The Political Context and Infant Health in the United States*

Florencia Torche[†]
Stanford University

Tamkinat Rauf
Stanford University

Abstract

Most social determinants of health are shaped by political decisions. However, beyond specific policies, there is limited empirical investigation into the consequences of the changing political context on population health in the United States. We examine a salient political factor –the party of the president and governor– as a determinant of infant health between 1971-2018 using a battery of fixed effects models. We focus on infant health because it has far-reaching implications for future population health and inequality. Our analysis yields three findings: 1) Democratic presidents have a beneficial effect on infant health outcomes, with stronger effects for Black infants compared to Whites. 2) The president’s party effect materializes after two years of a Democratic transition, and remains elevated until the end of the party’s tenure in office. 3) Specific measurable social policies appear to play a minor role in explaining the beneficial effect of Democratic administrations. Our findings suggest the party in power is an important determinant of infant health, particularly among vulnerable populations, and they invite a deeper examination of the mechanisms.

Keywords: infant health, political parties, social determinants of health, racial disparities, fixed effects

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[†]Corresponding author: Florencia Torche Department of Sociology Stanford University 450 Jane

1 INTRODUCTION

The beginning of the twenty-first century has been a period of reckoning with social determinants of health in the United States. During this period, two key indicators of human development worsened: life expectancy declined for the first time in two decades (Acciai and Firebaugh 2017; Masters, Tilstra, and Simon 2018), and further deterioration was reported in the nation’s already poor infant health outcomes compared to other wealthy countries (Chen, Oster, and Williams 2016; Martin and Osterman 2014; Tanne 2017). Traditionally, researchers have focused on proximate determinants of these trends conceptualized as individual “risk factors,” but scholars are increasingly considering macro-level determinants such as inequality and health policy (Chen, Oster, and Williams 2016; Fuchs and Eggleston 2018; Marmot and Allen 2014; McClellan et al. 2018; Ratcliff 2017). These determinants are, in turn, shaped by political decisions.

Driven by very different ideological commitments, the two major political parties in the United States have adopted distinct policy positions on social and economic issues since the 1960s, with the Republican party more strongly favoring private enterprise and economic elites and catering to conservative constituents, and the Democratic party favoring greater government intervention aimed toward poverty alleviation, with stronger attention to racial justice (Faricy 2015; Feinstein and Schickler 2008; McAdam and Kloos 2014).

Have these distinct approaches affected population health? A large body of recent research shows a link between political institutions and health outcomes *across countries*, but how changes in political contexts *within countries over time* can shape health has been relatively less explored (for notable exceptions in the United States, see Krieger et al. 2013; Rodriguez 2019; Rodriguez, Bound, and Geronimus 2014). In this study, we investigate the link between the political context during a mother’s pregnancy and infant health measured by preterm birth and small for gestational age birth (intrauterine growth restriction). We focus on these birth outcomes because they are critical indicators of current and future population health and well-being. They are the main determinants of infant mortality, morbidity, and developmental difficulties, and they predict educational attainment and economic well-being over the entire life course (Alderman and Behrman 2006; Behrman and Rosenzweig 2004; Conley, Strully, and Bennett 2003; Prinz et al. 2018). Furthermore, birth outcomes are sensitive to changes in public policies (Conley and Springer 2001; Muntaner et al. 2011; Navarro and Shi 2001) and to environmental stressors experienced by the mother during the pregnancy (Dunkel Schetter 2011; Torche 2011).

Scholars have documented the role of political factors in accounting for population health—and particularly, infant health. An important body of research examines vari-

Stanford Way #244, Stanford CA 94305, Email: torche@stanford.edu.

ation across countries and focuses on differences between welfare state regimes, power constellations, and firm coordination mechanisms using typologies such as social democratic, conservative/corporate and liberal regimes, or liberal and coordinated market economies (Esping-Andersen 1990; Hall and Soskice 2001; Huber and Stephens 2001; Pontusson 2005). This literature suggests the social democracies prevalent in Nordic European countries have healthier citizens (Muntaner et al. 2011, 2012). Increasingly, the comparative approach has examined change over time in welfare state generosity, healthcare expenditures, or the composition of political representation, finding substantial effects on population health (Beckfield and Bambra 2016; Conley and Springer 2001; Macmillan, Shofia, and Sigle 2018).¹ However, much of the classic macro-comparative research has focused on cross-sectional differences across countries at one point in time or over a short period of time (Chung and Muntaner 2006; Navarro and Shi 2001). Granted, within-country temporal variation usually pales compared to variation across countries. The United States in 2020, for example, is much more similar to the United States in 1990 than to Norway in 2020. However, understanding country trajectories is critical to examine how *plausible* variation in institutional, political, and policy contexts shapes health outcomes. Put differently, the United States is unlikely to become Norway in the foreseeable future, but its political and policy context is likely to change within the bounds defined by its own historical circumstances (Pierson 2004).

The macro-comparative approach has also been criticized for ignoring heterogeneity in the consequences of political factors across national populations (Beckfield and Krieger 2009; Pega et al. 2013). This critique is particularly relevant for the United States, where despite relatively high per capita income and health spending, infant health remains worse than in other wealthy countries, partly because of wide racial and economic disparities, with African American and low-income infants experiencing particularly poor birth outcomes (Bronstein, Wingate, and Brisendine 2018; Chen, Oster, and Williams 2016; Ciciolla, Addante, and Huffer 2020). Understanding the effect of political context on infant health requires, therefore, considering critical axes of heterogeneity within the population.

Whereas the comparative approach focuses on macro-level determinants of health such as welfare state regimes, political traditions in power, or total health expenditures, a complementary literature identifies the effects of specific policies on infant health. Using causal inference techniques that exploit plausibly exogenous variation across time and place, this research examines how targeted policies, such as the Supplemental Program for Women Infants and Children (WIC), the Earned Income Tax Credit (EITC), and Aid to Families with Dependent Children (AFDC), shape birth outcomes (Hoynes, Miller, and Simon 2015; Hoynes, Page, and Stevens 2011; Leonard and Mas 2008; Markowitz

¹This line of research is related to and has been inspired by scholarship examining the politics of poverty across advanced industrial countries (see, e.g., Brady 2009).

et al. 2017; Strully, Rehkopf, and Xuan 2010). These studies consistently find beneficial, albeit small, effects of these policies on infant health among vulnerable populations.

Our study builds on both the “macro-comparative” and the “specific policy” traditions. In keeping with the “macro-comparative” approach, we examine a macro-level determinant of infant health—the political party of presidents and governors. Our focus on the president is guided by the salience of executive authority in U.S. politics (Faricy 2015; Howell 2003; McCarthy 2000; Schlesinger 1973), and by the expectation that political ideologies at the helm of power provide an organizing principle for laws, policies, and definitions of the national community (Dawes 2018; Muntaner et al. 2012). Consistent with the “specific policy” tradition, we use longitudinal data and causal inference approaches to rule out confounding to the extent possible using observational data.

We examine the effect of political party in power at the federal and state levels during a mother’s pregnancy on birth outcomes using data on all births across 50 states over half a century. Our findings indicate that infant health improved during years when Democratic presidents were in power. The beneficial effect of Democratic presidents has been particularly strong for African American infants but is also observed for White infants. This research highlights the importance of political factors as determinants of population health and racial health disparities.

2 THE POWER OF THE PRESIDENT AND THE GROWING RELEVANCE OF POLITICAL PARTIES

2.1 The Role of Executive Authority

In the United States, executive authority is relevant to shaping laws, allocating public resources, and structuring norms. Presidents exercise formal *ex ante* authority over the budget and *ex post* control over distributive arms of the government (Berry, Burden, and Howell 2010). Presidents can unilaterally set public policy, issuing an average of 20 significant executive orders per congressional session (Howell 2003: 87-88); they also have the power to veto congressional initiatives (Kiewiet and McCubbins 1988) and can use threats to extract concessions from a divided Congress (Cameron 2000). Presidents thus have substantial power to influence resource distribution. Indeed, an analysis including both legislative and executive arms of the government found that the party of the executive predicts large differences in federal tax and welfare spending, whereas legislative party majority has smaller and statistically insignificant effects (Faricy 2015). Presidents also exercise indirect influence on policymaking and public opinion. They appoint heads of key medical and scientific offices and nominate judges and justices, often expecting them

to “pass a litmus test of loyalty” to their party (Kennedy 2003:625). The bully pulpit of the presidency influences Congress and the media (Edwards and Wood 1999; Zeidenstein 1985), shapes public opinion (Kernell 2005; Oliver, Hill, and Marion 2011), and defines national identity more or less inclusively (Beasley 2006).

Following sustained bipartisan consensus in the post-war era, the main political parties in the United States have shifted toward distinct ideological orientations and policy platforms since the 1960s, with the Republican party increasingly moving to the right and the Democratic party moving to the left (Carmines and Stimson 1989; Feinstein and Schickler 2008; Kruse and Zelizer 2019; McAdam and Kloos 2014; Schlozman 2016). The civil rights movement in the 1960s was probably the most critical determinant of the realignment experienced by U.S. parties (Andrews 1997; Hutchings and Valentino 2004; McAdam and Kloos 2014; Morris 1999). Deeply affected by the movement, the Democratic party coalesced around an agenda of equal opportunity. At the same time, the push toward greater racial equality fueled resentment among segments of the White population. Coupled with enduring perceptions of racial threat and racial animosity, this resulted in the migration of Southern White Democrats to the Republican party (Kuziemko and Washington 2018; McAdam and Kloos 2014). White conservatism has since continued to coalesce under the umbrella of the Republican party (Hochschild 2016; Tesler 2016).

Particularly after the election of Ronald Reagan in 1980, the Republican party increasingly welcomed the influence of corporate interests, advanced policies furthering the interests of large businesses, and promoted a market-oriented policy agenda including tax cuts, deregulation, a limited role for government, reduced social programs, and increased restrictions on organized labor (Faricy 2015; McAdam and Kloos 2014; Prasad 2018). Conversely, Democratic presidents have favored direct spending targeted at society’s most vulnerable populations (Faricy 2011). Research suggests income inequality is higher during Republican administrations (Bartels 2008; Kelly 2005), although this relationship may have weakened after the 1970s (Kenworthy 2010). In addition, poor and working-class families (Page and Simmons 2002) and racial/ethnic minorities (Hajnal and Horowitz 2014) achieve higher levels of economic well-being during Democratic administrations.

The influence of party control of the executive branch on population well-being might depend on party control of the legislature. Congress makes laws, approves and oversees public expenditures, and approves presidential appointments, among other functions. Even if research suggests party control of the legislature has a limited influence on federal taxation and welfare spending compared to the president’s party (Faricy 2015), Congress might affect population health in multiple other ways. Our examination of the influence of the president’s party therefore includes potential interactions between party control of the executive and legislative branches in shaping infant health.

At the state level, executive authority rests in the hands of governors, who also may play a significant role in shaping health outcomes within states, contributing to and interacting with the party in power at the federal level. State governments design and execute policies that could affect infant health, such as the minimum wage, access to health insurance, income transfer programs, and abortion access. As at the federal level, state-level political agendas align with political parties (Potrafke 2018).

Evidence about governors' ability to shape policy, however, is mixed. Early scholarship using cross-sectional data suggested that partisan control of the governorship had limited influence on state-level policies (Erikson, Wright, and McIver 1993; Hofferbert 1966). More recent scholarship is largely consistent with the early findings: party control of both the governorship and the state legislature appears to have minor effects on policy outcomes and the population's economic well-being. When an influence of political party in power is found, it is usually only for a subset of states, under particular conditions, and for specific policies (Abney and Lauth 1998; Alt and Lowry 1994; Kousser 2002; Leigh 2008; Reed 2006). As Caughey, Warshaw, and Xu (2017:1356) put it, at the state level, "Democrats and Republicans may disagree consistently and even violently, but the actual policy consequences of these disagreements are far less dramatic." Research on the determinants of state-level healthcare spending, arguably a direct determinant of population health, also offers mixed evidence about party differences. One study suggests Democratic governors allocate a larger share of their budgets to health and education sectors than do Republican governors (Beland and Oloomi 2017), whereas another suggests the governor's political party has no effect on the state's healthcare expenditures (Joshi 2015).

The influence of partisan control of the governor and state legislature on policies and population well-being may have increased, however, in recent decades in the context of devolution of power from the federal government, growing political polarization, and federal-level gridlock (Grumbach 2018; Montez 2017). Research suggests party control of the state's executive and legislative branches increasingly predicts policy outcomes in different domains, including healthcare, particularly after the turn of the twenty-first century (Grumbach 2018), and state-level policies and institutions can affect health outcomes (Montez et al. 2020; Sosnaud 2019). In summary, the current literature provides mixed support for the hypothesis that governors' political affiliation affects infant health. Finally, there could be heterogeneity in the effect of the governor's party. Specifically, the influence of a Democratic governor on population health may depend on the party in power at the federal level if, for example, federal budget allocations favor states whose governors belong to the same party as the president (Larcinese, Rizzo, and Testa 2006).

2.2 Pathways of Influence

Our study focuses on reduced-form effects and has limited ability to identify specific mechanisms for the influence of the president’s party. However, the plausibility of our inquiry relies on the existence of pathways of influence linking the political party in power with infant health. At the macro level, these pathways include economic and racial inequality, access to healthcare, and political leaders’ powerful role in shaping public opinion, values, and the extent to which different groups are incorporated or excluded.

First, economic inequality is related to poor infant health in the United States (Huynh et al. 2005; Olson et al. 2010). Given that adverse health outcomes are concentrated among the poor (Chen, Oster, and Williams 2016), redistributive policies that reduce inequality could have a positive effect on overall infant health. In fact, several poverty reduction and targeted social programs have been shown to improve birth outcomes (Hoynes, Miller, and Simon 2015; Hoynes, Page, and Stevens 2011; Leonard and Mas 2008; Markowitz et al. 2017; Strully, Rehkopf, and Xuan 2010). An increase in the minimum wage is also linked to improved infant health (Komro et al. 2016). Political contexts that promote racial inclusion and equality could also contribute to improved infant health. African American infants have the highest rates of adverse birth outcomes of all major racial/ethnic groups, a gap that cannot be explained by socioeconomic disadvantage alone and that has been attributed to the harmful embodiment of exposure to discrimination, racism, and exclusion (Ciciolla, Addante, and Huffer 2020; Collins and David 2009; Dominguez 2011; Lu and Halfon 2003; Rosenthal and Lobel 2011). The Democratic party’s stronger attention to racial justice could contribute to improved birth outcomes among African Americans, thereby improving overall infant health.

Importantly, the reduction of economic and racial inequality as a mechanism for the effect of the Democratic party on infant health relies on the assumption that there are no zero-sum tradeoffs across groups, that is, gains among vulnerable groups do not come at the expense of losses for White or wealthier infants. Even if the reduction of inequalities is usually expected to improve health outcomes for everyone (Wilkinson and Pickett 2011), political decisions such as redistribution could have disparate consequences across economic and social strata (Beckfield and Krieger 2009; Krieger et al. 2008).

Second, expanding healthcare access through insurance, public health programs, and reproductive health improves birth outcomes. General public health spending (Conley and Springer 2001; Navarro et al. 2006) and access to Medicaid (Bhatt and Beck-Sagué 2018) are both associated with improved infant health. Family planning and legal access to abortion also predict improved infant health and a reduction in infant deaths (Grossman and Jacobowitz 1981; Krieger et al. 2016; Meier and Mcfarlane 1994). Again, this mechanism could be more relevant for minority or disadvantaged groups that are more reliant on public insurance and services.

Finally, the ability of presidential rhetoric to shape collective norms and boundaries of national identity could also affect the well-being of the population in general, and particularly vulnerable groups defined by gender, socioeconomic status, race/ethnicity, or immigration status. Research suggests negative presidential rhetoric against minority groups can shape how these groups are treated by others (Rushin and Edwards 2018; Yates and Whitford 2011), and it can directly affect group members' levels of anxiety and well-being, with harmful consequences for birth outcomes (Chavez et al. 2019; Gemmill et al. 2019).

These macro-level factors, in turn, can affect individual-level determinants of infant health, including stress and anxiety (Dunkel Schetter 2011; Goldenberg, Culhane, and Romero 2008), access to and quality of prenatal care (Bhatt and Beck-Sagué 2018; Corman et al. 2019), quality of nutrition (Bloomfield 2011), immunity and infection (Moffett, Hiby, and Sharkey 2015), and mothers' behavioral responses, such as smoking (Strully, Rehkopf, and Xuan 2010). Maternal stress, nutrition, smoking, and access to prenatal care (especially the management of conditions such as hypertension and gestational diabetes) affect birth outcomes through multiple biological pathways, including placental development and function, fetal oxidative stress, and fetal neurological development (Beijers, Buitelaar, and de Weerth 2014). Maternal stress and anxiety specifically have been implicated in an endocrine response leading to early delivery (Dunkel Schetter 2011; Hobel, Goldstein, and Barrett 2008; de Weerth and Buitelaar 2005). Maternal stress can also lead to decreased utero-placental blood flow, hypoxemia, inflammation, and decline of immune function with consequences for fetal growth and, especially, gestational length (Dunkel Schetter 2011).

2.3 The Timing of Political Party Effects

In general, policies emerging from the political process take time to be approved and implemented (Bardach 1977; Brady, Blome, and Kleider 2017). Similarly, dominant norms and conceptions of national identity emerging from policy and political arrangements take time to change (Brooks and Manza 2007). As highlighted by institutionalist approaches, path dependency results in policy stability and constrains the choices and resources available to new political leaders (Pierson 2004). For example, incumbent leaders are unlikely to alter public opinion instantly when they take office, but they can cause a gradual shift over the course of their tenure, as they use their office to advertise their own issue positions (Matsubayashi 2013).

Sometimes, however, effects are observed immediately after a new party comes to power. Charismatic political leaders can use rhetoric to impart a sharply new vision of shared priorities (Schroedel et al. 2013). Political rhetoric or the announcement of specific policies could have immediate or anticipatory effects on infant health if they

induce heightened stress and anxiety among the population. For example, Torche and Sirois (2019) found that a restrictive immigration bill in Arizona worsened birth outcomes of Hispanic immigrant women exposed to its signing into law, despite the bill never being fully implemented. Similarly, Gemmill et al. (2019) found that in-utero exposure to the 2016 election of Trump resulted in increased preterm births among Latina women, even if exposure occurred before the new administration had time to implement a policy agenda. Examining temporal variation illuminates whether the effects of the political party in power are discrete and short-term or delayed and persistent.

3 RESEARCH HYPOTHESES, DATA, AND ANALYTIC STRATEGY

3.1 Hypotheses

U.S. political parties have coalesced around distinct ideological and policy agendas since the 1960s, with Republican administrations more strongly catering to the interests of corporations, wealthy constituents, and conservative religious groups, and Democrats more strongly favoring policies aimed at economic and racial equality. Given these distinct policy agendas, we expect birth outcomes to improve during Democratic regimes (*Hypothesis 1*). Given the distinct stances of the Democratic and Republican parties on racial inclusion since the 1960s, we expect heterogeneity in the effect of the president’s party by race, with a stronger effect for African American than for White infants (*Hypothesis 2*). Given that party platforms are similar at the federal and state levels, we further hypothesize that the beneficial effect of Democratic administrations will be observed for the party of the president and the governor in office during a woman’s pregnancy (*Hypothesis 3*). Finally, we expect these effects to materialize over the tenure of the executive, rather than immediately, and to persist over time (*Hypothesis 4*).

3.2 Data

We use natality microdata containing all U.S. births between 1971 and 2018, obtained from the Centers for Disease Control and Prevention (CDC). Geographic information is publicly available prior to 2005, and we use restricted access data to identify location for years 2005 to 2018. The analytic sample was restricted to singleton births, because multiple births are more likely to be preterm and small for gestational age, and the share of multiple births has grown over time, potentially inducing a compositional effect on the outcomes. Data on individual births were aggregated into a state-year panel, where state is based on mother’s residence. We created a dataset of parties of the president and governor in office and merged it with the state-year panel. The panel includes 2,400

(50 × 48) state-year observations. We excluded 31 (1.3 percent) observations where the governor was independent. The analysis also excludes 81 state-year observations where gestation data were not reported for the majority of births.² Data are weighted by the total number of singleton births in a state each year, by racial group.

The outcomes of interest are preterm birth (<37 weeks of gestation) and intrauterine growth restriction (<10th percentile of gestational age- and sex-specific birth weight). These outcomes are the only two proximate determinants of birth weight and, because the definition of intrauterine growth restriction is conditional on gestational age, they are orthogonal to each other. These outcomes have partially overlapping etiologies, but there is relevant variation in their main determinants. Preterm birth is substantially predicted by maternal stress and anxiety, infection, and inflammation (Dunkel Schetter 2011; Goldenberg, Culhane, and Romero 2008). Intrauterine growth restriction is more strongly predicted by maternal smoking, pre-pregnancy weight, and chronic medical conditions, such as hypertension and diabetes (Goldenberg and Culhane 2007; Wollmann 1998). As such, we expect preterm birth to be particularly sensitive to mother’s stress and anxiety triggered by environmental factors, whereas fetal growth restriction might be more strongly affected by pre-pregnancy health and behavioral factors during pregnancy.

3.3 Analytic Approach

To examine the effect of the political party of the president and the governor, we estimated a series of fixed-effects linear probability models, expressed as follows:

$$PRE_{st} = \beta_1 \text{President's Party}_t + \beta_2 \text{Governor's Party}_{st} + \sum_s \text{State}_s + [f(t) * \sum_s \text{State}_s] + \mathbf{X}'_{st} \mathbf{v} + \varepsilon_{s,t} \quad (1)$$

PRE is the mean of the outcome of interest (here, preterm birth) in state s and year t , β_1 captures the effect of the president’s party, and β_2 captures the effect of the state governor’s party. We control for state fixed effects $\sum_s \text{State}_s$ and state-specific fourth-degree polynomial time trend, indicated by $f(t)$. $\mathbf{X}$ is a vector of time-varying covariates, and ε is an idiosyncratic error term. All models use robust standard errors clustered at the state level. Note that because preterm birth and fetal growth restriction identify adverse birth outcomes, negative parameter estimates capture beneficial effects (i.e., the reduction of an adverse outcome).³

²Observations with missing gestation pertain to 1971 to 1984. In 1971, there were 12 such states (Alabama, Arkansas, Connecticut, Delaware, Georgia, Idaho, Massachusetts, New Mexico, Pennsylvania, Texas, Virginia, Wisconsin). In 1984, only one state (New Mexico) was excluded.

³The analyses rely on aggregate state × year data because the focal predictors vary only at the state

The focal predictors are the political party of the president and the governor in the state of maternal residence during pregnancy. Both variables were coded 1 if the president/governor in office was a Democrat, 0 if Republican. Most human pregnancies last 39 to 40 weeks, therefore any effect of the political context experienced prenatally would take months to be observed at the moment of birth. We thus lag these predictors by one year (this is naturally a rough approximation of the prenatal period).

The state fixed effects account for any time-invariant characteristics of the state that may correlate with both political leadership and the outcomes of interest, for example, economic resources, historical background, or geography. Instead of adding year fixed effects—which are perfectly collinear with the president’s party—we define year as a continuous variable and add a fourth-order polynomial term interacted with state dummies to account for state-specific changes in outcomes over time. In supplementary analyses, we used alternative strategies to account for trend, including a third-order polynomial time trend, a cubic b-spline function, a Hodrick-Prescott filtering strategy, and a single fourth-order polynomial time trend at the national level. Results are robust to these alternative methods (see the Robustness Checks section).

The fixed-effects formulation estimates a single parameter capturing a discrete and constant change in the birth outcomes associated with the political party of the president and governor. This formulation might be unrealistic if the effect of exposure varies over time or emerges with delay. As formulated in Hypothesis 4, the effect of a Democratic president might not materialize immediately, or might vary over time, as the party agenda is implemented or the presidential rhetoric permeates society. To accommodate this possibility, we estimate a time-distributed fixed-effects model (also known as an event study model). The time-distributed fixed-effects (TD FE) model is formulated as follows:

$$PRE_{st} = \sum_{p=1}^r \beta_p \text{President's Party}_t^p + \sum_{q=1}^r \beta_q \text{President's Party}_{st}^q + \sum_s \text{State}_s + [f(t) * \sum_s \text{State}_s] + \mathbf{X}'_{st} \mathbf{v} + \varepsilon_{st} \quad (2)$$

All terms are the same as in Equation 1 but, instead of using single-indicator variables, we use a set of dummy variables to capture the effect of the president’s party (β_p) and the governor’s party (β_q), where p and q denote the number of years since the beginning of a Democratic presidency and governorship, respectively, and the maximum number of years forward from the inauguration year is r (eight years in the case of Democratic presidents) (Dougherty 2006). Given that we measure the effect of prenatal exposure

× year-level (governor’s party) and at the year-level (president’s party). Given that, relevant sources of confounding should be measured at the aggregate levels too (Angrist and Pischke 2009:227). Results are identical to those that would be obtained using individual-level data given that models are weighted by the number of singleton births in a state each year, by racial group.

and that such effect will take a varying number of months to be observed in a live birth, we expect no or a weak effect of exposure the year of the inauguration. Most births occurring during the inauguration year would not have been prenatally exposed to the new party in power during the entire pregnancy. If any effect of prenatal exposure to the year of inauguration were detected, it would likely be attributable to anticipation of the new administration (or confounding).

Fixed-effects models account for any unobserved confounders at the state level insofar as they do not change over time. However, the effect of the president’s party could be confounded by temporal changes in other factors, including demographic and economic trends, which are correlated with the outcomes and co-occur with changing administrations, violating the strict exogeneity assumption (Allison 2009; Wooldridge 2002). To address this possibility, we account for the following time-varying covariates.

Real per-capita Gross Domestic Product (GDP) captures the overall level of economic well-being at the state level (Barenberg, Basu, and Soylu 2017; Conley and Springer 2001). We obtain per capita GDP by dividing the annual state GDP in current dollars by the resident state population. Data were obtained from the U.S. Bureau of Economic Analysis (BEA). We converted the nominal values to 2012 dollars using the annual GDP implicit price deflator provided by the BEA.

Employment share is included as a measure of economic conditions. It is calculated as the total number of full-time and part-time jobs in the state reported during the year by the BEA divided by the total state population. Several studies examining determinants of infant health control for unemployment rate (Hoynes, Miller, and Simon 2015; Leonard and Mas 2008). Results are insensitive to the use of unemployment instead of employment share, but we use employment share because the latter is available for a longer time period at the state level.⁴

The *number of singleton births* in the state/year, by racial group, captures changes driven by migration or fertility adjustments, which could put a strain on the healthcare system if rapid increases occur (Conley and Springer 2001) and could be associated with compositional change in women giving birth. This was calculated from CDC Natality files.

Mean age of mothers of children born in the state/year, by racial group, captures compositional changes in women giving birth over time, with race-specific potential consequences for birth outcomes (Reichman and Pagnini 1997). This was calculated from CDC Natality files.

We also include *proportion of mothers born outside the United States* in the state/year, by racial group. Infants born to immigrant mothers generally exhibit a health advantage compared to children of U.S.-born mothers, and the immigrant population has increased

⁴We collected data on unemployment using the Current Population Survey (CPS). State-specific measures for all states in the CPS are only available from 1976 onward.

heterogeneously over the period of observation (Montez et al. 2020; Villalonga-Olives, Kawachi, and von Steinbüchel 2017). This was also calculated from CDC Natality files.

High school attainment is the share of the state population with a high school diploma or higher educational attainment, as a measure of the stock of human capital, a strong predictor of health outcomes (Zajacova and Lawrence 2018). Data were obtained from Frank (2018) and are available until 2015.

Cigarette consumption comes from annual per capita cigarette sales in a state, measured in packs, following Komro et al. (2016). The data are available on the CDC website but were originally compiled by Orzechowski and Walker (2019). Cigarette consumption is a major determinant of population health and, specifically, of birth outcomes if women smoke or are exposed to smoke during pregnancy (Abrevaya 2006; Lien and Evans 2005). Table 1 shows descriptive statistics of outcome and predictor variables.

Table 1: Descriptive Statistics

	Mean	SD	Min	Max
<i>Outcome Variables</i>				
Preterm rate, state/year (all births)	0.10	0.02	0.06	0.17
Preterm rate, state/year (Black births)	0.16	0.02	0.00	1.00
Preterm rate, state/year (White births)	0.08	0.01	0.05	0.14
Small for gestational age rate, state/year (all births)	0.11	0.02	0.06	0.19
Small for gestational age rate, state/year (Black births)	0.17	0.02	0.00	0.45
Small for gestational age rate, state/year (White births)	0.09	0.01	0.05	0.19
<i>Time-Varying Covariates</i>				
Number of births, state/year (all births, 1,000s)	174.43	151.33	5.25	599.45
Number of births, state/year (Black births, 1,000s)	27.99	14.23	0.00	61.64
Number of births, state/year (White births, 1,000s)	139.45	124.03	3.70	492.34
Mean age of mother, state/year (all births)	26.66	1.48	23.25	30.90
Mean age of mother, state/year (Black births)	24.91	1.53	20.97	34.00
Mean age of mother, state/year (White births)	26.85	1.43	23.57	30.94
Proportion immigrant mothers, state/year (all births)	0.18	0.13	0.00	0.48
Proportion immigrant mothers, state/year (Black births)	0.11	0.13	0.00	0.84
Proportion immigrant mothers, state/year (White births)	0.16	0.12	0.00	0.47
Real GDP per capita, state/year (2012\$, thousands)	40.53	11.76	15.36	112.69
Employment share, state/year	0.55	0.05	0.37	0.82
Proportion of residents with HS degree, state/year	0.57	0.08	0.28	0.75
Cigarette sales, packs per capita in state/year	86.33	39.46	12.50	296.20

All time-varying covariates, except number of births, average mother’s age, and proportion of immigrant mothers, are lagged one year to capture sociodemographic conditions prior to the birth. The three remaining variables were measured contemporaneously to capture the extent to which compositional age change of mothers confounds the effects of interest. As with the outcome measures, we excluded plural births from the calculation of these variables to avoid potential confounding due to changes in plurality over time.

All variables were measured at the state level to capture heterogeneity across states, but using aggregate national-level data yields substantively identical results.

The selection of time-varying control variables was based on substantive and methodological rules for covariate selection, including a theory-informed understanding of the processes accounting for the outcomes of interest, and statistical principles to avoid reintroducing bias through the inclusion of colliders or instrumental variables as covariates (VanderWeele 2019; VanderWeele and Shpitser 2011). It is impossible, however, to irrefutably distinguish exogenous factors likely to confound the association between political leadership and infant health from factors that could partially mediate the effect of the party in power. Even if we lag time-varying covariates to make sure they are measured prior to the outcomes of interest, they might be partially affected by the party in power because parties stay in office for several years and there could be anticipatory behavioral responses to the party expected to gain power. We therefore compare models with and without time-varying covariates to empirically evaluate the impact of confounder adjustment.

For each outcome, we estimate two fixed-effects specifications. Model 1 is the baseline model. It includes the president’s and the governor’s party as well as a fourth-order polynomial specification of time to account for trend. Model 2 adds controls for the time-varying covariates mentioned above. All analyses are conducted for the entire population of singleton births (including all races), and births to Black and White mothers. We define infant’s race based only on the race of the mother reported in the birth certificates, because data on father’s race is not consistently available. A consequence of this definition is that we cannot identify biracial infants. We do not stratify the analysis by mother’s socioeconomic advantage because proxies for SES such as mother’s education, occupation, or marital status are not consistently available over the period of observation, nor do we stratify by ethnicity, as data on Hispanic origin were not reported regularly until 1989. However, we analyzed variation by ethnicity in supplementary analyses, which we discuss in the next section.

4 RESULTS

We start by providing a descriptive analysis on trends in the two birth outcomes we examine—preterm birth and small for gestational age birth—over the 1971 to 2018 period for all, Black, and White births. Figure 1 shows observed values of the outcomes and predicted values of the outcomes using a fourth-order polynomial time trend. The proportion of infants born preterm has increased among Black and White families over time; this trend is seen in most wealthy countries and is partially driven by increased maternal age and associated comorbidities (World Health Organization 2012; Zeitlin et al. 2013). The proportion of small for gestational age births, however, declined between

1971 and 2018. Figure 1 also shows striking differences in the prevalence of adverse birth outcomes between Black and White children, with some reduction of the racial gap over time. An initial visual assessment of the data suggests that observed values of small for gestational age birth and, particularly, preterm birth are lower than the predicted values during Democratic administrations, and the opposite is the case during Republican administrations. This preliminary assessment supports the plausibility of our hypotheses.

Figure 1: Proportion of Preterm and Small for Gestational Age Births among All, Black, and White Infants; United States, 1971 to 2018

Note: Hollow circles are observed outcomes each year. Time trend modeled by a fourth-order polynomial of time based on annual time series data. Sample restricted to singleton births and weighted by the population of births each year. Given wide disparities in the outcomes across racial groups, y-axis values vary across graphs.

Effect of Democratic presidents. Panels a and b in Figure 2 summarize the effect of Democratic presidents on preterm birth and fetal growth restriction, respectively (full parameter estimates are presented in Tables 2 and 3). Model 1 does not include any controls except for state-specific time trends; Model 2 includes time-varying controls.

The findings consistently support Hypothesis 1. Democratic administrations result in better infant health in terms of preterm birth and fetal growth restriction, but the effect is much larger for preterm birth. The probability of a preterm birth is .37 percentage points lower during Democratic presidencies compared to Republican presidencies (Model 1, Figure 2a). Time-varying covariates only marginally reduce this effect: after controlling

Figure 2: FE Estimates of Effect of Democratic Leaders on Infant Health in the United States, 1971 to 2018

Source: CDC, BEA, and Frank (2018).

Note: Solid markers show parameter estimates; horizontal bars show 95 percent confidence intervals. Full models presented in Tables 2 and 3. Analysis based on singleton births. Model 1 controls for state-specific fourth-order polynomial time trend. Model 2 adds state-level time-varying controls: number of births, real GDP per capita, employment share, share of high school graduates, average age of mothers, proportion of mothers who are immigrants, and per capita cigarette sales.

for time-varying covariates, the effect size decreases to .30 percentage points among all births.⁵ This effect is substantial at the population level. If we consider that there were 3,655,764 births in the United States in 2018, the parameter estimate associated with the president's party indicates there would have been 10,967 ($3,655,764 \times .0030$) fewer preterm births if the president in office in 2017 had been a Democrat instead of a Republican.⁶

The next two sets of models in Figure 2a examine the effect of the president's party separately for Black and White infants. A striking difference between racial groups emerges. As Hypothesis 2 predicts, Black infants experience a stronger beneficial effect than do White infants, even if the effect is significant among both groups (the difference between groups is significant at the $p < .001$ level). For White infants, a Democratic president

⁵Generalized linear models with binomial distribution and logit link yield substantively identical results for all analyses.

⁶For consistency with the analytic sample, we based predictions on the number of singleton births in the 50 states, excluding the District of Columbia and U.S. territories.

Table 2: FE Regressions of Share of Preterm Singleton Births in State; United States, 1971 to 2018

	All Mothers		Black Mothers		White Mothers	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<i>Political Context</i>						
President Democrat	−0.0037** (0.0003)	−0.0030** (0.0003)	−0.0073** (0.0007)	−0.0067** (0.0007)	−0.0029** (0.0003)	−0.0020** (0.0002)
Governor Democrat	−0.0002 (0.0005)	0.0000 (0.0004)	0.0003 (0.0014)	0.0004 (0.0010)	−0.0003 (0.0003)	−0.0002 (0.0003)
<i>Time-Varying Controls</i>						
Total births (thousands)		0.0000 (0.0000)		0.0011** (0.0002)		0.0000 (0.0000)
GDP per capita (2012\$, thousands)		−0.0001 (0.0001)		0.0000 (0.0003)		0.0000 (0.0001)
% Population employed		0.0161 (0.0156)		−0.0230 (0.0461)		0.0155 (0.0137)
% High school graduates		0.0034 (0.0086)		−0.0092 (0.0203)		0.0032 (0.0064)
Average age of mothers		0.0009 (0.0020)		0.0024 (0.0026)		0.0036* (0.0017)
% Immigrant mothers		0.0153 (0.0224)		−0.0365 (0.0228)		0.0450* (0.0186)
Cigarette sales per capita (packs)		0.0000 (0.0000)		0.0000 (0.0001)		0.0001** (0.0000)
Constant	0.1045** (0.0004)	0.0578 (0.0531)	0.1666** (0.0008)	0.1042 (0.0593)	0.0969** (0.0004)	−0.0258 (0.0448)
Observations	2,288	2,190	2,288	2,190	2,288	2,190
R-squared	0.9649	0.9687	0.8906	0.8998	0.9554	0.9648

Note: Robust standard errors clustered at the state level are in parentheses. Regressions weighted by the race-specific number of singleton births in each state and year. Excluding 31 cases with independent governor and 81 cases with missing gestation. Data for Models 2 pertain to 1971 to 2016 due to unavailability of data on educational attainment.

*p < .05; **p < .01; ***p < .001 (two-tailed tests).

reduces the chances of a preterm birth by .20 percentage points in models with a full set of covariates; for Black infants the reduction is .66 percentage points. In terms of number of births, these numbers translate to 5,478 ($2,739,010 \times .0020$) fewer preterm White infants and 3,981 ($603,249 \times .0066$) fewer preterm Black infants if the president in office in 2017 had been a Democrat.⁷

Figure 2b shows the results of fixed-effects models examining the effect of president's party on the probability of small for gestational age birth. As with preterm births, we observe a beneficial effect of a Democratic president: the probability of fetal growth restriction declined by .09 percentage points during Democratic administrations compared to Republican administrations. When controls for economic and demographic covariates are added (Figure 2b, Model 2), this beneficial effect slightly increases to .13 percentage points. Even if the effect of a Democratic president on fetal growth restriction is about

⁷Adding the number of Black and White infants yields a total that is smaller than the number of all births because it excludes Asian, Pacific Islander, American Indian, and Alaska Native infants.

Table 3: FE Regressions of Share of Small for Gestational Age Births in State; United States, 1971 to 2018

	All Mothers		Black Mothers		White Mothers	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<i>Political Context</i>						
President Democrat	−0.0009** (0.0002)	−0.0013** (0.0002)	−0.0019** (0.0006)	−0.0022** (0.0006)	−0.0006** (0.0002)	−0.0009** (0.0002)
Governor Democrat	0.0001 (0.0004)	0.0000 (0.0002)	−0.0004 (0.0006)	−0.0005 (0.0005)	0.0001 (0.0003)	0.0000 (0.0002)
<i>Time-Varying Controls</i>						
Total births (thousands)		0.0000* (0.0000)		−0.0002 (0.0001)		0.0000 (0.0000)
GDP per capita (2012\$, thousands)		−0.0001 (0.0001)		0.0000 (0.0004)		−0.0001 (0.0001)
% Population employed		−0.0163 (0.0130)		0.0031 (0.0506)		−0.0159 (0.0089)
% High school graduates		0.0079 (0.0073)		−0.0055 (0.0145)		0.0089 (0.0068)
Average age of mothers		−0.0085** (0.0014)		−0.0088** (0.0019)		−0.0071** (0.0010)
% Immigrant mothers		−0.0237** (0.0087)		−0.0153 (0.0156)		−0.0149** (0.0053)
Cigarette sales per capita (packs)		0.0000 (0.0000)		0.0000 (0.0000)		0.0000** (0.0000)
Constant	0.1306** (0.0003)	0.3523** (0.0377)	0.1939** (0.0007)	0.3963** (0.0517)	0.1217** (0.0002)	0.3108** (0.0263)
Observations	2.288	2.190	2.288	2.190	2.288	2.190
R-squared	0.9768	0.9805	0.9104	0.9151	0.9769	0.9799

Note: Robust standard errors clustered at the state level are in parentheses. Regressions weighted by the race-specific number of singleton births in each state and year. Excluding 31 cases with independent governor and 81 cases with missing gestation. Data for Models 2 pertain to 1971 to 2016 due to unavailability of data on educational attainment.

*p < .05; **p < .01; ***p < .001 (two-tailed tests).

one-third of the magnitude of the effect on preterm birth, it is still statistically significant and substantively relevant. Again, using the number of births in 2018 as a benchmark, these results indicate there would have been 4,752 ($3,655,764 \times .0013$) fewer small for gestational age births if the president in office during 2017 had been a Democrat instead of a Republican.

Racial differences under different parties of the executive are as pronounced for fetal growth restriction as they are for preterm birth. For White infants, Democratic administrations result in a .09 percentage-point decline in the probability of fetal growth restriction after accounting for economic and demographic time-varying covariates. Among Black infants, the comparable figure is a .24 percentage-point decline (the difference is significant at the $p < .01$ level). Using the number of births to Black and White women in 2018, these estimates indicate that if the president in office in 2017 had been a Democrat, there would have been 2,465 fewer White infants and 1,448 fewer Black infants born small for gestational age in 2018.

Effect of Democratic governors. Panels c and d in Figure 2 examine the effect of Democratic governors on preterm and small for gestational age births, respectively (full parameter estimates are presented in Tables 2 and 3). For both outcomes, the political party of the governor in the state of maternal residence during the pregnancy does not have a statistically significant effect. Stratifying the analysis by mother’s race shows no effect among all, Black, or White mothers. The point estimates for White infants and all infants are positive, indicating that a Democratic governor increases the probability that an infant is born small for gestational age. However, these estimates consistently fail to reach significance at any conventional level and are substantively minuscule. Finally, null effects persist when time-varying covariates are accounted for (Model 2). We therefore conclude there is no effect of Democratic governors on infant health, rejecting Hypothesis 3.⁸

As mentioned, the absence of an effect of the governor’s party may conceal heterogeneity across states. In particular, the literature suggests the effect of a Democratic governor may vary depending on the president’s party if, for example, federal budget allocations favor states whose governors belong to the same party as the president (Larcinese, Rizzo, and Testa 2006). We examined this possibility by considering an interaction effect between the president’s and the governor’s party. The interaction effect was consistently insignificant (see Part A of the online supplement), rejecting this possibility.

The timing of the effect of Democratic presidents. We now examine changes in the effect of the president’s political party over time by expressing Democratic presidents’ tenures as a set of periods starting with the year of inauguration and implementing a time-distributed fixed-effects model. We distinguish the following periods: 1 = year of the inauguration, 2 = 2nd year in office, 3 = 3rd and 4th year in office, 4 = 5th and 6th year in office, and 5 = 7 to 8 years in office.⁹ We limit this discussion to president’s party because our main analysis shows governor’s party does not have any significant effects on infant health. (TDFE analyses for governor’s party are available in Part B of the online supplement.)

Figure 3 shows the effect of president’s party on the probability of preterm birth across the length of Democratic administrations. Model 1 only controls for trends, and Model 2 adds time-varying covariates. Focusing on models with time-varying covariates, we find a statistically significant but small effect of Democratic administrations during the first two years in office, suggesting there might be some weak immediate or anticipatory effects. The impact of Democratic administrations increases substantially after the second year in office and remains persistently high thereafter. The temporal pattern is similar for Black and White infants but is more pronounced for Black infants. At its peak in years 5 to 6,

⁸Models adding president’s party and governor’s party separately yield identical results.

⁹There are few observations in which Democratic leadership lasted more than four years, which could result in parameter estimates capturing idiosyncratic effects of specific administrations. However, analyses collapsing the upper category into 3+ years yield identical results.

Democratic presidencies are associated with a decline in the percentage of Black preterm births by about one percentage point. This effect is very large when benchmarked by policies targeted at vulnerable populations. For example, an investment of \$1,000 in EITC (2009 dollars) on likely beneficiaries resulted in a decline in preterm birth by .19 percentage points (Hoynes, Miller, and Simon 2015). This effect of a Democratic presidency at its peak on Black preterm birth is five times the impact of this important policy.

Figure 3: TDFE Estimates of Effect of Democratic President on Preterm Births in the United States, 1971 to 2018

Source: CDC, BEA, and Frank (2018).

Note: Solid dots show parameter estimates; horizontal bars show 95 percent confidence intervals. Full models presented in Part B of the online supplement. Analysis based on singleton births. Model 1 controls for state-specific fourth-order polynomial time trend. Model 2 adds state-level time-varying controls: number of births, real GDP per capita, employment share, share of high school graduates, average age of mothers, proportion of mothers who are immigrants, and per capita cigarette sales.

We observe a similar temporal pattern in the effect of Democratic administrations on fetal growth restriction, although the effect sizes are smaller than for preterm births (see Figure 4). Panel a shows no effect of a Democratic president on fetal growth restriction in the first two years in office when time-varying controls are added. A significant beneficial effect emerges in the third and fourth years, and it increases thereafter, reaching more than .3 percentage points during the second term of Democratic administrations. The timing of effects is nearly identical across racial groups: for both Black and White infants,

a beneficial effect emerges after the second year of a Democratic presidency and increases during the administration's second term.

Figure 4: TDFE Estimates of Effect of Democratic President on Small for Gestational Age Births in the United States, 1971 to 2018

Source: CDC, BEA, and Frank (2018).

Note: Solid dots show parameter estimates; horizontal bars show 95 percent confidence intervals. Full models presented in Part B of the online supplement. Analysis based on singleton births. Model 1 controls for state-specific fourth-order polynomial time trend. Model 2 adds state-level time-varying controls: number of births, real GDP per capita, employment share, share of high school graduates, average age of mothers, proportion of mothers who are immigrants, and per capita cigarette sales.

In summary, we found a consistent trend in the effect of a president's party on birth outcomes: the effect of a Democratic president increases over time to reach its peak during the years after reelection. Although the patterns are not identical across outcomes—the effect of Democratic administrations on preterm birth weakens after peaking in years 3 to 6, whereas it increases throughout the entire spell of Democratic presidents for fetal growth restriction—the similarity in patterns across outcomes and racial groups indicates that the beneficial effect of Democratic presidents takes at least two years to fully materialize and is strongest during an administration's second term in office.

The role of party control of the legislature. We have focused on the president's political party, but party control of the legislature also plays a relevant role in U.S. democracy. Congress makes laws, approves and oversees public expenditures, and approves presidential appointments among other functions. Even if research suggests party control of the

legislative arm of government has limited influence on federal taxation and welfare spending compared to the president’s party (Faricy 2015), Congress might affect population health in multiple other ways. In supplementary analyses, we considered the role of legislative party control. We examined the additive effect of party control of the legislature as well as the interaction between party control of the executive and legislative branches of government by distinguishing the following configurations of power: Democratic president and Democratic majority in both chambers of the legislature (total control), Democratic president and Democratic majority in the Senate or the House (partial control), Democratic president and Republican majority in both chambers (divided government), and Republican president (see Part C of the online supplement).

We found that Democratic control of the legislature has a beneficial effect on infant health that is independent and smaller in magnitude than the effect of a Democratic president, and that fails to reach statistical significance at conventional levels in some instances. However, the beneficial effect of Democratic presidents, for both Black and White infants, does not vary depending on legislative majority configurations. We suspect there are several reasons why legislative majority does not amplify the impact of the party of the president. First, Democratic presidents promptly increase welfare spending, whereas, since the early 1970s, when the time frame of this study starts, Democratic legislative efforts have, to a large extent, been spent on protecting the New Deal and Great Society programs (Faricy 2015). It is also plausible that under complete Democratic control—historically a rare and short-lived opportunity—political energies are reserved for large legislative endeavors (e.g., the Affordable Care Act) that take time to implement and have effects outlasting congressional terms. Additionally, compared to the legislative branch, the bully pulpit of the presidency allows greater control over mechanisms that exacerbate the potential impact of political decisions or rhetoric on stress and anxiety across different groups of the population.

Pathways of influence for the effect of Democratic presidents. An important question our research invites concerns the specific mechanisms accounting for the impact of the president’s party. We cannot fully address this issue with the data at hand, but we offer supplementary analyses testing whether a range of mediators suggested by the literature alters the main effect of political party. These mediators include measures of economic inequality, specific social and health policies, minimum wage level, poverty rate, and anxiety-inducing sentiments associated with presidential rhetoric (variables, analysis, and results are available in Part D of the online supplement).

We find that although these variables have expected associations with birth outcomes, they do not substantially reduce the effect of the president’s party. A partial exception is the poverty rate: in models predicting preterm birth, parameter estimates associated with Democratic administrations decline somewhat after accounting for the population living in poverty, especially among the Black population. Even if this decline fails to reach

statistical significance at any conventional level, it is suggestive of the ability of Democratic administrations to improve living conditions of minority populations, which in turn may result in improved birth outcomes. Overall, however, the impact of Democratic administrations is only slightly reduced after accounting for putative mediators, suggesting complex pathways of influence that can only partially be captured by observable factors included in the analysis. We return to this important issue in the conclusion.

The effect of the president’s party on Hispanic infants. We have focused on differences between Black and White infants, but it is important to also consider the effect of political context on other racial/ethnic groups characterized by different levels of vulnerability in U.S. society. Even if we cannot examine outcomes among small groups such as Native Americans or Asian Americans given very limited numbers of births in many states over most of the observation period, we can consider Hispanics. Births to Hispanic mothers are a rapidly growing proportion of total births in U.S. society, accounting for as much as a third of all births in 2018.

We conducted supplementary analyses stratified by both race and ethnicity for a restricted sample of births from 1989 onward, when data on Hispanic ethnicity was reported in all states (see Part E of the online supplement). We find a consistent beneficial effect of Democratic presidents on infant health among Hispanics. However, despite Hispanics being a historically disadvantaged group often subject to exclusionary practices, the impact of the political context on Hispanic births is more similar to White births than to Black births. Further understanding differences in the effect of the political context for Hispanics would be an important task for future research. Such investigation should consider relevant characteristics of this group, including its substantial diversity in terms of national origin, the extent to which their experience has been shaped by immigration, and the potential relevance of the “Hispanic health paradox”: the finding that Hispanic infants, particularly those born to immigrant mothers, have generally better birth outcomes than would be predicted by their socioeconomic conditions (Dubowitz, Bates, and Garcia 2010; Giuntella 2016; Hummer et al. 2007).

4.1 Robustness Checks

Accounting for trend. When using longitudinal data, two central methodological issues are the need to account for long-term trends that could confound the effects of interest and the challenge of temporal autocorrelation in the outcomes of interest. We conducted several tests to assess the sensitivity of our findings to our model choices and assumptions regarding both issues.

Controlling for trend is important because unobserved trends in the dependent variables may result in spurious association between the political party in power and birth outcomes. Our main models account for trend by means of a state-specific fourth-order

polynomial of time. To test the robustness of our findings to this trend specification, we implemented four alternative detrending strategies: (1) a cubic b-spline model, (2) a Hodrick-Prescott filter to separate the series into trend and cyclical components (Hodrick and Prescott 1997), (3) a third-order polynomial time trend, and (4) a fourth-order polynomial time trend at the national, rather than state, level. These approaches yield substantively identical results for both preterm and small for gestational age birth (see Part F of the online supplement).

Addressing temporal autocorrelation. Datasets including a time component can contain sources of autocorrelation other than trend, which can confound the effect of exposure (Catalano 2014; Catalano et al. 2006; Catalano, Bruckner, and Smith 2008). These sources could result in spurious results if unaccounted-for trends in the data correlate with the party in office. We implemented two strategies to address temporal autocorrelation. First, we estimated models with a first-order autoregressive disturbance. Second, we tested dynamic panel models that include lagged dependent variables as regressors. These models provide an additional test of robustness and a bracket for plausible effect under different assumptions that are untestable (Angrist and Pischke 2009). Both sets of models yield parameter estimates substantively identical to the ones obtained in the main analysis (see Part G of the online supplement).

5 DISCUSSION AND CONCLUSIONS

This study has examined the impact of the political context experienced prenatally on infant health in the United States. The indicators of infant health we examine provide the first observable measure of individual health and well-being (Behrman and Butler 2007; Conley, Strully, and Bennett 2003; Moster, Lie, and Markestad 2008; Prinz et al. 2018). Our analysis extends pioneering research on the impact of the president’s party on infant mortality (Rodriguez 2019; Rodriguez, Bound, and Geronimus 2014) by examining widely prevalent adverse birth outcomes that predict health and wellbeing over the entire life course. We consider the effect of political party at the national and state levels (presidents and governors) as well as other features of the political context, extensively examining heterogeneity across race and ethnicity, and attending to the timing of effects of Democratic administrations.

Our analyses reveal a consistent pattern: the political party of the president in office during a woman’s pregnancy has a significant effect on infant health, both in terms of the probability of experiencing a preterm birth and a small for gestational age birth. The beneficial effects of Democratic administrations persist after accounting for demographic and economic trends that may confound the effect of political party and are replicated after accounting for sources of temporal autocorrelation. The fact that the birth outcomes examined are orthogonal to each other and that they follow widely different trends over

time further suggests we are capturing a true causal effect rather than a spurious corollary of unobserved trends.

The effect of Democratic presidents is substantial in terms of the population affected, resulting in thousands fewer preterm and small for gestational age births. Given the large costs of poor birth outcomes in the United States—both immediately after birth, over the individual life course, and even across generations (Almond, Chay, and Lee 2005; Almond and Currie 2011; Behrman and Rosenzweig 2004; Prinz et al. 2018; Russell et al. 2007)—these effects have implications spanning decades.

Models allowing for changes in the effects over the course of Democratic administrations show that the effect of a Democratic president is weak or insignificant during the first two years in office, becomes significant during the third year, and remains elevated until the end of the party’s spell in power. Although differences in effects over time sometimes fail to reach statistical significance, the consistent peak in the benefits of a Democratic president during the second term suggests presidents who are reelected might be particularly efficacious in improving infant health. This pattern, consistent across outcomes, suggests political parties require time to establish and communicate their vision and policy agenda.

We did not find a significant effect of Democratic governors. This null finding is consistent with prior research reporting a limited influence of party control at the state level on policies and economic well-being (Abney and Lauth 1998; Alt and Lowry 1994; Besley and Case 2003; Kousser 2002; Leigh 2008; Reed 2006). However, the influence of state-level party control on policy outcomes might have increased in the recent past, driven by devolution of power from the federal to the state level, growing political polarization, and gridlock at the federal level (Grumbach 2018; Montez 2017). It is possible, therefore, that the impact of the governor’s party on population health will increase in the near future. Furthermore, there is limited change in party control at the state level—that is, many “red states” were red and many “blue states” were blue for large portions of the observed period. Given that we focus on within-state variation over time, we have limited ability to identify the effects of interest.

We found marked racial differences in the impact of the president’s party, with the beneficial effects of a Democratic president being much larger for African American than for White infants for both birth outcomes examined. This suggests the party’s purported goal of promoting racial and socioeconomic equality, or the material and symbolic environment shaped by Democratic administrations, result in greater gains for Black infants. Importantly, we find no indication of a tradeoff resulting in a decline in infant health among White infants associated with gains among Black infants. In contrast, all infants gain during Democratic administrations, but Black infants gain more than White infants. This finding is particularly important given the wide gap in infant health between African American and White infants.

The high rates of adverse birth outcomes among African American children cannot be reduced to socioeconomic disadvantage and have been attributed to the stress emerging from discrimination, exclusion, and racism (Ciciolla, Addante, and Huffer 2020; Collins and David 2009; Dominguez 2011; Lu and Halfon 2003; Rosenthal and Lobel 2011). The stronger effect of Democratic presidents on preterm birth than on fetal growth restriction is consistent with this attribution, as gestational length is directly affected by maternal stress and anxiety (Dunkel Schetter 2011; Torche 2011). As discussed, we do not find a comparably strong effect of Democratic presidents on Hispanic infants, in spite of the socioeconomic disadvantage and exclusion experienced by this group. This finding points to the uniqueness of the African American experience, defined by the legacy of slavery, discrimination, and deep systemic racism (Myrdal 1944; Porter 2020).

Against the backdrop of prior literature examining the effect of the welfare state and political regimes on public health (Chung and Muntaner 2006; Conley and Springer 2001; Navarro and Shi 2001), it is no surprise that we find infant health outcomes improve when a political party favoring socioeconomic and racial equality is in power. A key contribution of our study is in demonstrating that even in the presence of stable institutions and absent any major political upheavals, changes in the president’s party in the United States have had substantial consequences for infant health, particularly for African American children, in the past 50 years. Unless there are momentous shifts in the political agendas of the two parties or substantial political realignments, we do not see reason for these patterns to change in the near future.

Perhaps the most important concern with our analysis is the inability to parse out the specific mechanisms accounting for the effect of the president’s party. As discussed earlier, accounting for potential mediators does not substantially reduce the observed effect of Democratic administrations. Nevertheless, based on this analysis, we cannot claim that these factors do not provide a pathway of influence for the effect of the president’s party. First, controlling for putative mediators as a strategy is limited if the intent is to capture causal processes (Elwert and Winship 2014; Imai et al. 2011). Second, although some of these mechanisms are readily quantifiable, others are notoriously difficult to measure. Particularly, non-monetary mechanisms such as exclusionary rhetoric, changes in bureaucratic processes, and re-allocation of resources within the same category (e.g., moving public health spending away from family planning to other categories) are hard to gauge. Finally, the dominant mechanisms may vary over time, challenging the ability to detect average effects of otherwise important pathways. As such, any effort to determine causal mechanisms that are constant across time is likely to fall short.

We suggest that the limited ability to identify mechanisms highlights the limitations but also the potential value of the analytic approach adopted in this study. Examining specific pathways is useful for policy evaluation, but the search for perfect counterfactuals also renders findings based on causal inference approaches difficult to generalize

beyond the local treatment context and risks blurring into the background macro-level factors that can affect health outcomes and their distribution. The fundamental cause approach has pushed scholars to conceptualize enduring associations between socioeconomic resources and health outcomes that may operate through context-specific and evolving causal pathways over time (Freese and Luftey 2011; Link and Phelan 1995; Phelan, Link, and Tehranifar 2010). Similarly, the ecosocial perspective in epidemiology has pushed for theorizing beyond the conventional “web of causation” model, considering the role of dominant economic and political priorities in shaping patterns of health across populations (Krieger 1994, 2008). These approaches have provided a valuable analytic and predictive framework for understanding the role of socioeconomic disparities in health (Geronimus et al. 2019; Phelan et al. 2004) and the consequences of political developments for public health (e.g., Homan 2017; Krieger et al. 2013). These paradigms can be equally useful for apprehending the role of political factors, given the deeply political nature of many social determinants of health (Marmot and Allen 2014; Ratcliff 2017).

Informed by these approaches, we view the political ideology in power as a fundamental factor shaping the economic, legal, institutional, and normative environment, which in turn results in the association we find between the president’s political party and infant health. As these theoretical perspectives would predict, this association has endured over the course of half a century, despite substantial changes in healthcare technology and provision, as well as changes in a host of specific regulations and social programs that affect maternal and infant health. By trading off the precision of local treatment effects of specific policies for the breadth of the fundamental cause approach, we attempted to evaluate the relationship between a central aspect of political context and two vital indicators of current and future health of the population. We hope to have offered a useful lens for interpreting and evaluating the fundamental political determinants of health.

References

- Abney, Glenn, and Thomas Lauth. 1998. “The End of Executive Dominance in State Appropriations.” *Public Administration Review* 58(5):388–394.
- Abrevaya, Jason. 2006. “Estimating the effect of smoking on birth outcomes using a matched panel data approach.” *Journal of Applied Econometrics* 21(4):489–519.
- Acciai, Francesco, and Glenn Firebaugh. 2017. “Why did life expectancy decline in the United States in 2015? A gender-specific analysis.” *Social Science and Medicine* 190:174–180.
- Alderman, Harold, and Jere R Behrman. 2006. “Reducing the incidence of low birth

- weight in low-income countries has substantial economic benefits.” *World Bank Research Observer* 21(1):25–48.
- Allison, Paul. 2009. *Fixed Effects Regression Models*. Sage.
- Almond, Douglas, Kenneth Chay, and David Lee. 2005. “The Costs of Low Birth Weight.” *Quarterly Journal of Economics* 120(3):1031–1083.
- Almond, Douglas, and Janet Currie. 2011. “Killing Me Softly: The Fetal Origins Hypothesis.” *Journal of Economic Perspectives* 25(3):153–172.
- Alt, James E., and Robert C. Lowry. 1994. “Divided Government, Fiscal Institutions, and Budget Deficits: Evidence from the States.” *American Political Science Review* 88(4):811–828.
- Andrews, Kenneth T. 1997. “The Impacts of Social Movements on the Political Process: The Civil Rights Movement and Black Electoral Politics in Mississippi.” *American Sociological Review* 62(5):800–819.
- Angrist, Joshua David., and Jörn-Steffen Pischke. 2009. *Mostly harmless econometrics: An empiricist’s companion*. Princeton NJ: Princeton University Press.
- Bardach, Eugene. 1977. *The Implementation Game: What Happens after a Bill Becomes a Law*. MIT Press.
- Barenberg, Andrew J, Deepankar Basu, and Ceren Soylu. 2017. “The Effect of Public Health Expenditure on Infant Mortality: Evidence from a Panel of Indian States, 1983–1984 to 2011–2012.” *Journal of Development Studies* 53(10):1765–1784.
- Bartels, Larry. 2008. *Unequal Democracy: The Political Economy of the New Gilded Age*. Princeton NJ: Princeton University Press.
- Beasley, Vanessa B. 2006. *You, the People: American National Identity in Presidential Rhetoric*. Texas A&M University Press.
- Beckfield, Jason, and Clare Bambra. 2016. “Shorter lives in stingier states: Social policy shortcomings help explain the US mortality disadvantage.” *Social Science and Medicine* 171:30–38.
- Beckfield, Jason, and Nancy Krieger. 2009. “Epi + demos + cracy: Linking political systems and priorities to the magnitude of health inequities-evidence, gaps, and a research agenda.” *Epidemiologic Reviews* 31(1):152–177.
- Behrman, Jere R, and Mark R Rosenzweig. 2004. “Returns to birthweight.” *Review of Economics and Statistics* 86(2):586–601.

- Behrman, Richard E, and Adrienne Stith Butler (eds.). 2007. *Preterm Birth: Causes, Consequences, and Prevention*. Washington, DC: National Academies Press.
- Beijers, Roseriet, Jan K Buitelaar, and Carolina de Weerth. 2014. “Mechanisms underlying the effects of prenatal psychosocial stress on child outcomes: beyond the HPA axis.” *Eur Child Adolesc Psychiatry* p. 14.
- Beland, Louis Philippe, and Sara Oloomi. 2017. “Party Affiliation and Public Spending: Evidence From U.S. Governors.” *Economic Inquiry* 55(2):982–995.
- Berry, Christopher R, Barry C Burden, and William G Howell. 2010. “The president and the distribution of federal spending.” *American Political Science Review* 104(4):783–799.
- Besley, Timothy, and Anne Case. 2003. “Political Institutions and Policy Choices: Evidence from the United States.” *Journal of Economic Literature* p. 75.
- Bhatt, Chintan B., and Consuelo M. Beck-Sagué. 2018. “Medicaid expansion and infant mortality in the United States.” *American Journal of Public Health* 108(4):565–567.
- Bloomfield, Frank H. 2011. “How Is Maternal Nutrition Related to Preterm Birth?” *Annual Review of Nutrition* 31(1):235–261.
- Brady, David. 2009. *Rich Democracies, Poor People: How Politics Explain Poverty*. Oxford University Press.
- Brady, David, Agnes Blome, and Hanna Kleider. 2017. “How Politics and Institutions Shape Poverty and Inequality.” In *The Oxford Handbook of The Social Science of Poverty*. Brady, David and Linda Burton eds., pp. 1–26. Oxford University Press.
- Bronstein, Janet M., Martha S. Wingate, and Anne E. Brisendine. 2018. “Why Is the U.S. Preterm Birth Rate So Much Higher Than the Rates in Canada, Great Britain, and Western Europe?” *International Journal of Health Services* 48(4):622–640.
- Brooks, Clem, and Jeff Manza. 2007. *Why Welfare States Persist. The Importance of Public Opinion in Democracy*. Chicago, IL: University of Chicago Press.
- Cameron, Charles. 2000. *Veto Bargaining. Presidents and the politics of Negative Power*. Cambridge, UK: Cambridge University Press.
- Carmines, Edward, and James Stimson. 1989. *Issue Evolution: Race and the Transformation of American Politics*. Princeton, NJ: Princeton University Press.

- Catalano, Ralph. 2014. "Commentary: Political epidemiology, republican presidents and dog food." *International Journal of Epidemiology* 43(3):829–831. arguments - no theory for why there is an association - time series has autocorrelation ... need a counterfactual (like canada).
- Catalano, Ralph, Tim Bruckner, Andrew Marks, and Brenda Eskenazi. 2006. "Exogenous shocks to the human sex ratio: The case of September 11, 2001 in New York City." *Human Reproduction* 21(12):3127–3131.
- Catalano, R., T. Bruckner, and K. R. Smith. 2008. "Ambient temperature predicts sex ratios and male longevity." *Proceedings of the National Academy of Sciences* 105(6):2244–2247.
- Caughey, Devin, Christopher Warshaw, and Yiqing Xu. 2017. "Incremental Democracy: The Policy Effects of Partisan Control of State Government." *The Journal of Politics* 79(4):1342–1358.
- Chavez, Leo R, Belinda Campos, Karina Corona, Daina Sanchez, and Catherine Belyeu Ruiz. 2019. "Words hurt: Political rhetoric, emotions/affect, and psychological well-being among Mexican-origin youth." *Social Science and Medicine* 228(July 2018):240–251.
- Chen, Emily Oster, and Heidi Williams. 2016. "Why is infant mortality higher in the United States than in Europe?" *American Economic Journal: Economic Policy* 8(2):89–124.
- Chung, Haejoo, and Carles Muntaner. 2006. "Political and welfare state determinants of infant and child health indicators: An analysis of wealthy countries." *Social Science and Medicine* .
- Ciciolla, Lucia, Samantha Addante, and Amy Huffer. 2020. "Racial Disparities in Pregnancy and Birth Outcomes." In *Handbook of Children and Prejudice*, edited by Hiram Fitzgerald, Deborah Johnson, Diseree Baolian Qin, Francisco Villarruel, and John Norder, pp. 67–97. Springer.
- Collins, James W., and Richard J. David. 2009. "Racial Disparity in Low Birth Weight and Infant Mortality." *Clinics in Perinatology* 36(1):63–73.
- Conley, Dalton, and Kristen W Springer. 2001. "Welfare state and infant mortality." *American Journal of Sociology* 10(3):768–807.
- Conley, Dalton, Kate Wetteroth Strully, and Neil G. Bennett. 2003. *The Starting Gate: Birth Weight and Life Chances*. University of California Press.

- Corman, Hope, Dhaval Dave, Nancy E Reichman, Hope Corman, Dhaval Dave, and Nancy E Reichman. 2019. “The Effects of Prenatal Care on Birth Outcomes: Reconciling a Messy Literature.” ISBN: 9780190625979.
- Dawes, Daniel E. 2018. “The Future of Health Equity in America: Addressing the Legal and Political Determinants of Health.” *Journal of Law, Medicine and Ethics* 46(4):838–840.
- de Weerth, Carolina, and Jan K. Buitelaar. 2005. “Physiological stress reactivity in human pregnancy—a review.” *Neuroscience & Biobehavioral Reviews* 29(2):295–312.
- Dominguez, Tyan Parker. 2011. “Adverse birth outcomes in African American women: The social context of persistent reproductive disadvantage.” *Social Work in Public Health* 26(1):3–16.
- Dougherty, Christopher. 2006. “The Marriage Earnings Premium as a Distributed Fixed Effect.” *The Journal of Human Resources* 41(2):433–443.
- Dubowitz, T, L Bates, and D Garcia. 2010. “The Latino health paradox.” *Handbook of medical sociology* pp. 106–123.
- Dunkel Schetter, Christine. 2011. “Psychological Science on Pregnancy: Stress Processes, Biopsychosocial Models, and Emerging Research Issues.” *Annual Review of Psychology* 62(1):531–558.
- Edwards, Dan B, and George C Wood. 1999. “Who Influences Whom? The President, Congress, and the Media.” *American Political Science Review* 93(2):327–344.
- Elwert, Felix, and Christopher Winship. 2014. “Endogenous Selection Bias : The Problem of Conditioning on a Collider Variable.” *Annual Review of Sociology* 40(1):2.1–2.23.
- Erikson, Robert, Gerald Wright, and John McIver. 1993. *Statehouse Democracy: Public Opinion and Policy in the American States*. Cambridge, UK: Cambridge University Press.
- Esping-Andersen, Gøsta. 1990. *The Three World of Welfare Capitalism*. Princeton, NJ: Princeton University Press.
- Faricy, Christopher. 2011. “The politics of social policy in America: The causes and effects of indirect versus direct social spending.” *Journal of Politics* 73(1):74–83.
- Faricy, Christopher G. 2015. *Welfare for the Wealthy: Parties, Social Spending, and Inequality in the United States*. Cambridge University Press.

- Feinstein, Brian D., and Eric Schickler. 2008. "Platforms and partners: The civil rights realignment reconsidered." *Studies in American Political Development* 22(1):1–31.
- Frank, Mark. 2018. "U.S. State-Level Income Inequality Data." [Online; accessed 2019-01-09].
- Freese, Jeremy, and Karen Luftey. 2011. "Fundamental Causality: Challenges of an Animating Concept for Medical Sociology." In *Handbook of the Sociology of Health, Illness, and Healing: A Blueprint for the 21st Century*, edited by Bernice Pescosolido, Jack Martin, Jane McLeod, and A Rogers, pp. 67–81. Springer Science.
- Fuchs, Victor R, and Karen Eggleston. 2018. "Life Expectancy and Inequality in Life Expectancy in the United States." *Stanford Institute of Economic Policy Research Policy Brief* .
- Gemmill, Alison, Ralph Catalano, Joan A Casey, Deborah Karasek, Héctor E Alcalá, Holly Elser, and Jacqueline M Torres. 2019. "Association of Preterm Births among US Latina Women with the 2016 Presidential Election." *JAMA Network Open* 2(7):1–10.
- Geronimus, Arline T., John Bound, Timothy A. Waidmann, Javier M. Rodriguez, and Brenden Timpe. 2019. "Weathering, Drugs, and Whack-a-Mole: Fundamental and Proximate Causes of Widening Educational Inequity in U.S. Life Expectancy by Sex and Race, 1990–2015." *Journal of Health and Social Behavior* 60(2):222–239.
- Giuntella, Osea. 2016. "The Hispanic health paradox: New evidence from longitudinal data on second and third-generation birth outcomes." *SSM - Population Health* 2:84–89.
- Goldenberg, Robert L, and Jennifer F Culhane. 2007. "Low birth weight in the United States." *American Journal of Clinical Nutrition* 85(2):584–590.
- Goldenberg, Robert L, Jennifer F Culhane, and Roberto Romero. 2008. "Epidemiology and Causes of Preterm Birth." *The Lancet* 371(9606):2.
- Grossman, Michael, and Steven Jacobowitz. 1981. "Variations in infant mortality rates among counties of the United States: The roles of public policies and programs." *Demography* 18:695–713.
- Grumbach, Jacob M. 2018. "From Backwaters to Major Policymakers: Policy Polarization in the States, 1970–2014." *Perspectives on Politics* 16(2):416–435.
- Hajnal, Zoltan L., and Jeremy D. Horowitz. 2014. "Racial winners and losers in American party politics." *Perspectives on Politics* 12(1):100–118.
- Hall, Peter, and David Soskice. 2001. *Varieties of Capitalism*. Oxford University Press.

- Hobel, Calvin J., Amy Goldstein, and Emily S. Barrett. 2008. "Psychosocial Stress and Pregnancy Outcome:." *Clinical Obstetrics and Gynecology* 51(2):333–348.
- Hochschild, Arlie Russell. 2016. *Strangers in their own land : anger and mourning on the American right*. New Press.
- Hodrick, Robert, and Edward Prescott. 1997. "Postwar U.S. Business Cycles: An Empirical Investigation." *Journal of Money, Credit and Banking* 29(1):1–16.
- Hofferbert, Richard I. 1966. "The Relation between Public Policy and Some Structural and Environmental Variables in the American States." *American Political Science Review* 60(1):73–82.
- Homan, Patricia. 2017. "Political gender inequality and infant mortality in the United States, 1990–2012." *Social Science & Medicine* 182:127–135.
- Howell, William G. 2003. *Power without Persuasion: The Politics of Direct Presidential Action*. Princeton, NJ: Princeton University Press.
- Hoynes, Hilary, Douglas Miller, and David Simon. 2015. "Income, the Earned Income Tax Credit, and infant health." *American Economic Journal: Economic Policy* 7(1):172–211.
- Hoynes, Hilary, Marianne Page, and Ann Huff Stevens. 2011. "Can targeted transfers improve birth outcomes?. Evidence from the introduction of the WIC program." *Journal of Public Economics* 95(7-8):813–827.
- Huber, E., and J. Stephens. 2001. *Development and crisis of the welfare state: parties and policies in global markets*. Chicago: University of Chicago Press.
- Hummer, Robert A, Daniel A Powers, Starling G Pullum, Ginger L Gossman, and W Parker Frisbie. 2007. "Paradox found (again): infant mortality among the Mexican-origin population in the United States." *Demography* 44(3):441–457.
- Hutchings, Vincent L., and Nicholas A. Valentino. 2004. "the Centrality of Race in American Politics." *Annual Review of Political Science* 7(1):383–408.
- Huynh, Mary, Jennifer D. Parker, Sam Harper, Elsie Pamuk, and Kenneth C. Schoendorf. 2005. "Contextual effect of income inequality on birth outcomes." *International Journal of Epidemiology* 34(4):888–895.
- Imai, Kosuke, Luke Keele, Dustin Tingley, and Teppei Yamamoto. 2011. "Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies." *American Political Science Review* 105(4):765–789.

- Joshi, Nayan Krishna. 2015. "Party politics, governors, and healthcare expenditures." *Economics and Politics* 27(1):53–77.
- Kelly, Nathan J. 2005. "Political choice, public policy, and distributional outcomes." *American Journal of Political Science* 49(4):865–880.
- Kennedy, Donald. 2003. "An epidemic of politics." *Science* 299(5607):625.
- Kenworthy, Lane. 2010. "How Much Do Presidents Influence Income Inequality?" *Challenge* 53(2):90–112.
- Kernell, Samuel. 2005. *Going Public. New Strategies of Presidential Leadership*. Sage.
- Kiewiet, Roderick, and Mathew D Mccubbins. 1988. "Presidential Influence in an Era of Congressional." *American Journal of Political Science* 32:713–736.
- Komro, Kelli A, Melvin D Livingston, Sara Markowitz, and Alexander C Wagenaar. 2016. "The effect of an increased minimum wage on infant mortality and birth weight." *American Journal of Public Health* 106(8):1514–1516.
- Kousser, Thad. 2002. "The Politics of Discretionary Medicaid Spending, 1980–1993." *Journal of Health Politics, Policy and Law* 27(4):639–672.
- Krieger, Nancy. 1994. "Epidemiology and the web of causation: Has anyone seen the spider?" *Social Science & Medicine* 39(7):887–903.
- . 2008. "Proximal, Distal, and the Politics of Causation: What's Level Got to Do With It?" *American Journal of Public Health* 98(2):221–230.
- Krieger, Nancy, Jarvis T Chen, Brent Coull, Pamela D Waterman, and Jason Beckfield. 2013. "The unique impact of abolition of Jim Crow Laws on reducing inequities in infant death rates and implications for choice of comparison groups in analyzing societal determinants of health." *American Journal of Public Health* 103(12):2234–2244.
- Krieger, Nancy, Sofia Gruskin, Nakul Singh, V. Mathew Kiang, Jarvis T. Chen, Pamela D. Waterman, Jason Beckfield, and Brent A. Coull. 2016. "Reproductive justice & preventable deaths: State funding, family planning, abortion, and infant mortality, US 1980-2010." *SSM - Population Health* 2:277–293.
- Krieger, Nancy, David H. Rehkopf, Jarvis T. Chen, Pamela D. Waterman, Enrico Marcelli, and Malinda Kennedy. 2008. "The fall and rise of US inequities in premature mortality: 1960-2002." *PLoS Medicine* 5(2):0227–0241.
- Kruse, Kevin, and Julien Zelizer. 2019. *Fault Lines: A History of the United States since 1974*. New York, NY: Norton.

- Kuziemko, Ilyana, and Ebonya Washington. 2018. "Why Did the Democrats Lose the South? Bringing New Data to an Old Debate." 108(10):2830–67.
- Larcinese, Valentino, Leonzio Rizzo, and Cecilia Testa. 2006. "Allocating the U.S. federal budget to the states: The impact of the president." *Journal of Politics* 68(2):447–456.
- Leigh, Andrew. 2008. "Estimating the impact of gubernatorial partisanship on policy settings and economic outcomes: A regression discontinuity approach." *European Journal of Political Economy* 24(1):256–268.
- Leonard, Jonathan, and Alexandre Mas. 2008. "Welfare reform, time limits, and infant health." *Journal of Health Economics* 27(6):1551–1566.
- Lien, Diana S., and William N. Evans. 2005. "Estimating the impact of large cigarette tax hikes: The case of maternal smoking and infant birth weight." *Journal of Human Resources* 40(2):373–392.
- Link, Bruce G., and Jo Phelan. 1995. "Social Conditions As Fundamental Causes of Disease." *Journal of Health and Social Behavior* 35:80.
- Lu, Michael C., and Neal Halfon. 2003. "Racial and ethnic disparities in birth outcomes: a life-course perspective." *Maternal and child health journal* 7(1):13–30.
- Macmillan, Ross, Naila Shofia, and Wendy Sigle. 2018. "Gender and the Politics of Death: Female Representation, Political and Developmental Context, and Population Health in a Cross-National Panel." *Demography* 55(5):1905–1934.
- Markowitz, Sara, Kelli Komro, Melvin D Livingston, and Alexander C Wagenaar. 2017. "Effects of state-level Earned Income Tax Credit laws in the U.S. on maternal health behaviors and infant health outcomes." Technical report.
- Marmot, Michael, and Jessica J. Allen. 2014. "Social determinants of health equity." *American Journal of Public Health* 104(SUPPL. 4):517–519.
- Martin, Joyce A, and Michelle J K Osterman. 2014. "Describing the Increase in Preterm Births in the United States, 2014-2016 Key findings Data from the National Vital Statistics System." *NCHS Data Brief* 312(312):1–29.
- Masters, Ryan K., Andrea M. Tilstra, and Daniel H. Simon. 2018. "Explaining recent mortality trends among younger and middle-aged White Americans." *International Journal of Epidemiology* 47(1):81–88.
- Matsubayashi, Tetsuya. 2013. "Do politicians shape public opinion?" *British Journal of Political Science* 43(2):451–478.

- McAdam, Doug, and Karina Kloos. 2014. *Deeply Divided: Racial Politics and Social Movements in Post-War America*. Oxford University Press.
- McCarthy, Nolan. 2000. "Presidential Pork : Executive Veto Power and Distributive Politics." *American Political Science Review* 94(1):117–129.
- McClellan, Chandler, Barrot H. Lambdin, Mir M. Ali, Ryan Mutter, Corey S. Davis, Eliza Wheeler, Michael Pemberton, and Alex H. Kral. 2018. "Opioid-overdose laws association with opioid use and overdose mortality." *Addictive Behaviors* .
- Meier, Kenneth J, and Deborah R Mcfarlane. 1994. "State Family Planning and Abortion Expenditures: Their Effect on Public Health." *American Journal of Public Health* 84(9):1467–1472.
- Moffett, Ashley, Susan E Hiby, and Andrew M Sharkey. 2015. "The role of the maternal immune system in the regulation of human birthweight." *Philosophical Transactions of the Royal Society B: Biological Sciences* 370(1663):1–9.
- Montez, Jennifer Karas. 2017. "Deregulation, Devolution, and State Preemption Laws' Impact on US Mortality Trends." *American Journal of Public Health* 107(11):1749–1750.
- Montez, Jennifer Karas, Jason Beckfield, Julene Kemp Cooney, Jacob M. Grumbach, Mark D. Hayward, Huseyin Zeyd Koytak, Steven H. Woolf, and Anna Zajacova. 2020. "US State Policies, Politics, and Life Expectancy." *The Milbank Quarterly* 98(3):668–699.
- Morris, Aldon D. 1999. "A Retrospective on the Civil Rights Movement: Political and Intellectual Landmarks." *Annual Review of Sociology* 25(1):517–539.
- Moster, Dag, Rolv Terje Lie, and Trond Markestad. 2008. "Long-term medical and social consequences of preterm birth." *New England Journal of Medicine* 359(3):262–273.
- Muntaner, Carles, Carme Borrell, Edwin Ng, Haejoo Chung, Albert Espelt, Maica Rodriguez-Sanz, Joan Benach, and Patricia O'Campo. 2011. "Politics, welfare regimes, and population health: Controversies and evidence." *Sociology of Health and Illness* 33(6):946–964.
- Muntaner, Carles, Carme Borrell, Edwin Ng, Haejoo Chung, Albert Espelt, Maica Rodriguez-Sanz, Joan Benach, and Patricia O'Campo. 2012. "Locating Politics in Social Epidemiology." In *Rethinking Social Epidemiology*, edited by Patricia O'Campo and James R. Dunn, pp. 175–198. New York, NY: Springer.

- Myrdal, Gunnar. 1944. *An American Dilemma: The Negro Problem and Modern Democracy*. Harper & Brothers.
- Navarro, Vicente, Carles Muntaner, Carme Borrell, Joan Benach, Águeda Quiroga, Maica Rodríguez-Sanz, Núria Vergés, and M. Isabel Pasarín. 2006. “Politics and health outcomes.” *Lancet* 368(9540):1033–1037.
- Navarro, Vicente, and Leiyu Shi. 2001. “The political context of social inequalities and health.” *Social Science and Medicine* 52(3):481–491.
- Oliver, Willard M, Joshua Hill, and Nancy E Marion. 2011. “When the president speaks...: An analysis of presidential influence over public opinion concerning the war on drugs.” *Criminal Justice Review* 36(4):456–469.
- Olson, Maren E., Douglas Diekema, Barbara A. Elliott, and Colleen M. Renier. 2010. “Impact of income and income inequality on infant health outcomes in the United States.” *Pediatrics* 126(6):1165–1173.
- Orzechowski, and Walker. 2019. *The Tax Burden on Tobacco, 1970-2018*. Centers for Disease Control and Prevention <https://chronicdata.cdc.gov/Policy/The-Tax-Burden-on-Tobacco-1970-2018/7nwe-3aj9>.
- Page, Benjamin, and James Simmons. 2002. *What government can do: Dealing with poverty and inequality*. University of Chicago Press.
- Pega, Frank, Ichiro Kawachi, Kumanan Rasanathan, and Olle Lundberg. 2013. “Democratization and life expectancy in Europe: A commentary on Mackenbach, Hu and Looman (2013).” *Social Science and Medicine* 93:166–175.
- Phelan, Jo C., Bruce G. Link, Ana Diez-Roux, Ichiro Kawachi, and Bruce Levin. 2004. ““Fundamental Causes” of Social Inequalities in Mortality: A Test of the Theory.” *Journal of Health and Social Behavior* 45(3):265–285.
- Phelan, Jo C., Bruce G. Link, and Parisa Tehranifar. 2010. “Social Conditions as Fundamental Causes of Health Inequalities: Theory, Evidence, and Policy Implications.” *Journal of Health and Social Behavior* 51(1_suppl):S28–S40.
- Pierson, Paul. 2004. *Politics in Time: History, Institutions, and Social Analysis*. Princeton NJ: Princeton University Press.
- Pontusson, Jonas. 2005. *Inequality and Prosperity*. Ithaca: Cornell University Press.
- Porter, Eduardo. 2020. *American Poison: How Racial Hostility Destroyed our Promise*. Alfred Knopf.

- Potrafke, Niklas. 2018. "Government ideology and economic policy-making in the United States—A survey." *Public Choice* 174(1-2):145–207.
- Prasad, Monica. 2018. *Starving the Beast: Ronald Reagan and the Tax Cut Revolution*. Russell Sage Foundation.
- Prinz, Daniel, Michael Chernew, David Cutler, and Austin Frakt. 2018. "Health and Economic Activity Over the Lifecycle." Technical report.
- Ratcliff, Kathryn Strother. 2017. *The Social Determinants of Health: Looking Upstream*. Medford, MA: Polity Press.
- Reed, W. Robert. 2006. "Democrats, republicans, and taxes: Evidence that political parties matter." *Journal of Public Economics* 90(4-5):725–750.
- Reichman, Nancy E., and Deanna L. Pagnini. 1997. "Maternal Age and Birth Outcomes: Data from New Jersey." *Family Planning Perspectives* 29(6):268–272.
- Rodriguez, Javier. 2019. "The politics hypothesis and racial disparities in infants' health in the United States." *SSM - Population Health* 8(March).
- Rodriguez, Javier, John Bound, and Arline Geronimus. 2014. "US infant mortality and the president's party." *International Journal of Epidemiology* 43(3):818–826.
- Rosenthal, Lisa, and Marci Lobel. 2011. "Explaining racial disparities in adverse birth outcomes: Unique sources of stress for Black American women." *Social Science and Medicine* 72(6):977–983.
- Rushin, Stephen, and Griffin Sims Edwards. 2018. "The Effect of President Trump's Election on Hate Crimes." *SSRN Electronic Journal* .
- Russell, Rebecca B., Nancy S. Green, Claudia A. Steiner, Susan Meikle, Jennifer L. Howse, Karalee Poschman, Todd Dias, Lisa Potetz, Michael J. Davidoff, Karla Damus, and Joann R. Petrini. 2007. "Cost of hospitalization for preterm and low birth weight infants in the United States." *Pediatrics* 120(1).
- Schlesinger, Arthur. 1973. *The Imperial Presidency*. Houghton Mifflin Harcourt.
- Schlozman, Daniel. 2016. *When Movements Anchor Parties: Electoral Alignments in American History*. Princeton University Press.
- Schroedel, Jean, Michelle Bligh, Jennifer Merolla, and Randall Gonzalez. 2013. "Charismatic Rhetoric in the 2008 Presidential Campaign: Commonalities and Differences." *Presidential Studies Quarterly* 43(1):101–128.

- Sosnaud, Benjamin. 2019. "Inequality in Infant Mortality: Cross-State Variation and Medical System Institutions." *Social Problems* 66(1):108–127.
- Strully, Kate W, David H Rehkopf, and Ziming Xuan. 2010. "Effects of Prenatal Poverty on Infant Health: State Earned Income Tax Credits and Birth Weight." *American Sociological Review* 75(4):534–562.
- Tanne, Janice Hopkins. 2017. "Preterm and low weight births rise again in the US." *BMJ (Clinical research ed.)* 358:j3311.
- Tesler, Michael. 2016. *Post-Racial or Most-Racial? Race and Politics in the Obama Era*. Chicago: University of Chicago Press.
- Torche, Florencia. 2011. "The Effect of Maternal Stress on Birth Outcomes: Exploiting a Natural Experiment." *Demography* 48(4):1473–1491.
- Torche, Florencia, and Catherine Sirois. 2019. "Restrictive Immigration Law and Birth Outcomes of Immigrant Women." *American journal of epidemiology* 188(1):24–33.
- VanderWeele, Tyler J. 2019. "Principles of confounder selection." *European Journal of Epidemiology* 34(3):211–219.
- VanderWeele, Tyler J., and Ilya Shpitser. 2011. "A New Criterion for Confounder Selection." *Biometrics* 67(4):1406–1413.
- Villalonga-Olives, E., I. Kawachi, and N. von Steinbüchel. 2017. "Pregnancy and Birth Outcomes Among Immigrant Women in the US and Europe: A Systematic Review." *Journal of Immigrant and Minority Health* 19(6):1469–1487.
- Wilkinson, Richard G., and Kate Pickett. 2011. *The spirit level: Why greater equality makes societies stronger*. London: Penguin.
- Wollmann, Hartmut. 1998. "Intrauterine growth restriction: Definition and etiology." *Hormone Research* 49(suppl 2):1–6.
- Wooldridge, Jeffrey. 2002. *Econometric Analysis of Cross Section and Panel Data*. MIT Press.
- World Health Organization. 2012. *Born too soon: The global action report on preterm birth*. Geneva: World Health Organization. ISSN: 0040781X.
- Yates, Jeff L, and Andrew B Whitford. 2011. "Race in the War on Drugs: The Social Consequences of Presidential Rhetoric." *SSRN Electronic Journal* 6(4):874–898.

- Zajacova, Anna, and Elizabeth M. Lawrence. 2018. "The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach." *Annual Review of Public Health* 39(1):273–289.
- Zeidenstein, Harvey G. 1985. "Presidents' Popularity and Their Wins and Losses on Major Issues in Congress: Does One Have Greater Influence over the Other?" *Presidential Studies Quarterly* 15(2):287–300.
- Zeitlin, J., K. Szamotulska, N. Drewniak, A. D. Mohangoo, J. Chalmers, L. Sakkeus, L. Irgens, M. Gatt, M. Gissler, and B. Blondel. 2013. "Preterm birth time trends in Europe: A study of 19 countries." *BJOG: An International Journal of Obstetrics and Gynaecology* 120(11):1356–1365.