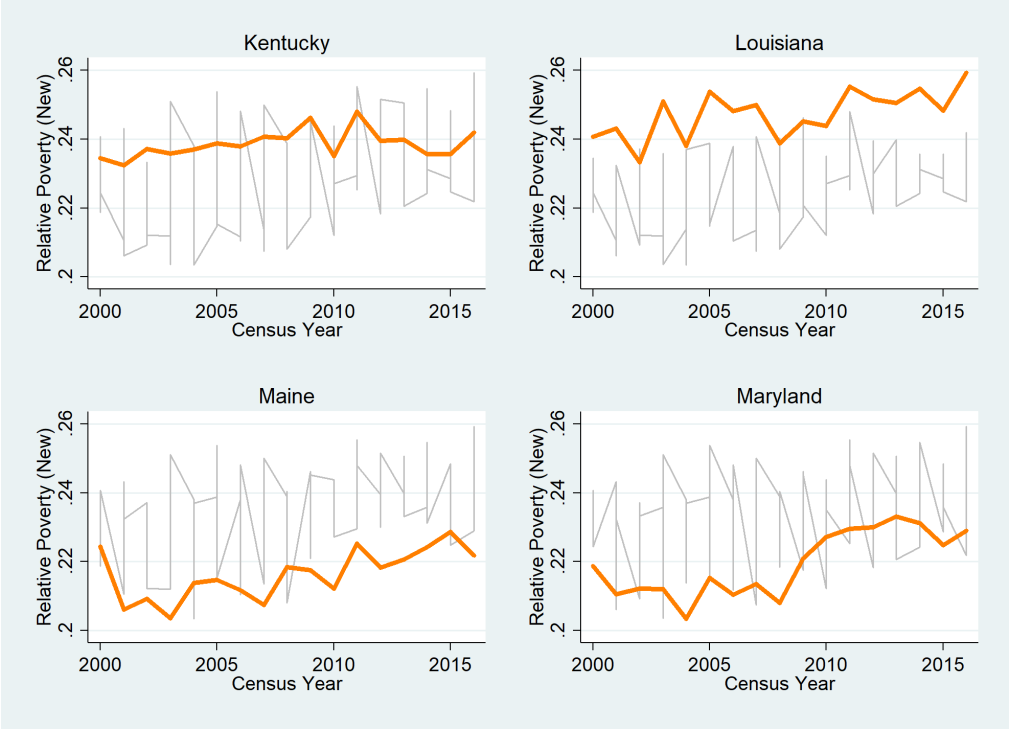

Figure 3.7: New Relative Poverty Measure (Kentucky, Louisiana, Maine, Maryland)

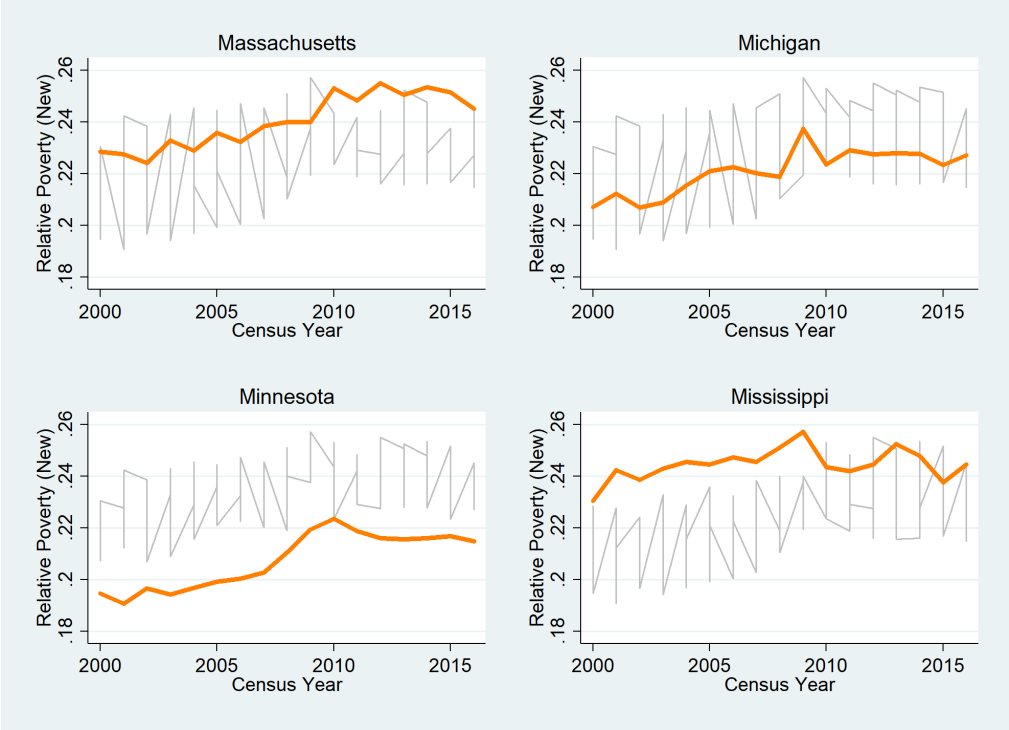

Figure 3.8: New Relative Poverty Measure (Massachusetts, Michigan, Minnesota, Mississippi)

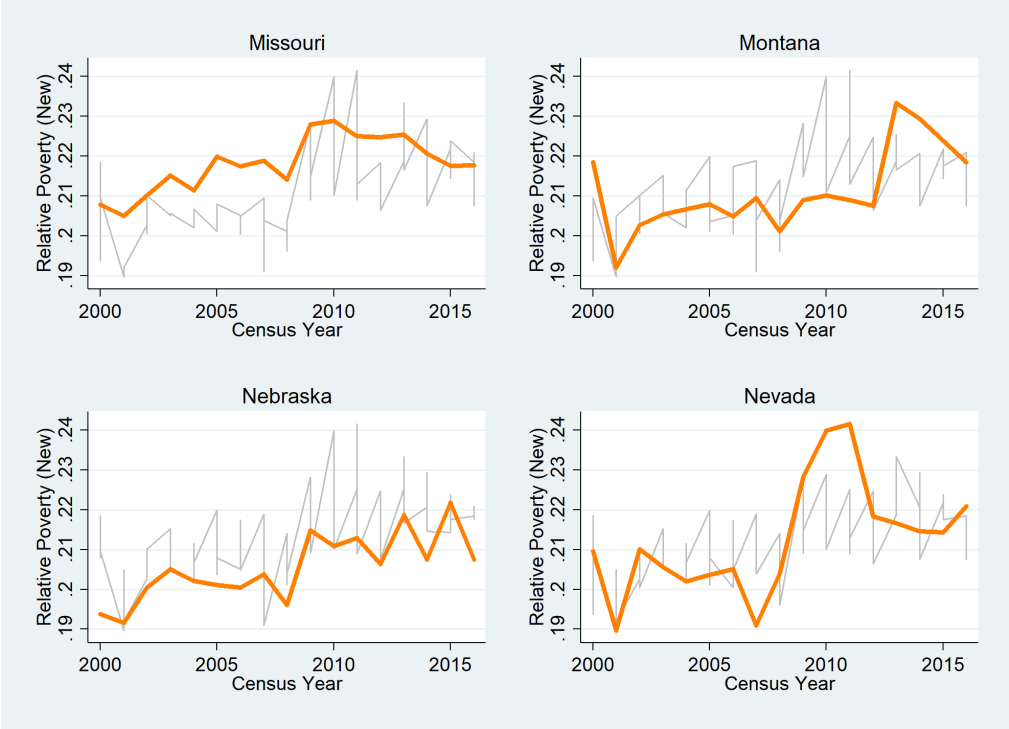

Figure 3.9: New Relative Poverty Measure (Missouri, Montana, Nebraska, Nevada)

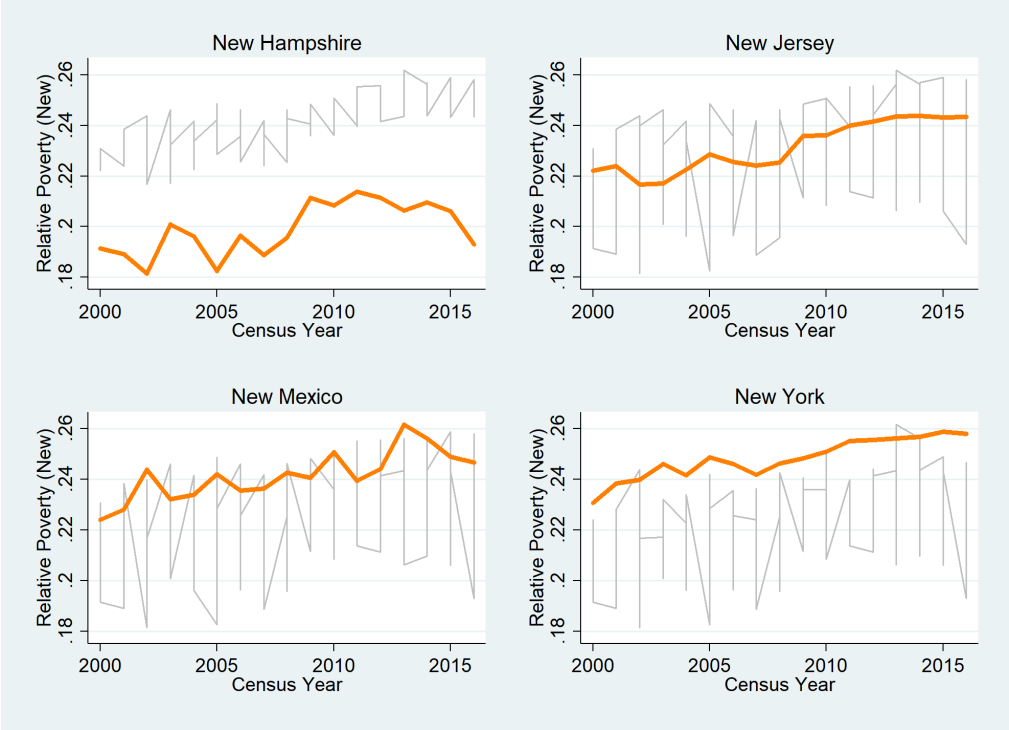

Figure 3.10: New Relative Poverty Measure (New Hampshire, New Jersey, New Mexico, New York)

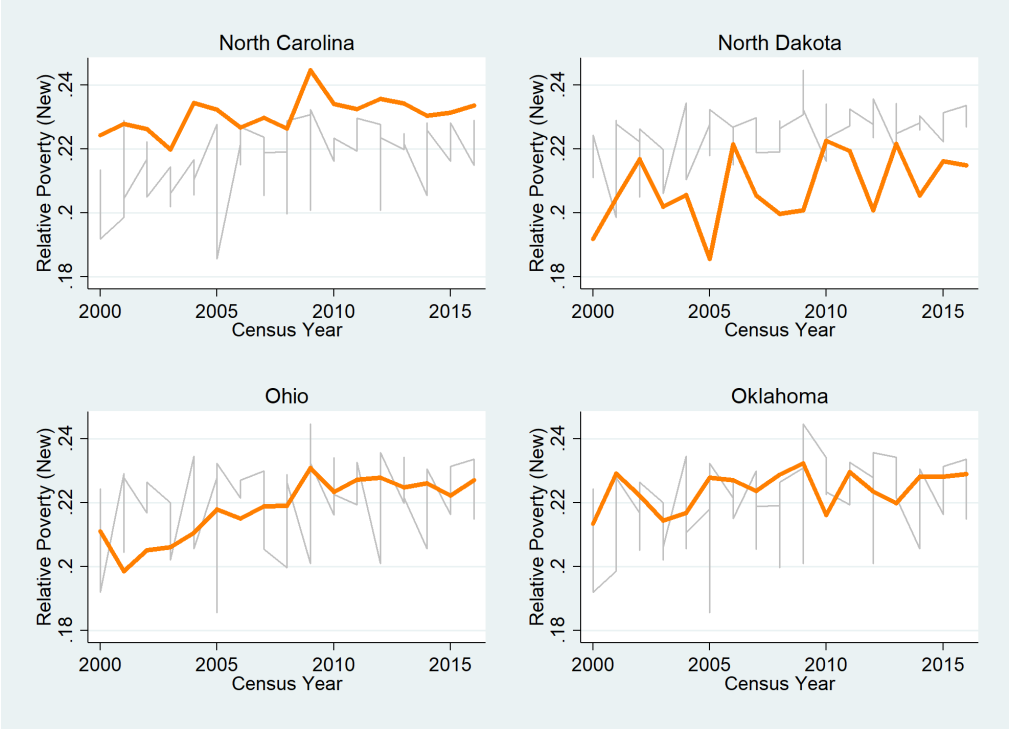

Figure 3.11: New Relative Poverty Measure (North Carolina, North Dakota, Ohio, Oklahoma)

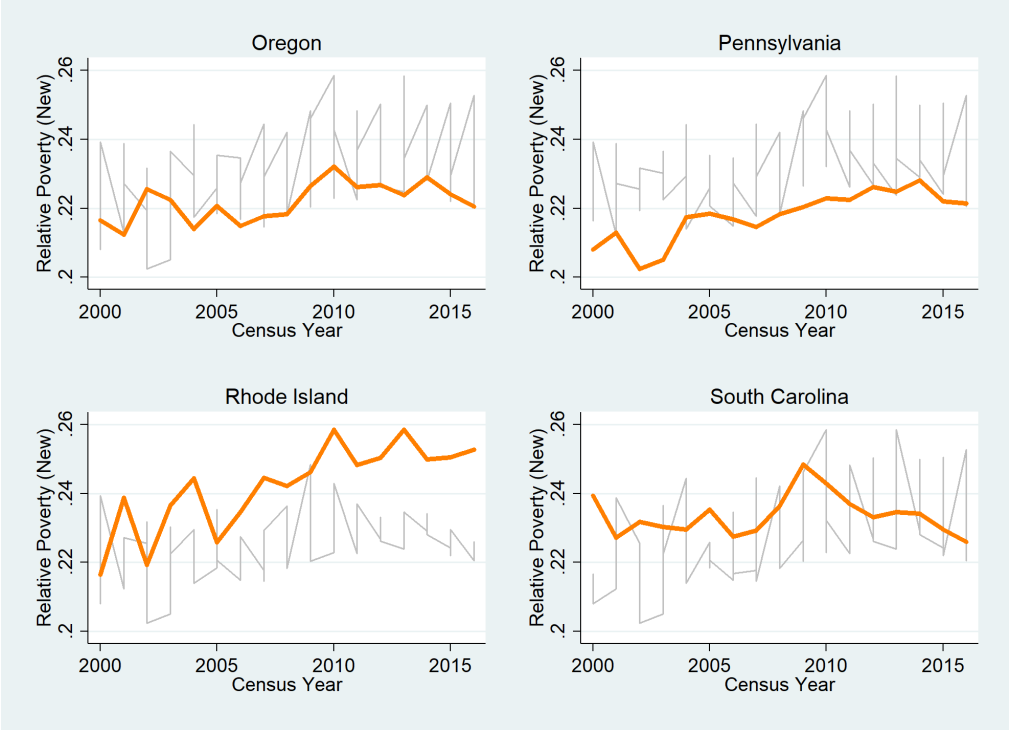

Figure 3.12: New Relative Poverty Measure (Oregon, Pennsylvania, Rhode Island, South Carolina)

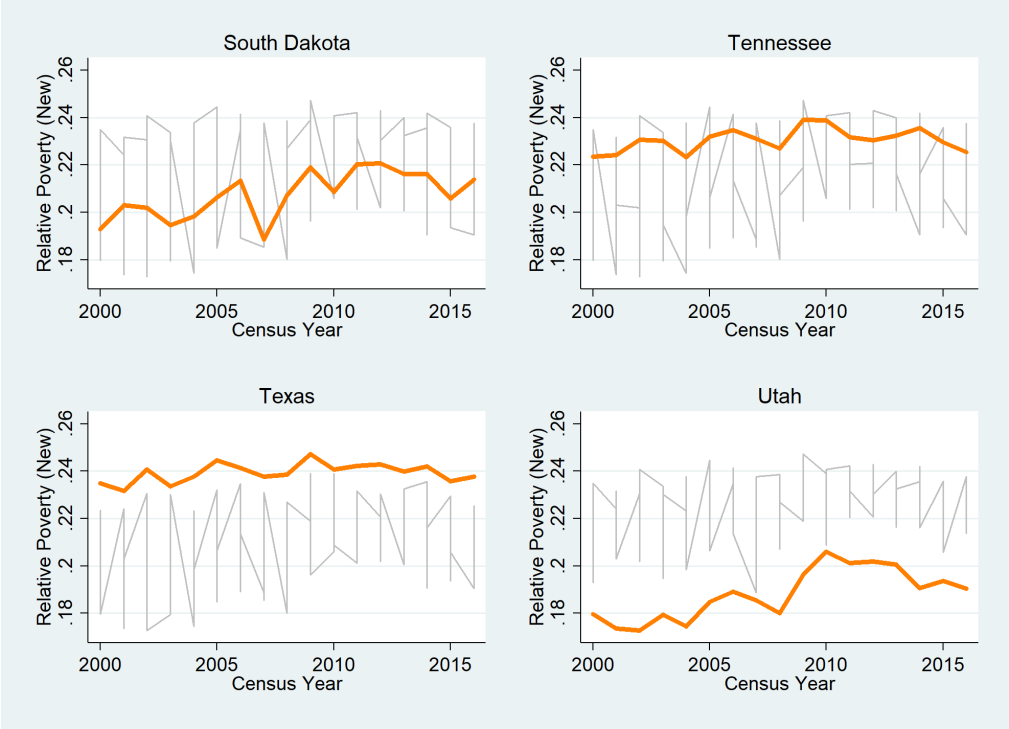

Figure 3.13: New Relative Poverty Measure (South Dakota, Tennessee, Texas, Utah)

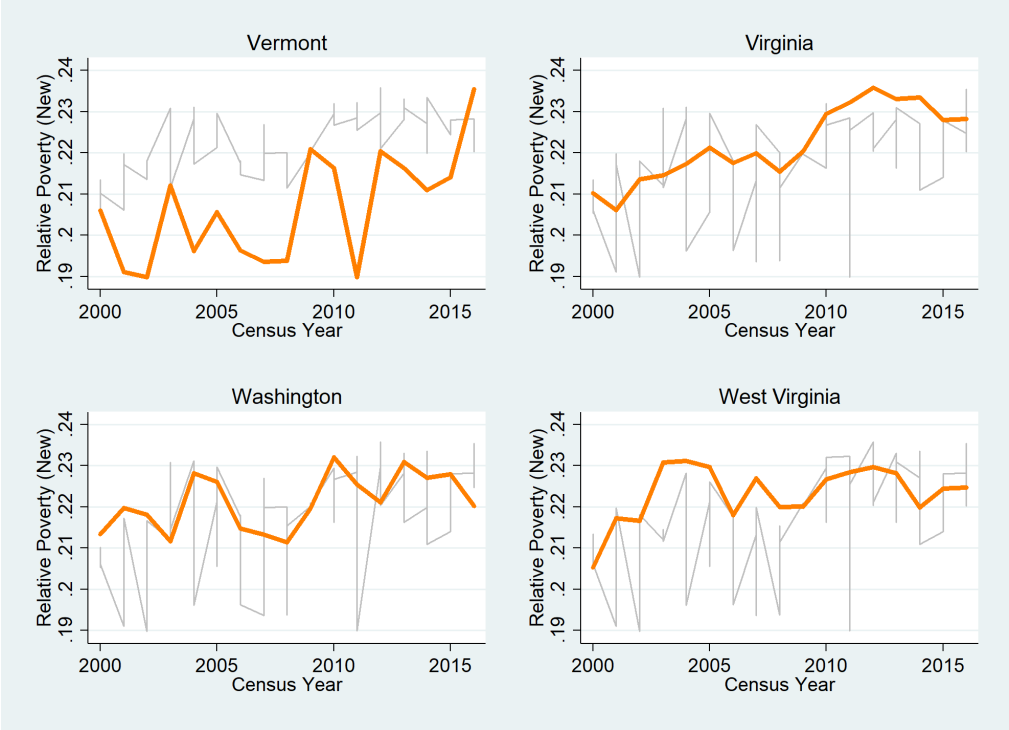

Figure 3.14: New Relative Poverty Measure (Vermont, Virginia, Washington, West Virginia)

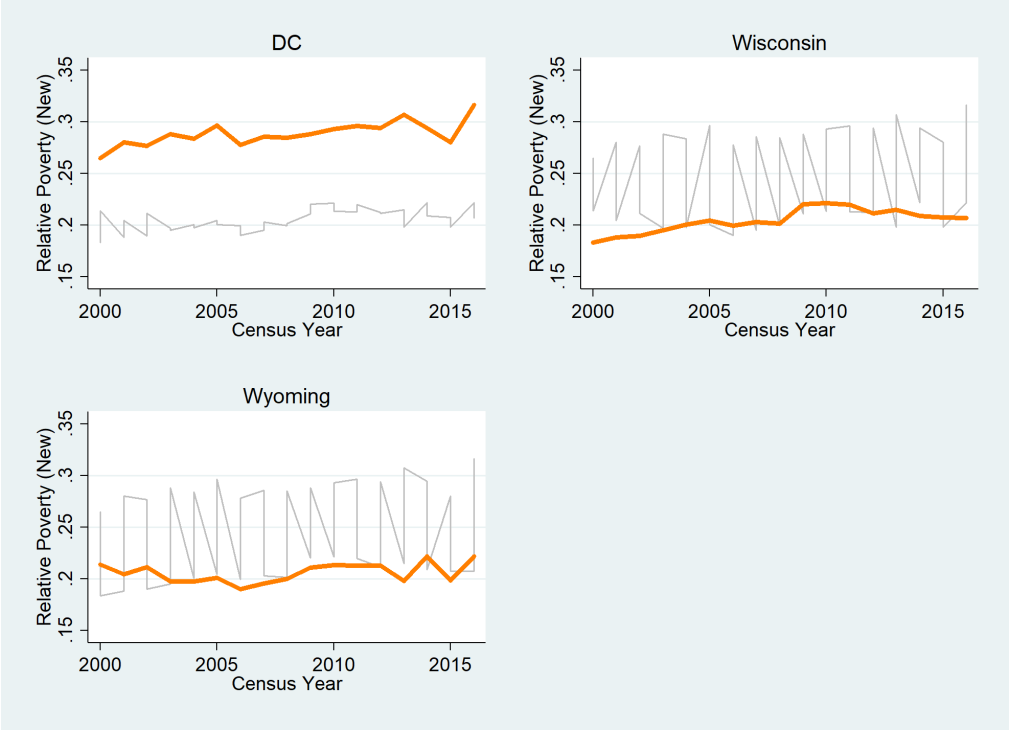

Figure 3.15: New Relative Poverty Measure (Wisconsin, Wyoming, DC)

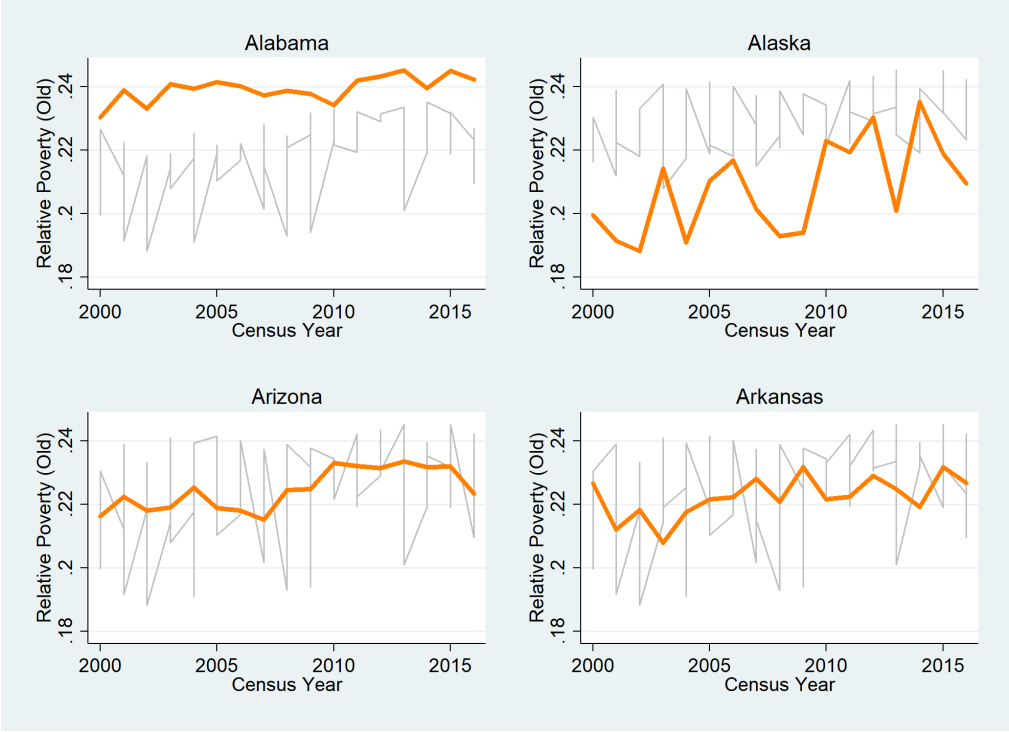

Figure 3.16: Old Relative Poverty Measure (Alabama, Alaska, Arizona, Arkansas)

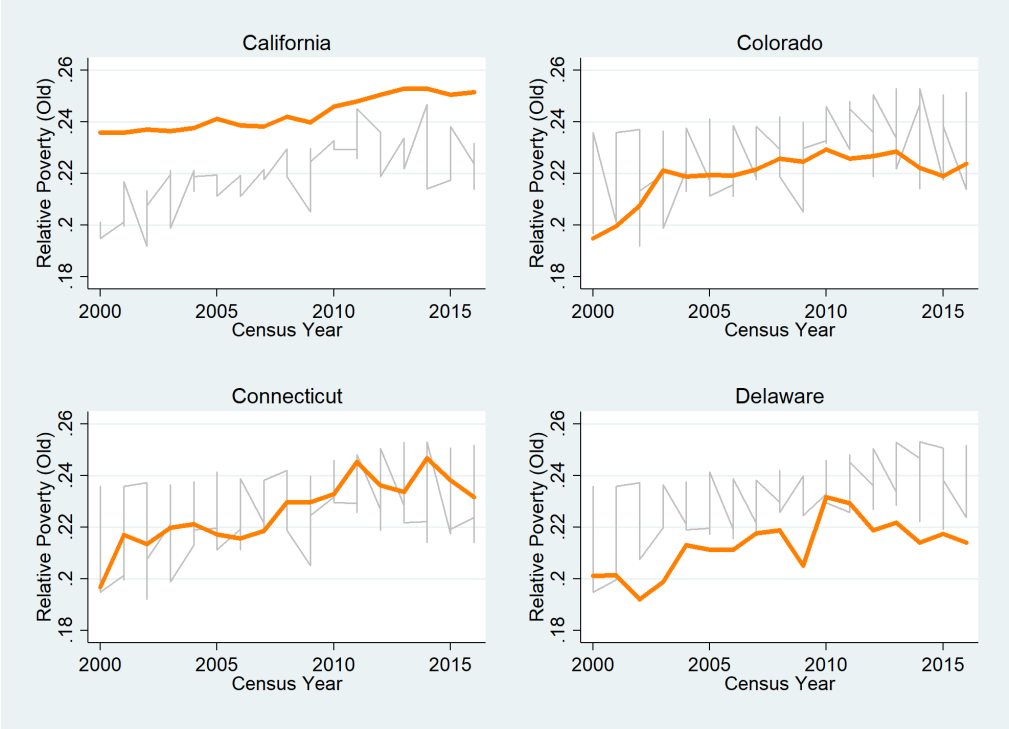

Figure 3.17: Old Relative Poverty Measure (California, Colorado, Connecticut, Delaware)

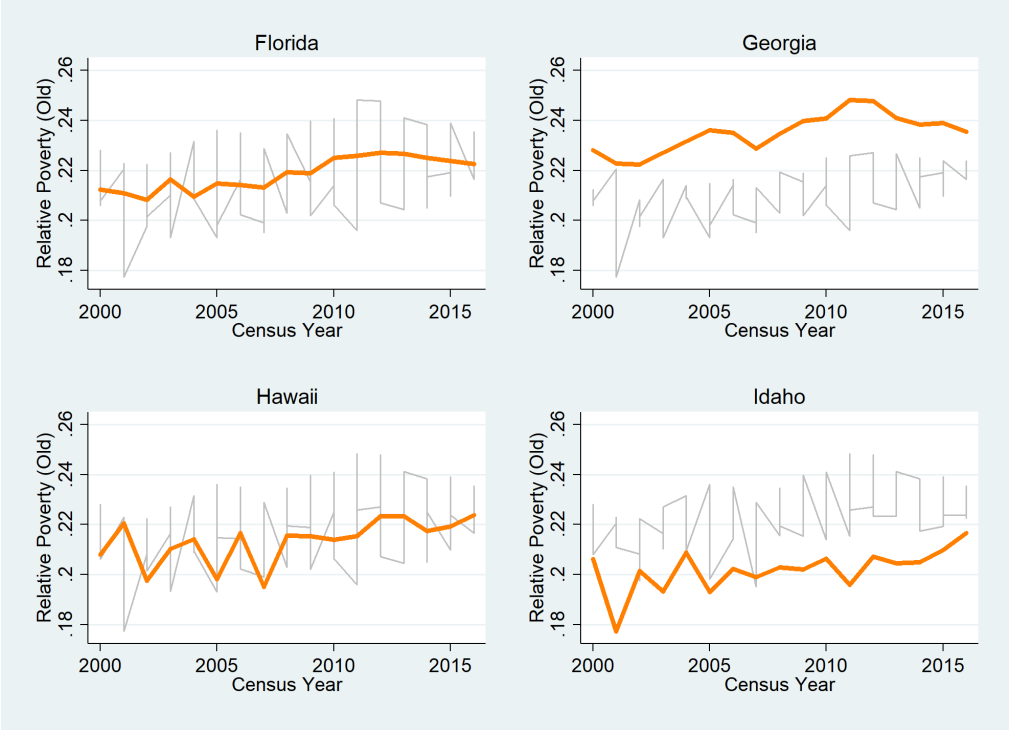

Figure 3.18: Old Relative Poverty Measure (Florida, Georgia, Hawaii, Idaho)

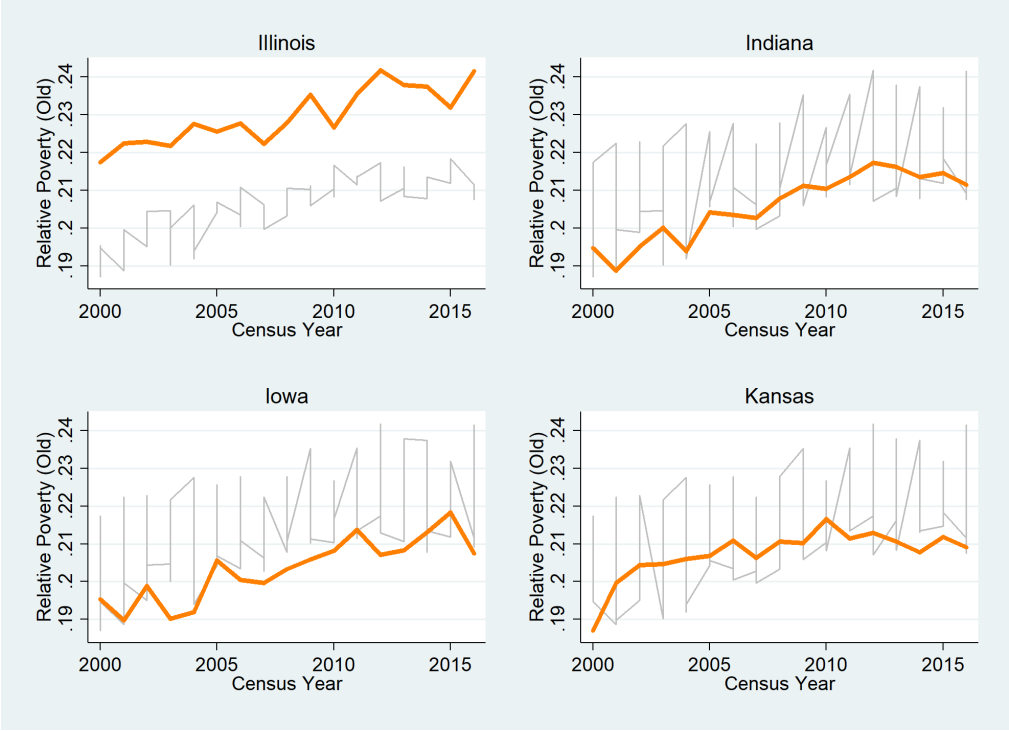

Figure 3.19: Old Relative Poverty Measure (Illinois, Indiana, Iowa, Kansas)

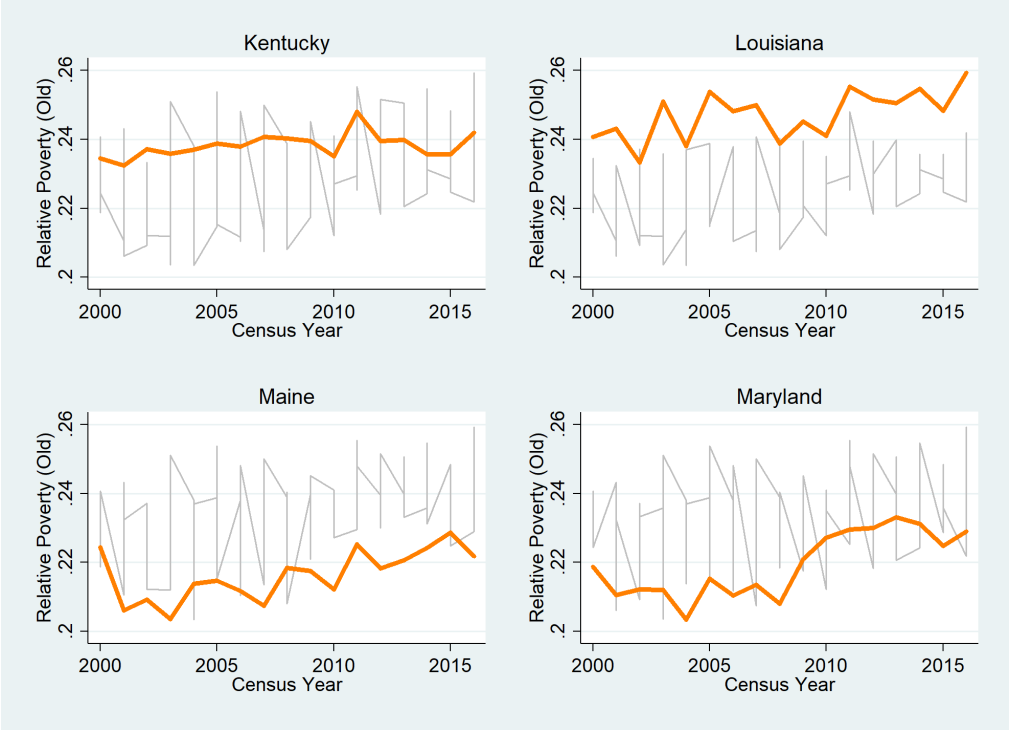

Figure 3.20: Old Relative Poverty Measure (Kentucky, Louisiana, Maine, Maryland)

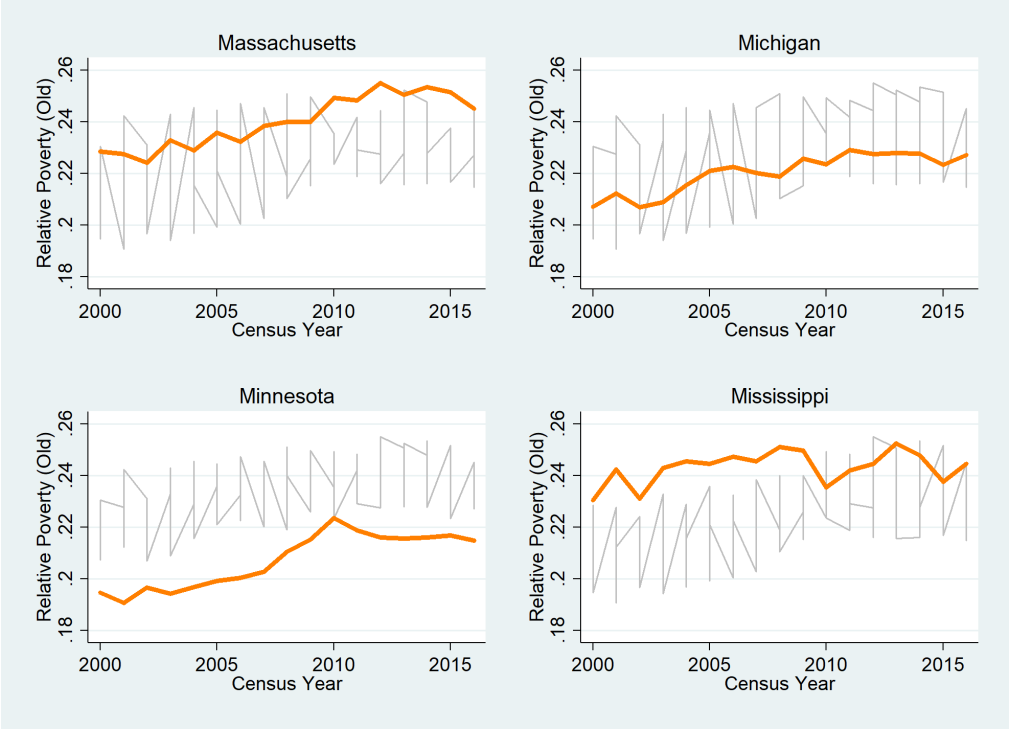

Figure 3.21: Old Relative Poverty Measure (Massachusetts, Michigan, Minnesota, Mississippi)

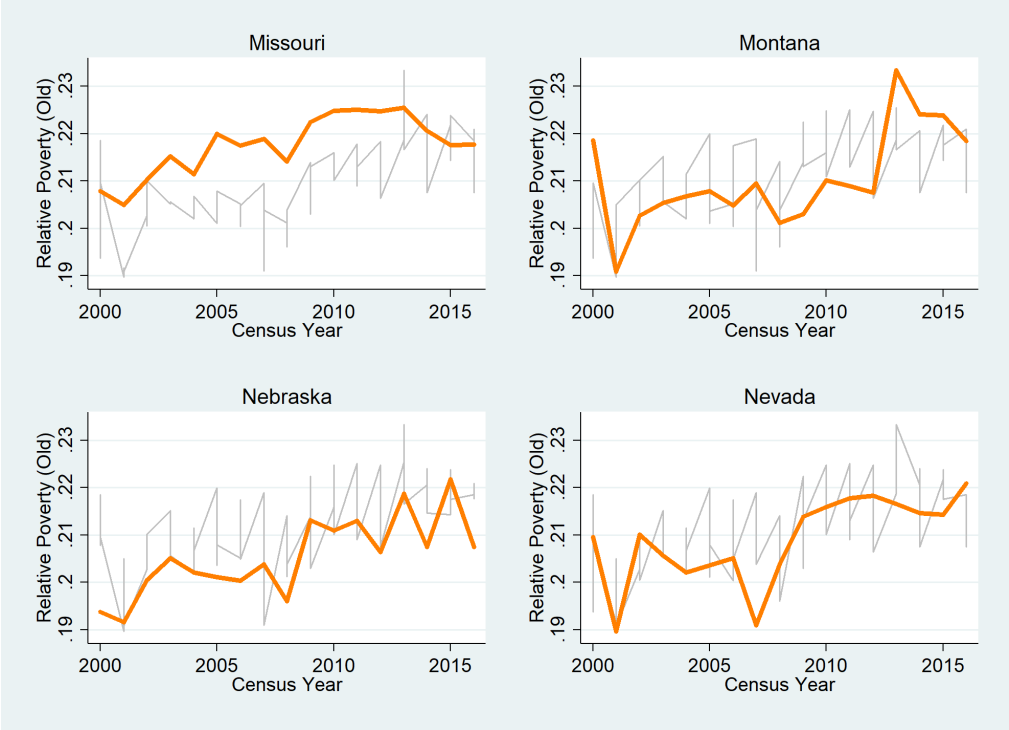

Figure 3.22: Old Relative Poverty Measure (Missouri, Montana, Nebraska, Nevada)

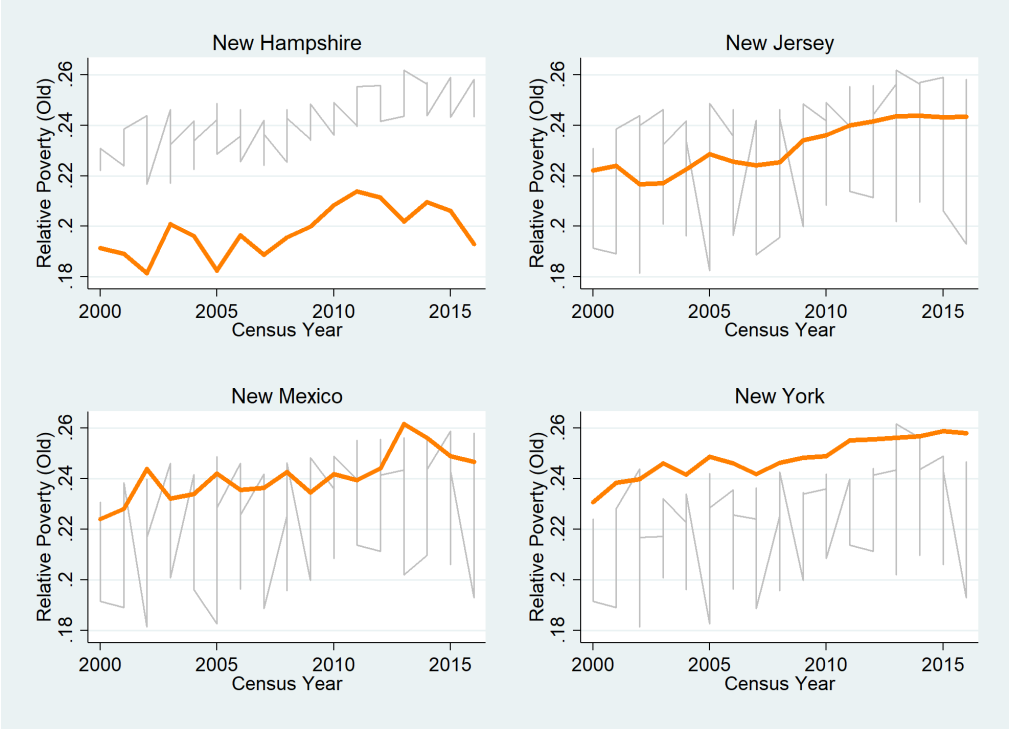

Figure 3.23: Old Relative Poverty Measure (New Hampshire, New Jersey, New Mexico, New York)

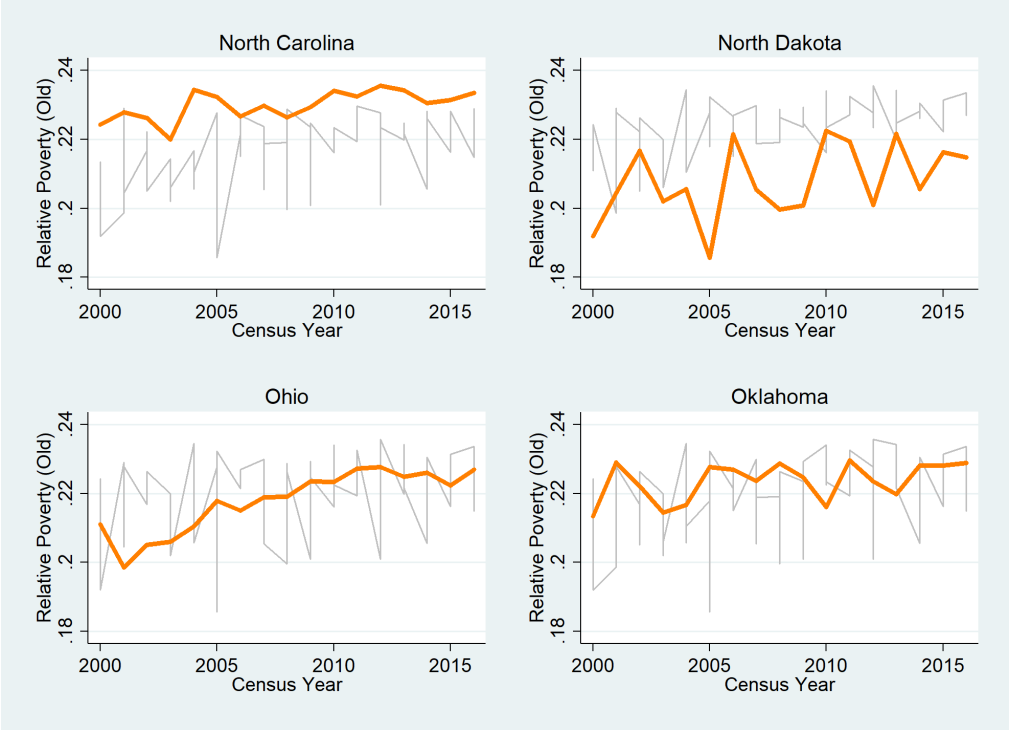

Figure 3.24: Old Relative Poverty Measure (North Carolina, North Dakota, Ohio, Oklahoma)

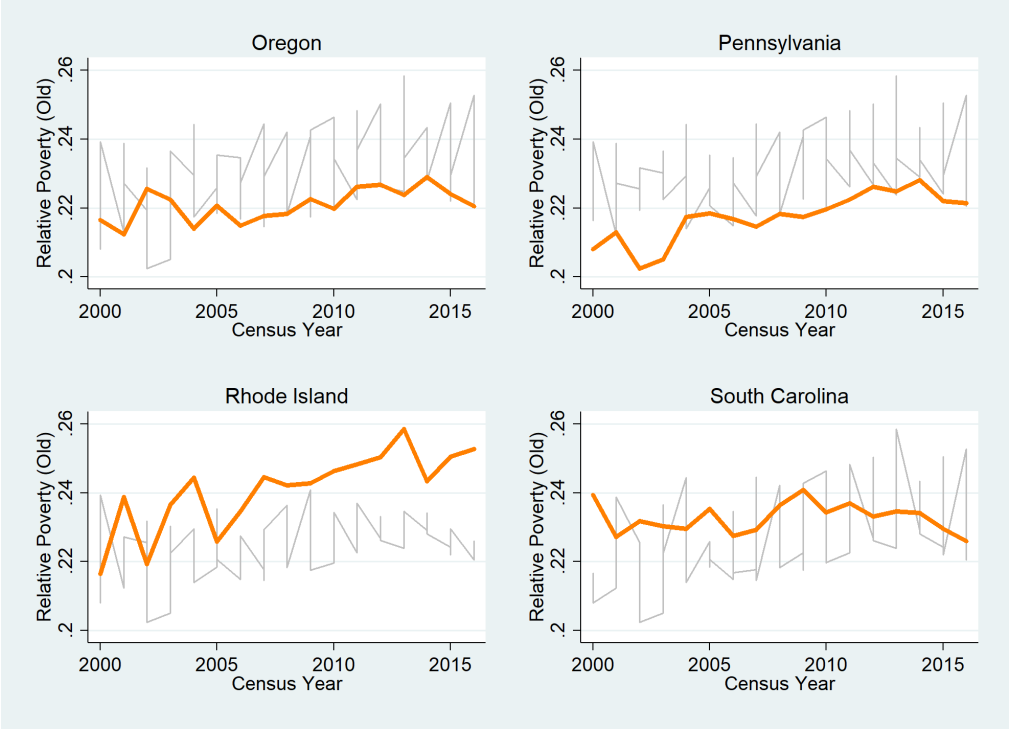

Figure 3.25: Old Relative Poverty Measure (Oregon, Pennsylvania, Rhode Island, South Carolina)

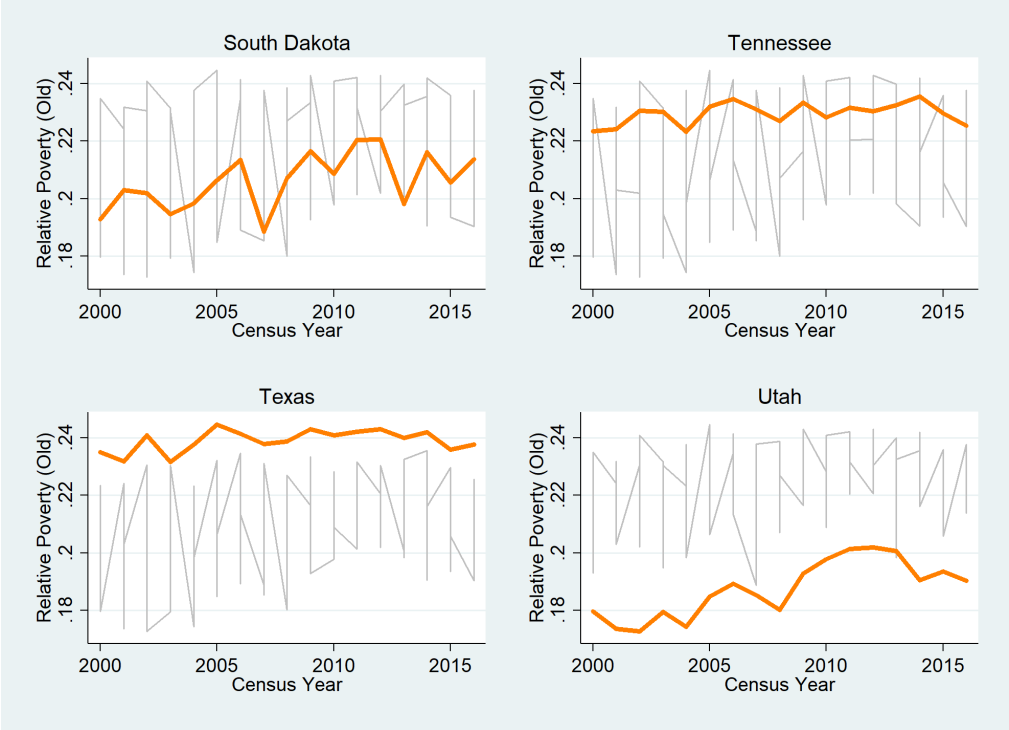

Figure 3.26: Old Relative Poverty Measure (South Dakota, Tennessee, Texas, Utah)

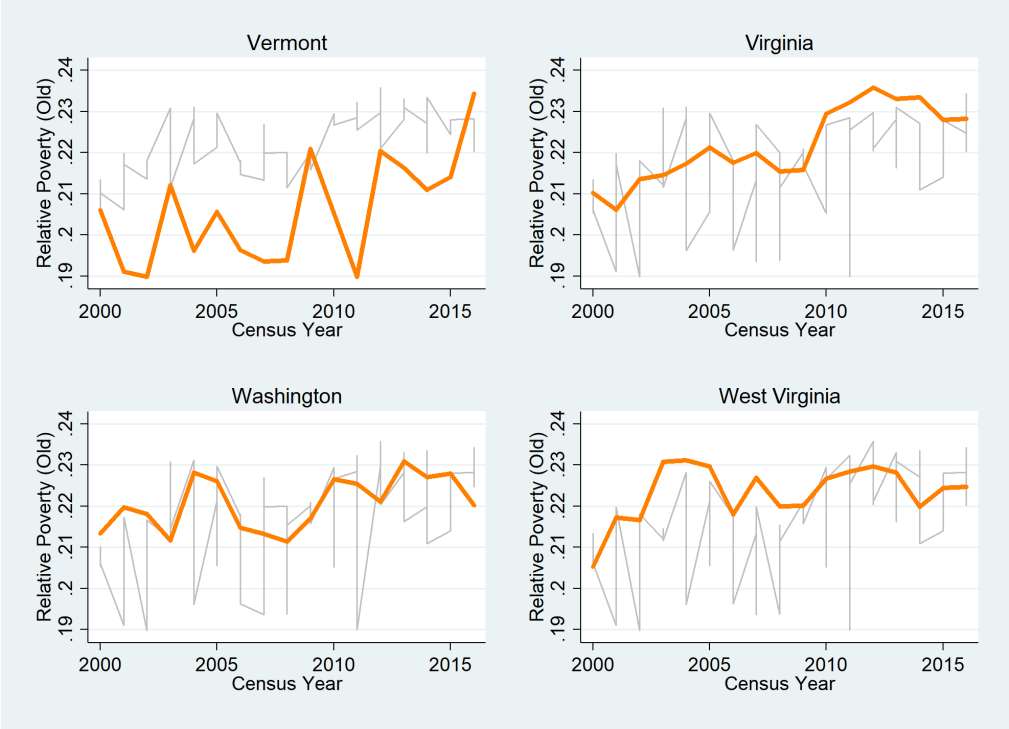

Figure 3.27: Old Relative Poverty Measure (Vermont, Virginia, Washington, West Virginia)

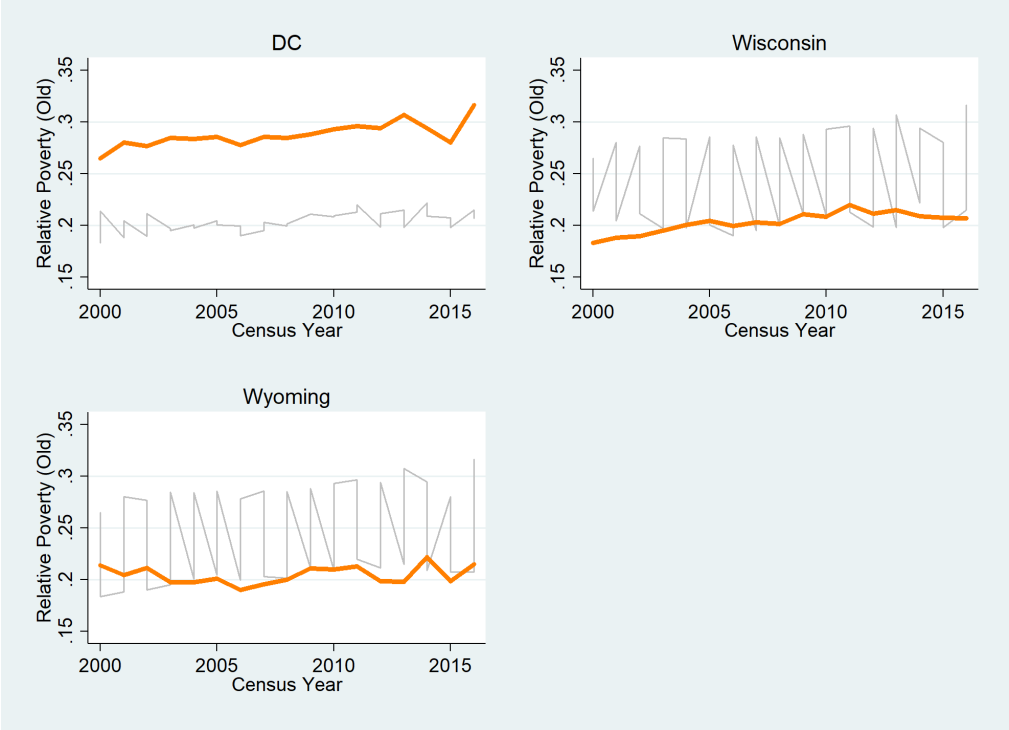

Figure 3.28: Old Relative Poverty Measure (Wisconsin, Wyoming, DC)

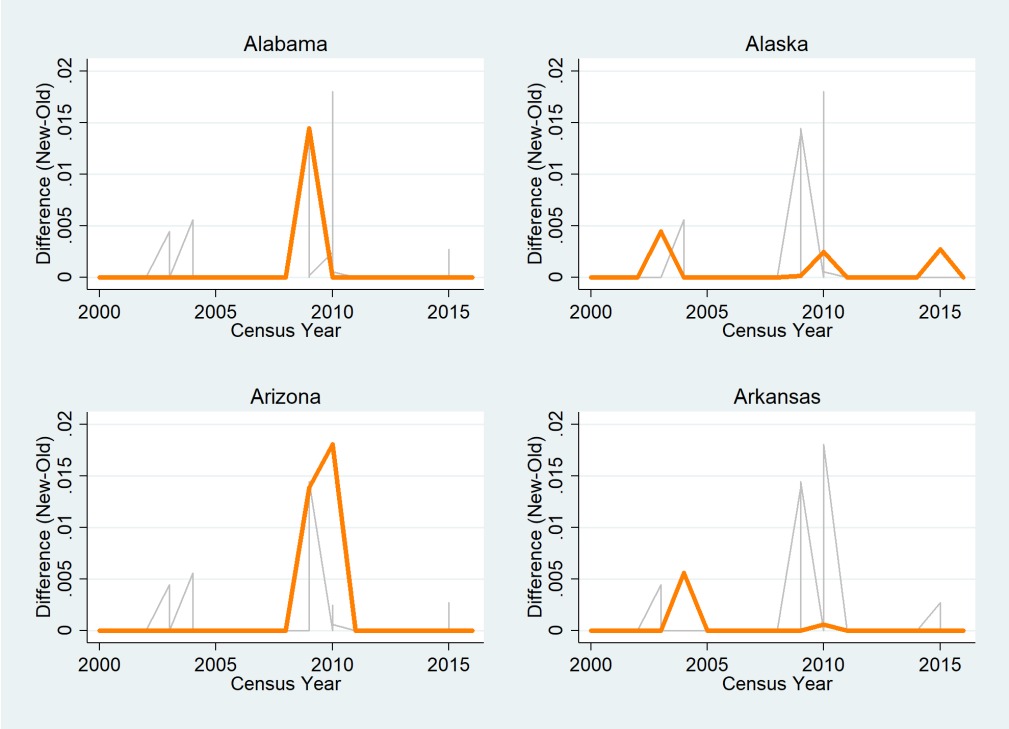

Figure 3.29: Difference Between Relative Poverty Measures (Alabama, Alaska, Arizona, Arkansas)

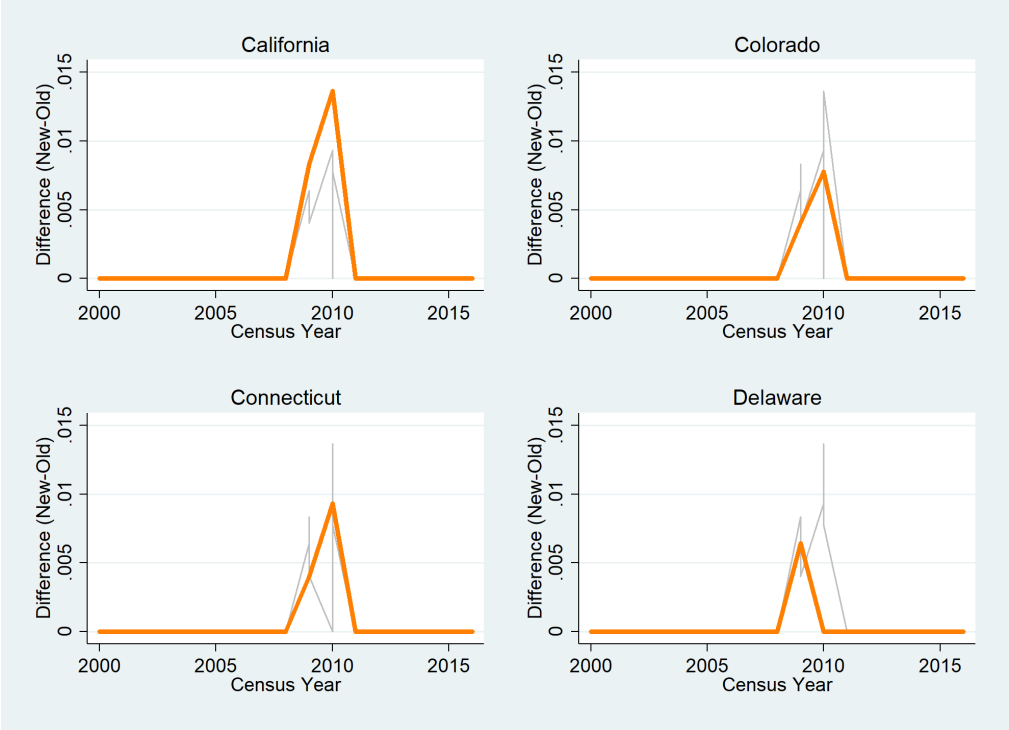

Figure 3.30: Difference Between Relative Poverty Measures (California, Colorado, Connecticut, Delaware)

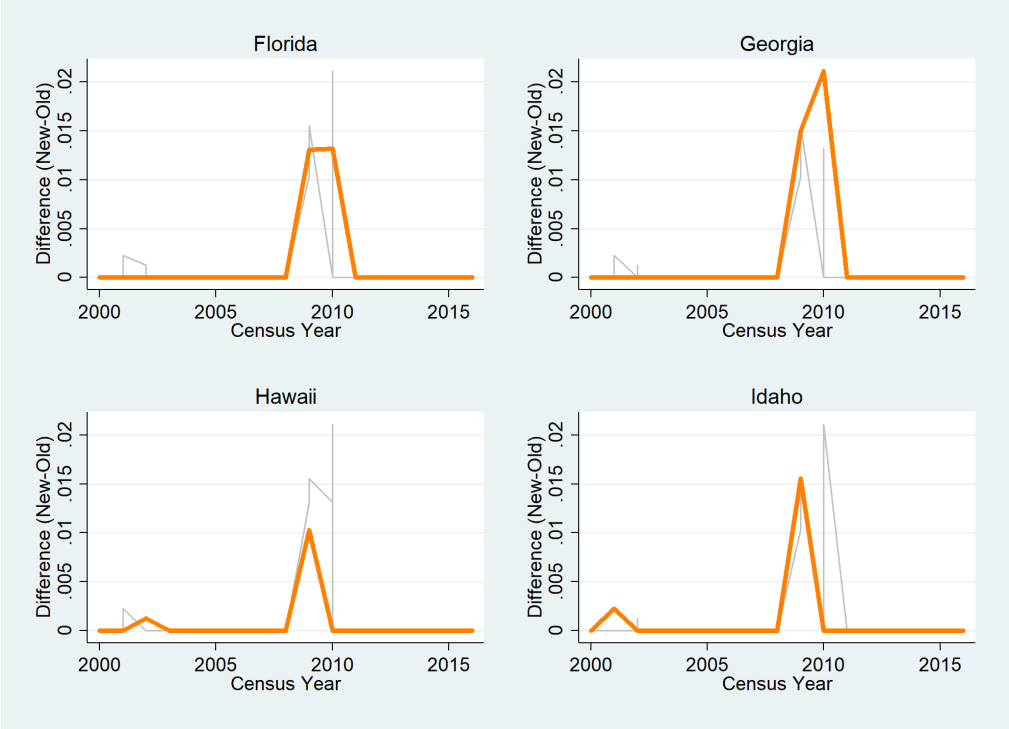

Figure 3.31: Difference Between Relative Poverty Measures (Florida, Georgia, Hawaii, Idaho)

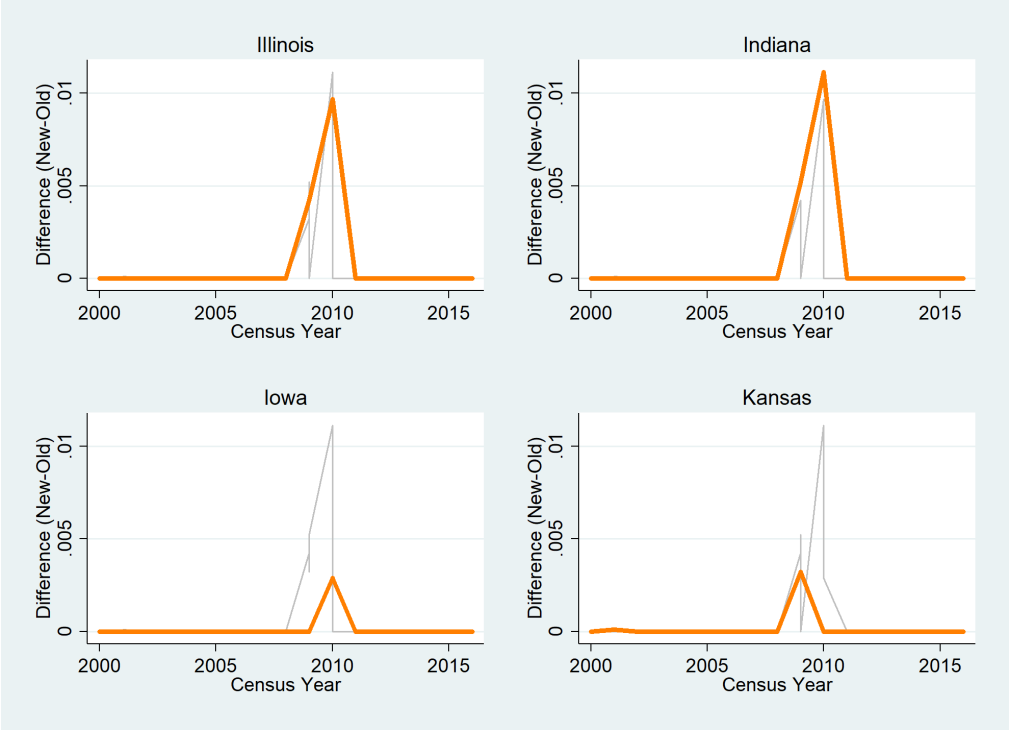

Figure 3.32: Difference Between Relative Poverty Measures (Illinois, Indiana, Iowa, Kansas)

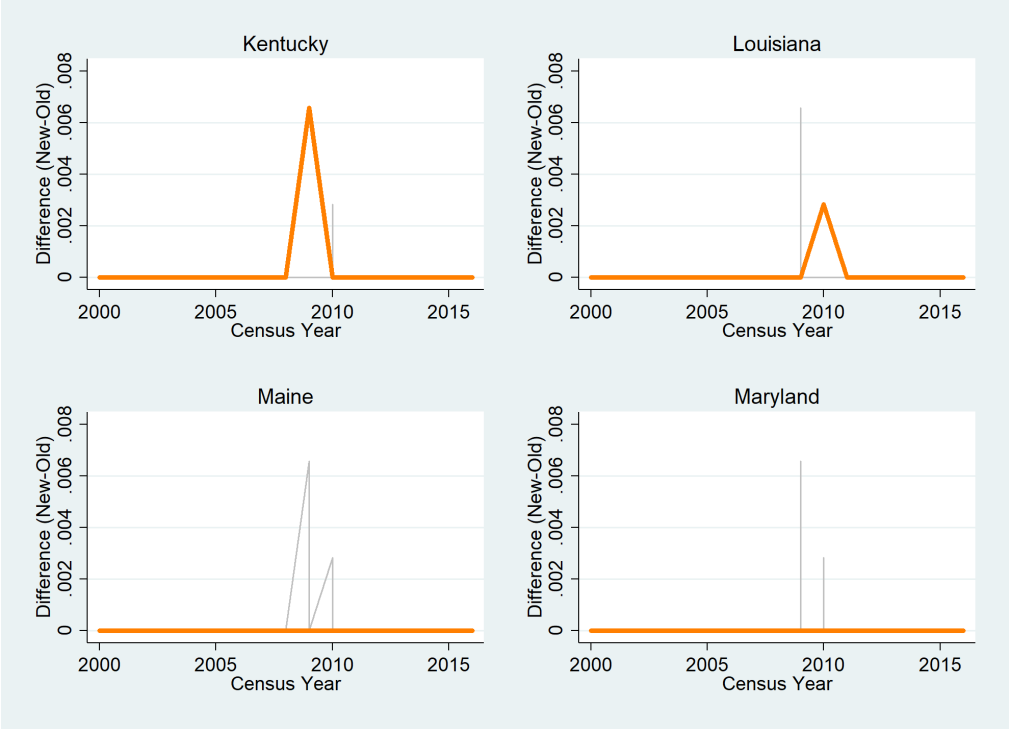

Figure 3.33: Difference Between Relative Poverty Measures (Kentucky, Louisiana, Maine, Maryland)

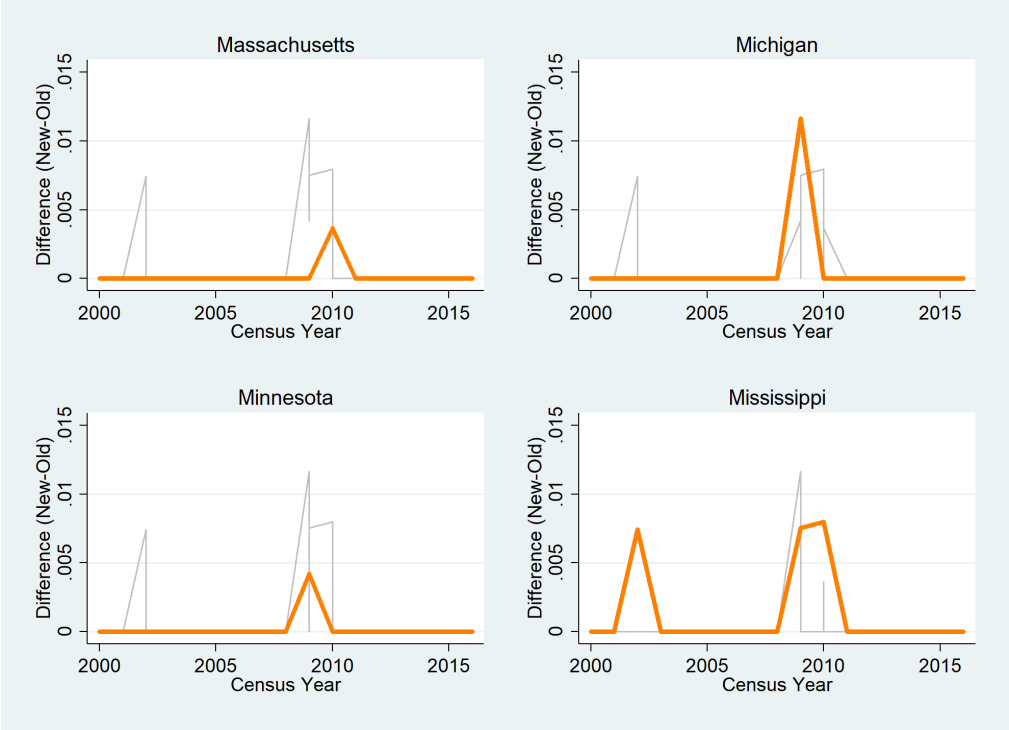

Figure 3.34: Difference Between Relative Poverty Measures (Massachusetts, Michigan, Minnesota, Mississippi)

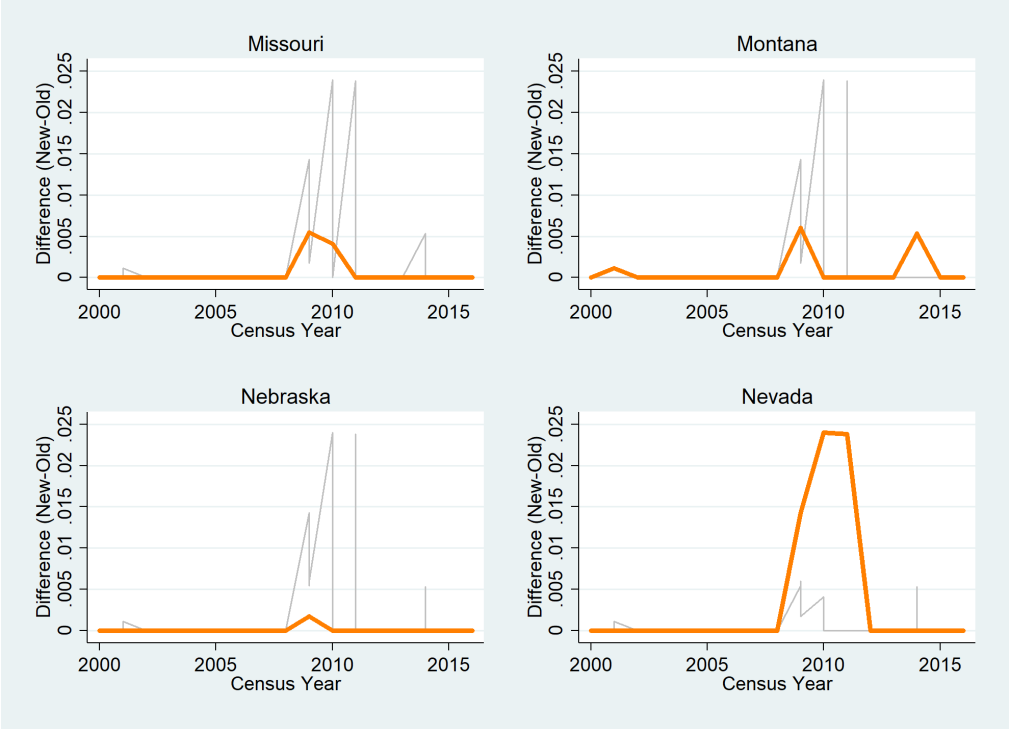

Figure 3.35: Difference Between Relative Poverty Measures (Missouri, Montana, Nebraska, Nevada)

Figure 3.36: Difference Between Relative Poverty Measures (New Hampshire, New Jersey, New Mexico, New York)

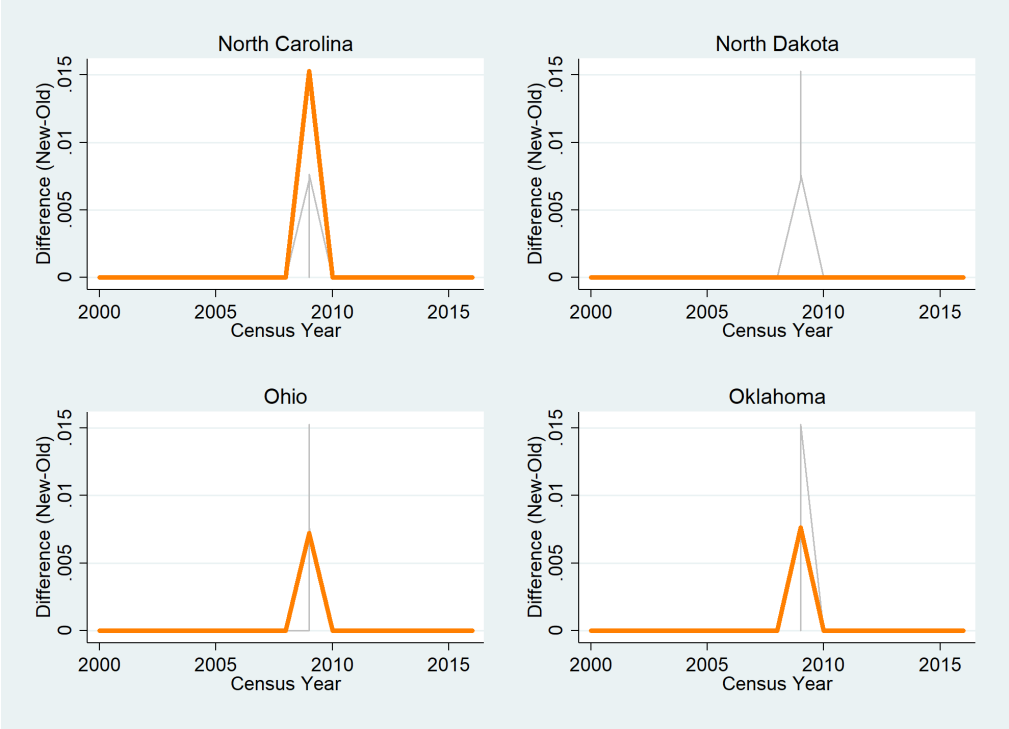

Figure 3.37: Difference Between Relative Poverty Measures (North Carolina, North Dakota, Ohio, Oklahoma)

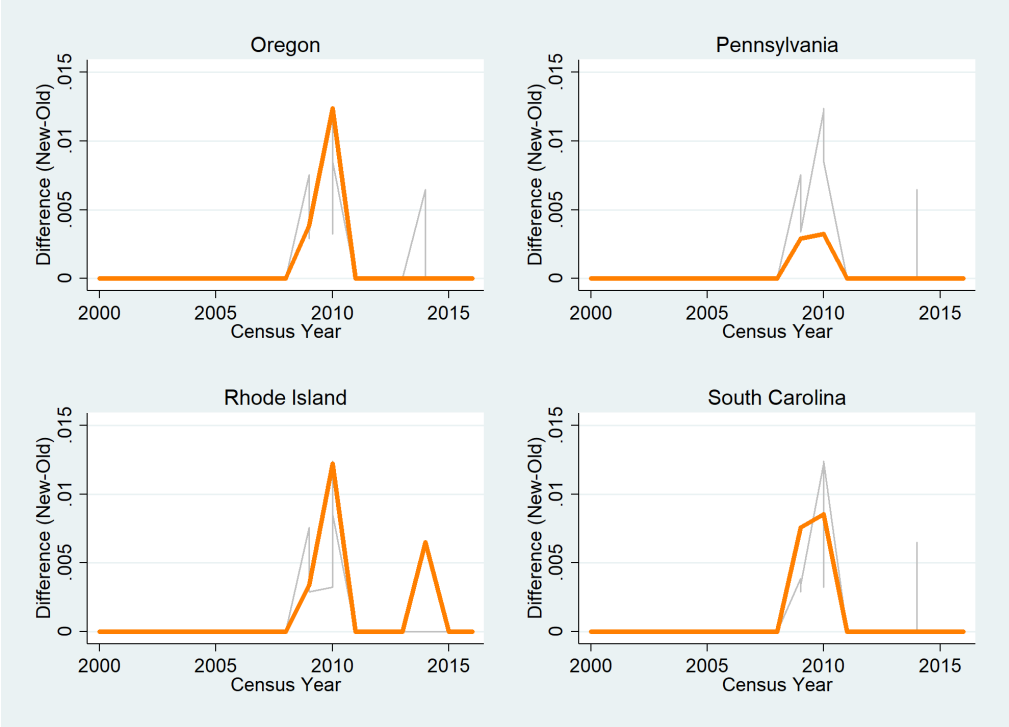

Figure 3.38: Difference Between Relative Poverty Measures (Oregon, Pennsylvania, Rhode Island, South Carolina)

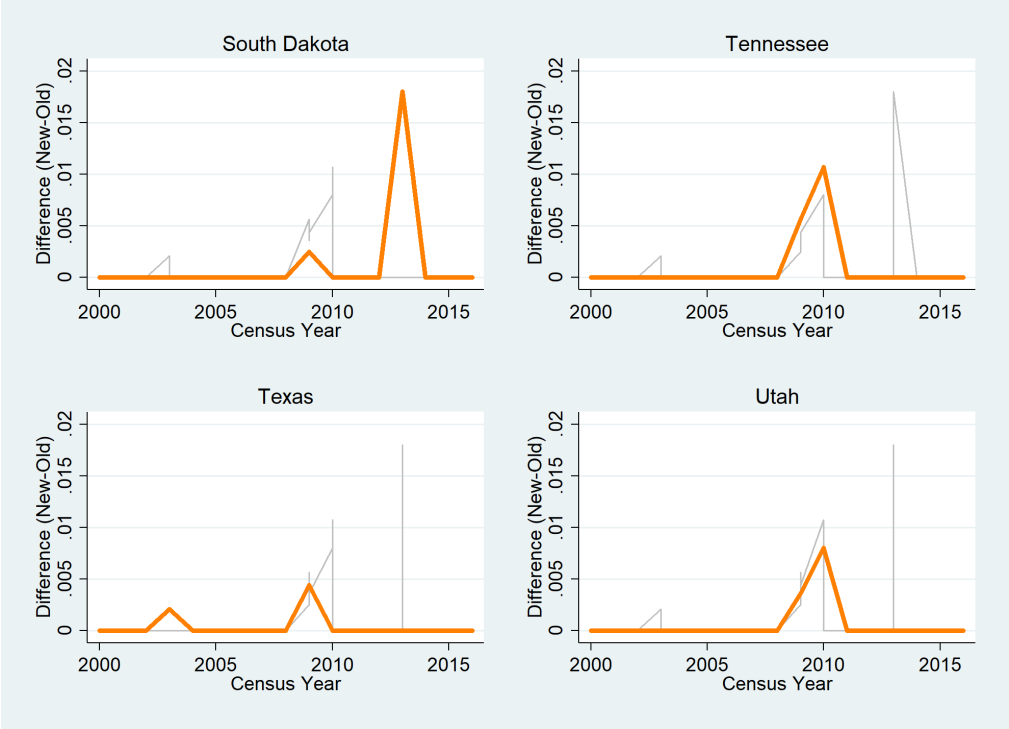

Figure 3.39: Difference Between Relative Poverty Measures (South Dakota, Tennessee, Texas, Utah)

Figure 3.40: Difference Between Relative Poverty Measures (Vermont, Virginia, Washington, West Virginia)

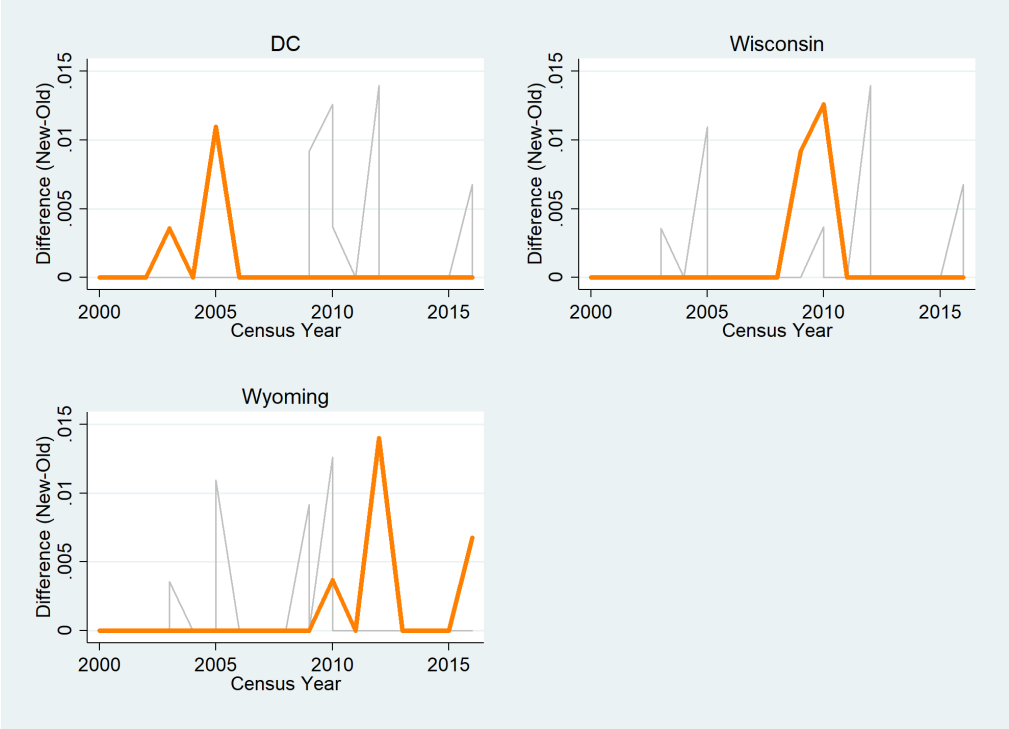

Figure 3.41: Difference Between Relative Poverty Measures (Wisconsin, Wyoming, DC)

3.4 Model

The model for this investigation is a nearly-saturated fixed-effects state-level model. A dummy measure which equals one for any state which gave the majority of their electoral college votes to the Republican candidate is the dependent variable in model (1) & (2). The proportion of votes cast received by Republican candidates in general elections is the dependent variable in models (3) & (4). Voter turnout in general elections is the dependent variable for models (5) & (6). Even numbered regressions test the old relative poverty measure, and odd the new. The proportion of Republican representatives elected or re-elected in midterms is the dependent variable for models (7) & (8). The proportion of votes cast in midterm elections garnered by all Republican representative candidates in a state in a midterm election year is the dependent variable for models (9) & (10). The proportion of total votes cast for third party candidates for all representative races by state is used as the dependent variable in models (11) & (12). As with the general election models, all even numbered regressions test the old relative poverty measure, odd numbered models test the new. Time dummies and a dummy for presidential incumbency are also included. Below

multiple regressions tests the effect of relative poverty on election outcomes. Data on election outcomes, popular vote totals, voter turnout, and midterm election outcomes are taken directly from the Library of Congress and the Clerk of The House of Representatives (Archer et al.).

3.5 Results

Starting With Table 3.1 on page 3.1 the results of an OLS Fixed-Effects model is presented with the general election dependent variables described on page 3.4. Due to the extraordinary number of variables being tested (with interaction terms and a constant, 105 in total) the table is broken into nine sections. With 204 observations, and an adjusted R-squared equal to 0.8 or better, the results suggest that in many states increased relative poverty decreases the likelihood of a Republican victory, decreases voter turnout, and decreases the proportion of votes which the Republican candidate garners. The models run are numbered 1-6. The first model (1) tests a dependent variable which equals one if the state in question awarded the majority of their electoral college votes to the Republican candidate in a given election year against the new relative poverty measure. Model (2) tests the same dependent variable against the old relative poverty measure. The third (3) and fourth (4) models test the dependent variable which equals the proportion of the total state-level vote received by the Republican General Election candidate in a given election year against the new and old (respectively) relative poverty measures. In the last two regressions, (5) & (6), the dependent variable equals the proportion of total eligible citizen voters who turned out to vote in a given election year in a given state against the new and old relative poverty measures respectively.

3.5.1 General Election Results

The coefficients on the un-interacted relative poverty measures ("NewBelow50" & "Below50") in Table 3.1 should be interpreted as the state-level effect of the reference group (Alabama). Alabama is a useful reference since Alabama sent 100% of their representatives to support the republican candidate in 100% of the elections tested. As expected the coefficients for $NewBelow50$

& $Below50$ are statistically indistinguishable from zero. LIke Alabama Wyoming, West Virginia, Utah, Texas, Tennessee, South Dakota, South Carolina, Oklahoma, North Dakota, Nebraska, Montana, Missouri, Mississippi, Kentucky, Kansas, Idaho, Georgia, Arkansas, and Alaska gave their electoral college votes to Republican candidate in every election. On the Democratic side California, Connecticut, Delaware, the District of Columbia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Oregon, Rhode Island, Vermont, and Washington sent all or the majority of their electoral college representative votes to the Democratic presidential candidate in every election year. For these states then only voter turnout (Models (5) & (6)) and vote proportions (Models (3) & (4)) will provide any testable variation.

No states have significant results in the general election models (Models (1) & (2)). The lack of variation between states, as well as the lack of variation across states in terms of the dependent variable, may be the cause of these results. The only variable which shows significance is the 2008 time dummy suggesting that there was a cross-state, i.e. national, story taking place which was larger than the state-level variation in relative poverty.

3.5.2 Republican Proportion and Voter Turnout in General Elections

The dependent variable which measures the proportion of votes cast for the Republican candidate in the general election votes is tested in models (3) & (4). States with significant results in these models are: Alaska, California, Colorado, DC, Hawaii, Idaho, Maryland, New Mexico, Vermont, Virginia, and North Carolina. The old relative poverty measure has the same states showing significant results (at a minimum 10% level) with similar coefficients in both magnitude and sign. Results suggest that for every 1% increase in the new (old) relative poverty, there is a; 6.11% (6.076%) decrease in Republican vote proportion in Alaska, in California the same increase in relative poverty corresponds to a 9.054% (9.025%) decrease, in DC a 5.574% (5.545%) decrease, in Hawaii a 10.63% (10.61%) decrease, in Idaho a 8.994% (8.966%) decrease, in Mary-

land a 6.271% (6.228%) decrease, in New Mexico a 7.486% (7.464%) decrease, in North Carolina 7.368% (7.370%) decrease, in Vermont a 5.543% (5.524%) decrease, and in Virginia a 6.731% (6.705%) decrease. In these states, some of which gave 100% of their electoral college votes to one party candidate or another. Proportion of total votes then allows an insight into the effect of relative poverty on Republican support even in the face of the unresponsive American electoral system.

Lastly, models (5) & (6) test the dependent variable of voter turnout. Colorado, Georgia, and North Carolina have significant results (minimum 10% level) using the new (old) relative poverty measure. Results suggest that for every 1% increase in the new (old) relative poverty there was a 5.385% (5.430%) increase in voter turnout in Colorado, a 6.327% (6.343%) increase in turnout in Georgia, and a 6.477% (6.487%) increase in turnout in North Carolina. Time dummies used at the end of the general election results are meant to pull out time trends in the overall data. The reference period is 2000. The variable for 2012 has been dropped due to collinearity with the incumbent variable. But looking at 2008 we see a large drop in Republican electoral college votes and proportion and a massive increase in voter turnout. Given that poverty reduction was a key aspect of Barack Obama's 2008 campaign, among other things, this may be circumstantial evidence supporting the idea that when a party candidate addresses the issue of poverty there is a big response from the electorate. The relative poverty measures used here seem to strengthen arguments which highlight relative poverty as a left-wing issue, decreasing support for Republican candidates and increasing voter turnout.

In all of the general election models the new and old relative poverty measures performed about the same. Differences in magnitude are small and no state was significant for one measure but not for the other. The new relative poverty measure has strong arguments in support, the old simply is not capturing the changing reality of poverty as well. But in the data selected downturn years (consecutive) are simply not the majority of the sample. After two years (2008-2009) there is al-

most consecutive down years in any state. Thus the differences between the new and old measure, when looking at the 2008 recession at the state-level, are minimal. This may explain the lack of difference in coefficients found here.

Countries or states which experience prolonged decreases in median income will have larger difference between the old and new measure, and thus differing coefficients. THis is simply not the case with the data used here. Better to apply these new and old measures to the international case, where we do see prolonged median income drops (multiple years) and thus a bigger difference. Additionally, it may be useful to look into county-level data. By aggregating tot he median for the state-level we are aggregating away variation which might include some counties recovering very quickly and other counties (most likely rural) taking much lnger to recover.

3.5.3 Midterm Election Results

Turning to the midterm election results equations in Table 3.10 to Table 3.18 one can see that the results of midterm elections are less enthusiastic. The only state which with a significant regressor of any kind for models (7) through (12) is Delaware in Models (7) & (8). Models (7) & (8) test the dependent variable which equals the proportion of Republican representatives elected (or re-elected) in a given midterm year. For every 1% increase in the new (old) relative poverty measure there is a 35.81% (34.27%) decrease in Republican representation at the state level in Delaware. Note that the way this dependent variable is calculated as a fraction between 0 and 1. New Hampshire for example has only two representatives. So a 50% increase or decrease would mean one of two representatives changing affiliation, i.e. possible values of the dependent variable is only the set [0,1/2,1]. Delaware has only one House Representative. Thus, the fact that Delaware is the only statistically significant state suggests that the findings here are not robust. The new relative poverty measure, nor the old, have any predictive power concerning the outcomes of general elections. No other state has significant results for any other models tested on midterm elections.

3.6 Policy Recommendations & Conclusion

As the IPUMS data collection stretches into future years these regressions can be extended. The results here may be sensitive to the elections chosen and thus adding new elections as the data becomes available may allow for greater insight into the relationship investigated here. Additionally, though state-level effects are studied here, it may be possible to calculate county-level effects using the IPUMS-USA. Though County-level data may not be complete, the county-level may capture a clearer picture as variation is lost when aggregating to the state level. One reason why the midterm results may be showing less significance and consistency is due to the fact that midterm elections have lower voter turnout in general. Midterm elections then may be pulling in only those voters for whom party affiliation/loyalty is a more decisive factor. State-level fixed-effects should pull out any invariant state-level effects and with time and incumbency dummies a strong case has been made that relative poverty is the key factor for the marginal voter.

The goal of the new relative poverty measure is to ensure we understand what proportion of the population experiences poverty during downturns. This is integral if we are to understand how people's behavior is affected by poverty. The issue is not bare subsistence, the basic human need for caloric intake. It is something else. A higher level on Maslow's hierarchy. The primate science conducted by Sapolsky (1996, 2005), Linden (2011), and others points to predictably irrational behavior. Behavior which does not or cannot comprehend the market signal without a context; and this context, I argue here, is set by relative income. The physiological stress caused by seeing one earn less than one's neighbor, one's peer group, is so bad it would do well for the health of the one suffering-to mitigate it. The need to belong, to empathize with others and feel their understanding in return, is fundamental. Understanding economic measures without a strong foundation in these social aspects-one invites misinterpretation. Republican presidential candidates do not seem to benefit from relative poverty.

This is contra the inequality studies of late. But relative poverty is different from inequality. Relative poverty gives the proportion of people suffering under poverty. As this number grows, instead of feeling isolated and frustrated, as with inequality, we may be seeing people being emboldened; a countermovement born of the burdensome nature of “free market" induced poverty may be forming. When the upper echelon of income gain in relative position, relative poverty does not change. Thus, relative poverty is not capturing the well-reported rise of extreme income inequality. When relative poverty increases the reference group of the poor becomes larger, not smaller. The myth of the protestant work ethic, more absurd. The networking which births new solutions to old problems more likely.

This paper has argued for using a relative definition of poverty which includes one key adjustment to the standard method for computing relative poverty rates. This adjustment is in the spirit of a relative definition of poverty which takes into account the fact that median incomes rise and fall. When median incomes fall, rather than using the current, lower median figure, relative poverty measures should use the highest previous real median income. This captures the primal instinctual money-like behavior fo humans. A species which cannot organize itself in a way which prevents Wall St. brokers from owning millionaire dollar yachts while innocent children die of starvation adn preventable disease. As expected, during periods of recession our new relative poverty measure is higher than the traditional measure better capturing the proportion of people who are now experiencing poverty as they would define it, in relation to their income expectations and the purchasing habits which have formed as a result.

Table 3.1: General Election Regressions (Section 1)

	(1)	(2)	(3)	(4)	(5)	(6)
NewBelow50	0.0161		4.852		-2.456	
	(0.23)		(3.07)		(2.72)	
Below50		0.0191		4.819		-2.526
		(0.23)		(3.06)		(2.71)
Alabama # NewBelow50	0		0		0	
	(.)		(.)		(.)	
Alaska # NewBelow50	-0.0118		-6.111*		0.421	
	(0.24)		(3.19)		(2.83)	
Arizona # NewBelow50	0.0384		-2.265		3.148	
	(0.31)		(4.11)		(3.64)	
Arkansas # NewBelow50	-0.101		-3.66		3.567	
	(0.42)		(5.59)		(4.96)	
California # NewBelow50	-0.0136		-9.054**		0.486	
	(0.28)		(3.68)		(3.26)	
Colorado # NewBelow50	-0.31		-6.070*		5.385*	
	(0.24)		(3.24)		(2.87)	
Connecticut # NewBelow50	-0.000405		-3.95		2.924	
	(0.24)		(3.18)		(2.82)	
Delaware # NewBelow50	0.0417		-5.577		1.732	
	(0.28)		(3.68)		(3.26)	
DC # NewBelow50	-0.0265		-5.574*		2.851	
	(0.24)		(3.15)		(2.79)	
Florida # NewBelow50	-0.459		-4.226		1.122	
	(0.28)		(3.68)		(3.26)	
Georgia # NewBelow50	0.0266		-5.363		6.327*	
	(0.27)		(3.64)		(3.22)	
Hawaii # NewBelow50	-0.0144		-10.63***		3.797	
	(0.28)		(3.77)		(3.34)	
Idaho # NewBelow50	-0.14		-8.994**		4.24	
	(0.32)		(4.27)		(3.79)	
Illinois # NewBelow50	-0.0182		-5.264		1.846	
	(0.25)		(3.35)		(2.97)	
Indiana # NewBelow50	-0.0496		-5.555		2.205	
	(0.25)		(3.36)		(2.98)	
Iowa # NewBelow50	-0.114		-3.345		0.241	
	(0.28)		(3.71)		(3.29)	
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.2: General Election Regressions (Section 2)

	(1)	(2)	(3)	(4)	(5)	(6)
Kansas # NewBelow50	0.0104		-4.104		1.609	
	(0.25)		(3.35)		(2.97)	
Kentucky # NewBelow50	0.0354		5.016		-0.0293	
	(0.46)		(6.05)		(5.36)	
Louisiana # NewBelow50	-0.0456		-3.405		0.787	
	(0.26)		(3.44)		(3.05)	
Maine # NewBelow50	-0.0494		-1.997		4.947	
	(0.38)		(4.97)		(4.40)	
Maryland # NewBelow50	-0.0276		-6.271*		2.631	
	(0.25)		(3.30)		(2.93)	
Massachusetts # NewBelow50	0.00847		-3.105		3.387	
	(0.25)		(3.32)		(2.94)	
Michigan # NewBelow50	0.265		-4.18		2.72	
	(0.26)		(3.50)		(3.10)	
Minnesota # NewBelow50	0.0108		-4.307		0.816	
	(0.26)		(3.37)		(2.99)	
Mississippi # NewBelow50	0.0306		-4.331		4.631	
	(0.27)		(3.63)		(3.22)	
Missouri # NewBelow50	0.0179		-1.413		-0.525	
	(0.29)		(3.82)		(3.39)	
Montana # NewBelow50	-0.0947		-2.344		2.873	
	(0.28)		(3.69)		(3.27)	
Nebraska # NewBelow50	-0.0598		-4.75		2.749	
	(0.29)		(3.90)		(3.46)	
Nevada # NewBelow50	-0.402		-5.308		3.704	
	(0.27)		(3.53)		(3.13)	
New Hampshire # NewBelow50	0.027		-5.08		2.382	
	(0.27)		(3.58)		(3.17)	
New Jersey # NewBelow50	-0.0251		-5.065		1.351	
	(0.25)		(3.35)		(2.97)	
New Mexico # NewBelow50	-0.121		-7.486**		2.511	
	(0.26)		(3.43)		(3.04)	
New York # NewBelow50	-0.012		-4.679		1.217	
	(0.25)		(3.32)		(2.94)	
North Carolina # NewBelow50	0.36		-7.368*		6.477*	
	(0.32)		(4.21)		(3.73)	
North Dakota # NewBelow50	-0.0603		-2.413		-0.321	
	(0.27)		(3.53)		(3.12)	
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.3: General Election Regressions (Section 3)

	(1)	(2)	(3)	(4)	(5)	(6)
Ohio # NewBelow50	-0.314		-3.865		2.62	
	(0.27)		(3.53)		(3.13)	
Oklahoma # NewBelow50	0.0244		-0.339		-1.209	
	(0.28)		(3.72)		(3.29)	
Oregon # NewBelow50	0.0393		-6.797		-0.733	
	(0.33)		(4.36)		(3.86)	
Pennsylvania # NewBelow50	0.19		-3.671		3.437	
	(0.28)		(3.77)		(3.34)	
Rhode Island # NewBelow50	-0.014		-2.923		1.149	
	(0.24)		(3.21)		(2.84)	
South Carolina # NewBelow50	0.0687		-3.858		3.224	
	(0.33)		(4.31)		(3.82)	
South Dakota # NewBelow50	0.00408		-4.502		1.103	
	(0.25)		(3.31)		(2.94)	
Tennessee # NewBelow50	0.155		6.225		3.62	
	(0.46)		(6.04)		(5.35)	
Texas # NewBelow50	0.117		-5.111		-1.461	
	(0.46)		(6.07)		(5.38)	
Utah # NewBelow50	-0.00396		-5.301		0.87	
	(0.25)		(3.34)		(2.96)	
Vermont # NewBelow50	-0.0366		-5.543*		1.965	
	(0.24)		(3.17)		(2.81)	
Virginia # NewBelow50	-0.369		-6.731**		4.149	
	(0.25)		(3.36)		(2.97)	
Washington # NewBelow50	-0.081		-5.869		3.036	
	(0.29)		(3.80)		(3.37)	
West Virginia # NewBelow50	-0.0173		-1.827		1.155	
	(0.25)		(3.36)		(2.98)	
Wisconsin # NewBelow50	0.137		-4.777		2.262	
	(0.25)		(3.34)		(2.96)	
Wyoming # NewBelow50	-0.0504		-3.288		2.479	
	(0.26)		(3.41)		(3.02)	
————————-Interaction Terms State and Old Relative Poverty Measure————————						
Alabama # Below50		0		0		0
		(.)		(.)		(.)
Alaska # Below50		-0.0137		-6.076*		0.475
		(0.24)		(3.18)		(2.81)
Arizona # Below50		0.0382		-2.263		3.136
		(0.31)		(4.09)		(3.62)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
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Table 3.4: General Election Regressions (Section 4)

	(1)	(2)	(3)	(4)	(5)	(6)
Arkansas # Below50		-0.0244		-0.749		1.809
		(0.33)		(4.41)		(3.90)
California # Below50		-0.0143		-9.025**		0.522
		(0.28)		(3.66)		(3.24)
Colorado # Below50		-0.312		-6.050*		5.430*
		(0.24)		(3.23)		(2.85)
Connecticut # Below50		-0.00248		-3.927		2.971
		(0.24)		(3.17)		(2.81)
Delaware # Below50		0.0403		-5.567		1.75
		(0.28)		(3.66)		(3.24)
DC # Below50		-0.0288		-5.545*		2.913
		(0.24)		(3.14)		(2.78)
Florida # Below50		-0.459		-4.19		1.154
		(0.28)		(3.67)		(3.25)
Georgia # Below50		0.0259		-5.338		6.343**
		(0.27)		(3.62)		(3.21)
Hawaii # Below50		-0.0149		-10.61***		3.823
		(0.28)		(3.75)		(3.32)
Idaho # Below50		-0.142		-8.966**		4.323
		(0.32)		(4.26)		(3.77)
Illinois # Below50		-0.0195		-5.24		1.888
		(0.25)		(3.34)		(2.96)
Indiana # Below50		-0.051		-5.522		2.247
		(0.25)		(3.35)		(2.96)
Iowa # Below50		-0.115		-3.307		0.282
		(0.28)		(3.70)		(3.27)
Kansas # Below50		0.00865		-4.088		1.644
		(0.25)		(3.34)		(2.96)
Kentucky # Below50		0.0362		5.021		-0.0293
		(0.46)		(6.03)		(5.33)
Louisiana # Below50		-0.0471		-3.369		0.848
		(0.26)		(3.43)		(3.04)
Maine # Below50		-0.053		-1.902		5.087
		(0.38)		(4.95)		(4.38)
Maryland # Below50		-0.0295		-6.228*		2.695
		(0.25)		(3.29)		(2.91)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
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Table 3.5: General Election Regressions (Section 5)

	(1)	(2)	(3)	(4)	(5)	(6)
Massachusetts # Below50		0.00702		-3.073		3.428
		(0.25)		(3.30)		(2.92)
Michigan # Below50		0.264		-4.159		2.753
		(0.26)		(3.49)		(3.09)
Minnesota # Below50		0.00927		-4.277		0.858
		(0.26)		(3.36)		(2.98)
Mississippi # Below50		0.0284		-4.323		4.664
		(0.27)		(3.62)		(3.20)
Missouri # Below50		0.0177		-1.391		-0.514
		(0.29)		(3.81)		(3.37)
Montana # Below50		-0.0978		-2.29		2.98
		(0.28)		(3.67)		(3.25)
Nebraska # Below50		-0.0602		-4.737		2.777
		(0.29)		(3.89)		(3.44)
Nevada # Below50		-0.404		-5.265		3.764
		(0.27)		(3.52)		(3.11)
New Hampshire # Below50		0.0259		-5.057		2.4
		(0.27)		(3.56)		(3.15)
New Jersey # Below50		-0.0265		-5.033		1.401
		(0.25)		(3.34)		(2.96)
New Mexico # Below50		-0.123		-7.464**		2.551
		(0.26)		(3.42)		(3.02)
New York # Below50		-0.0135		-4.654		1.262
		(0.25)		(3.31)		(2.93)
North Carolina # Below50		0.36		-7.370*		6.487*
		(0.32)		(4.20)		(3.72)
North Dakota # Below50		-0.0624		-2.396		-0.261
		(0.27)		(3.51)		(3.11)
Ohio # Below50		-0.315		-3.832		2.66
		(0.27)		(3.52)		(3.11)
Oklahoma # Below50		0.0226		-0.313		-1.163
		(0.28)		(3.71)		(3.28)
Oregon # Below50		0.0397		-6.757		-0.725
		(0.33)		(4.34)		(3.84)
Pennsylvania # Below50		0.189		-3.659		3.448
		(0.28)		(3.75)		(3.32)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
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Table 3.6: General Election Regressions (Section 6)

	(1)	(2)	(3)	(4)	(5)	(6)
Rhode Island # Below50		-0.0161		-2.902		1.197
		(0.24)		(3.19)		(2.83)
South Carolina # Below50		0.0641		-3.796		3.316
		(0.33)		(4.29)		(3.80)
South Dakota # Below50		0.00264		-4.475		1.143
		(0.25)		(3.30)		(2.92)
Tennessee # Below50		0.157		6.251		3.562
		(0.46)		(6.02)		(5.32)
Texas # Below50		0.12		-5.116		-1.543
		(0.46)		(6.05)		(5.35)
Utah # Below50		-0.00537		-5.265		0.914
		(0.25)		(3.32)		(2.94)
Vermont # Below50		-0.039		-5.524*		2.024
		(0.24)		(3.17)		(2.80)
Virginia # Below50		-0.37		-6.705**		4.186
		(0.25)		(3.34)		(2.96)
Washington # Below50		-0.083		-5.864		3.082
		(0.29)		(3.79)		(3.35)
West Virginia # Below50		-0.0192		-1.816		1.191
		(0.25)		(3.35)		(2.96)
Wisconsin # Below50		0.136		-4.759		2.297
		(0.25)		(3.33)		(2.94)
Wyoming # Below50		-0.0723		-3.437		4.445
		(0.27)		(3.56)		(3.15)
State Fixed-Effects						
Alabama	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Alaska	0.297	0.346	138.6*	137.7*	-14.04	-15.38
	(5.68)	(5.69)	(75.33)	(75.07)	(66.75)	(66.42)
Arizona	-0.838	-0.829	49.82	49.73	-76.7	-76.55
	(7.20)	(7.20)	(95.39)	(95.05)	(84.52)	(84.10)
Arkansas	2.293	0.575	85.46	20.32	-89.72	-50.28
	(9.68)	(7.72)	(128.30)	(101.90)	(113.60)	(90.17)

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

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Table 3.7: General Election Regressions (Section 7)

	(1)	(2)	(3)	(4)	(5)	(6)
California	-0.677	-0.661	196.2**	195.5**	-12.01	-12.85
	(6.67)	(6.67)	(88.38)	(88.07)	(78.31)	(77.93)
Colorado	6.185	6.236	129.4*	128.9*	-117.0*	-118.1*
	(5.78)	(5.78)	(76.57)	(76.29)	(67.84)	(67.51)
Connecticut	-0.966	-0.915	75.65	75.08	-66.85	-68.02
	(5.71)	(5.71)	(75.61)	(75.34)	(67.00)	(66.67)
Delaware	-1.848	-1.811	112	111.7	-38.65	-39.22
	(6.41)	(6.41)	(84.89)	(84.59)	(75.22)	(74.84)
DC	-0.315	-0.263	83.37	82.72	-58.07	-59.51
	(5.75)	(5.75)	(76.21)	(75.95)	(67.53)	(67.20)
Florida	9.636	9.66	91.09	90.24	-29.01	-29.86
	(6.45)	(6.45)	(85.54)	(85.23)	(75.79)	(75.42)
Georgia	-0.621	-0.605	121.4	120.8	-152.1**	-152.4**
	(6.53)	(6.53)	(86.48)	(86.17)	(76.62)	(76.24)
Hawaii	-0.653	-0.636	214.1**	213.6**	-99.69	-100.4
	(6.57)	(6.57)	(87.09)	(86.78)	(77.17)	(76.79)
Idaho	2.971	3.016	205.7**	205.0**	-95.85	-97.79
	(7.23)	(7.23)	(95.83)	(95.50)	(84.91)	(84.50)
Illinois	-0.567	-0.534	105.7	105.1	-42.52	-43.52
	(6.01)	(6.01)	(79.61)	(79.33)	(70.54)	(70.20)
Indiana	0.871	0.911	125	124.3	-55.31	-56.4
	(5.91)	(5.91)	(78.34)	(78.06)	(69.41)	(69.07)
Iowa	1.759	1.791	73.17	72.29	-6.817	-7.92
	(6.35)	(6.35)	(84.19)	(83.89)	(74.59)	(74.23)
Kansas	-0.159	-0.113	98.65	98.21	-39.57	-40.53
	(5.90)	(5.90)	(78.22)	(77.94)	(69.31)	(68.96)
Kentucky	-0.845	-0.865	-121	-121.1	-0.232	-0.231
	(10.90)	(10.90)	(144.40)	(143.90)	(128.00)	(127.30)
Louisiana	1.108	1.143	76.47	75.6	-13.08	-14.52
	(6.25)	(6.25)	(82.77)	(82.49)	(73.34)	(72.99)
Maine	0.115	0.201	35.69	33.54	-103.2	-106.4
	(8.51)	(8.51)	(112.80)	(112.40)	(99.94)	(99.48)
Maryland	-0.364	-0.317	124.4	123.4	-58.34	-59.87
	(5.88)	(5.88)	(77.91)	(77.65)	(69.04)	(68.70)
Massachusetts	-1.204	-1.17	48.72	47.98	-74.31	-75.28
	(5.98)	(5.98)	(79.22)	(78.94)	(70.20)	(69.85)

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

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Table 3.8: General Election Regressions (Section 8)

	(1)	(2)	(3)	(4)	(5)	(6)
Michigan	-6.58	-6.551	85.99	85.45	-59.82	-60.69
	(6.19)	(6.19)	(81.97)	(81.68)	(72.63)	(72.28)
Minnesota	-1.17	-1.13	89.54	88.81	-12.64	-13.75
	(5.94)	(5.94)	(78.66)	(78.38)	(69.70)	(69.35)
Mississippi	-0.751	-0.7	99.99	99.81	-105.7	-106.5
	(6.58)	(6.58)	(87.18)	(86.86)	(77.24)	(76.85)
Missouri	-0.347	-0.336	34.09	33.53	10.37	9.962
	(6.64)	(6.64)	(87.97)	(87.66)	(77.95)	(77.56)
Montana	2.039	2.113	58.27	57.04	-62.46	-64.92
	(6.42)	(6.42)	(85.02)	(84.74)	(75.33)	(74.98)
Nebraska	1.263	1.283	114.3	113.9	-61.34	-62.17
	(6.61)	(6.61)	(87.58)	(87.27)	(77.60)	(77.22)
Nevada	7.932	7.969	111.9	110.9	-88.16	-89.62
	(6.18)	(6.18)	(81.95)	(81.67)	(72.61)	(72.26)
New Hampshire	-1.467	-1.433	106.9	106.3	-48.7	-49.35
	(6.16)	(6.16)	(81.63)	(81.34)	(72.33)	(71.97)
New Jersey	-0.408	-0.373	102.3	101.5	-31.12	-32.33
	(6.01)	(6.01)	(79.62)	(79.34)	(70.55)	(70.20)
New Mexico	2.096	2.133	162.5**	162.0**	-61.45	-62.41
	(6.18)	(6.18)	(81.87)	(81.58)	(72.54)	(72.18)
New York	-0.718	-0.682	86.37	85.79	-30.39	-31.43
	(6.02)	(6.02)	(79.71)	(79.43)	(70.63)	(70.28)
North Carolina	-8.492	-8.484	165.9*	165.9*	-148.2*	-148.5*
	(7.47)	(7.47)	(99.01)	(98.66)	(87.73)	(87.30)
North Dakota	1.28	1.332	65.71	65.24	4.064	2.584
	(6.12)	(6.12)	(81.12)	(80.84)	(71.88)	(71.53)
Ohio	6.511	6.54	83.15	82.37	-59.78	-60.79
	(6.23)	(6.23)	(82.52)	(82.23)	(73.12)	(72.76)
Oklahoma	-0.515	-0.471	19.7	19.07	19.7	18.55
	(6.55)	(6.55)	(86.79)	(86.48)	(76.90)	(76.52)
Oregon	-1.829	-1.833	141.6	140.6	18.62	18.32
	(7.53)	(7.53)	(99.77)	(99.41)	(88.40)	(87.96)
Pennsylvania	-4.91	-4.893	76.42	76.09	-79.41	-79.81
	(6.59)	(6.59)	(87.30)	(86.99)	(77.35)	(76.97)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.9: General Election Regressions (Section 9)

	(1)	(2)	(3)	(4)	(5)	(6)
Rhode Island	-0.666	-0.617	44.89	44.4	-24.64	-25.79
	(5.78)	(5.78)	(76.65)	(76.37)	(67.91)	(67.58)
South Carolina	-1.59	-1.482	87.78	86.31	-74.59	-76.76
	(7.67)	(7.67)	(101.70)	(101.30)	(90.11)	(89.66)
South Dakota	-0.0322	0.00711	106.6	105.9	-28.67	-29.72
	(5.85)	(5.85)	(77.53)	(77.26)	(68.70)	(68.36)
Tennessee	-3.472	-3.518	-137.9	-138.5	-91.29	-90.09
	(10.44)	(10.44)	(138.40)	(137.90)	(122.60)	(122.00)
Texas	-2.795	-2.856	118.6	118.7	28.97	30.92
	(10.93)	(10.93)	(144.80)	(144.30)	(128.30)	(127.70)
Utah	0.16	0.202	128.0*	127.1*	-30.15	-31.36
	(5.81)	(5.81)	(77.00)	(76.73)	(68.22)	(67.89)
Vermont	-0.185	-0.126	104.5	104	-44.98	-46.43
	(5.67)	(5.68)	(75.16)	(74.99)	(66.59)	(66.36)
Virginia	7.589	7.621	145.9*	145.3*	-91.75	-92.7
	(5.97)	(5.97)	(79.13)	(78.85)	(70.11)	(69.77)
Washington	0.804	0.855	119.6	119.4	-66.75	-67.88
	(6.65)	(6.65)	(88.16)	(87.85)	(78.12)	(77.73)
West Virginia	0.412	0.458	47	46.7	-38.48	-39.41
	(5.98)	(5.98)	(79.29)	(79.00)	(70.25)	(69.90)
Wisconsin	-3.497	-3.456	100.5	100	-43.41	-44.38
	(5.87)	(5.87)	(77.73)	(77.45)	(68.87)	(68.53)
Wyoming	1.102	1.548	90.98	94.58	-56.61	-97.16
	(6.01)	(6.22)	(79.58)	(82.17)	(70.51)	(72.71)
——————————Time Dummies-Incumbent-Constant——————————						
Incumbent	-0.0792	-0.0838	-1.006	-0.964	2.843***	2.968***
	(0.07)	(0.07)	(0.94)	(0.94)	(0.83)	(0.83)
Y2004	0.103*	0.106*	3.473***	3.504***	1.609**	1.549**
	(0.06)	(0.06)	(0.79)	(0.78)	(0.70)	(0.69)
Y2008	-0.141**	-0.141**	-3.117***	-3.077***	4.188***	4.251***
	(0.06)	(0.06)	(0.73)	(0.73)	(0.65)	(0.65)
Y2012	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Y2016	0.0517	0.049	-1.019	-0.985	2.378***	2.418***
	(0.07)	(0.07)	(0.88)	(0.87)	(0.78)	(0.77)
Constant	0.643	0.574	-54.73	-53.98	116.9*	118.6*
	(5.53)	(5.53)	(73.23)	(72.97)	(64.88)	(64.57)
Observations	255	255	255	255	255	255
Adjusted R-squared	0.789	0.789	0.926	0.927	0.781	0.783
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						

Table 3.10: Midterm Election Regressions (Section 1)

	(7)	(8)	(9)	(10)	(11)	(12)
NewBelow50	5.429		-1.146		-4.250	
	(16.36)		(8.196)		(3.985)	
Below50		4.342		-1.718		-4.206
		(16.35)		(8.195)		(4.083)
Alabama # NewBelow50	0		0		0	
	(.)		(.)		(.)	
Alaska # NewBelow50	-8.813		-1.464		3.806	
	(16.76)		(8.396)		(4.083)	
Arizona # NewBelow50	-13.05		-0.186		4.742	
	(17.59)		(8.811)		(4.285)	
Arkansas # NewBelow50	21.60		12.38		5.929	
	(25.21)		(12.63)		(6.142)	
California # NewBelow50	-17.67		-4.776		3.319	
	(18.18)		(9.110)		(4.430)	
Colorado # NewBelow50	-13.41		-2.666		3.702	
	(17.24)		(8.640)		(4.201)	
Connecticut # NewBelow50	-21.25		-2.567		5.588	
	(16.87)		(8.451)		(4.109)	
Delaware # NewBelow50	-35.81**		-10.30		4.732	
	(17.44)		(8.736)		(4.248)	
Florida # NewBelow50	-11.12		-0.215		5.349	
	(17.83)		(8.932)		(4.343)	
Georgia # NewBelow50	-9.623		0.848		4.544	
	(17.38)		(8.709)		(4.235)	
Hawaii # NewBelow50	-9.594		-0.489		5.466	
	(18.59)		(9.316)		(4.530)	
Idaho # NewBelow50	-4.627		13.94		3.711	
	(22.46)		(11.25)		(5.473)	
Illinois # NewBelow50	-17.09		-1.696		4.588	
	(18.17)		(9.103)		(4.427)	
Indiana # NewBelow50	-7.884		-0.197		5.344	
	(17.62)		(8.827)		(4.292)	
Iowa # NewBelow50	-23.32		-2.720		4.838	
	(18.99)		(9.513)		(4.626)	
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.11: Midterm Election Regressions (Section 2)

	(7)	(8)	(9)	(10)	(11)	(12)
Kansas # NewBelow50	-2.749		-2.858		5.439	
	(18.25)		(9.142)		(4.446)	
Kentucky # NewBelow50	-2.273		-1.686		2.269	
	(32.43)		(16.25)		(7.901)	
Louisiana # NewBelow50	-4.748		4.679		4.511	
	(18.16)		(9.099)		(4.424)	
Maine # NewBelow50	14.67		-6.451		7.281	
	(20.54)		(10.29)		(5.005)	
Maryland # NewBelow50	-15.16		-6.887		4.395	
	(17.57)		(8.801)		(4.280)	
Massachusetts # NewBelow50	-17.01		-0.387		2.566	
	(17.27)		(8.651)		(4.207)	
Michigan # NewBelow50	-6.190		0.368		5.161	
	(18.29)		(9.166)		(4.457)	
Minnesota # NewBelow50	-9.272		-0.227		4.172	
	(17.54)		(8.788)		(4.273)	
Mississippi # NewBelow50	-2.946		2.646		6.947	
	(19.96)		(10.00)		(4.864)	
Missouri # NewBelow50	-4.172		2.300		6.421	
	(19.15)		(9.596)		(4.666)	
Montana # NewBelow50	-11.35		3.596		4.103	
	(18.03)		(9.035)		(4.393)	
Nebraska # NewBelow50	-25.05		6.456		4.729	
	(20.35)		(10.20)		(4.959)	
Nevada # NewBelow50	-10.49		-0.951		4.044	
	(17.40)		(8.720)		(4.240)	
New Hampshire # NewBelow50	-14.00		-3.000		4.254	
	(17.75)		(8.892)		(4.324)	
New Jersey # NewBelow50	-11.02		-1.300		4.223	
	(17.58)		(8.810)		(4.284)	
New Mexico # NewBelow50	-25.52		-1.578		3.985	
	(17.83)		(8.936)		(4.345)	
New York # NewBelow50	-16.82		-2.638		1.700	
	(17.96)		(9.001)		(4.377)	
North Carolina # NewBelow50	-6.447		-3.404		2.989	
	(22.89)		(11.47)		(5.577)	
North Dakota # NewBelow50	-17.08		3.942		4.269	
	(17.63)		(8.834)		(4.296)	
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.12: Midterm Election Regressions (Section 3)

	(7)	(8)	(9)	(10)	(11)	(12)
Ohio # NewBelow50	-6.326		0.886		4.206	
	(18.29)		(9.163)		(4.456)	
Oklahoma # NewBelow50	2.172		-6.979		1.927	
	(19.97)		(10.01)		(4.867)	
Oregon # NewBelow50	-14.82		-6.421		5.904	
	(19.51)		(9.778)		(4.755)	
Pennsylvania # NewBelow50	-5.372		-1.007		3.722	
	(18.28)		(9.158)		(4.453)	
Rhode Island # NewBelow50	-9.098		1.704		3.358	
	(16.94)		(8.486)		(4.126)	
South Carolina # NewBelow50	-5.281		0.181		4.947	
	(20.93)		(10.49)		(5.099)	
South Dakota # NewBelow50	-1.579		0.676		4.081	
	(17.98)		(9.009)		(4.381)	
Tennessee # NewBelow50	-0.984		1.611		6.652	
	(20.61)		(10.33)		(5.022)	
Texas # NewBelow50	-1.437		5.779		6.976	
	(31.78)		(15.92)		(7.743)	
Utah # NewBelow50	-6.966		2.869		4.842	
	(17.37)		(8.702)		(4.231)	
Vermont # NewBelow50	-23.26		-9.503		-5.114	
	(16.95)		(8.492)		(4.215)	
Virginia # NewBelow50	-7.094		-0.759		2.790	
	(17.85)		(8.942)		(4.348)	
Washington # NewBelow50	-10.95		-5.335		4.044	
	(19.06)		(9.551)		(4.644)	
West Virginia # NewBelow50	1.516		12.09		2.051	
	(18.48)		(9.259)		(4.502)	
Wisconsin # NewBelow50	-4.686		-0.554		4.451	
	(17.39)		(8.712)		(4.236)	
Wyoming # NewBelow50	-11.14		7.396		5.858	
	(17.57)		(8.803)		(4.281)	
————————Interaction Terms State and Old Relative Poverty Measure————————						
Alaska # Below50		-7.633		-1.057		3.820
		(16.75)		(8.396)		(4.183)
Arizona # Below50		-20.76		-0.0455		4.928
		(19.58)		(9.814)		(4.889)
Arkansas # Below50		31.04		13.82		8.080
		(23.59)		(11.82)		(5.890)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.13: Midterm Election Regressions (Section 4)

	(7)	(8)	(9)	(10)	(11)	(12)
California # Below50		-21.92		-6.413		2.320
		(19.19)		(9.619)		(4.792)
Colorado # Below50		-13.36		-2.568		3.510
		(17.41)		(8.727)		(4.348)
Connecticut # Below50		-20.55		-2.120		5.668
		(16.91)		(8.474)		(4.222)
Delaware # Below50		-34.27**		-9.606		4.690
		(17.41)		(8.728)		(4.348)
Florida # Below50		-14.96		-1.514		5.183
		(18.88)		(9.466)		(4.716)
Georgia # Below50		-9.313		0.300		4.459
		(18.78)		(9.411)		(4.689)
Hawaii # Below50		-8.444		0.182		5.368
		(18.38)		(9.212)		(4.589)
Idaho # Below50		-3.753		14.33		3.703
		(22.42)		(11.24)		(5.599)
Illinois # Below50		-17.26		-0.545		4.170
		(18.17)		(9.108)		(4.538)
Indiana # Below50		-6.020		0.105		5.130
		(18.00)		(9.024)		(4.496)
Iowa # Below50		-21.37		-2.474		4.764
		(19.19)		(9.620)		(4.793)
Kansas # Below50		-1.336		-2.235		5.407
		(18.22)		(9.131)		(4.549)
Kentucky # Below50		-3.016		-1.959		2.355
		(32.36)		(16.22)		(8.080)
Louisiana # Below50		-3.976		4.722		4.491
		(18.08)		(9.062)		(4.514)
Maine # Below50		15.09		-6.202		7.283
		(20.51)		(10.28)		(5.120)
Maryland # Below50		-13.90		-6.363		4.387
		(17.54)		(8.792)		(4.380)
Massachusetts # Below50		-15.98		-0.0851		2.775
		(17.31)		(8.674)		(4.322)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.14: Midterm Election Regressions (Section 5)

	(7)	(8)	(9)	(10)	(11)	(12)
Michigan # Below50		-5.096		0.821		5.147
		(18.26)		(9.151)		(4.559)
Minnesota # Below50		-7.803		0.393		4.156
		(17.51)		(8.777)		(4.373)
Mississippi # Below50		-4.158		3.197		6.695
		(18.61)		(9.328)		(4.647)
Missouri # Below50		-1.308		3.140		6.550
		(19.80)		(9.923)		(4.943)
Montana # Below50		-11.19		4.866		3.931
		(18.54)		(9.294)		(4.630)
Nebraska # Below50		-23.34		7.094		4.709
		(20.30)		(10.18)		(5.070)
Nevada # Below50		-20.62		-1.709		4.045
		(19.35)		(9.697)		(4.831)
New Hampshire # Below50		-12.66		-2.426		4.218
		(17.72)		(8.882)		(4.425)
New Jersey # Below50		-9.914		-0.835		4.212
		(17.55)		(8.798)		(4.383)
New Mexico # Below50		-24.38		-1.144		3.906
		(17.98)		(9.012)		(4.490)
New York # Below50		-15.43		-2.155		1.902
		(17.95)		(8.999)		(4.483)
North Carolina # Below50		-5.008		-2.887		2.953
		(22.84)		(11.45)		(5.702)
North Dakota # Below50		-15.56		4.671		4.220
		(17.62)		(8.832)		(4.400)
Ohio # Below50		-5.144		1.357		4.205
		(18.25)		(9.149)		(4.558)
Oklahoma # Below50		2.420		-6.796		1.940
		(19.93)		(9.992)		(4.978)
Oregon # Below50		-13.60		-8.880		8.239
		(20.84)		(10.45)		(5.204)
Pennsylvania # Below50		-3.981		-0.397		3.629
		(18.32)		(9.180)		(4.573)
Rhode Island # Below50		-7.668		3.172		3.248
		(17.08)		(8.562)		(4.266)

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

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Table 3.15: Midterm Election Regressions (Section 6)

	(7)	(8)	(9)	(10)	(11)	(12)
South Carolina # Below50		-2.854		2.121		4.662
		(23.48)		(11.77)		(5.863)
South Dakota # Below50		-0.618		1.075		4.075
		(17.95)		(8.996)		(4.482)
Tennessee # Below50		-2.719		0.881		7.135
		(22.62)		(11.34)		(5.649)
Texas # Below50		-0.104		6.130		6.983
		(31.70)		(15.89)		(7.915)
Utah # Below50		-4.265		3.818		4.815
		(17.62)		(8.833)		(4.401)
Vermont # Below50		-21.62		-9.542		-3.420
		(16.98)		(8.513)		(4.324)
Virginia # Below50		-5.903		-0.280		2.775
		(17.81)		(8.929)		(4.448)
Washington # Below50		-10.89		-5.773		3.635
		(19.78)		(9.915)		(4.940)
West Virginia # Below50		2.694		12.63		2.003
		(18.45)		(9.248)		(4.607)
Wisconsin # Below50		-3.020		-0.960		4.433
		(17.82)		(8.932)		(4.450)
Wyoming # Below50		-8.968		7.192		5.201
		(17.76)		(8.903)		(4.436)
-State Fixed-Effects-						
Alabama	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Alaska	225.6	197.7	29.42	19.20	-87.04	-87.21
	(396.5)	(396.3)	(198.6)	(198.6)	(96.59)	(98.95)
Arizona	288.4	458.6	-1.229	-5.413	-110.0	-114.1
	(415.7)	(457.9)	(208.3)	(229.5)	(101.3)	(114.3)
Arkansas	-487.4	-697.2	-280.7	-312.8	-134.5	-182.1
	(578.4)	(542.4)	(289.8)	(271.8)	(140.9)	(135.4)
California	387.3	489.7	105.3	144.6	-77.90	-53.73
	(435.3)	(459.8)	(218.1)	(230.5)	(106.0)	(114.8)

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

Remainder of table on next page

Table 3.16: Midterm Election Regressions (Section 7)

	(7)	(8)	(9)	(10)	(11)	(12)
Colorado	284.7	281.0	50.76	47.19	-86.69	-82.45
	(407.0)	(410.2)	(203.9)	(205.6)	(99.16)	(102.4)
Connecticut	433.5	414.6	44.00	32.81	-130.2	-131.8
	(400.0)	(400.7)	(200.4)	(200.9)	(97.47)	(100.1)
Delaware	756.6*	721.0*	207.5	191.3	-111.7	-110.7
	(409.6)	(409.2)	(205.2)	(205.1)	(99.79)	(102.2)
Florida	243.8	324.6	-1.669	25.34	-125.1	-121.3
	(419.0)	(439.9)	(209.9)	(220.5)	(102.1)	(109.8)
Georgia	216.8	208.2	-20.24	-7.605	-110.7	-108.6
	(413.5)	(445.4)	(207.2)	(223.2)	(100.7)	(111.2)
Hawaii	143.9	116.7	-10.19	-25.94	-125.9	-123.7
	(432.5)	(428.2)	(216.7)	(214.6)	(105.4)	(106.9)
Idaho	132.4	111.0	-289.4	-299.2	-89.88	-89.57
	(501.9)	(501.0)	(251.5)	(251.1)	(122.3)	(125.1)
Illinois	369.5	371.3	29.80	2.562	-110.3	-100.6
	(429.9)	(429.5)	(215.4)	(215.3)	(104.7)	(107.3)
Indiana	171.2	129.1	-2.809	-11.04	-123.3	-118.6
	(411.6)	(418.1)	(206.2)	(209.6)	(100.3)	(104.4)
Iowa	480.3	436.5	46.45	39.33	-114.0	-112.3
	(435.2)	(438.7)	(218.1)	(219.9)	(106.0)	(109.5)
Kansas	82.33	49.71	56.95	42.28	-122.9	-122.1
	(423.3)	(422.7)	(212.1)	(211.9)	(103.1)	(105.5)
Kentucky	55.46	73.10	41.47	47.94	-54.86	-56.91
	(771.0)	(769.3)	(386.3)	(385.6)	(187.9)	(192.1)
Louisiana	114.8	96.69	-113.7	-114.2	-104.6	-104.1
	(434.8)	(432.7)	(217.9)	(216.9)	(105.9)	(108.0)
Maine	-370.6	-382.1	125.0	118.4	-166.4	-166.4
	(473.5)	(472.7)	(237.2)	(236.9)	(115.4)	(118.0)
Maryland	289.8	260.1	136.5	123.9	-104.7	-104.5
	(413.5)	(413.0)	(207.2)	(207.0)	(100.8)	(103.1)
Massachusetts	343.7	318.7	-17.79	-24.97	-48.22	-53.31
	(411.3)	(412.2)	(206.1)	(206.6)	(100.2)	(102.9)
Michigan	128.7	102.7	-18.73	-29.73	-120.6	-120.2
	(428.4)	(427.6)	(214.7)	(214.3)	(104.4)	(106.8)
Minnesota	178.8	145.0	-8.732	-23.34	-98.27	-97.81
	(410.5)	(409.9)	(205.7)	(205.5)	(100.0)	(102.4)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
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Table 3.17: Midterm Election Regressions (Section 8)

	(7)	(8)	(9)	(10)	(11)	(12)
Mississippi	51.27	81.46	-67.98	-80.81	-164.3	-157.7
	(478.9)	(444.7)	(240.0)	(222.9)	(116.7)	(111.0)
Missouri	90.55	26.27	-56.21	-75.57	-147.5	-150.1
	(444.9)	(457.5)	(222.9)	(229.3)	(108.4)	(114.2)
Montana	279.5	272.8	-83.40	-111.6	-97.29	-93.56
	(420.8)	(430.3)	(210.8)	(215.7)	(102.5)	(107.5)
Nebraska	548.7	510.3	-129.7	-144.6	-111.2	-110.6
	(459.6)	(458.6)	(230.3)	(229.9)	(112.0)	(114.5)
Nevada	218.3	428.0	12.35	26.25	-93.79	-93.75
	(409.4)	(445.8)	(205.1)	(223.5)	(99.74)	(111.3)
New Hampshire	263.3	232.5	49.45	35.81	-100.7	-99.82
	(412.0)	(411.4)	(206.4)	(206.2)	(100.4)	(102.7)
New Jersey	229.3	203.0	20.29	9.157	-101.2	-100.9
	(416.6)	(415.9)	(208.7)	(208.5)	(101.5)	(103.9)
New Mexico	585.2	556.0	29.09	18.54	-96.58	-94.71
	(425.6)	(428.8)	(213.2)	(214.9)	(103.7)	(107.1)
New York	360.4	326.8	44.21	32.72	-18.62	-23.71
	(430.6)	(430.3)	(215.8)	(215.7)	(104.9)	(107.5)
North Carolina	135.7	101.8	73.15	60.80	-73.85	-72.98
	(535.9)	(534.6)	(268.5)	(268.0)	(130.6)	(133.5)
North Dakota	353.5	318.6	-88.16	-105.0	-102.0	-100.9
	(412.7)	(412.5)	(206.8)	(206.7)	(100.5)	(103.0)
Ohio	139.5	111.6	-25.63	-37.02	-100.6	-100.5
	(427.9)	(427.1)	(214.4)	(214.1)	(104.2)	(106.6)
Oklahoma	-27.73	-34.88	155.2	150.3	-47.46	-47.69
	(465.2)	(464.3)	(233.1)	(232.7)	(113.3)	(115.9)
Oregon	283.0	253.0	127.9	180.1	-133.9	-185.1
	(455.2)	(482.1)	(228.1)	(241.6)	(110.9)	(120.4)
Pennsylvania	113.6	81.17	14.98	0.485	-90.98	-88.89
	(427.5)	(428.0)	(214.2)	(214.5)	(104.2)	(106.9)
Rhode Island	142.9	108.1	-57.23	-92.13	-75.68	-73.26
	(403.4)	(406.6)	(202.1)	(203.8)	(98.28)	(101.5)
South Carolina	125.9	68.98	-6.175	-51.66	-116.5	-109.8
	(494.4)	(552.2)	(247.7)	(276.8)	(120.5)	(137.9)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.18: Midterm Election Regressions (Section 9)

	(7)	(8)	(9)	(10)	(11)	(12)
South Dakota	41.08	17.84	-14.32	-24.34	-99.03	-98.77
	(418.6)	(417.9)	(209.7)	(209.4)	(102.0)	(104.3)
Tennessee	12.82	52.05	-39.43	-23.20	-155.3	-166.0
	(484.3)	(528.4)	(242.7)	(264.8)	(118.0)	(131.9)
Texas	20.56	-11.20	-142.0	-150.4	-164.5	-164.7
	(760.2)	(758.3)	(380.9)	(380.1)	(185.2)	(189.4)
Utah	158.3	102.3	-60.55	-81.04	-110.8	-110.0
	(403.8)	(407.3)	(202.3)	(204.1)	(98.39)	(101.7)
Vermont	446.2	406.6	169.0	166.6	119.7	82.67
	(399.7)	(400.1)	(200.3)	(200.6)	(99.14)	(101.6)
Virginia	159.2	131.1	9.971	-1.563	-66.34	-65.94
	(420.1)	(419.4)	(210.5)	(210.2)	(102.3)	(104.7)
Washington	213.3	209.6	106.2	114.4	-97.85	-88.77
	(445.0)	(459.6)	(223.0)	(230.4)	(108.4)	(114.8)
West Virginia	-43.64	-71.51	-276.5	-289.4	-53.37	-52.22
	(433.0)	(432.3)	(216.9)	(216.7)	(105.5)	(108.0)
Wisconsin	93.03	55.63	0.336	6.190	-105.6	-105.1
	(406.7)	(413.7)	(203.8)	(207.3)	(99.09)	(103.3)
Wyoming	274.0	224.2	-156.1	-152.0	-130.7	-116.5
	(411.6)	(414.7)	(206.2)	(207.9)	(100.3)	(103.6)
——————————————————Time Dummies——————————————————						
Incumbent	10.66**	11.22**	2.740	3.322	-1.056	-1.132
	(4.925)	(5.038)	(2.468)	(2.525)	(1.200)	(1.258)
Y2002	2.789	3.049	1.708	1.841	-1.450	-1.471
	(4.133)	(4.132)	(2.071)	(2.071)	(1.012)	(1.037)
Y2004	-6.353	-6.308	-1.013	-1.435	-0.547	-0.371
	(4.458)	(4.544)	(2.234)	(2.278)	(1.087)	(1.135)
Y2006	-1.555	-1.348	2.614	2.720	-2.668**	-2.647**
	(4.333)	(4.359)	(2.171)	(2.185)	(1.056)	(1.089)
Y2008	-8.125*	-7.736*	4.582**	4.722**	-1.354	-1.395
	(4.322)	(4.341)	(2.165)	(2.176)	(1.059)	(1.090)
Y2010	15.60***	13.06***	6.374**	5.571**	-2.385*	-2.376**
	(5.086)	(4.722)	(2.548)	(2.367)	(1.239)	(1.179)
Y2014	16.97***	17.75***	5.400**	5.894**	-1.491	-1.530
	(4.859)	(4.925)	(2.434)	(2.468)	(1.184)	(1.230)
Y2016	13.25***	13.82***	3.176	3.595	-0.101	-0.197
	(4.748)	(4.821)	(2.379)	(2.417)	(1.158)	(1.205)
Constant	-60.52	-34.77	81.59	95.06	105.1	104.1
	(388.8)	(388.6)	(194.8)	(194.8)	(94.72)	(97.04)
Observations	450	450	450	450	448	448
Adjusted R-squared	0.616	0.618	0.299	0.301	0.430	0.404
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						

Table 3.19: General Election Regressions (Below 60-Section 1)

	(1)	(2)	(3)	(4)	(5)	(6)
NewBelow50	0.0727		6.905*		-4.749	
	(0.31)		(4.01)		(3.51)	
Below50		0.0689		6.439		-4.698
		(0.31)		(4.07)		(3.51)
Alabama # NewBelow60	0		0		0	
	(.)		(.)		(.)	
Alaska # NewBelow60	-0.0573		-8.238**		1.866	
	(0.31)		(4.07)		(3.56)	
Arizona # NewBelow60	0.105		-0.506		4.159	
	(0.52)		(6.80)		(5.95)	
Arkansas # NewBelow60	0.114		12.09*		2.951	
	(0.49)		(6.41)		(5.61)	
California # NewBelow60	-0.0216		-10.83**		2.474	
	(0.34)		(4.44)		(3.89)	
Colorado # NewBelow60	-0.378		-8.030*		7.481**	
	(0.32)		(4.10)		(3.59)	
Connecticut # NewBelow60	-0.0476		-5.837		5.024	
	(0.31)		(4.08)		(3.57)	
Delaware # NewBelow60	-0.00728		-7.285*		3.778	
	(0.33)		(4.34)		(3.80)	
DC # NewBelow60	-0.0599		-7.341*		5.133	
	(0.31)		(4.04)		(3.54)	
Florida # NewBelow60	-0.395		-6.129		2.945	
	(0.34)		(4.36)		(3.82)	
Georgia # NewBelow60	0.0399		-6.695		9.249**	
	(0.39)		(5.00)		(4.38)	
Hawaii # NewBelow60	-0.0521		-9.119**		5.662	
	(0.33)		(4.29)		(3.76)	
Idaho # NewBelow60	-0.0705		-9.401**		5.899	
	(0.33)		(4.22)		(3.70)	
Illinois # NewBelow60	-0.038		-7.153*		3.482	
	(0.33)		(4.25)		(3.72)	
Indiana # NewBelow60	-0.0809		-7.420*		4.095	
	(0.32)		(4.21)		(3.69)	
Iowa # NewBelow60	-0.0521		-5.241		2.456	
	(0.34)		(4.37)		(3.83)	

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
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Table 3.20: General Election Regressions (Below 60-Section 2)

	(1)	(2)	(3)	(4)	(5)	(6)
Kansas # NewBelow60	-0.0193		-5.798		3.527	
	(0.33)		(4.26)		(3.74)	
Kentucky # NewBelow60	-0.045		-2.814		4.089	
	(0.36)		(4.64)		(4.06)	
Louisiana # NewBelow60	-0.104		-8.241*		3.733	
	(0.35)		(4.51)		(3.95)	
Maine # NewBelow60	-0.00776		-5.47		3.707	
	(0.35)		(4.52)		(3.96)	
Maryland # NewBelow60	-0.0525		-8.176**		4.847	
	(0.32)		(4.11)		(3.60)	
Massachusetts # NewBelow60	-0.0365		-5.189		5.302	
	(0.32)		(4.16)		(3.64)	
Michigan # NewBelow60	0.128		-6.212		4.617	
	(0.32)		(4.14)		(3.62)	
Minnesota # NewBelow60	-0.0172		-5.947		2.531	
	(0.34)		(4.42)		(3.87)	
Mississippi # NewBelow60	-0.00585		-6.236		7.490*	
	(0.34)		(4.44)		(3.88)	
Missouri # NewBelow60	-0.0333		-3.406		1.842	
	(0.33)		(4.33)		(3.79)	
Montana # NewBelow60	-0.163		-4.701		5.461	
	(0.36)		(4.61)		(4.04)	
Nebraska # NewBelow60	-0.06		-6.812		4.605	
	(0.32)		(4.20)		(3.68)	
Nevada # NewBelow60	-0.0971		-6.162		4.215	
	(0.33)		(4.32)		(3.78)	
New Hampshire # NewBelow60	-0.0141		-6.827		4.483	
	(0.32)		(4.20)		(3.68)	
New Jersey # NewBelow60	-0.0627		-6.839		3.277	
	(0.32)		(4.21)		(3.69)	
New Mexico # NewBelow60	-0.0833		-9.526**		4.814	
	(0.33)		(4.33)		(3.79)	
New York # NewBelow60	-0.0519		-6.448		3.247	
	(0.32)		(4.17)		(3.66)	
North Carolina # NewBelow60	0.788*		-7.401		4.797	
	(0.40)		(5.18)		(4.53)	
North Dakota # NewBelow60	-0.0671		-4.814		1.521	
	(0.32)		(4.20)		(3.68)	

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
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Table 3.21: General Election Regressions (Below 60-Section 3)

	(1)	(2)	(3)	(4)	(5)	(6)
Ohio # NewBelow60	-0.395		-5.805		4.527	
	(0.34)		(4.43)		(3.88)	
Oklahoma # NewBelow60	0.0981		3.569		-8.147	
	(0.46)		(6.00)		(5.25)	
Oregon # NewBelow60	0.0228		-9.211*		0.961	
	(0.37)		(4.76)		(4.17)	
Pennsylvania # NewBelow60	0.145		-5.673		5.183	
	(0.33)		(4.25)		(3.72)	
Rhode Island # NewBelow60	-0.0514		-4.77		3.531	
	(0.31)		(4.08)		(3.58)	
South Carolina # NewBelow60	-0.051		-6.235		5.577	
	(0.40)		(5.16)		(4.52)	
South Dakota # NewBelow60	-0.0591		-4.437		0.497	
	(0.34)		(4.41)		(3.86)	
Tennessee # NewBelow60	-0.0396		-1.557		3.292	
	(0.34)		(4.44)		(3.89)	
Texas # NewBelow60	-0.0106		2.184		3.907	
	(0.65)		(8.39)		(7.35)	
Utah # NewBelow60	-0.0243		-7.472*		1.702	
	(0.32)		(4.21)		(3.69)	
Vermont # NewBelow60	-0.0742		-8.016*		3.703	
	(0.32)		(4.10)		(3.59)	
Virginia # NewBelow60	-0.426		-8.601**		6.203*	
	(0.32)		(4.18)		(3.66)	
Washington # NewBelow60	-0.105		-8.088*		5.145	
	(0.34)		(4.39)		(3.84)	
West Virginia # NewBelow60	-0.0573		-5.068		3.652	
	(0.32)		(4.12)		(3.61)	
Wisconsin # NewBelow60	0.196		-6.334		3.688	
	(0.33)		(4.22)		(3.69)	
Wyoming # NewBelow60	-0.0639		-5.745		3.691	
	(0.32)		(4.15)		(3.64)	
————————-Interaction Terms State and Old Relative Poverty Measure————————						
Alabama # Below60		0		0		0
		(.)		(.)		(.)
Alaska # Below60		-0.0545		-7.877*		1.83
		(0.31)		(4.13)		(3.57)
Arizona # Below60		0.104		-0.643		4.171
		(0.52)		(6.90)		(5.96)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
Remainder of table on next page

Table 3.22: General Election Regressions (Below 60-Section 4)

	(1)	(2)	(3)	(4)	(5)	(6)
Arkansas # Below60		0.00259		-0.0206		3.19
		(0.35)		(4.57)		(3.94)
California # Below60		-0.0196		-10.58**		2.448
		(0.34)		(4.51)		(3.89)
Colorado # Below60		-0.375		-7.692*		7.440**
		(0.32)		(4.16)		(3.59)
Connecticut # Below60		-0.0448		-5.491		4.984
		(0.31)		(4.14)		(3.57)
Delaware # Below60		-0.00513		-7.031		3.742
		(0.33)		(4.41)		(3.81)
DC # Below60		-0.0569		-6.969*		5.091
		(0.31)		(4.10)		(3.54)
Florida # Below60		-0.393		-5.873		2.921
		(0.34)		(4.43)		(3.82)
Georgia # Below60		0.0414		-6.495		9.237**
		(0.39)		(5.07)		(4.38)
Hawaii # Below60		-0.05		-8.859**		5.631
		(0.33)		(4.35)		(3.76)
Idaho # Below60		-0.0679		-9.082**		5.861
		(0.33)		(4.29)		(3.70)
Illinois # Below60		-0.0359		-6.883		3.453
		(0.33)		(4.31)		(3.73)
Indiana # Below60		-0.0785		-7.114*		4.061
		(0.32)		(4.27)		(3.69)
Iowa # Below60		-0.05		-4.962		2.434
		(0.34)		(4.43)		(3.83)
Kansas # Below60		-0.0169		-5.519		3.489
		(0.33)		(4.33)		(3.74)
Kentucky # Below60		-0.0436		-2.643		4.064
		(0.36)		(4.71)		(4.07)
Louisiana # Below60		-0.101		-7.791*		3.704
		(0.35)		(4.58)		(3.95)
Maine # Below60		-0.00522		-5.149		3.675
		(0.35)		(4.58)		(3.96)
Maryland # Below60		-0.0497		-7.824*		4.813
		(0.32)		(4.18)		(3.61)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
Remainder of table on next page

Table 3.23: General Election Regressions (Below 60-Section 5)

	(1)	(2)	(3)	(4)	(5)	(6)
Massachusetts # Below60		-0.0339		-4.871		5.27
		(0.32)		(4.22)		(3.64)
Michigan # Below60		0.13		-5.9		4.583
		(0.32)		(4.20)		(3.63)
Minnesota # Below60		-0.0154		-5.728		2.502
		(0.34)		(4.49)		(3.88)
Mississippi # Below60		-0.00332		-5.945		7.441*
		(0.34)		(4.50)		(3.89)
Missouri # Below60		-0.0313		-3.167		1.817
		(0.33)		(4.40)		(3.80)
Montana # Below60		-0.158		-4.097		5.403
		(0.36)		(4.68)		(4.04)
Nebraska # Below60		-0.0576		-6.522		4.574
		(0.32)		(4.27)		(3.69)
Nevada # Below60		-0.0935		-5.687		4.179
		(0.33)		(4.38)		(3.79)
New Hampshire # Below60		-0.0114		-6.508		4.447
		(0.32)		(4.26)		(3.68)
New Jersey # Below60		-0.0603		-6.533		3.249
		(0.32)		(4.27)		(3.69)
New Mexico # Below60		-0.0812		-9.272**		4.778
		(0.33)		(4.39)		(3.79)
New York # Below60		-0.0495		-6.146		3.215
		(0.32)		(4.24)		(3.66)
North Carolina # Below60		0.790**		-7.073		4.788
		(0.40)		(5.26)		(4.54)
North Dakota # Below60		-0.0644		-4.475		1.484
		(0.32)		(4.27)		(3.69)
Ohio # Below60		-0.393		-5.579		4.504
		(0.34)		(4.49)		(3.88)
Oklahoma # Below60		0.0976		3.499		-8.146
		(0.46)		(6.09)		(5.26)
Oregon # Below60		0.024		-9.065*		0.942
		(0.37)		(4.83)		(4.18)
Pennsylvania # Below60		0.147		-5.407		5.153
		(0.33)		(4.31)		(3.72)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.24: General Election Regressions (Below 60-Section 6)

	(1)	(2)	(3)	(4)	(5)	(6)
Rhode Island # Below60		-0.0485		-4.418		3.488
		(0.31)		(4.14)		(3.58)
South Carolina # Below60		-0.0454		-5.52		5.515
		(0.40)		(5.24)		(4.52)
South Dakota # Below60		-0.0569		-4.15		0.477
		(0.34)		(4.47)		(3.87)
Tennessee # Below60		-0.0377		-1.339		3.264
		(0.34)		(4.51)		(3.90)
Texas # Below60		-0.00528		2.878		3.874
		(0.65)		(8.52)		(7.36)
Utah # Below60		-0.0219		-7.183*		1.671
		(0.32)		(4.27)		(3.69)
Vermont # Below60		-0.0708		-7.672*		3.642
		(0.32)		(4.17)		(3.60)
Virginia # Below60		-0.424		-8.303*		6.173*
		(0.32)		(4.24)		(3.67)
Washington # Below60		-0.102		-7.763*		5.112
		(0.34)		(4.45)		(3.85)
West Virginia # Below60		-0.0543		-4.708		3.609
		(0.32)		(4.18)		(3.61)
Wisconsin # Below60		0.198		-6.051		3.657
		(0.33)		(4.28)		(3.70)
Wyoming # Below60		-0.0707		-5.069		4.31
		(0.33)		(4.34)		(3.75)
State Fixed-Effects						
Alabama	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Alaska	1.747	1.658	236.4*	225.4*	-61.6	-60.49
	(9.23)	(9.23)	(119.90)	(121.70)	(105.00)	(105.10)
Arizona	-2.889	-2.866	15.18	18.44	-126.4	-126.7
	(15.04)	(15.04)	(195.30)	(198.30)	(171.00)	(171.30)
Arkansas	-3.177	0.00905	-342.4*	4.754	-95.14	-102.2
	(14.29)	(10.16)	(185.50)	(133.90)	(162.50)	(115.70)

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

Remainder of table on next page

Table 3.25: General Election Regressions (Below 60-Section 7)

	(1)	(2)	(3)	(4)	(5)	(6)
California	-0.386	-0.444	300.4**	293.2**	-73.46	-72.71
	(10.15)	(10.15)	(131.80)	(133.80)	(115.40)	(115.60)
Colorado	9.889	9.804	222.0*	211.7*	-209.6**	-208.4*
	(9.30)	(9.30)	(120.70)	(122.50)	(105.80)	(105.90)
Connecticut	0.453	0.368	154.5	144	-146	-144.7
	(9.27)	(9.26)	(120.30)	(122.10)	(105.30)	(105.50)
Delaware	-0.641	-0.708	195.5	187.5	-109.4	-108.3
	(9.78)	(9.78)	(126.90)	(128.90)	(111.20)	(111.30)
DC	0.721	0.634	165.6	155	-141.4	-140.2
	(9.26)	(9.25)	(120.20)	(121.90)	(105.20)	(105.40)
Florida	10.67	10.61	171.8	163.8	-90.12	-89.37
	(9.82)	(9.82)	(127.50)	(129.50)	(111.70)	(111.90)
Georgia	-1.164	-1.211	191.6	185.7	-275.3**	-274.9**
	(11.37)	(11.37)	(147.60)	(149.80)	(129.20)	(129.40)
Hawaii	0.59	0.523	237.5*	229.3*	-177.3	-176.4
	(9.67)	(9.66)	(125.50)	(127.40)	(109.90)	(110.00)
Idaho	2.093	2.013	274.3**	264.4**	-171.1	-170
	(9.52)	(9.51)	(123.50)	(125.40)	(108.20)	(108.30)
Illinois	0.156	0.0904	191.7	183.6	-102.1	-101.3
	(9.65)	(9.65)	(125.30)	(127.20)	(109.70)	(109.90)
indiana	2.169	2.092	212.8*	203.2	-125	-123.9
	(9.49)	(9.49)	(123.20)	(125.10)	(107.90)	(108.00)
Iowa	1.014	0.945	148.5	139.6	-73.43	-72.66
	(9.76)	(9.75)	(126.70)	(128.60)	(110.90)	(111.10)
Kansas	0.734	0.661	173.1	164.3	-106.4	-105.3
	(9.59)	(9.59)	(124.50)	(126.40)	(109.10)	(109.20)
Kentucky	1.342	1.298	83.28	78.13	-122.1	-121.4
	(10.53)	(10.53)	(136.70)	(138.80)	(119.80)	(120.00)
Louisiana	3.117	3.016	241.1*	227.8*	-105.1	-104.2
	(10.33)	(10.33)	(134.20)	(136.20)	(117.50)	(117.60)
Maine	-0.636	-0.713	147.3	137.5	-101.8	-100.8
	(10.13)	(10.13)	(131.50)	(133.50)	(115.20)	(115.40)
Maryland	0.599	0.514	216.7*	206.1*	-139.1	-138
	(9.33)	(9.33)	(121.10)	(123.00)	(106.10)	(106.20)
Massachusetts	0.0928	0.0168	128.9	119.4	-150	-149.1
	(9.46)	(9.46)	(122.80)	(124.70)	(107.60)	(107.70)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
Remainder of table on next page

Table 3.26: General Election Regressions (Below 60-Section 8)

	(1)	(2)	(3)	(4)	(5)	(6)
Michigan	-4.171	-4.248	170.1	160.6	-132.3	-131.2
	(9.38)	(9.37)	(121.70)	(123.60)	(106.60)	(106.80)
Minnesota	-0.314	-0.374	164	156.7	-69.79	-68.87
	(9.87)	(9.87)	(128.10)	(130.10)	(112.20)	(112.40)
Mississippi	0.144	0.0701	181	172.5	-217.0*	-215.6*
	(10.14)	(10.14)	(131.60)	(133.60)	(115.30)	(115.40)
Missouri	1.078	1.016	101.3	93.66	-56.5	-55.7
	(9.74)	(9.74)	(126.50)	(128.40)	(110.80)	(110.90)
Montana	4.63	4.491	139	121.4	-155.1	-153.4
	(10.34)	(10.33)	(134.20)	(136.10)	(117.60)	(117.60)
Nebraska	1.823	1.747	202.4	193.1	-133.6	-132.6
	(9.45)	(9.45)	(122.70)	(124.60)	(107.50)	(107.60)
Nevada	2.218	2.109	170.4	156.4	-129.2	-128.1
	(9.74)	(9.74)	(126.50)	(128.40)	(110.80)	(110.90)
New Hampshire	-0.342	-0.424	188.9	178.8	-125.3	-124.1
	(9.44)	(9.44)	(122.60)	(124.40)	(107.40)	(107.50)
New Jersey	0.865	0.793	184	174.8	-96.26	-95.41
	(9.57)	(9.56)	(124.20)	(126.10)	(108.80)	(108.90)
New Mexico	1.667	1.604	266.3**	258.9**	-144	-142.9
	(9.87)	(9.87)	(128.20)	(130.10)	(112.30)	(112.40)
New York	0.525	0.454	165.3	156.5	-97.59	-96.63
	(9.53)	(9.53)	(123.70)	(125.60)	(108.40)	(108.50)
North Carolina	-22.90*	-22.97*	210.6	200.8	-138.7	-138.4
	(11.68)	(11.68)	(151.70)	(154.00)	(132.90)	(133.10)
North Dakota	2.004	1.92	148.3	137.9	-48.74	-47.59
	(9.48)	(9.47)	(123.00)	(124.90)	(107.70)	(107.90)
Ohio	10.64	10.58	162.9	155.7	-131.9	-131.2
	(9.95)	(9.95)	(129.20)	(131.20)	(113.10)	(113.30)
Oklahoma	-2.696	-2.687	-88.87	-87.47	222.5	222.5
	(13.35)	(13.35)	(173.30)	(176.00)	(151.80)	(152.00)
Oregon	-1.518	-1.558	251.8*	247.0*	-27.31	-26.7
	(10.66)	(10.66)	(138.40)	(140.60)	(121.20)	(121.40)
Pennsylvania	-4.653	-4.72	156.6	148.4	-151.9	-150.9
	(9.60)	(9.59)	(124.60)	(126.50)	(109.10)	(109.30)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.27: General Election Regressions (Below 60-Section 9)

	(1)	(2)	(3)	(4)	(5)	(6)
Rhode Island	0.516	0.431	116.2	105.8	-101.7	-100.4
	(9.31)	(9.31)	(120.90)	(122.70)	(105.90)	(106.00)
South Carolina	1.52	1.355	179.9	158.8	-162.7	-160.8
	(11.69)	(11.68)	(151.80)	(153.90)	(132.90)	(133.00)
South Dakota	1.792	1.722	137	127.9	-25.99	-25.3
	(9.85)	(9.85)	(127.90)	(129.80)	(112.00)	(112.20)
Tennessee	1.211	1.155	49.14	42.39	-105.6	-104.7
	(10.04)	(10.03)	(130.30)	(132.30)	(114.10)	(114.30)
Texas	0.31	0.153	-68.51	-89.07	-121.3	-120.4
	(19.15)	(19.14)	(248.60)	(252.40)	(217.80)	(218.00)
Utah	0.967	0.891	222.0*	212.5*	-66.96	-65.93
	(9.42)	(9.42)	(122.30)	(124.10)	(107.10)	(107.20)
Vermont	1.192	1.09	208.2*	197.6	-109.2	-107.4
	(9.30)	(9.31)	(120.80)	(122.70)	(105.80)	(106.00)
Virginia	11.43	11.36	240.2*	231.1*	-176.8	-175.9
	(9.48)	(9.47)	(123.00)	(124.90)	(107.80)	(107.90)
Washington	2.03	1.95	218.3*	208.4	-146.8	-145.8
	(9.88)	(9.87)	(128.20)	(130.10)	(112.30)	(112.40)
West Virginia	1.715	1.626	150.6	139.9	-118.2	-116.9
	(9.37)	(9.36)	(121.60)	(123.40)	(106.50)	(106.60)
Wisconsin	-5.584	-5.658	175.7	166.7	-101.8	-100.8
	(9.48)	(9.48)	(123.10)	(124.90)	(107.80)	(107.90)
Wyoming	1.911	2.087	180.6	161.5	-109.2	-126.1
	(9.41)	(9.64)	(122.10)	(127.10)	(107.00)	(109.80)
——————————Time Dummies-Incumbent-Constant——————————						
Incumbent	-0.126*	-0.122	-1.667*	-1.188	3.712***	3.661***
	(0.08)	(0.07)	(0.98)	(0.98)	(0.86)	(0.85)
Y2004	0.148**	0.146**	3.994***	3.768***	0.928	0.971
	(0.06)	(0.06)	(0.78)	(0.78)	(0.68)	(0.67)
Y2008	-0.143**	-0.141**	-3.218***	-2.936***	4.381***	4.389***
	(0.06)	(0.06)	(0.75)	(0.75)	(0.65)	(0.65)
Y2016	-0.00302	0.000181	-1.394	-0.982	3.116***	3.085***
	(0.07)	(0.07)	(0.91)	(0.92)	(0.80)	(0.79)
Constant	-1.101	-0.992	-143	-129.4	198.4*	196.9*
	(9.13)	(9.12)	(118.50)	(120.20)	(103.80)	(103.80)
Observations	255	255	255	255	255	255
Adjusted R-squared	0.794	0.794	0.931	0.929	0.8	0.799
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						

Table 3.28: General Election Regressions (Below 40-Section 1)

	(1)	(2)	(3)	(4)	(5)	(6)
NewBelow50	-0.013		3.428		-2.563	
	(0.16)		(2.12)		(1.84)	
Below50		-0.0129		3.386		-2.582
		(0.16)		(2.14)		(1.83)
Alabama # NewBelow40	0		0		0	
	(.)		(.)		(.)	
Alaska # NewBelow40	-0.00763		-5.484**		0.995	
	(0.17)		(2.34)		(2.03)	
Arizona # NewBelow40	-0.106		-7.887*		1.071	
	(0.34)		(4.65)		(4.03)	
Arkansas # NewBelow40	-0.252		-19.26***		8.112	
	(0.49)		(6.71)		(5.80)	
California # NewBelow40	0.0215		-8.135***		0.518	
	(0.22)		(3.04)		(2.63)	
Colorado # NewBelow40	-0.314*		-4.761**		5.393***	
	(0.17)		(2.37)		(2.05)	
Connecticut # NewBelow40	0.0382		-2.558		3.066	
	(0.17)		(2.35)		(2.03)	
Delaware # NewBelow40	0.0325		-3.837		0.766	
	(0.22)		(2.98)		(2.58)	
DC # NewBelow40	0.00536		-4.046*		2.517	
	(0.16)		(2.18)		(1.89)	
Florida # NewBelow40	-0.353		-3.276		1.1	
	(0.22)		(3.01)		(2.61)	
Georgia # NewBelow40	0.0546		-4.093		6.822**	
	(0.25)		(3.45)		(2.98)	
Hawaii # NewBelow40	0.0315		-6.104**		4.463*	
	(0.20)		(2.77)		(2.39)	
Idaho # NewBelow40	-0.0341		-6.418**		2.97	
	(0.20)		(2.72)		(2.35)	
Illinois # NewBelow40	-0.0095		-4.211		1.899	
	(0.21)		(2.79)		(2.42)	
Indiana # NewBelow40	-0.0665		-4.371*		2.102	
	(0.18)		(2.46)		(2.13)	
Iowa # NewBelow40	0.00211		-1.514		-0.429	
	(0.22)		(2.96)		(2.56)	

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
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Table 3.29: General Election Regressions (Below 40-Section 2)

	(1)	(2)	(3)	(4)	(5)	(6)
Kansas # NewBelow40	0.0185		-3.295		1.209	
	(0.20)		(2.75)		(2.38)	
Kentucky # NewBelow40	0.054		3.456		-1.837	
	(0.41)		(5.63)		(4.88)	
Louisiana # NewBelow40	-0.0231		-2.261		0.448	
	(0.19)		(2.56)		(2.21)	
Maine # NewBelow40	-0.056		-2.958		4.218	
	(0.23)		(3.08)		(2.67)	
Maryland # NewBelow40	-0.019		-5.368**		2.459	
	(0.19)		(2.65)		(2.29)	
Massachusetts # NewBelow40	0.0345		-1.839		3.692	
	(0.19)		(2.60)		(2.25)	
Michigan # NewBelow40	0.169		-3.417		2.907	
	(0.19)		(2.57)		(2.23)	
Minnesota # NewBelow40	0.0403		-3.162		1.737	
	(0.18)		(2.49)		(2.15)	
Mississippi # NewBelow40	0.0463		-2.626		5.734**	
	(0.23)		(3.14)		(2.72)	
Missouri # NewBelow40	0.0313		-0.167		-1.248	
	(0.26)		(3.48)		(3.01)	
Montana # NewBelow40	0.0122		-3.277		0.536	
	(0.24)		(3.22)		(2.78)	
Nebraska # NewBelow40	0.0188		-4.575		2.608	
	(0.22)		(2.95)		(2.56)	
Nevada # NewBelow40	-0.327		-3.787		2.884	
	(0.21)		(2.87)		(2.49)	
New Hampshire # NewBelow40	0.0241		-4.034		2.554	
	(0.21)		(2.82)		(2.44)	
New Jersey # NewBelow40	-0.00982		-3.733		1.215	
	(0.19)		(2.59)		(2.25)	
New Mexico # NewBelow40	-0.810***		-9.448**		-3.888	
	(0.31)		(4.23)		(3.66)	
New York # NewBelow40	0.0131		-3.502		1.148	
	(0.19)		(2.55)		(2.21)	
North Carolina # NewBelow40	0.0572		-6.130*		6.709**	
	(0.23)		(3.12)		(2.70)	
North Dakota # NewBelow40	0.0107		-2.474		-1.026	
	(0.19)		(2.56)		(2.21)	

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
Remainder of table on next page

Table 3.30: General Election Regressions (Below 40-Section 3)

	(1)	(2)	(3)	(4)	(5)	(6)
Ohio # NewBelow40	-0.257		-2.92		2.871	
	(0.20)		(2.69)		(2.33)	
Oklahoma # NewBelow40	0.0471		0.54		-0.5	
	(0.21)		(2.85)		(2.47)	
Oregon # NewBelow40	0.0606		-6.477*		-0.859	
	(0.27)		(3.71)		(3.22)	
Pennsylvania # NewBelow40	0.396*		-1.928		3.084	
	(0.21)		(2.90)		(2.51)	
Rhode Island # NewBelow40	0.0162		-1.706		1.4	
	(0.17)		(2.29)		(1.99)	
South Carolina # NewBelow40	0.0506		-2.189		2.345	
	(0.23)		(3.10)		(2.68)	
South Dakota # NewBelow40	0.0241		-2.303		0.0986	
	(0.21)		(2.89)		(2.50)	
Tennessee # NewBelow40	0.175		10.17		4.81	
	(0.52)		(7.03)		(6.09)	
Texas # NewBelow40	0.16		-4.003		-1.247	
	(0.40)		(5.42)		(4.69)	
Utah # NewBelow40	0.0168		-5.648**		0.918	
	(0.18)		(2.47)		(2.14)	
Vermont # NewBelow40	-0.0104		-4.806**		1.523	
	(0.17)		(2.37)		(2.05)	
Virginia # NewBelow40	-0.462**		-6.096**		4.910**	
	(0.19)		(2.58)		(2.23)	
Washington # NewBelow40	-0.0696		-5.267		3.456	
	(0.29)		(3.97)		(3.44)	
West Virginia # NewBelow40	0.0128		-0.246		1.315	
	(0.19)		(2.55)		(2.21)	
Wisconsin # NewBelow40	0.269		-3.237		2.272	
	(0.20)		(2.69)		(2.33)	
Wyoming # NewBelow40	-0.0142		-1.927		3.168	
	(0.20)		(2.70)		(2.34)	
————————-Interaction Terms State and Old Relative Poverty Measure————————						
Alabama # Below40		0		0		0
		(.)		(.)		(.)
Alaska # Below40		-0.00782		-5.461**		1.011
		(0.17)		(2.36)		(2.02)
Arizona # Below40		-0.106		-7.906*		1.072
		(0.34)		(4.70)		(4.02)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
Remainder of table on next page

Table 3.31: General Election Regressions (Below 40-Section 4)

	(1)	(2)	(3)	(4)	(5)	(6)
Arkansas # Below40		-0.255		-16.12**		6.808
		(0.53)		(7.36)		(6.29)
California # Below40		0.0211		-8.169***		0.529
		(0.22)		(3.07)		(2.63)
Colorado # Below40		-0.314*		-4.746**		5.401***
		(0.17)		(2.39)		(2.05)
Connecticut # Below40		0.0382		-2.537		3.073
		(0.17)		(2.37)		(2.03)
Delaware # Below40		0.0325		-3.842		0.764
		(0.22)		(3.01)		(2.57)
DC # Below40		0.00528		-4.014*		2.53
		(0.16)		(2.21)		(1.89)
Florida # Below40		-0.354		-3.315		1.133
		(0.22)		(3.05)		(2.61)
Georgia # Below40		0.0548		-4.092		6.802**
		(0.25)		(3.48)		(2.98)
Hawaii # Below40		0.0317		-6.081**		4.452*
		(0.20)		(2.80)		(2.39)
Idaho # Below40		-0.0342		-6.393**		2.99
		(0.20)		(2.75)		(2.35)
Illinois # Below40		-0.00947		-4.205		1.897
		(0.21)		(2.82)		(2.42)
Indiana # Below40		-0.0668		-4.375*		2.117
		(0.18)		(2.48)		(2.12)
Iowa # Below40		0.00159		-1.549		-0.403
		(0.22)		(2.99)		(2.56)
Kansas # Below40		0.0183		-3.304		1.221
		(0.20)		(2.78)		(2.38)
Kentucky # Below40		0.0526		3.36		-1.753
		(0.41)		(5.69)		(4.87)
Louisiana # Below40		-0.0233		-2.255		0.465
		(0.19)		(2.58)		(2.21)
Maine # Below40		-0.0563		-2.898		4.253
		(0.23)		(3.12)		(2.67)
Maryland # Below40		-0.0194		-5.364**		2.483
		(0.19)		(2.68)		(2.29)

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01
Remainder of table on next page

Table 3.32: General Election Regressions (Below 40-Section 5)

	(1)	(2)	(3)	(4)	(5)	(6)
Massachusetts # Below40		0.0342		-1.85		3.706
		(0.19)		(2.63)		(2.25)
Michigan # Below40		0.169		-3.422		2.914
		(0.19)		(2.60)		(2.22)
Minnesota # Below40		0.0401		-3.159		1.745
		(0.18)		(2.51)		(2.15)
Mississippi # Below40		0.0462		-2.625		5.734**
		(0.23)		(3.17)		(2.71)
Missouri # Below40		0.0315		-0.172		-1.27
		(0.26)		(3.51)		(3.00)
Montana # Below40		0.0113		-3.314		0.589
		(0.24)		(3.25)		(2.78)
Nebraska # Below40		0.0187		-4.593		2.609
		(0.22)		(2.98)		(2.55)
Nevada # Below40		-0.327		-3.801		2.916
		(0.21)		(2.90)		(2.48)
New Hampshire # Below40		0.0242		-4.003		2.546
		(0.21)		(2.84)		(2.43)
New Jersey # Below40		-0.01		-3.735		1.229
		(0.19)		(2.62)		(2.24)
New Mexico # Below40		-0.811***		-9.520**		-3.846
		(0.31)		(4.28)		(3.66)
New York # Below40		0.0129		-3.503		1.157
		(0.19)		(2.58)		(2.20)
North Carolina # Below40		0.0575		-6.103*		6.689**
		(0.23)		(3.16)		(2.70)
North Dakota # Below40		0.0105		-2.469		-1.013
		(0.19)		(2.58)		(2.21)
Ohio # Below40		-0.257		-2.929		2.878
		(0.20)		(2.72)		(2.33)
Oklahoma # Below40		0.047		0.543		-0.491
		(0.21)		(2.88)		(2.46)
Oregon # Below40		0.0603		-6.534*		-0.859
		(0.27)		(3.75)		(3.21)
Pennsylvania # Below40		0.396*		-1.952		3.096
		(0.21)		(2.93)		(2.50)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.33: General Election Regressions (Below 40-Section 6)

	(1)	(2)	(3)	(4)	(5)	(6)
Rhode Island # Below40		0.0161		-1.687		1.41
		(0.17)		(2.32)		(1.98)
South Carolina # Below40		0.0503		-2.109		2.388
		(0.23)		(3.13)		(2.68)
South Dakota # Below40		0.0236		-2.332		0.125
		(0.21)		(2.92)		(2.50)
Tennessee # Below40		0.173		9.955		4.891
		(0.52)		(7.11)		(6.08)
Texas # Below40		0.16		-4.071		-1.282
		(0.40)		(5.48)		(4.69)
Utah # Below40		0.0166		-5.648**		0.931
		(0.18)		(2.50)		(2.14)
Vermont # Below40		-0.0107		-4.813**		1.533
		(0.17)		(2.40)		(2.05)
Virginia # Below40		-0.463**		-6.100**		4.919**
		(0.19)		(2.60)		(2.23)
Washington # Below40		-0.0687		-5.172		3.414
		(0.29)		(4.01)		(3.43)
West Virginia # Below40		0.013		-0.207		1.308
		(0.19)		(2.58)		(2.20)
Wisconsin # Below40		0.27		-3.226		2.269
		(0.20)		(2.72)		(2.32)
Wyoming # Below40		-0.0141		-2.248		4.104*
		(0.20)		(2.72)		(2.32)
State Fixed-Effects						
Alabama	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Alaska	0.0787	0.0819	88.06**	87.60**	-18.81	-19.11
	(2.95)	(2.95)	(40.17)	(40.60)	(34.77)	(34.72)
Arizona	1.761	1.763	127.1	127.4	-22.71	-22.74
	(5.78)	(5.78)	(78.81)	(79.64)	(68.21)	(68.11)
Arkansas	4.078	4.123	314.2***	262.6**	-141.4	-120.1
	(8.07)	(8.73)	(110.00)	(120.20)	(95.19)	(102.80)

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

Remainder of table on next page

Table 3.34: General Election Regressions (Below 40-Section 7)

	(1)	(2)	(3)	(4)	(5)	(6)
California	-1.385	-1.38	125.5**	126.1**	-8.681	-8.886
	(4.04)	(4.04)	(55.02)	(55.60)	(47.62)	(47.55)
Colorado	4.463	4.465	68.93*	68.63	-85.43**	-85.59**
	(3.01)	(3.01)	(41.06)	(41.50)	(35.54)	(35.49)
Connecticut	-1.652	-1.651	25.76	25.37	-51.36	-51.48
	(3.01)	(3.01)	(41.03)	(41.46)	(35.51)	(35.45)
Delaware	-1.537	-1.537	47.58	47.57	-12.28	-12.29
	(3.65)	(3.65)	(49.72)	(50.25)	(43.03)	(42.97)
DC	-1.048	-1.046	21.74	21.24	-32.08	-32.28
	(2.91)	(2.91)	(39.64)	(40.06)	(34.31)	(34.25)
Florida	5.153	5.164	46.9	47.44	-21.55	-22.1
	(3.70)	(3.70)	(50.36)	(50.89)	(43.59)	(43.52)
Georgia	-0.977	-0.98	65.8	65.81	-123.9**	-123.5**
	(4.51)	(4.51)	(61.47)	(62.12)	(53.20)	(53.12)
Hawaii	-1.533	-1.536	77.29	76.86	-88.37**	-88.19**
	(3.48)	(3.48)	(47.41)	(47.91)	(41.04)	(40.97)
Idaho	0.446	0.449	106.9**	106.4**	-51.06	-51.4
	(3.27)	(3.27)	(44.55)	(45.03)	(38.56)	(38.50)
Illinois	-0.839	-0.839	54.28	54.16	-31.62	-31.59
	(3.59)	(3.59)	(48.94)	(49.45)	(42.36)	(42.29)
Indiana	0.757	0.762	69.26*	69.21	-40.09	-40.37
	(3.06)	(3.06)	(41.63)	(42.07)	(36.03)	(35.98)
Iowa	-0.671	-0.663	20.13	20.52	5.729	5.286
	(3.51)	(3.51)	(47.88)	(48.39)	(41.44)	(41.38)
Kansas	-0.313	-0.31	56.54	56.57	-22.94	-23.16
	(3.36)	(3.36)	(45.77)	(46.25)	(39.62)	(39.55)
Kentucky	-0.972	-0.946	-65.52	-63.75	33.59	32.07
	(7.46)	(7.46)	(101.60)	(102.70)	(87.95)	(87.81)
Louisiana	0.429	0.433	35.3	35.21	-2.043	-2.334
	(3.35)	(3.35)	(45.59)	(46.08)	(39.46)	(39.40)
Maine	-0.121	-0.116	35.32	34.3	-61.66	-62.26
	(3.81)	(3.81)	(51.93)	(52.49)	(44.95)	(44.89)
Maryland	-0.701	-0.695	70.07	69.95	-39.33	-39.74
	(3.35)	(3.35)	(45.63)	(46.12)	(39.49)	(39.44)
Massachusetts	-1.627	-1.621	5.724	5.962	-59.41	-59.66
	(3.42)	(3.42)	(46.64)	(47.13)	(40.37)	(40.31)

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

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Table 3.35: General Election Regressions (Below 40-Section 8)

	(1)	(2)	(3)	(4)	(5)	(6)
Michigan	-3.569	-3.566	45.09	45.11	-46.14	-46.28
	(3.24)	(3.24)	(44.21)	(44.68)	(38.26)	(38.20)
Minnesota	-1.641	-1.639	41.33	41.18	-20.57	-20.73
	(3.09)	(3.09)	(42.13)	(42.58)	(36.46)	(36.41)
Mississippi	-0.821	-0.821	42.91	42.9	-95.86**	-95.86**
	(4.09)	(4.09)	(55.69)	(56.28)	(48.20)	(48.12)
Missouri	-0.516	-0.519	1.452	1.442	19.53	19.84
	(4.19)	(4.19)	(57.05)	(57.66)	(49.38)	(49.30)
Montana	-0.217	-0.203	53.33	53.79	-9.603	-10.45
	(3.83)	(3.83)	(52.20)	(52.76)	(45.18)	(45.12)
Nebraska	-0.312	-0.31	77.29	77.4	-42.61	-42.69
	(3.48)	(3.48)	(47.37)	(47.87)	(41.00)	(40.94)
Nevada	4.404	4.412	52.33	52.45	-53.31	-53.84
	(3.51)	(3.51)	(47.79)	(48.30)	(41.37)	(41.30)
New Hampshire	-1.389	-1.39	55.69	55.11	-36.56	-36.5
	(3.37)	(3.37)	(45.86)	(46.34)	(39.69)	(39.63)
New Jersey	-0.826	-0.822	47.32	47.37	-19.36	-19.62
	(3.36)	(3.36)	(45.78)	(46.27)	(39.63)	(39.56)
New Mexico	13.76**	13.78**	152.5**	153.8**	69.28	68.53
	(5.56)	(5.56)	(75.71)	(76.51)	(65.53)	(65.43)
New York	-1.23	-1.227	36.59	36.67	-20.35	-20.49
	(3.39)	(3.39)	(46.25)	(46.74)	(40.03)	(39.97)
North Carolina	-1.181	-1.187	98.35*	97.87*	-112.5**	-112.2**
	(3.97)	(3.97)	(54.03)	(54.61)	(46.77)	(46.69)
North Dakota	-0.195	-0.192	45.43	45.24	14.88	14.64
	(3.15)	(3.15)	(42.92)	(43.38)	(37.15)	(37.09)
Ohio	3.739	3.741	41.11	41.19	-47.7	-47.83
	(3.37)	(3.37)	(45.92)	(46.40)	(39.74)	(39.68)
Oklahoma	-0.774	-0.771	1.241	1.115	0.592	0.424
	(3.53)	(3.53)	(48.10)	(48.60)	(41.63)	(41.56)
Oregon	-1.999	-1.993	92.81	93.66	17.55	17.53
	(4.54)	(4.54)	(61.83)	(62.48)	(53.51)	(53.43)
Pennsylvania	-7.114**	-7.109**	22.91	23.22	-52.8	-53.02
	(3.57)	(3.57)	(48.69)	(49.20)	(42.14)	(42.07)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.36: General Election Regressions (Below 40-Section 9)

	(1)	(2)	(3)	(4)	(5)	(6)
Rhode Island	-1.288	-1.286	4.056	3.746	-21.13	-21.31
	(2.99)	(2.99)	(40.80)	(41.23)	(35.31)	(35.26)
South Carolina	-0.889	-0.883	33.74	32.33	-39.4	-40.15
	(4.00)	(4.00)	(54.50)	(55.09)	(47.17)	(47.11)
South Dakota	-0.397	-0.389	41.42	41.75	-5.969	-6.408
	(3.50)	(3.50)	(47.63)	(48.14)	(41.23)	(41.16)
Tennessee	-2.952	-2.918	-171.3	-167.8	-89.24	-90.62
	(8.70)	(8.70)	(118.60)	(119.80)	(102.70)	(102.50)
Texas	-2.863	-2.864	67.27	68.5	17.49	18.14
	(7.13)	(7.13)	(97.12)	(98.15)	(84.06)	(83.93)
Utah	-0.279	-0.275	92.79**	92.60**	-24.88	-25.13
	(2.99)	(2.99)	(40.69)	(41.12)	(35.22)	(35.17)
Vermont	-0.881	-0.875	55.08	55.05	-26.34	-26.55
	(2.97)	(2.98)	(40.49)	(40.98)	(35.04)	(35.04)
Virginia	7.068**	7.071**	93.17**	93.20**	-79.77**	-79.95**
	(3.27)	(3.27)	(44.56)	(45.04)	(38.57)	(38.51)
Washington	0.121	0.106	71.91	70.3	-55.16	-54.5
	(4.87)	(4.87)	(66.35)	(67.05)	(57.43)	(57.33)
West Virginia	-0.226	-0.229	7.794	7.096	-33.92	-33.85
	(3.21)	(3.21)	(43.70)	(44.16)	(37.82)	(37.76)
Wisconsin	-4.736	-4.736	43.82	43.52	-29.62	-29.65
	(3.24)	(3.25)	(44.21)	(44.68)	(38.27)	(38.21)
Wyoming	0.184	0.178	45.4	50.44	-51.87	-65.82*
	(3.32)	(3.30)	(45.29)	(45.41)	(39.20)	(38.83)
——————————Time Dummies-Incumbent-Constant——————————						
Incumbent	-0.0695	-0.07	-0.411	-0.336	2.877***	2.939***
	(0.06)	(0.06)	(0.86)	(0.87)	(0.74)	(0.75)
Y2004	0.0868	0.086	3.020***	2.882***	1.488**	1.499**
	(0.05)	(0.05)	(0.74)	(0.75)	(0.64)	(0.64)
Y2008	-0.143***	-0.143***	-3.257***	-3.198***	4.313***	4.334***
	(0.05)	(0.05)	(0.73)	(0.74)	(0.63)	(0.63)
Y2016	0.0556	0.0554	-0.614	-0.537	2.868***	2.894***
	(0.06)	(0.06)	(0.86)	(0.87)	(0.75)	(0.75)
Constant	1.258	1.256	0.502	1.225	103.3***	103.6***
	(2.74)	(2.74)	(37.29)	(37.69)	(32.27)	(32.23)
Observations	255	255	255	255	255	255
Adjusted R-squared	0.806	0.805	0.928	0.927	0.796	0.797
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						

Table 3.37: Midterm Election Regressions (Below 60-Section 1)

	(7)	(8)	(9)	(10)	(11)	(12)
NewBelow60	4.874		0.407		-3.826	
	(19.70)		(9.81)		(4.54)	
Below60		4.583		-0.00564		-3.861
		(19.66)		(9.78)		(4.60)
Alabama # NewBelow60	0		0		0	
	(.)		(.)		(.)	
Alaska # NewBelow60	-8.315		-4.021		3.311	
	(20.01)		(9.96)		(4.61)	
Arizona # NewBelow60	-9.211		-1.517		4.096	
	(20.46)		(10.19)		(4.71)	
Arkansas # NewBelow60	25.12		13		18.73***	
	(28.59)		(14.24)		(6.59)	
California # NewBelow60	-14.91		-5.229		2.978	
	(21.08)		(10.50)		(4.86)	
Colorado # NewBelow60	-11.32		-3.672		3.578	
	(20.24)		(10.08)		(4.66)	
Connecticut # NewBelow60	-22.29		-4.862		5.215	
	(20.21)		(10.06)		(4.66)	
Delaware # NewBelow60	-27.27		-11.86		4.369	
	(20.50)		(10.21)		(4.72)	
Florida # NewBelow60	-8.985		-1.126		4.805	
	(20.69)		(10.30)		(4.77)	
Georgia # NewBelow60	-8.074		-0.0136		4.009	
	(20.53)		(10.22)		(4.73)	
Hawaii # NewBelow60	-8.606		-2.506		4.71	
	(21.02)		(10.47)		(4.84)	
Idaho # NewBelow60	-8.72		0.0436		4.598	
	(21.83)		(10.87)		(5.03)	
Illinois # NewBelow60	-15.44		-2.852		4.333	
	(21.27)		(10.59)		(4.90)	
Indiana # NewBelow60	-6.637		-1.682		4.866	
	(20.66)		(10.29)		(4.76)	
Iowa # NewBelow60	-19.01		-4.257		4.141	
	(22.74)		(11.32)		(5.24)	
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.38: Midterm Election Regressions (Below 60-Section 2)

	(7)	(8)	(9)	(10)	(11)	(12)
Kansas # NewBelow60	-0.687		-4.379		4.629	
	(21.96)		(10.93)		(5.06)	
Kentucky # NewBelow60	-13.51		3.566		2.335	
	(25.57)		(12.73)		(5.89)	
Louisiana # NewBelow60	-3.33		5.742		4.506	
	(21.41)		(10.66)		(4.93)	
Maine # NewBelow60	10.66		-1.74		6.432	
	(22.18)		(11.04)		(5.11)	
Maryland # NewBelow60	-17.32		-8.079		4.29	
	(20.61)		(10.26)		(4.75)	
Massachusetts # NewBelow60	-13.78		-1.247		1.946	
	(20.47)		(10.19)		(4.72)	
Michigan # NewBelow60	-4.992		-1.223		4.503	
	(20.72)		(10.32)		(4.77)	
Minnesota # NewBelow60	-8.342		-2.149		3.688	
	(21.33)		(10.62)		(4.91)	
Mississippi # NewBelow60	-0.892		-1.096		5.033	
	(22.84)		(11.37)		(5.26)	
Missouri # NewBelow60	-3.688		0.808		5.457	
	(21.21)		(10.56)		(4.89)	
Montana # NewBelow60	-8.651		3.122		2.644	
	(22.73)		(11.32)		(5.24)	
Nebraska # NewBelow60	-15.74		-0.126		3.573	
	(21.32)		(10.62)		(4.91)	
Nevada # NewBelow60	-7.615		-1.486		3.44	
	(20.28)		(10.10)		(4.67)	
New Hampshire # NewBelow60	-17.15		-4.735		3.781	
	(20.73)		(10.32)		(4.77)	
New Jersey # NewBelow60	-10.24		-2.885		3.797	
	(20.84)		(10.38)		(4.80)	
New Mexico # NewBelow60	-30.92		-3.222		3.458	
	(21.33)		(10.62)		(4.91)	
New York # NewBelow60	-16.41		-5.252		0.794	
	(21.16)		(10.54)		(4.87)	
North Carolina # NewBelow60	-6.89		-2.622		2.939	
	(23.42)		(11.66)		(5.39)	
North Dakota # NewBelow60	-8.145		6.111		4.204	
	(20.98)		(10.45)		(4.83)	
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01 Remainder of table on next page						

Table 3.39: Midterm Election Regressions (Below 60-Section 3)

	(7)	(8)	(9)	(10)	(11)	(12)
Ohio # NewBelow60	-5.001		-0.591		3.754	
	(21.31)		(10.61)		(4.91)	
Oklahoma # NewBelow60	9.013		-9.233		0.963	
	(27.40)		(13.64)		(6.31)	
Oregon # NewBelow60	-11.84		-5.345		5.064	
	(21.57)		(10.74)		(4.97)	
Pennsylvania # NewBelow60	-3.25		-2.387		3.53	
	(21.27)		(10.59)		(4.90)	
Rhode Island # NewBelow60	-7.649		0.148		2.784	
	(20.04)		(9.98)		(4.62)	
South Carolina # NewBelow60	-4.988		0.582		4.852	
	(22.66)		(11.28)		(5.22)	
South Dakota # NewBelow60	2.311		3.368		3.337	
	(21.41)		(10.66)		(4.93)	
Tennessee # NewBelow60	-2.004		0.298		5.207	
	(21.76)		(10.84)		(5.01)	
Texas # NewBelow60	-26.29		10.24		3.561	
	(44.97)		(22.39)		(10.36)	
Utah # NewBelow60	-6.149		-0.561		4.619	
	(20.33)		(10.12)		(4.68)	
Vermont # NewBelow60	-17.85		-7.364		-4.288	
	(20.02)		(9.97)		(4.64)	
Virginia # NewBelow60	-6.524		-2.699		2.015	
	(20.91)		(10.41)		(4.82)	
Washington # NewBelow60	-9.383		-5.914		3.08	
	(21.76)		(10.84)		(5.01)	
West Virginia # NewBelow60	-4.482		6.697		1.843	
	(20.82)		(10.37)		(4.80)	
Wisconsin # NewBelow60	-3.575		-2.021		3.782	
	(20.46)		(10.19)		(4.71)	
Wyoming # NewBelow60	-8.234		4.615		5.272	
	(20.40)		(10.16)		(4.70)	
——————Interaction Terms State and Old Relative Poverty Measure——————						
Alaska # Below60		-7.987		-3.731		3.372
		(19.96)		(9.94)		(4.67)
Arizona # Below60		-22.01		-1.847		4.247
		(24.42)		(12.15)		(5.71)
Arkansas # Below60		25.43		10.18		13.50**
		(23.90)		(11.90)		(5.59)

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

Remainder of table on next page

Table 3.40: Midterm Election Regressions (Below 60-Section 4)

	(7)	(8)	(9)	(10)	(11)	(12)
California # Below60		-20.48		-6.793		1.976
		(22.13)		(11.01)		(5.17)
Colorado # Below60		-12.33		-3.901		3.522
		(20.38)		(10.14)		(4.77)
Connecticut # Below60		-22.72		-4.694		5.482
		(20.29)		(10.10)		(4.74)
Delaware # Below60		-26.73		-11.43		4.373
		(20.45)		(10.18)		(4.78)
Florida # Below60		-14.51		-2.503		4.79
		(21.79)		(10.84)		(5.10)
Georgia # Below60		-7.814		0.27		3.789
		(22.92)		(11.41)		(5.36)
Hawaii # Below60		-8.244		-2.045		4.66
		(20.90)		(10.40)		(4.89)
Idaho # Below60		-8.217		0.403		4.646
		(21.78)		(10.84)		(5.09)
Illinois # Below60		-17.43		-1.97		4.029
		(21.40)		(10.65)		(5.00)
indiana # Below60		-5.5		-1.611		4.779
		(21.10)		(10.50)		(4.93)
Iowa # Below60		-15.55		-3.947		4.026
		(22.69)		(11.29)		(5.31)
Kansas # Below60		-0.127		-4.003		4.712
		(21.90)		(10.90)		(5.12)
Kentucky # Below60		-13.64		3.586		2.377
		(25.48)		(12.68)		(5.96)
Louisiana # Below60		-3.381		5.661		4.517
		(21.33)		(10.62)		(4.99)
Maine # Below60		10.4		-1.626		6.471
		(22.10)		(11.00)		(5.17)
Maryland # Below60		-16.94		-7.734		4.343
		(20.55)		(10.23)		(4.81)
Massachusetts # Below60		-13.45		-1.09		2.234
		(20.50)		(10.20)		(4.79)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.41: Midterm Election Regressions (Below 60-Section 5)

	(7)	(8)	(9)	(10)	(11)	(12)
Michigan # Below60		-4.751		-0.946		4.533
		(20.66)		(10.28)		(4.83)
Minnesota # Below60		-7.696		-1.73		3.732
		(21.28)		(10.59)		(4.98)
Mississippi # Below60		-4.099		0.573		6.422
		(22.41)		(11.15)		(5.24)
Missouri # Below60		-1.935		1.553		5.648
		(21.62)		(10.76)		(5.06)
Montana # Below60		-8.084		3.647		2.507
		(22.85)		(11.37)		(5.34)
Nebraska # Below60		-15.24		0.224		3.601
		(21.26)		(10.58)		(4.97)
Nevada # Below60		-13.34		-0.863		3.158
		(21.35)		(10.62)		(4.99)
New Hampshire # Below60		-16.88		-4.418		3.824
		(20.67)		(10.29)		(4.83)
New Jersey # Below60		-10.02		-2.606		3.822
		(20.78)		(10.34)		(4.86)
New Mexico # Below60		-31.9		-2.987		3.452
		(21.59)		(10.75)		(5.05)
New York # Below60		-15.43		-4.964		1.366
		(21.21)		(10.55)		(4.96)
North Carolina # Below60		-5.914		-2.076		2.859
		(23.36)		(11.63)		(5.46)
North Dakota # Below60		-7.503		6.56		4.253
		(20.94)		(10.42)		(4.90)
Ohio # Below60		-4.69		-0.292		3.786
		(21.24)		(10.57)		(4.97)
Oklahoma # Below60		7.49		-9.607		1.105
		(27.28)		(13.57)		(6.38)
Oregon # Below60		-13.15		-8.486		8.208
		(23.18)		(11.54)		(5.42)
Pennsylvania # Below60		-2.151		-1.744		3.444
		(21.41)		(10.66)		(5.01)
Rhode Island # Below60		-7.303		1.381		2.512
		(20.12)		(10.01)		(4.71)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.42: Midterm Election Regressions (Below 60-Section 6)

	(7)	(8)	(9)	(10)	(11)	(12)
South Carolina # Below60		-4.064		4.302		5.471
		(25.48)		(12.68)		(5.96)
South Dakota # Below60		2.251		3.557		3.408
		(21.34)		(10.62)		(4.99)
Tennessee # Below60		-3.343		0.236		5.496
		(22.43)		(11.16)		(5.24)
Texas # Below60		-26.29		10.7		3.785
		(44.83)		(22.31)		(10.48)
Utah # Below60		-2.92		-0.591		4.832
		(20.71)		(10.31)		(4.84)
Vermont # Below60		-18.56		-8.2		-4.464
		(20.06)		(9.98)		(4.73)
Virginia # Below60		-6.294		-2.429		2.048
		(20.85)		(10.38)		(4.88)
Washington # Below60		-9.874		-6.181		2.723
		(22.20)		(11.05)		(5.19)
West Virginia # Below60		-3.993		7.107		1.857
		(20.78)		(10.34)		(4.86)
Wisconsin # Below60		-2.512		-2.54		3.766
		(20.80)		(10.35)		(4.87)
Wyoming # Below60		-8.317		5.605		5.216
		(20.61)		(10.26)		(4.82)
State Fixed-Effects						
Alabama	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Alaska	261.2	251.6	110.3	101.3	-94.6	-96.36
	(589.40)	(588.10)	(293.50)	(292.70)	(135.80)	(137.50)
Arizona	255	616.2	39.71	48.22	-118.6	-122.9
	(603.40)	(711.30)	(300.50)	(354.00)	(139.00)	(166.30)
Arkansas	-721.6	-726.7	-371.7	-290.6	-532.4***	-382.6**
	(827.80)	(696.60)	(412.20)	(346.70)	(190.70)	(162.90)
California	406	571.8	145.3	191.7	-87.04	-57.04
	(625.10)	(656.70)	(311.30)	(326.80)	(144.00)	(153.60)

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

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Table 3.43: Midterm Election Regressions (Below 60-Section 7)

	(7)	(8)	(9)	(10)	(11)	(12)
Colorado	301.9	328.3	96.25	101.3	-103.9	-102.4
	(596.00)	(599.20)	(296.80)	(298.20)	(137.30)	(140.10)
Connecticut	581.6	590.4	124.9	118.9	-151	-158.4
	(595.90)	(597.60)	(296.80)	(297.40)	(137.30)	(139.70)
Delaware	734.1	718.8	314.6	302.1	-128.2	-128.4
	(602.00)	(600.60)	(299.80)	(298.90)	(138.70)	(140.40)
Florida	248.3	400	27.77	64.97	-140.2	-139.7
	(608.00)	(636.10)	(302.80)	(316.60)	(140.10)	(148.80)
Georgia	226.7	218	0.357	-7.95	-121.1	-114.7
	(606.80)	(675.60)	(302.10)	(336.20)	(139.80)	(158.00)
Hawaii	170.1	159.6	50.63	37.11	-135.7	-134.4
	(614.50)	(611.10)	(306.00)	(304.10)	(141.50)	(142.90)
Idaho	266.4	252.1	1.816	-8.97	-133.6	-134.9
	(633.50)	(632.00)	(315.50)	(314.50)	(145.90)	(147.80)
Illinois	418.3	474	73.61	47.74	-129	-120.3
	(626.10)	(629.20)	(311.80)	(313.10)	(144.20)	(147.10)
indiana	182.3	151.1	42.68	39.35	-140.4	-138
	(605.00)	(614.70)	(301.30)	(305.90)	(139.40)	(143.70)
Iowa	501.4	409.4	107.9	98.24	-122.2	-119.3
	(652.70)	(651.10)	(325.00)	(324.00)	(150.40)	(152.20)
Kansas	40.75	24.96	119.5	108.3	-131.8	-134.1
	(637.00)	(635.30)	(317.20)	(316.20)	(146.70)	(148.60)
Kentucky	398.5	402.4	-103	-103.7	-70.24	-71.45
	(753.20)	(750.70)	(375.10)	(373.60)	(173.50)	(175.50)
Louisiana	99.72	101.5	-173.8	-170.9	-130.7	-131
	(635.30)	(632.90)	(316.40)	(315.00)	(146.30)	(148.00)
Maine	-343.1	-336.5	35.73	31.68	-183.6	-184.8
	(644.80)	(642.60)	(321.10)	(319.80)	(148.50)	(150.30)
Maryland	433.8	422.7	210.8	200.5	-126.3	-127.8
	(605.30)	(603.70)	(301.40)	(300.50)	(139.40)	(141.20)
Massachusetts	341.5	331.5	9.331	4.566	-45.53	-54.05
	(604.80)	(605.50)	(301.10)	(301.30)	(139.30)	(141.60)
Michigan	130.1	122.9	25.97	17.49	-131.2	-132.1
	(608.30)	(606.60)	(302.90)	(301.90)	(140.10)	(141.90)
Minnesota	206	187.9	48.26	35.89	-108.2	-109.5
	(620.90)	(619.20)	(309.20)	(308.20)	(143.00)	(144.80)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.44: Midterm Election Regressions (Below 60-Section 8)

	(7)	(8)	(9)	(10)	(11)	(12)
Mississippi	6.348	103.6	28.7	-21.36	-147	-188.4
	(679.40)	(665.00)	(338.30)	(331.00)	(156.50)	(155.50)
Missouri	100.2	51.67	-25.18	-46.41	-157.1	-162.3
	(620.60)	(630.70)	(309.00)	(313.90)	(142.90)	(147.50)
Montana	272.3	256.1	-88.53	-103.7	-80.17	-76.57
	(659.20)	(661.90)	(328.20)	(329.40)	(151.80)	(154.80)
Nebraska	447.8	433.6	9.98	-0.573	-106.9	-107.7
	(618.70)	(617.10)	(308.10)	(307.10)	(142.50)	(144.30)
Nevada	200.4	354.6	36.47	18.22	-99.57	-92.09
	(597.00)	(623.50)	(297.30)	(310.30)	(137.50)	(145.80)
New Hampshire	422	413.9	117.2	107.4	-111.5	-112.7
	(604.40)	(602.80)	(301.00)	(300.00)	(139.20)	(141.00)
New Jersey	269.1	262.4	74.22	65.86	-113	-113.8
	(614.00)	(612.20)	(305.70)	(304.70)	(141.40)	(143.20)
New Mexico	893.7	920.2	86.71	79.53	-104	-103.8
	(631.80)	(639.30)	(314.60)	(318.20)	(145.50)	(149.50)
New York	442.5	412.4	136.5	127.8	-1.946	-19.36
	(627.80)	(629.00)	(312.60)	(313.10)	(144.60)	(147.10)
North Carolina	185.2	156.9	71.43	55.38	-89.33	-87.07
	(686.80)	(685.20)	(342.00)	(341.00)	(158.20)	(160.20)
North Dakota	212	194.1	-163.8	-177	-123.7	-125.1
	(612.90)	(611.60)	(305.20)	(304.40)	(141.20)	(143.00)
Ohio	138.4	129.2	13.06	4.002	-111.6	-112.6
	(623.40)	(621.60)	(310.40)	(309.40)	(143.60)	(145.40)
Oklahoma	-238.1	-195.2	264.3	274.5	-29.83	-33.91
	(794.70)	(791.20)	(395.70)	(393.80)	(183.10)	(185.00)
Oregon	286.3	321.4	138.8	225.4	-144.2	-232.3
	(633.00)	(675.50)	(315.20)	(336.20)	(145.80)	(158.00)
Pennsylvania	84.91	54.15	62.09	43.39	-106.3	-104
	(622.60)	(625.80)	(310.00)	(311.40)	(143.40)	(146.30)
Rhode Island	152.2	141.3	-21.04	-57.38	-78.11	-70.31
	(592.50)	(594.80)	(295.00)	(296.00)	(136.50)	(139.10)
South Carolina	147.7	120.6	-18.32	-126.7	-142.3	-160.2
	(668.10)	(749.00)	(332.70)	(372.80)	(153.90)	(175.20)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.45: Midterm Election Regressions (Below 60-Section 9)

	(7)	(8)	(9)	(10)	(11)	(12)
South Dakota	-55.47	-54.73	-85.48	-91.71	-101.5	-103.5
	(623.20)	(621.20)	(310.30)	(309.20)	(143.50)	(145.30)
Tennessee	47.36	85.8	-9.75	-8.264	-151.8	-159.9
	(640.10)	(658.20)	(318.70)	(327.60)	(147.40)	(153.90)
Texas	767.3	767.4	-307.9	-321.7	-103.3	-109.9
	(1,334.70)	(1,330.50)	(664.60)	(662.20)	(307.40)	(311.10)
Utah	176	95.08	14.81	13.44	-131.3	-136.6
	(594.70)	(601.70)	(296.10)	(299.40)	(137.00)	(140.70)
Vermont	439.6	456.1	174.3	194.4	130.4	133.5
	(589.90)	(590.50)	(293.70)	(293.90)	(136.70)	(139.00)
Virginia	183.3	176.4	71	62.78	-60.18	-61.14
	(614.00)	(612.30)	(305.80)	(304.70)	(141.40)	(143.20)
Washington	231.2	244	155.1	161.4	-93.71	-83.94
	(635.90)	(647.10)	(316.70)	(322.10)	(146.50)	(151.30)
West Virginia	113.9	99.67	-196.7	-208.8	-57.71	-58.13
	(612.90)	(611.60)	(305.20)	(304.40)	(141.20)	(143.00)
Wisconsin	89.18	60.74	47.23	58.97	-112.4	-112.1
	(599.30)	(606.50)	(298.40)	(301.80)	(138.10)	(141.80)
Wyoming	259.8	260.6	-121.2	-147.8	-147.9	-146.2
	(599.30)	(604.10)	(298.40)	(300.60)	(138.10)	(141.30)
Time Dummies						
Incumbent	10.20**	10.74**	3.022	3.646	-1.223	-1.22
	(5.12)	(5.25)	(2.55)	(2.61)	(1.18)	(1.23)
Y2002	2.651	2.608	2.296	2.41	-1.294	-1.472
	(4.27)	(4.28)	(2.12)	(2.13)	(0.99)	(1.01)
Y2004	-5.233	-5.09	-0.317	-0.589	-0.245	-0.105
	(4.52)	(4.62)	(2.25)	(2.30)	(1.04)	(1.08)
Y2006	-1.959	-2.059	3.147	3.365	-2.651**	-2.755***
	(4.48)	(4.54)	(2.23)	(2.26)	(1.03)	(1.06)
Y2008	-8.276*	-8.063*	4.901**	5.141**	-1.434	-1.523
	(4.45)	(4.50)	(2.22)	(2.24)	(1.03)	(1.06)
Y2010	13.95***	11.41**	6.883**	6.282**	-1.998	-2.041*
	(5.37)	(4.90)	(2.67)	(2.44)	(1.24)	(1.15)
Y2014	15.83***	16.68***	5.728**	6.234**	-0.904	-1.07
	(4.98)	(5.11)	(2.48)	(2.54)	(1.15)	(1.20)
Y2016	12.35**	12.78**	3.566	4.091	-0.385	-0.38
	(4.96)	(5.06)	(2.47)	(2.52)	(1.14)	(1.18)
Constant	-74.99	-66.39	41.86	53.84	117	118.1
	(581.80)	(580.60)	(289.70)	(289.00)	(134.00)	(135.80)
Observations	450	450	450	450	448	448
Adjusted R-squared	0.599	0.601	0.276	0.282	0.468	0.455
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						

Table 3.46: Midterm Election Regressions (Below 40-Section 1)

	(7)	(8)	(9)	(10)	(11)	(12)
NewBelow50	0.966		2.443		-2.549	
	(12.19)		(6.10)		(2.75)	
Below50		1.198		2.611		-2.484
		(12.19)		(6.09)		(2.83)
Alabama # NewBelow40	0		0		0	
	(.)		(.)		(.)	
Alaska # NewBelow40	-4.764		-4.335		2.574	
	(12.93)		(6.47)		(2.92)	
Arizona # NewBelow40	-5.543		-2.114		2.642	
	(14.13)		(7.07)		(3.19)	
Arkansas # NewBelow40	4.537		3.098		3.095	
	(21.78)		(10.90)		(4.91)	
California # NewBelow40	-12.34		-7.724		1.39	
	(14.98)		(7.50)		(3.38)	
Colorado # NewBelow40	-7.331		-5.662		2.017	
	(13.49)		(6.75)		(3.04)	
Connecticut # NewBelow40	-17.91		-5.378		4.199	
	(13.19)		(6.60)		(2.97)	
Delaware # NewBelow40	-43.56***		-16.80**		3.155	
	(14.32)		(7.17)		(3.23)	
Florida # NewBelow40	-5.328		-3.284		3.703	
	(14.47)		(7.24)		(3.26)	
Georgia # NewBelow40	-5.213		-2.096		2.953	
	(14.32)		(7.17)		(3.23)	
Hawaii # NewBelow40	-3.76		-1.353		2.926	
	(15.74)		(7.88)		(3.55)	
Idaho # NewBelow40	-5.792		-0.152		2.019	
	(15.83)		(7.93)		(3.57)	
Illinois # NewBelow40	-12.67		-5.383		2.734	
	(15.52)		(7.77)		(3.50)	
Indiana # NewBelow40	-1.537		-3.179		3.411	
	(13.98)		(7.00)		(3.15)	
Iowa # NewBelow40	-14.64		-5.113		2.611	
	(16.49)		(8.25)		(3.72)	

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

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Table 3.47: Midterm Election Regressions (Below 40-Section 2)

	(7)	(8)	(9)	(10)	(11)	(12)
Kansas # NewBelow40	5.09		-8.524		5.739	
	(16.44)		(8.23)		(3.71)	
Kentucky # NewBelow40	2.097		-8.083		1.843	
	(21.29)		(10.66)		(4.80)	
Louisiana # NewBelow40	-1.417		1.249		2.551	
	(14.36)		(7.19)		(3.24)	
Maine # NewBelow40	5.804		-15.56*		3.713	
	(16.62)		(8.32)		(3.75)	
Maryland # NewBelow40	-10.22		-12.91*		2.422	
	(14.36)		(7.19)		(3.24)	
Massachusetts # NewBelow40	-8.159		-1.683		0.472	
	(14.12)		(7.07)		(3.18)	
Michigan # NewBelow40	-0.256		-2.436		3.344	
	(14.33)		(7.17)		(3.23)	
Minnesota # NewBelow40	-3.286		-2.68		2.332	
	(13.98)		(7.00)		(3.15)	
Mississippi # NewBelow40	8.17		-0.53		5.413	
	(17.54)		(8.78)		(3.95)	
Missouri # NewBelow40	1.932		-0.271		4.818	
	(15.93)		(7.98)		(3.59)	
Montana # NewBelow40	-6.117		-5.954		2.64	
	(15.64)		(7.83)		(3.53)	
Nebraska # NewBelow40	-9.893		3.063		3.64	
	(16.08)		(8.05)		(3.63)	
Nevada # NewBelow40	-6.326		-4.245		2.241	
	(13.95)		(6.98)		(3.15)	
New Hampshire # NewBelow40	-11.29		-6.304		2.512	
	(15.15)		(7.58)		(3.42)	
New Jersey # NewBelow40	-5.776		-4.45		2.411	
	(14.02)		(7.02)		(3.16)	
New Mexico # NewBelow40	-17.55		-6.258		1.681	
	(15.95)		(7.99)		(3.60)	
New York # NewBelow40	-10.88		-5.814		-0.144	
	(14.54)		(7.28)		(3.28)	
North Carolina # NewBelow40	-0.189		-5.8		1.51	
	(19.01)		(9.52)		(4.29)	
North Dakota # NewBelow40	16.55		0.296		3.697	
	(13.65)		(6.83)		(3.08)	
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01 Remainder of table on next page						

Table 3.48: Midterm Election Regressions (Below 40-Section 3)

	(7)	(8)	(9)	(10)	(11)	(12)
Ohio # NewBelow40	0.0832		-1.518		2.241	
	(14.68)		(7.35)		(3.31)	
Oklahoma # NewBelow40	3.339		-8.791		1.556	
	(16.15)		(8.09)		(3.64)	
Oregon # NewBelow40	-9.55		-10.98		6.415	
	(17.57)		(8.80)		(3.96)	
Pennsylvania # NewBelow40	-0.144		-3.194		1.801	
	(14.83)		(7.42)		(3.34)	
Rhode Island # NewBelow40	-3.34		-0.485		2.141	
	(12.88)		(6.45)		(2.90)	
South Carolina # NewBelow40	-2.132		-5.072		1.703	
	(16.90)		(8.46)		(3.81)	
South Dakota # NewBelow40	-5.711		0.521		2.851	
	(14.19)		(7.10)		(3.20)	
Tennessee # NewBelow40	0.331		-4.218		5.415	
	(24.03)		(12.03)		(5.42)	
Texas # NewBelow40	9.766		2.907		4.96	
	(29.93)		(14.98)		(6.75)	
Utah # NewBelow40	0.0186		-0.0706		3.044	
	(13.53)		(6.77)		(3.05)	
Vermont # NewBelow40	-16.85		-11		-14.15***	
	(13.50)		(6.76)		(3.20)	
Virginia # NewBelow40	-2.727		-3.679		0.723	
	(14.36)		(7.19)		(3.24)	
Washington # NewBelow40	-5.596		-9.64		2.596	
	(17.42)		(8.72)		(3.93)	
West Virginia # NewBelow40	8.86		11.01		0.103	
	(15.29)		(7.65)		(3.45)	
Wisconsin # NewBelow40	1.693		-4.449		2.576	
	(14.24)		(7.13)		(3.21)	
Wyoming # NewBelow40	-4.179		1.936		3.64	
	(13.56)		(6.79)		(3.06)	
————————Interaction Terms State and Old Relative Poverty Measure————————						
Alaska # Below40		-4.985		-4.613		2.597
		(12.96)		(6.47)		(3.00)
Arizona # Below40		-9.292		-0.129		2.063
		(16.64)		(8.31)		(3.86)
Arkansas # Below40		11.6		5.393		4.273
		(22.73)		(11.35)		(5.27)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.49: Midterm Election Regressions (Below 40-Section 4)

	(7)	(8)	(9)	(10)	(11)	(12)
California # Below40		-16.55		-8.835		0.519
		(16.11)		(8.05)		(3.73)
Colorado # Below40		-8.807		-6.229		1.806
		(13.87)		(6.93)		(3.22)
Connecticut # Below40		-18.33		-5.381		4.298
		(13.34)		(6.67)		(3.09)
Delaware # Below40		-43.47***		-16.80**		3.125
		(14.34)		(7.16)		(3.32)
Florida # Below40		-10.14		-4.875		3.592
		(16.03)		(8.01)		(3.72)
Georgia # Below40		-6.912		-3.007		2.942
		(17.20)		(8.59)		(3.99)
Hawaii # Below40		-4.3		-1.53		2.889
		(15.69)		(7.84)		(3.64)
Idaho # Below40		-5.966		-0.244		1.998
		(15.85)		(7.92)		(3.67)
Illinois # Below40		-14.22		-4.699		2.263
		(15.49)		(7.74)		(3.59)
Indiana # Below40		-1.396		-3.324		3.152
		(14.18)		(7.08)		(3.29)
Iowa # Below40		-13.5		-5.273		2.493
		(16.63)		(8.31)		(3.86)
Kansas # Below40		4.965		-8.589		5.742
		(16.45)		(8.22)		(3.81)
Kentucky # Below40		1.555		-8.369		1.819
		(21.29)		(10.63)		(4.94)
Louisiana # Below40		-1.957		0.854		2.515
		(14.34)		(7.16)		(3.32)
Maine # Below40		5.28		-15.85*		3.632
		(16.62)		(8.30)		(3.85)
Maryland # Below40		-10.34		-13.01*		2.385
		(14.38)		(7.18)		(3.33)
Massachusetts # Below40		-8.119		-1.88		0.764
		(14.32)		(7.15)		(3.32)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.50: Midterm Election Regressions (Below 40-Section 5)

	(7)	(8)	(9)	(10)	(11)	(12)
Michigan # Below40		-0.467		-2.538		3.317
		(14.34)		(7.16)		(3.32)
Minnesota # Below40		-3.323		-2.727		2.306
		(14.00)		(6.99)		(3.24)
Mississippi # Below40		1.377		-0.626		5.319
		(15.65)		(7.82)		(3.63)
Missouri # Below40		2.735		-0.0569		4.833
		(16.49)		(8.24)		(3.82)
Montana # Below40		-6.591		-6.852		2.54
		(16.24)		(8.11)		(3.76)
Nebraska # Below40		-9.758		3.064		3.63
		(16.10)		(8.04)		(3.73)
Nevada # Below40		-15.85		-4.927		2.164
		(16.10)		(8.04)		(3.73)
New Hampshire # Below40		-11.44		-6.394		2.462
		(15.16)		(7.57)		(3.51)
New Jersey # Below40		-6.062		-4.586		2.383
		(14.03)		(7.01)		(3.25)
New Mexico # Below40		-14.94		-6.088		1.666
		(15.78)		(7.88)		(3.66)
New York # Below40		-10.89		-5.899		0.0298
		(14.57)		(7.28)		(3.38)
North Carolina # Below40		-0.386		-5.89		1.505
		(19.03)		(9.51)		(4.41)
North Dakota # Below40		16.56		0.258		3.665
		(13.66)		(6.82)		(3.17)
Ohio # Below40		-0.1		-1.602		2.222
		(14.69)		(7.34)		(3.41)
Oklahoma # Below40		2.67		-9.065		1.525
		(16.16)		(8.07)		(3.75)
Oregon # Below40		-8.962		-13.17		9.423**
		(18.95)		(9.46)		(4.39)
Pennsylvania # Below40		-0.213		-3.169		1.727
		(14.94)		(7.46)		(3.46)
Rhode Island # Below40		-3.451		0.308		2.02
		(13.06)		(6.52)		(3.03)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
Remainder of table on next page						

Table 3.51: Midterm Election Regressions (Below 40-Section 6)

	(7)	(8)	(9)	(10)	(11)	(12)
South Carolina # Below40		-2.662		-5.125		1.29
		(17.49)		(8.74)		(4.05)
South Dakota # Below40		-5.895		0.422		2.812
		(14.20)		(7.09)		(3.29)
Tennessee # Below40		-7.382		-6.133		4.176
		(22.47)		(11.22)		(5.21)
Texas # Below40		8.798		2.607		4.971
		(29.97)		(14.97)		(6.95)
Utah # Below40		1.274		0.181		2.981
		(13.83)		(6.91)		(3.21)
Vermont # Below40		-16.01		-11.39*		-12.41***
		(13.61)		(6.80)		(3.31)
Virginia # Below40		-2.929		-3.782		0.702
		(14.37)		(7.18)		(3.33)
Washington # Below40		-6.988		-10.73		2.255
		(18.66)		(9.32)		(4.33)
West Virginia # Below40		8.623		10.89		0.0711
		(15.30)		(7.64)		(3.55)
Wisconsin # Below40		1.664		-5.124		2.504
		(14.64)		(7.31)		(3.39)
Wyoming # Below40		-3.887		0.924		3.215
		(13.57)		(6.78)		(3.15)
State Fixed-Effects						
Alabama	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Alaska	100.9	104.7	74.12	78.73	-40.63	-40.83
	(225.20)	(225.60)	(112.70)	(112.70)	(50.77)	(52.28)
Arizona	80.86	142.6	33.4	0.531	-44.36	-34.62
	(246.70)	(286.30)	(123.50)	(143.00)	(55.62)	(66.37)
Arkansas	-84.49	-196.8	-48.23	-84.45	-49.62	-68.31
	(360.10)	(374.50)	(180.30)	(187.10)	(81.20)	(86.80)
California	187.2	263.2	128.9	148.6	-23.02	-7.12
	(269.80)	(290.50)	(135.10)	(145.10)	(60.84)	(67.35)

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

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Table 3.52: Midterm Election Regressions (Below 40-Section 7)

	(7)	(8)	(9)	(10)	(11)	(12)
Colorado	101.5	125.1	90.01	99.12	-33.91	-30.45
	(234.90)	(240.50)	(117.60)	(120.10)	(52.95)	(55.74)
Connecticut	249.9	255.3	80.02	79.91	-71.67	-73.1
	(231.40)	(233.70)	(115.90)	(116.70)	(52.18)	(54.17)
Delaware	665.4***	664.5***	259.3**	259.6**	-54.84	-54.24
	(245.00)	(245.30)	(122.70)	(122.50)	(55.25)	(56.86)
Florida	76.42	152.6	52.25	77.67	-63.3	-61.28
	(248.40)	(270.90)	(124.30)	(135.30)	(56.00)	(62.79)
Georgia	82.13	111.7	36.78	53.13	-54.96	-54.7
	(254.90)	(306.20)	(127.60)	(152.90)	(57.48)	(70.98)
Hawaii	-11.9	-2.793	7.31	10.43	-49.9	-49.19
	(269.60)	(268.80)	(135.00)	(134.30)	(60.79)	(62.30)
Idaho	105.9	109.1	12.18	14.05	-37.31	-36.79
	(258.70)	(258.90)	(129.50)	(129.30)	(58.32)	(60.01)
Illinois	191.9	217.8	85.74	73.66	-49.62	-41.41
	(272.70)	(271.70)	(136.50)	(135.70)	(61.49)	(62.99)
Indiana	16.94	15.43	50.86	53.43	-57.48	-53.38
	(238.10)	(240.40)	(119.20)	(120.10)	(53.68)	(55.73)
Iowa	203.5	187.4	77.09	79.88	-46.8	-44.88
	(268.40)	(270.10)	(134.40)	(134.90)	(60.51)	(62.61)
Kansas	-66.39	-63.92	136.9	138.3	-90.73	-90.61
	(272.40)	(272.60)	(136.30)	(136.20)	(61.41)	(63.20)
Kentucky	-36.35	-26.71	145.3	150.4	-33.23	-32.82
	(378.90)	(378.90)	(189.70)	(189.30)	(85.43)	(87.84)
Louisiana	27.7	37.42	-24.25	-17.06	-42.06	-41.45
	(256.50)	(256.00)	(128.40)	(127.90)	(57.82)	(59.34)
Maine	-153.6	-144.9	238.1*	243.0*	-62.89	-61.49
	(280.10)	(280.20)	(140.20)	(139.90)	(63.16)	(64.94)
Maryland	117.4	119.6	203.7	205.6*	-43.35	-42.65
	(249.10)	(249.30)	(124.70)	(124.50)	(56.15)	(57.79)
Massachusetts	87.82	86.59	1.619	5.152	6.239	0.648
	(253.40)	(257.00)	(126.80)	(128.40)	(57.13)	(59.58)
Michigan	-11.74	-7.982	34.43	36.32	-57.43	-56.9
	(247.60)	(247.80)	(123.90)	(123.80)	(55.82)	(57.44)
Minnesota	22.16	23.29	36.72	37.86	-40.49	-39.93
	(238.70)	(238.90)	(119.50)	(119.40)	(53.82)	(55.39)

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

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Table 3.53: Midterm Election Regressions (Below 40-Section 8)

	(7)	(8)	(9)	(10)	(11)	(12)
Mississippi	-164.1	-41.88	4.664	6.727	-93.77	-91.54
	(312.30)	(277.00)	(156.30)	(138.30)	(70.40)	(64.20)
Missouri	-40.35	-52.58	4.694	1.667	-80.35	-80.39
	(269.70)	(277.90)	(135.00)	(138.80)	(60.81)	(64.41)
Montana	120	127.5	91.53	105.3	-45.65	-43.97
	(260.60)	(268.60)	(130.50)	(134.20)	(58.76)	(62.25)
Nebraska	168	166.7	-31.32	-30.81	-61.14	-60.78
	(262.80)	(263.10)	(131.60)	(131.40)	(59.25)	(60.99)
Nevada	81.27	226.8	65.89	76.38	-37.3	-36.03
	(239.50)	(268.90)	(119.90)	(134.30)	(54.00)	(62.33)
New Hampshire	130	133	93.26	95.1	-44	-43.06
	(250.80)	(251.00)	(125.50)	(125.40)	(56.54)	(58.18)
New Jersey	72.17	77.2	69.3	71.7	-43.33	-42.82
	(247.00)	(247.20)	(123.70)	(123.50)	(55.70)	(57.31)
New Mexico	288.7	240.3	103	99.58	-31.09	-30.9
	(285.50)	(281.90)	(142.90)	(140.80)	(64.37)	(65.34)
New York	156.4	156.2	85.61	86.93	26.03	22.56
	(264.10)	(264.50)	(132.20)	(132.10)	(59.54)	(61.30)
North Carolina	-12.94	-9.443	95.61	97.25	-29.17	-29.04
	(327.50)	(327.80)	(163.90)	(163.70)	(73.83)	(75.98)
North Dakota	-267.9	-267.5	-0.954	0.0297	-62.97	-62.31
	(234.20)	(234.50)	(117.20)	(117.10)	(52.80)	(54.35)
Ohio	-9.132	-5.822	24.13	25.75	-40.52	-40.12
	(252.40)	(252.60)	(126.30)	(126.20)	(56.90)	(58.55)
Oklahoma	-39.93	-28.78	147	151.6	-27.08	-26.49
	(274.70)	(274.80)	(137.50)	(137.30)	(61.93)	(63.71)
Oregon	102.5	92.16	169.6	204.1	-104.2	-152.2**
	(298.20)	(318.30)	(149.30)	(159.00)	(67.22)	(73.79)
Pennsylvania	-10.29	-8.772	50.41	50.28	-34.47	-33.2
	(253.50)	(254.90)	(126.90)	(127.30)	(57.15)	(59.10)
Rhode Island	-13.58	-12.08	-9.679	-24.06	-33.52	-31.39
	(228.80)	(232.00)	(114.60)	(115.90)	(51.59)	(53.79)
South Carolina	37.6	46.78	87.42	88.24	-29.45	-22.32
	(296.30)	(306.00)	(148.30)	(152.90)	(66.81)	(70.94)
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						
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Table 3.54: Midterm Election Regressions (Below 40-Section 9)

	(7)	(8)	(9)	(10)	(11)	(12)
South Dakota	81.65	85	0.976	2.877	-51.06	-50.31
	(241.80)	(242.00)	(121.10)	(120.90)	(54.53)	(56.11)
Tennessee	-19.15	111.9	71.87	104.3	-92.73	-71.47
	(413.20)	(385.80)	(206.80)	(192.70)	(93.17)	(89.42)
Texas	-189.2	-171.9	-57.03	-51.67	-86.51	-86.74
	(537.70)	(538.40)	(269.20)	(269.00)	(121.20)	(124.80)
Utah	4.661	-10.37	11.28	9	-50.04	-48.89
	(227.80)	(230.60)	(114.00)	(115.20)	(51.36)	(53.45)
Vermont	198.4	185.5	144.8	150.2	228.4***	200.7***
	(231.20)	(232.40)	(115.70)	(116.10)	(54.35)	(56.07)
Virginia	39.54	43.14	58.65	60.53	-12.21	-11.78
	(249.70)	(250.00)	(125.00)	(124.90)	(56.30)	(57.94)
Washington	55.95	79.01	152.8	170.7	-47.06	-41.36
	(298.00)	(317.50)	(149.20)	(158.60)	(67.18)	(73.59)
West Virginia	-158.2	-154	-177.7	-175.5	-7.048	-6.424
	(260.20)	(260.40)	(130.20)	(130.10)	(58.66)	(60.35)
Wisconsin	-42.68	-41.29	65.45	75.58	-45.83	-44.58
	(239.80)	(244.50)	(120.00)	(122.20)	(54.06)	(56.68)
Wyoming	90.84	86.61	-20.95	-4.718	-57.32	-50.63
	(233.10)	(233.10)	(116.70)	(116.40)	(52.56)	(54.03)
——————————————————Time Dummies——————————————————						
Incumbent	7.1	7.476	0.829	0.853	-1.138	-1.252
	(4.93)	(4.99)	(2.47)	(2.49)	(1.11)	(1.16)
Y2002	0.0584	0.306	1.141	1.251	-1.424	-1.471
	(4.21)	(4.22)	(2.11)	(2.11)	(0.96)	(0.99)
Y2004	-5.023	-5.464	0.0465	-0.0871	-0.561	-0.462
	(4.46)	(4.52)	(2.23)	(2.26)	(1.01)	(1.05)
Y2006	-3.617	-3.493	1.391	1.347	-2.437**	-2.476**
	(4.40)	(4.42)	(2.20)	(2.21)	(0.99)	(1.02)
Y2008	-10.22**	-9.975**	3.051	3.028	-1.303	-1.396
	(4.44)	(4.45)	(2.22)	(2.22)	(1.01)	(1.04)
Y2010	9.181*	7.279	4.188*	3.385	-2.192*	-2.289**
Y2014	12.67**	13.17***	3.469	3.487	-1.503	-1.565
	(5.03)	(5.06)	(2.52)	(2.53)	(1.14)	(1.17)
Y2016	9.754**	10.05**	2.008	1.979	0.187	0.0329
	(4.93)	(4.96)	(2.47)	(2.48)	(1.11)	(1.15)
Constant	54.55	50.48	12.46	9.592	48.94	47.85
	(214.70)	(214.80)	(107.50)	(107.30)	(48.41)	(49.80)
Observations	450	450	450	450	448	448
Adjusted R-squared	0.606	0.605	0.281	0.282	0.499	0.469
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01						

Chapter 4

A Structural Model of Consumption and the Post-Asset Backed Security Period

4.1 Introduction

There is something inimitably social in humanity. We are on some level a herd animal. People consume goods whose label alone seems to differentiate it from cheaper alternatives. This is why fashions come and go, and people are more likely to walk through a grocery store in a direction (clockwise or counter-) which mimics the direction of local traffic. Human beings form distinct habits based on expectations, much of which is driven by social influence. John Maynard Keynes wrote in “The General Theory of Employment, Interest and Money" about the most logical response to uncertainty being to follow the herd, to follow rules of thumb, to follow convention. This type of behavior, argued Hyman Minsky in his work titled “John Maynard Keynes", could be seen in lending and borrowing habits of firms and banks. The business cycle, according to Minsky, can be traced to the relationship between borrowers and lenders at different stages of the business cycle. In “John Maynard Keynes" Minsky comments that such an analysis could be administered to household consumption and investment decisions.

Neo-classical theory, assumes household consumer debt is at its core a rational monist, utility maximizing inter-temporal consumption choice (Friednman, Modigliani, etc.). In order to achieve utility maximization, a person balances the increased debt payments of the future, or the costs of decreased savings, for consumption in the current period. Over time learning ensures that unforeseen changes in economic conditions, employment states, and interest rates do not cause permanent disequilibrium in the labor market. These choices, say the orthodox model, result in consumers that rationally choose their consumption based on unchanging preferences and a rational and well

informed understanding of debt and optimal debt structure combined with monotonic learning in the face of stochastic economic fluctuations. As the cost for borrowable funds increase consumption should fall, all else equal. This relationship is tested below using Brown (2007) as a jumping off point.

Brown (2007) uses Federal Reserve data to find “financial engineering has boosted borrowing power at all income levels...and fueled the growth of consumption" (P440). If the marginal propensity to consume is diminishing in income then credit availability could have a similar effect on consumption as falling inequality-raising the aggregate propensity to consume (Brown 2007 p440). If this is true then consumption characteristics should have changed as a result of financial innovation of the 1980s. Brown (2007) tests a simple consumption function before and after the rise of financial innovation of the 1980s. If in addition Minsky-type spending patterns are present, then we should see a return to pre-ABS period structural characteristics during and after the 2008 recession. Extensions of the regressions found in Brown (2007) suggest that the structural characteristics seen after the innovation of Asset-Backed Securities remained in all periods except the post 2008-recession period. This could be seen as confirmation of Minskian dynamics in debt expansion.

In the run-up to the 2008 crisis household debt levels rose to unprecedented levels, not the least of which was the run-up in sub-prime mortgage debt (Gustman et al 2001; FRED). Such debt was brought on by brokers who saw increased opportunity to lend along with lax regulations and securitization. In Minskian terms this would be the “euphoric exuberance" which leads to Ponzi finance (Minsky 1975). From a strictly Minskian perspective the business cycle can be explained completely by the human nature of investors and banks. However, there may be a household demand irrationality as well. On page 47 of “John Maynard Keynes" (1975), Minsky has this to say; “In this way the firm, the individual investor...and even the household can be said to operate like a bank." (Minsky 1975) The context in which Minsky makes this statement is a discussion of

debt structure and cash flows. Like banks, Minsky tells us, households must decide on their debt structure based on expectations of future cash flows. Thus, as consumers felt more confident about the economy, and their own future within it, they take on debt levels, or more specifically, payment plans, which become unsustainable at the first unpredicted economic downturn. THe driver of this behavior is herd mentality, both the pessimism during downturns well discussed by Keynes and the optimism during expansions which only Minsky addresses. On either side of the coin is the herd mentality, the drive to conform in the face of lax regulation and uncertainty.

In Section 4.2 a literature review is presented. In Section 4.3 the data used to test the Brown (2007) findings and extensions is discussed. In section 4.4 past research by Brown (2007) is recreated an extended into and after the recession period and an interpretation is offered. The final section, Section 4.5, concludes.

4.2 Literature Review

4.2.1 Social Consumption and Status Seeking

The treatment of Veblen's theory of conspicuous consumption has a wide and varied past. "Veblen Effects in a Theory of Conspicuous Consumption" by Bagwell and Bernheim (1996) might help explain the high level of bankruptcy risk among even the high income (Allen 1991). The article is useful in describing a rigorous mathematical theory of Vebelen Effects, worsened by the availability of debt, which arise in a market with rational agents. Tobias (2013) too finds that a market for signal goods is sustainable, if nto wasteful. The treatment finds that price is integral for achieving a separating equilibrium, and debt would allow low income individuals to create a pooling equilibrium at lower incomes and/or higher prices. Bilancini and D'Alessandro (2012) studies conspicuous consumption with a Ramsey-type optimal control model. This model has more in common with Mandeville's "The Fable of the Bees: or, Private Vice, Publick Benefits" (1714) than Veblen's "Theory of the Leisure Class", however it too shows when debt is introduced

conspicuous consumption worsens. Akerlof (1980) offers a general equilibrium utility maximization model which includes a parameter of dis-utility when breaking social codes. This model is interesting in finding that adherence to social “codes of honor" can in fact reduce consumption and create permanent unemployment in the long-run.

Akerlof (1980) finds that with the inclusion of a “Reputation Variable" long-run equilibrium can include persistent spending tied to social “codes of honor”, even by those who receive some dis-utility from so doing. Juliet Schor’s book “Overspent American: Why We Want What We Don’t Need" (Basic Books, 1998) also describes consumption in the kinds of objects which best serve as status symbols or reputation-props. She discusses the psychological drive to conform, and the stress and depression that can result from too much “choice” in consumption goods (Schor 2007). Samuel Bowles, William Darity, Glenn Loury and others have contributed to the understanding of this type of behavior with endogenous preferences models which include the effect of social pressure on “rational" choice (Bowles 2004,1998; Darity 2006, 1982; Loury 2005, etc.).

This need to conform is deeply held and may have evolutionary origins. The Whitehall Studies, made up of two studies; “Employment Grade and Coronary Heart Disease in British Civil Servants" and “Health Inequalities Among British Civil Servants: The Whitehall II Study" studied thousands of British civil servants, and found subordination in the civil service is correlated with worsening health outcomes (Marmot et al. 1978, Marmot & Smith 1991). The gradient of this relationship was nearly constant across samples, i.e. across genders, cohorts, and racial categories and across more than 20 years. Those who were subordinated earned incomes that were safely middle class and held respectable positions in a country with well ranked and nearly universal health services. Still the studies find “an inverse association between employment grade and prevalence of angina, electrocardiogram evidence of ischemia, and symptoms of bronchitis" (Marmot et al 1991). In addition, there was evidence of increased “health-risk behaviors" such as smoking, binge drinking, poor diet, and reduced exercise (Marmot et al 1991). Stress and drug addiction/use has long been

identified in the fields of health and psychology. Sinha R. (2008) studying the effect of stress on brain development and drug use/addiction finds that: “The deleterious effects of early life stress, child maltreatment, and accumulated adversity... are discussed as the underlying pathophysiology associated with stress-related risk of addiction". In effect, stress caused changes in the reward centers of the brain causing increased likelihoods of addiction and relapse (Sinha, R. 2008).

As far back as Willis (1986), survey data correlates stress in adolescents and drug use/addiction in adulthood. Boardman et al (2001), also ties stress from neighborhood poverty and crime to drug use among adults (See also Uhart & Wand 2008). These same behaviors are seen in primates as well. When primates of lower social status were subject to stressful or anxiety-inducing situations, subordinated primates chose cocaine to cope at a higher rate than primates of higher status (Nader et al 2002). Macaques, in the dominant social position were shown by Morgan et al (2002) to have an increase in D2 dopamine receptors. These receptors serve in reward-motivated behavior as well as emotional regulation (in humans) (Panesar and Guzman 2018). Lastly, Robert Sapolsky has done extensive work studying the effects of stress on primates and humans. Sapolsky (2005) studies the importance of rank in social groupings of primates and finds that lower ranked Baboons suffer from greater stress levels, or to be specific, higher levels of the chemical cortisol. Sapolsky also finds stress negatively affects memory, self-control, and cognitive ability in humans (Sapolsky 1995, 1996, 2000, 2017). All of these studies suggest that status seeking and social rank is deeply held in primates and there is reason to believe these physiological responses exist in humans as well. Stress operates to encourage response to perceived threats, low status just being one. Herd mentality then could be considered a rational response to the physiological costs of “going against the grain".

Of course the idea of being alienated from one’s work or from one’s social embeddedness is not new. Karl Marx in *Capital* Chapter 1 discusses the idea of alienation and the resulting commodity fetishism. Labor too must be removed from the context of social embeddedness in order to ensure

that workers work in greater magnitude than their physical or social needs would entail and ensure fixed capital investment (Polanyi 1944). In the face of work conditions which strip the individual of individuality in order to ensure maximum surplus, and within a super structure which facilitates this change across the board, alienation may drive conspicuous consumption. Conspicuous consumption may be a coping mechanism for alienation by taking part in market purchases which are meant to reinstate one's sense of identity and social embeddedness. From nice cars, to band t-shirts, to following the next health fad, individuals take impersonal money earned in repetitive work environments and exchange for simulacrum. Corrales & Mejia (2008) Studies Duesenberry consumption in Latin America (Mexico, Brazil, Argentina and Columbia) and finds evidence of Duesenberry Effects in Brazil in the early 2000s.

Contrary to some theories, firm expansion is limited by the banking sector's willingness to lend. Minsky's Financial Instability Hypothesis suggests that during times of economic boom, bank's lending requirements will fall and in times of economic contraction, rise. Having imperfect information about the real viability of any given project, lenders use current period income and the general consensus on the economy as a proxy for borrower risk. This rule of thumb changes with the economic climate, e.g. average credit scores rise during times of economic expansion i.e. perceived credit risk falls during expansions. This "Paradox of Tranquility" leads to higher debt loads as the economy grows and as firm behavior moves from Hedge Finance (income sufficient to cover principle and interest), to Speculative Finance (income only sufficient to pay interest, but not principle) to Ponzi Finance (where margin calls are filled by more debt or collapse).

The debt burdens of average consumers too will begin to creep upward. When the bubble finally pops, and incomes fall, the debt burdens of individuals becomes onerous and their status seeking must come to an end. In this way we have what might be called, "Minskian Consumption", i.e. conspicuous consumption which is repressed during times of tight credit and grows with the ease of credit. Student loan debt is a unique case. According to Pressman and Scott (2009); aver-

age student loan debt has increased by 126% in real terms between 1995 and 2004 for those less than 40 years old, car loan debt has gone from $5,000 on average in 1962/3 (Survey of Consumer Finances) to around $20,000 in 2004, and median levels of revolving credit card debt has risen 85% between 1983 and 2004. Effective demand may be temporarily propped up by debt however, when debt burdens become onerous there will be a doubly negative effect (firm and individual level) on effective demand precipitating a vicious cycle of collapsing growth.

Piketty's Capital in the 21st-Century has one central theme; inequality is rising and reaching levels not seen since the Ancien Régime. Perceptions of unfairness in distribution lead to divisive political debates and rising frustrations among the working and middle classes. Inequality leads to greater social dissent and political unrest including occurrences of coup d'etat (Alesina and Perotti 1996; Bouvet & King 2009; Galbraith 2010). Inequality lowers voter turnout and in democracies that rely on self-financed campaigns can have corrosive effects on legislation through the creeping effect of special interests. Inequality worsens health outcomes across the spectrum. The increased stress that is a direct result of rising inequality can lead to increased likelihood of obesity, diabetes, heart disease, depression and even suicide as well as drug and alcohol abuse (Sapolsky 2005; Wilkinson & Pickett 2010). Is it any wonder than that people would try so hard to avoid the shame and sting of poverty? Inequality worsens crime, both violent and non-violent, increases divorce, teen pregnancy, and lowers overall charitable giving (Wilkinson & Pickett 2010).

4.2.2 Financial Innovation and The 2008 Recession

Essential aspects of modern economies are credit and money creation; a time lag between production and re-couping of investment, and uncertainty. It is exactly this uncertainty, along with endogenous money creation, which gives rise to the Minsky dynamic being studied here. Endogenous money also appears in Wicksell (1898), Schumpeter (1910) and in various works by Joan Robinson (Graziani 2003). Endogenous money creation requires three actors; banks, firms, and

workers (Keen 2011). To give an example, imagine to begin each of the three sectors has zero balances. Banks create money to lend to firms as this is the unique institutional role banks play in a money (as opposed to barter) economy; bank's method of payment (credit money) is accepted as final payment. Contra to traditional money theory which states that deposits create loans, i.e. that money serves only to facilitate what otherwise would be a real transaction; in modern economies real goods and services are not necessary for loan origination.

The business model of a bank is to manage borrowing short to lend long, to manage the difference between rates paid to depositors and those earned from lending. To asses the riskiness of lending opportunities then banking institutions must asses the likelihood a borrower will be able to repay. During times of economic boom, balance sheets of firms and individuals will look better than in downturns. Key is the debt-to-income ratio, namely that income is sufficient to repay principle of loans over the loan length. Optimism during times of economic boom leads to assessments of risk which become increasingly favorable. Frims and households increase borrowing with expectations of higher future income. However, it is this increased lending itself which, in-part at least, fuels the boom (Keen 2011).

Private debt has the opportunity to create growth, and the power to destroy it. When a bank makes a loan, it is creating a matching deposit in the account of the borrower. This is the familiar process of money creation on which "fractional reserve" banking is based. In a world where the marginal propensity to spending is not largely different across groups, changes in the level of debt is simply a transfer of income from one group to another. What a debtor losses in interest payments a creditor gains. If a large portion of spending is driven by debt however, both for investment and consumption, and the gains from lending are not spent as debt is re-payed, then the collapse of private debt can in fact lead to recession; or the corollary, a rise in lending can create growth. When this creation process slows then there is a real risk of a downturn. This point is made explicitly in Keen (2017) who finds that the global downturn of 2008 started as "credit fell from plus 15% of

GDP to minus 5%...something that had not happened since the Great Depression" in the United States. In Australia, the global recession started with the fall off of private debt growth as it did elsewhere. The Australian government however was able to prop up the economy by encouraging the rise in private debt in the growing export sector to China, and then as that sector slowed again encourage mortgage debt as an investment vehicle (Keen 2017 p. 65). As late as 2016 Australian private debt to GDP ratio sat at 208% higher than the rate before the crisis (Keen 2017 p. 67). In the U.S. the collapse in private debt meant a collapse in overall spending, a rise in unemployment, and a collapse in asset prices.

Japan's lost decade too may be the result of collapsing private debt (Keen 2017). If money were neutral (as is argued in the traditional model) this would be impossible. Lenders not lending would simply mean they are spending in the current period given interest rates which do not induce saving. However, within the theory of endogenous money creation, the actual spending power is tied to the creation of loans, and thus the collapse in the growth of these loans can lead to economic downturn. Minsky adds the psychological piece to this puzzle; herd mentality works in optimism as well as fear leading lenders to offer loans to those with ever higher debt-to-income levels with the expectation that incomes will grow to match the new debt payment burdens. At the first sign of a slowing economy, as private debt growth slows, a key component of sustained growth slows, and a recession becomes inevitable. It is this insight, that tranquility leads to instability, which Minsky offers and which relies on the endogenous creation of money theory.

In the Minskian framework a type of habit forming herd behavior sets in which creates waves of bad-debt. The mechanism at play is the overly-optimistic outlook of both firm CFO and bank originator during times of economic mid-to-long term growth, i.e. the creation of loans is not automatic given the interest rate but dependent on endogenous considerations. Loan originators which take into consideration factors like time employed, or even income will find more desirable borrowers more often during times of mid-to-late economic expansion. In addition, increasing

competition for loans will lead banks to seek riskier borrowers. Many have written on the rise of asset-backed securities as it pertains to average debt levels and the expansion of credit to those who previously would not have qualified (sub–prime) (Gustman et al 2010). The securitization “revolution" meant that lenders could mitigate individual risk in their borrowers by securitizing the asset; an effective transfer of risk to the systemic realm (Cho 2004). This use of the Financial Market Hypothesis defended deregulation movements which started in the 1970s and gained steam in the 1980s (Crotty, J. 2009). And in the international context, countries with softer lending standards experienced a deeper recession in 2008 (Blanchard. 2009). Sub-prime lending “revolutionized" the mortgage market and the level and way debt was taken on by homeowners (Green & Wachter 2005).

The source of all this “cheap money" was, according to Bernanke (2005), the global savings glut. However, without the financial innovations the expansion of this credit, especially as consumer and mortgage debt, would never have been possible (Shin 2012). According to Gorton & Metrick (2012) the rise of the international repo market was collatoralized by the rise of securitization, a form of banking they label “securitized banking". The crisis, in this view, was in fact the result of the collapse of the repo market (Gorton & Metrick 2012). Ben Bernanke et al. (2011), doing a post-mortem on the U.S. economy, had this to say: “...problems with the originate-to-distribute model for mortgage loans, deteriorating lending standards, deficiencies in risk management, conflicting incentives for the GSEs, and shortcomings of supervision and regulation were the primary sources of the U.S. housing boom and bust and the associated financial crisis" (Bernanke et al. 2011 Abstract).

For the purposes of this investigation one key quote in “John Maynard Keynes" is useful; namely that “Corporations, and households can be considered banks, in that they have cash flows to meet and sources of cash from operations (their participation in income production), financial assets, borrowings, and the sale of assets. The fundamental speculative decision of a capitalist

economy centers around how much, of the anticipated cash flows from normal operations, a firm, household, or financial institution pledges for the payment of interest or principle on liabilities" (Minsky 1973). Households which are forming their liability structure are making bets about future cash flows, i.e. income and wages. For a household there are going to be many such income sources and many such options for their debt structure. Income from current labor supply decisions, like wages, depend on expectations of future employment and the wage at which future employment takes place. Income from non-current-period-labor-supply decisions like pension income from past labor, capital gains, fixed income from securities, and even expected income from currently unrealized gains or from current labor are all sources of what Minsky and Keynes call “quasi-rents" (Minsky p. 131). In the current period the household also has an increasing number of liabilities from which it can choose to supplement its current consumption. A household can borrow in extremely short-term liabilities like pay-day loans, somewhat longer term liabilities like credit card debt or rotating non-collatoralized debts, still longer term it can borrow using collatoralized amortized debts, and lastly it can borrow using a mortgage contract or HELOC loan or even borrow against life insurance policies or pension income guarantees in the victuals market.

Uncertainty is central to Minsky’s theory of the business cycle. Whereas orthodox economists view uncertainty with an eye towards learning, Minsky (and Keynes) believe that lack of foresight can produce permanent disequilibrium. In orthodox theory uncertainty, better named risk, is a calculation of the future based on the probability of series of possible future states of nature. The individual then maximizes their utility function, a Von Neumann-Morgenstern expected utility function via sufficiently distributing investment and liabilities over the possible states of nature. This method of utility maximization over a series of time periods then leads to an inter-temporal consumption choice under which future and current consumption is constrained by criterion that maximizes utility (minimizes cost) achieved when the inter-temporal marginal utilities to price, discounted by a social discounting factor, are equalized (Varian 1992). This method of maximization however relies on a key assumption which is the caveat both Minsky, Keynes, and this investigation

wish to challenge. Namely, under fundamental uncertainty (different from risk), the probabilities are unknowable. For instance, Adam Smith, in “An Inquiry into The Nature and Causes of The Wealth of Nations" argues that government investment in things like national defense is always required. Despite believing that rational investors will allocate accumulated capital in a way that is optimal for national defense (the “Society of Perfect Liberty"), Smith reminds his readers that things like war are essentially unknowable (Book II, Chapter III). In the face of such fundamental uncertainty (a term he does not use) there is need for government involvement. Without a probability distribution upon which to make the wise decision of proportional national defense investment, national defense would always go underfunded presenting systemic risk to national wealth adventures. Note, that Smith’s argument here is not one of a public good, as would be an explanation for his support of government investment in the body justice or in regulation. His argument is about those events whose probability of occurring is simply unknowable, i.e. fundamental uncertainty.

When faced with the need to make a decision today, without a deep understanding of the underlying true probabilities of any number of probable states of nature, investors and consumers use the current state of the economy as their guide. Keynes in his work *The General Theory*, has this to say: “Nonetheless, the necessity for action and for decision compels us as practical men (*sic*) to do our best to overlook this awkward fact and to behave..." (Keynes 1937: 213–214). From this then we can see that Keynes was not speaking about a public good, nor is he claiming that rational investors would sufficiently learn along the time path and thus correct their mistakes preserving the supposedly ergodic nature of the free market financial system. For Keynes, and thus for Minsky, effective demand is made up of two parts; 1) consumption and 2) investment (Minsky 1982 p8). Keynes’ theory however is that of a theory of the business cycle as affected by investment, consumption plays only the role of a passive multiplier.

Savings, in Keynes’ framework, does not in fact affect the scale of investment, and thus the liability structure of the household is not investigated (Keynes, 1937: 213-214). For households

of course the “capital asset" of relative status is not one which provides future cash flows, at least not directly. Individual households are investing in status goods, or to put it another way, “social capital assets". It is these assets which are being financed against expected cash flows. An individual who invests in an expensive suit, for example, is attempting to signal their desire for a job or their rightful place in that tier of the workforce. In as much as short-term lending is used to purchase the luxury suit, then what we have is an increase in investment in social capital assets under the auspices that such an investment will pay dividends, an assumption more readily made during times of economic expansion and stability. This example of a suit is taken from Robert Frank & David Cook’s work “The Winner Take All Society: Why the Few at the Top Get So Much More Than the Rest of Us". Simply borrowing to maintain consumption, maintain relative status, in the face of job loss or economic downturn too could be considered a social capital asset investment.

It was the constraining of this type of consumption as a result of stagnating wages which was a leading factor into the 2008 crisis. As wealthy investors sought higher yield vehicles financial innovations like securitization fueled unsustainable credit booms and the gains from this fueled a wealthy elite to manipulate politics to fuel further financial deregulation (Wisman 2013). Inequality too seems to make environmental damage mitigation harder, and as the costs of damage rise the wealthy both profit and are able to better protect themselves (Wisman 2011). Wisman 2009 even locates falling savings rates in the U.S. from 1980 on in a lack of class consciousness and strong belief in vertical mobility. In this framework conspicuous consumption serves as a sort of balm for the sting of not living up to the promise of the protestant work ethic.

Godley & Wray (1999) locate the expansion and government surpluses in the late 1990s (in the U.S.) in rising private sector debt suggesting that unless savings rate fell even further the surplus would be unsustainable. The fall in private sector debt after 1999 is exactly the reason Keen (2017) gives for the 2000-2001 recession. Writing with Anwar Shaikh in 2002, Godley develops a mathematical proof that the neoclassical models which treats money as neutral in the long-run is in-

ternally inconsistent, and that money supply increases need not need create inflation. The massive run-up in loan creation then through the “Great Moderation", as it saw no inflationary pressures, is understandable given their critique that the bond market cannot, as is done in neo-classical models, be assumed away from real effects (Godley & Shaikh 2002). The previous finding was put down more formally in a chapter of Arena & Salvadori (2004). By 2007 Godley and the Levey Institute were writing the equivalent of a “victory lap" having predicted that the sustained growth from 2002-2006 was due in large part to the increase in the current account balance deficit, that very thing which Bernanke (2005) had chalked up to a savings glut in the rest of the world. Once this borrowing spree ended the recession would be inevitable without massive fiscal policy expansion which did not materialized until after the collapse.

One article of particular interest is Brown (2007) which uses Federal Reserve data to find “financial engineering has boosted borrowing power at all income levels...and fueled the growth of consumption" (P440). The structural model in Brown (2007) is reproduced and extended below. The marginal propensity to consume is diminishing in income (Brown 2004). Increased availability of credit, via financial innovation and securitization, then should have a similar effect on consumption as falling inequality-raising the aggregate propensity to consume (Brown 2007 p440). If this is true the consumption function tested below should show differing coefficients in pre- and post-ABS periods. If in addition Minsky-type spending patterns are present, then we should see a return to pre-ABS period structural characteristics during and after the 2008 recession.

Extension results from Brown (2007) suggest that the structural characteristics seen after the innovation of Asset-Backed Securities remained in all periods except the post 2008-recession period. This could be seen as confirmation of Minskian dynamics in debt expansion. It is not that the financial innovation changed consumer patterns alone, but that the greater lending capacity that it allowed then deepened a Minsky-type debt cycle. Brown (2007) closes with the ominous statement: “The borrowing binge of the past 10 years [1997-2007] has left a plethora of households in a

weakened financial state, and made the prospect for debt deflation a near certainty" (Brown p451). The 1987 break-point chosen by Brown (2007) is surrounded on all sides by multiple factors of potential interest to the investigation of financialization, deregulation, and debt-fueled consumption. For instance, in 1983 the Supreme Court created precedent that made mortgage loan debt deductible on federal taxes (Commissioner v. Tufts, 461 U.S. 300 (1983)). This incentivization of mortgage lending In addition, in 1986 the Tax Reform Act of 1986 was passed. This bill ended up lowering taxes on the top marginal tax rate from 50% to 38.5% and consolidated lower tax brackets as well as raising the bottom rate. Standard deductions, personal exemptions and the earned income tax credit were also expanded. The TRA86 also increased incentives for owner-occupied housing by increasing the mortgage deduction. Interest on consumer loans was made non-deductible, depreciation deductions were lowered and IRA deductions were weakened. The recent rise of discount window rates to as much as 12% also mean that more risky ventures must be taken to ensure adequate returns.

This move by The Fed in the alte 70s and early 80s led to many S&L institutions becoming insolvent. Starting inn 1980 the S&Ls faced deregulation in the form of the Depository Institutions Deregulation and Monetary Control Act and the Garn-St. Germain Depository Institutions Act of 1982; both acts reduced oversight, allowed for a greater number of savings vehicles, and allowed for adjustable rate mortgages. Forbearance too would allow these institutions to take on risky investments with little oversight. The Economic Recovery Tax Act of 1981 allowed S&L institutions to sell mortgage loans in order to better balance their liability/asset structure. Losses on loans could then be amortized over the life of the loan and losses could be offset against tax liabilities for 10 years prior. This ushered in an era of selling loans at a loss (in order to get out from under mortgages with low fixed rates from a time before the “Volcker Shock") to investment firms who then packaged these loans as government-backed as they were guaranteed by Ginnie Mae, Freddie Mac, and Fannie Mae. The bonds (packaged loans) were often bought by the S&Ls. The Garn-St. Germain Act increased the percentage of commercial and real-estate loans that could

be held as assets to 5% this increased to 10% by 1984. Though from 1986 to 1989 $125 billion in closures occurred in the S&L industry, the foundation of the Resolution Trust Company in 1989 would resolve some 747 more trusts and it is not until the passing of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) that the practice of valuing the difference between the purchase price of failing institutions and the tangible asset value of the purchased institution as “supervisory goodwill" (which counted as capital towards regulatory requirements) was stopped (United States v Winstar Corp. et al.).

Thus, the strain to the system was well known by 1987, forbearance, and regulation removal meant to help S&Ls “grow" out of the problem, was still in full swing until at least 1989. The 1987 break point then is occurring in the middle of a process of financialization and deregulation on all fronts. The actual economic consequences of this period, i.e. the collapse of Minsky-type financialization, are not felt until the recession of July 1990 to March 1991 (with unemployment remaining high until 1992). Thus, there is reason to believe that testing the early 1990s recession as another Minskian-collapse period is appropriate. This would not be considered an issue outside of the definition of why 1987 is the breakpoint. But it is clear, even in the midst of this chaos, that the 2008 recession is a clear break. In the current time-period makeup under Brown (2007), covering January 1988 to December 2005 as the Post-ABS period, this early 1990s recession may be being subsumed into the overall trend, and placed late enough to avoid including the recession which ended in 1983. The steps of financial innovation and deregulation are occurring right around the 1987-1988 breakpoint, but it is a continuous process, and investigating the recession of the early 1990s as a result of this process as a stand alone Minsky-dynamic test may be enlightening.

4.3 Data

The regressions below contain re-creations and extension of the regressions found in Brown (2007) testing a structural consumption model. The data comes from the Federal Reserve Bank of

St. Louis (FRED). Personal Consumption Expenditure, the monthly opening price of the S&P 500 (first day of the month), Household disposable income, and the average interest rate charged on new auto loans by automobile finance companies (FRED). The auto interest rate used by Brown (2007) was discontinued by the Federal Reserve in 2011. For the extension regressions beyond this year the "Finance Rate on Consumer Installment Loans at Commercial Banks, New Autos 48 Month Loan" is used instead as it is recommended by the data source as analog. Comparisons to the regression results using the new and old rate are provided below. All variables are in chained 2016 dollars.

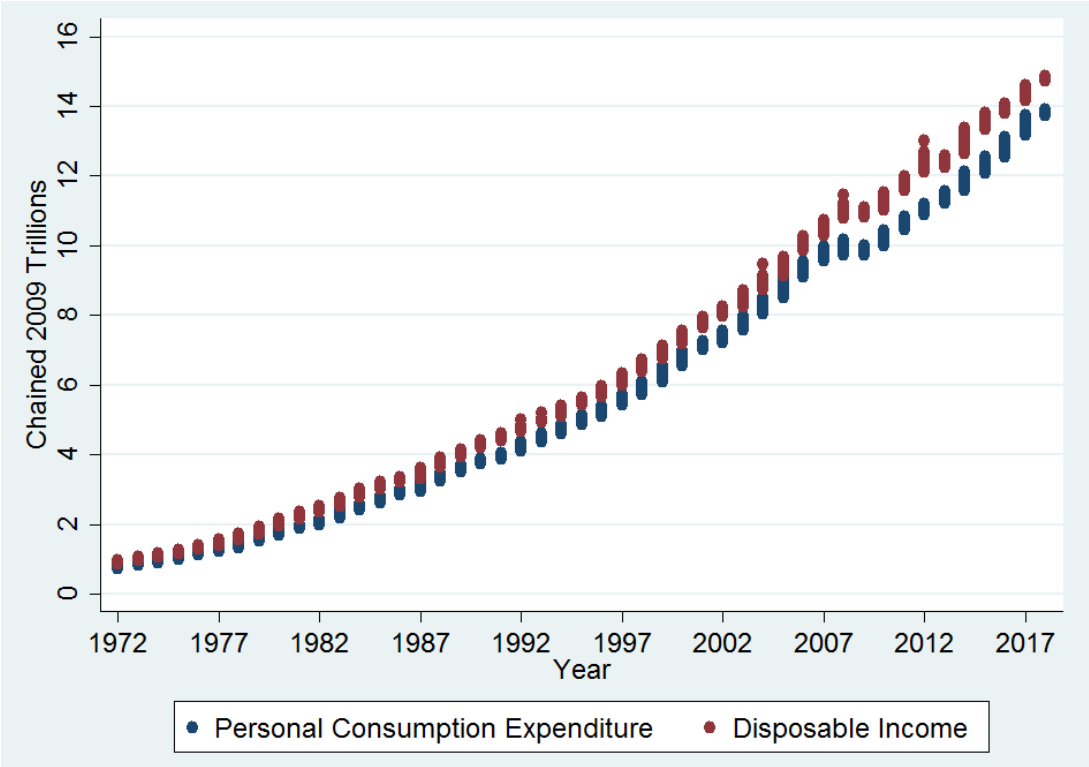

Figure 4.1: Brown (2007) Regression Data

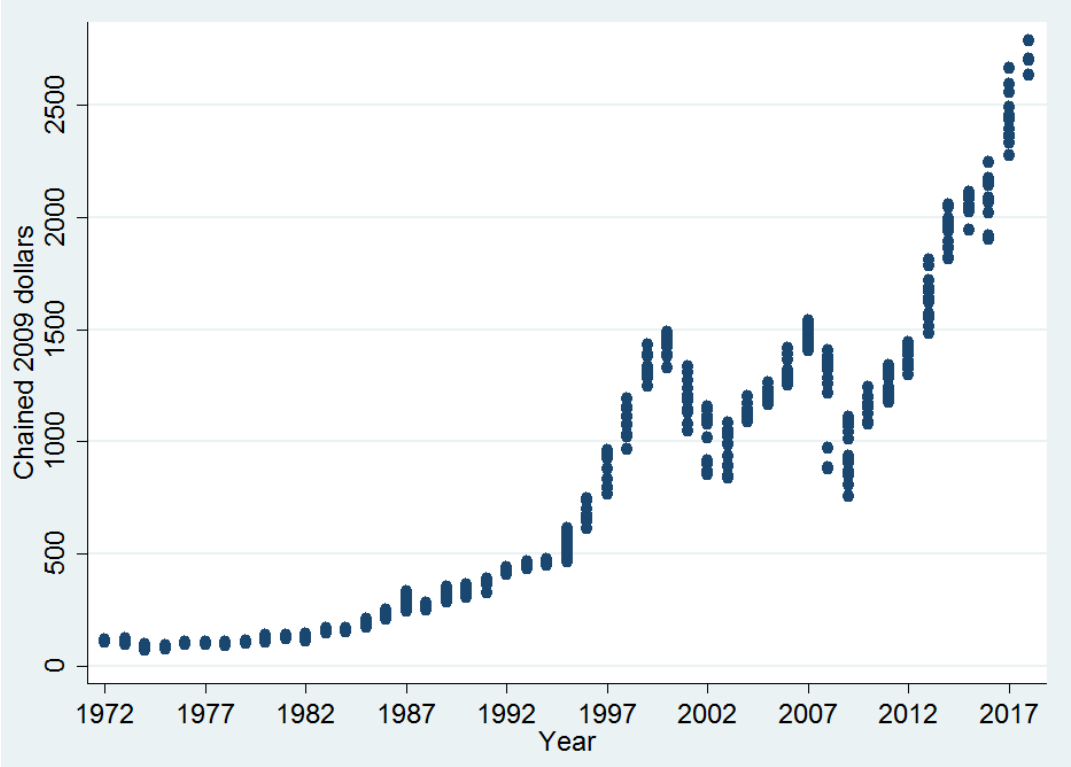

Figure 4.2: Brown (2007) Regression Data

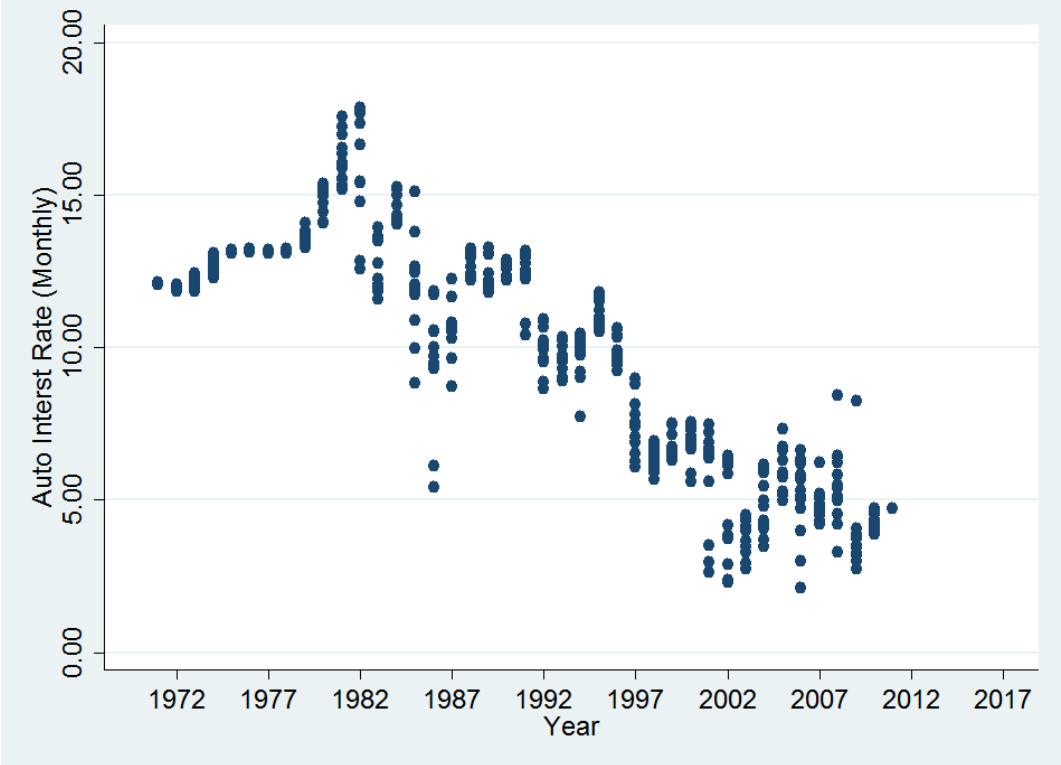

Figure 4.3: Brown (2007) Auto Rate (Monthly)

4.4 Brown (2007) Extensions

In order to study the rise of Asset-Backed Securities (ABS), Brown (2007) runs a simple structural regression. The dependent variable is personal consumption expenditure, dependent variables are Disposable Income, the opening S&P 500 price (a proxy for wealth), and the new car average auto loan rate given by automobile finance companies. Auto-loan rates serve as a useful proxy for the overall interest rate on all debt. Mortgage and student-loan debt often have very low rates as these collatoralized or secured by the government. Credit card and payday loans have rates which are highly volatile and makeup the upper end of the spectrum of consumer rates and cover a smaller portion of household debt. Thus, Auto-loans serve as a middle road proxy. Due in part to lengthening auto-loans, The St. Louis Fed now offers two New Auto Loan rates, one for loans of 48 months and one for loans of 60 months. The 48 month auto loan rate is used below in all extentions of Brown (2007) which extend past his original data. The 60 month auto-loan rate is also tested and results can be found at the bottom of this chapter. As stated in Section 4.2.2, the structural consumption model tested below is meant to test whether during periods after financialization took hold, and in response to 2008, we see average marginal propensities to consume rise and fall respectively. The results of the pre-ABS period suggest an orthodox consumption model. A negative relationship with interest rates, a positive relationship with wealth (S&P 500), and a direct correlation between disposable income and consumption.

The F-statistic presented in the Brown (2007) table is a Chow Test confirming that the coefficients between each period are different, suggesting a change in the structure of consumption in the post-ABS period. In the post-ABS period the correlation between disposable income and consumption is stronger, the relationship with the wealth proxy is now statistically no different from zero (with a negative sign), and the relationship to the interest rate has changed sign, grown in absolute magnitude and is statistically significantly different from zero.

Least squares estimates of consumption specifications using monthly U.S. data

Variable	Sample 1972–1987 (n = 193)	1987–2005 (n = 214)
Constant	60.7668	–663.18
	(2.988)	(–9.898)
DY	0.8501	1.0264
	(163.530)	(133.205)
SP	0.4723	–0.0220
	(5.366)	(–0.962)
r	–5.3724	9.5379
	(–3.990)	(2.836)
Adjusted R^2	0.999	0.999

t-statistics are shown in parentheses.

Chow breakpoint test (breakpoint is December 1987)

F-statistic	143.484	Probability	0.000000
Log likelihood ratio	362.492	Probability	0.000000

Figure 4.4: Brown (2007) Original Regressions (Source: Brown (2007) p.441)

The expected relationship between income, wealth, the interest rate and consumption changed as banks were able to expand lending via financial innovation creating an effect similar to a rising average marginal propensity to consume. In order to test whether or not the pre-ABS structure reasserted itself after 2008; Table 4.1 extends the regression to the period of 2008-2011 (in order to test the recession period specifically). If Minsky is right, the period of recession should see a re-assertion of the pre-ABS period structure as Minsky argues that immediately following major financial crises, lending behavior tightens to address the new general consensus of the riskiness of any endeavor (The other side of “Euphoric Exuberance").

The model being tested in Brown (2007) and recreated and extended below is:

$$\begin{aligned} PersonalConsumptionExpenditure_t = \beta_0 + \beta_1 DisposableIncome_t \\ +\beta_2 S\&P500MonthlyOpeningPrice_t + \beta_3 Avg.NewCarAutoRate_t + \epsilon_t \end{aligned} \tag{4.1}$$

Comparing the results from Brown (2007) to the original regression re-creations in Table 4.1, we see the structural change well represented. The coefficients are slightly different. This could be due to changes FRED has made to data since 2007 as well as the fact that Brown (2007) seems

to have added months to the second period (post-ABS) and one month to the pre-ABS period. No explanation is given in Brown (2007) for this sample size anomaly. But the structural characteristics Brown (2007) speaks of are clear in the re-creations in Table 4.1. For instance, an increased coefficient for disposable income, a weakened relationship to the proxy for wealth (zero in Brown (2007) and near zero for the re-creations), and a switch of the sign and growth in magnitude of the interest rate coefficient.

Table 4.1: Brown (2007) Re-creations & Extensions

Personal Consumption Expenditure	Originals		Extensions	
	1972-1987	1988-2005	1988-2011	2008-2011
Disposable Income	0.870***	0.968***	0.909***	0.671***
	(0.005)	(0.006)	(0.004)	(0.070)
S&P 500 Open Price	0.316***	0.0387**	0.213***	0.443***
	(0.083)	(0.019)	(0.022)	(0.084)
Auto Interest Rate	-5.575***	12.410***	2.449	-5.857
	(1.248)	(2.767)	(3.281)	(10.53)
Constant	30.57	-515.8***	-204.0***	2140.9***
	(18.75)	(51.69)	(53.52)	(754.1)
N	192	216	277	37
adj. R-sq	0.999	0.999	0.999	0.831
Standard errors in parentheses * p<0.1 ** p<0.05 *** p<0.01				

The first of the extensions, to the right of the original regressions in Table 4.1, the period 1988-2011 shows a similar result to the Post-ABS period in some ways and different in others. A stronger relationship with income is similar to the Post-ABS period. The relationship with the interest rate is now effectively zero, neither positive nor negative as in the post and pre-ABS periods, respectively. Lastly, the proxy for wealth has reasserted itself with a magnitude similar to the pre-ABS period. Thus, the period 1988-2011 may be affected by the 2008 recession in a way that is confusing results.

The last extensions, the period 2008-2011, tests the recession period. In both of these regressions the coefficients look very similar to the Pre-ABS period. The relationship to disposable income has weakened, the strength and sign of the wealth proxy is very similar, and the negative sign on the interest rate has returned (significant at a 12% level). Thus, the Post-ABS period was still subject to Minskian dynamics in that when the recession hit, the massive expansion of lending due to financial innovation, were pulled back and the old structural characteristics reasserted themselves. In order to test periods after 2011 a new interest rate must be used. As stated above, the rate used in Brown (2007) was discontinued in 2011. These regressions are in Table 4.2. The new auto rate is a quarterly auto rate thus some variation is lost beyond 2011 as all data must be quarterly and thus quarterly averages are used for disposable income.

Table 4.2: Original Brown (2007) Regressions Using 48 Month Auto Rate

Quarterly Personal	Originals	
Consumption Expenditure	1972-1987	1988-2005
Quarterly Avg. Disposable Income	0.883***	0.961***
	(0.00941)	(0.00909)
Quarterly Avg. S&P Price	0.228*	0.00557
	(0.130)	(0.0299)
Quarterly Avg. Auto Rate	-6.755***	9.298
	(1.861)	(6.362)
Constant	25.73	-426.9***
	(22.15)	(94.05)
N	64	72
adj. R-sq	0.999	0.999
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01		

Using the new quarterly measures the original structural change remains. Disposable income becomes a stronger relationship, a (not significantly different from) zero coefficient for the wealth proxy, and lastly the interest rate has a positive sign (significant at 12%) and a larger magnitude. Thus, the new data using the new auto rate seems to well-represent the original structural change.

Table 4.3: Brown (2007) Extensions Using 48 Month Auto Rate

Quarterly Personal Consumption Expenditure	Extensions 1988-2011	2008-2011	2012-2017
Quarterly Avg. Disposable Income	0.904***	0.784***	0.750***
	(0.00706)	(0.0939)	(0.0768)
Quarterly Avg. S&P Price	0.216***	0.409***	0.750***
	(0.0318)	(0.0853)	(0.175)
Quarterly Avg. Auto Rate	0.135	-29.37	145.4*
	(8.179)	(57.86)	(71.24)
Constant	-152.5	1093.1	73.39
	(106.6)	(1356.0)	(734.5)
N	96	16	24
adj. R-sq	0.999	0.979	0.988
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01			

Using the new quarterly data the 1988-2011 period has coefficients similar to the original data. This Post-ABS period still shows a weak relationship to the wealth proxy, a stronger relationship between disposable income and consumption, and the interest rate relationship is statistically no different from zero. The next regression in Table 4.3 covering the period 2008-2011 have similar coefficients to those found for the same periods using the original data (displayed in Table 4.1). During this period the traditional relationship between consumption, income, the interest rate and wealth returns; confirmation that traditional borrowing tightness reasserted itself. In the last regression in Table 4.3 the period 2012-2017 is tested. In the 2012-2017 period we see a weaker relationship to disposable income, a strong relationship to the wealth proxy, and a strong positive relationship with the auto rate. This suggests characteristics very similar to Brown (2007) Post-ABS period suggesting that after the recession the structural characteristics imposed by the innovation of Asset Backed Securities reasserted itself. It is these structural characteristics, switching between pre- and post-ABS factors suggest that Minskian dynamics are present. As lending became larger due to financial innovation, consumers took on greater debt to supplement their purchases. Thus, financial innovation had similar effects to rising equality in income. Consumers previously left out of consumption were able to at least temporarily purchase as if their income could support a higher standard of living. This promise of something better however fails as soon as lending tightens, and the pain of a recession is foisted disproportionately on the poor.

Table 4.4: Brown (2007) Extensions Using 60 Month Auto Rate

Quarterly Personal Consumption Expenditure	Extensions			
	2006-2011	2008-2011	2012-2017	2006-2017
Quarterly Avg Disposable Income	0.792***	0.803***	0.811***	0.920***
	(0.0741)	(0.120)	(0.0694)	(0.0360)
Quarterly Avg. S&P Price	0.412***	0.379***	0.831***	0.411***
	(0.0578)	(0.101)	(0.199)	(0.0637)
Quarterly Avg. Auto Rate	-28.05	-30.84	188.1*	87.91***
	(51.25)	(72.78)	(102.6)	(27.61)
Constant	1009.3	930.2	-926.0	-1195.3**
	(1140.2)	(1757.9)	(849.2)	(521.1)
N	22	16	24	46
adj. R-sq	0.984	0.971	0.987	0.996
Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01				

4.5 Future Research Suggestions and Conclusion

This paper has offered insight into the structural characteristics of consumption, specifically during the pre- & post-ABS periods. Extensions suggest that structural characteristics of consumption as a result of the 2008 crisis returned to pre-ABS characteristics. Future incarnations of this work might test specific household debt caused by the 2008 financial crisis and debt burdens during periods of expansion vs credit tightening. Minsky effects may be stronger in those with a greater desire for social status; combining survey data on this subject with financial data might better capture this dual effect.

Hyman Minsky poses a serious challenge to our understanding of the capitalist financial system. The very nature of capitalist finance ensures that business cycles will persist. It is stability which leads to instability and not, as other works would argue, exogenous upsettings to an otherwise well-functioning system. When the economy is going well, and consumers hold high hopes for their future income, they are more willing to take on short-term debt and riskier mortgage debt in order to finance purchases which they believe future cash flows will easily cover. This is the mirage of the American dream, the false promise of capitalist finance. However, just as investors must make decisions under uncertainty in the current period, consumers too lack perfect foresight.

Chapter 5

Conclusion

Human beings are innately social creatures. To understand human behavior within a market context then we must understand the social influences. This dissertation has investigated three avenues of social-economic expression; Grandparent childcare, relative poverty and consumption. These papers have attempted to show the complex relationship between the individual and society. Starting with family dynamics and child care, this dissertation finds as the feminist economics literature predicts, that women are relied on for care and this constraint exists into their geriatric years. Reliance on grandparents for care cannot easily be understood in a monist relationship, but this does not mean that real economic factors do not play a role. Capturing the effects of the recession in a dummy variable or fixed-effects framework offers an exogenous shock from which we can pull variation. Income and wealth are going to be key variables, but for the group measured, variables with low co-determination due to the age of the studied group. The effect of the recession is felt in changing family dynamics which by their very nature are quick to adjust to crisis, but slow to change after. The path dependence of the social relationships we build will never reach the standard of a perfectly fluid labor market.

Studying relative poverty and election outcomes, this dissertation finds that higher inequality benefits the left slightly in the states where statistically significant regressors could be found, but has little effect overall. The marginal voter in the U.S., for the period studied, is the voter who opts out of voting. This social arrangement too has the possibility of being slow to change as long as the issue of poverty is not addressed openly by either party. The marginal economic voter then must be pulled into voting by addressing relative poverty. Lastly, re-creations and extensions of Brown (2007) suggest that the relationship between consumption and income and consumption and the interest rate responded to periods of financial innovation and recession in ways similar to the predictions of Keynes and Minsky. Debt has served, it seems, as a simulacrum for greater overall

income. This temporary solution to inequality is demanded, necessary, because the social dynamics of extreme inequality are simply not a social convention willingly born. What convention arises when debt is no longer an option, in the family sphere, in the political sphere, in consumption; is the pressing question.

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