"Rights without Access": The Political Context of Inequality in Health Care Coverage in the U.S. States

Online Appendix

In this document we present additional details for how we use data from the Current Population Surveys (CPS) to compute the two versions of the Gini- coefficient measure of inequality. We also present robustness analysis to check for multicollinearity between key explanatory variables and results based on an alternative model specification that treats political institution variables as endogenous variables.

1 Using CPS Data to Measure Health Care Inequality

In the paper, we assess state-level inequality in health care coverage using data from the U.S. Census Bureau's Current Population Surveys (CPS) Annual Social and Economic Supplement (ASEC). CPS-ASEC draws a probability sample of about 5% of the total population and covers around 60,000 households from all 50 states. The CPS individual-level data records do not cover individuals who are in the armed force, long-term care facilities, prisons, and mental health institutions. In most cases, the household head or the person who rents the housing unit responds for all members of the household. The Census Bureau also directly contact those whose information is not reported by the main respondent in each household.

We use individual-level records for health insurance coverage to compute the Gini-coefficient of inequality by the following steps:

First, we tabulate private and overall (private and public insurance combined) insurance coverage by state, year, and the nine income levels. *Private Insurance* counts coverage through employment-sponsored plans, self-employment plans and directly purchased plans. *Overall Insurance* counts for those who are covered by any type of coverage plan (government-provided or privately provided). Coverage type counted as government provided plans include: Medicare, Medicaid, SCHIP, Military plans, state-specific plans (funded by state governments), and Indian Health Services (IHS). We use the Census Bureau CPS online data tabulation tool to collect the count data by state, year, and income level. Table 1 shows the segment of data tabulation created based on the CPS sample for Texas in 1997.

Table 1: CPS Tabulation of Health Insurance Coverage by Income Levels in Texas, 1997 (Total Sample=7,688)

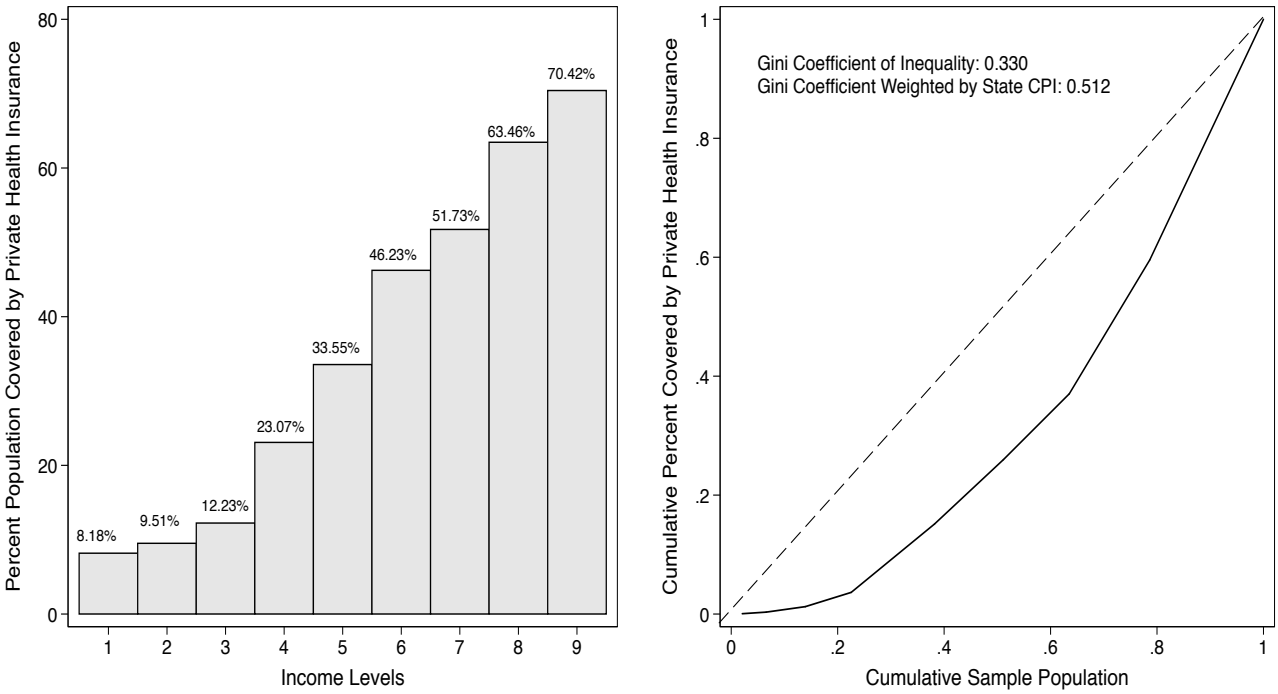
Income Group	Total Insured	Public Insurance	Private Insurance	CPS Sample Size	% Privately Covered	% Total Covered
1 ($0)	56	43	13	159	8.18%	35.22%
2 (1-4,999)	227	194	33	347	9.51%	65.42%
3 (5,000-9,999)	434	365	69	564	12.23%	76.95%
4 (10,000-14,999)	425	272	153	663	23.08%	64.10%
5(15,000-24,999)	746	342	404	1204	33.55%	61.96%
6(25,000-34,000)	639	179	460	995	46.23%	64.22%
7(35,000-44,999)	647	155	492	951	51.74%	68.03%
8(50,000-74,999)	1213	171	1042	1642	63.46%	73.87%
9(75,000+)	950	131	819	1163	70.42%	81.69%

Second, we evaluate the distribution of private and overall health insurance coverage across the nine income groups. As an example, the left-hand-side panel in Figure 1 illustrates the distribution of private health insurance coverage across nine income groups in Texas in 1997.

Third, using the `inequal7` module in STATA12, we compute the Gini-coefficient of inequality of private health insurance coverage for each state in each year. When computing the Gini-coefficient measure, CPS sample-size for each income group is used as the frequency weights. The Gini-coefficient score is calculated based on the generalized Lorez-Curve of inequality shown in the right-hand-side panel in Figure 1. Essentially, the generalized Lorez-Curve in Figure 1 plots the cumulative percent of population covered by private health insurance coverage against the cumulative population size across the nine income groups. In a world of perfect equality (i.e. no income-discrimination in the private health insurance market), cumulating the number of individuals across the income ladder would lead to a proportional change in the cumulative percent of population covered by private insurance plans, thus, the 45-degree line references perfect equality. As the distribution of private health insurance coverage becomes unequal, the Lorenz Curve would deviates from the equality line. The Gini-coefficient score is computed as the ratio between the size of the area between the Lorenz Curve and the diagonal line and the size of the triangle area under the diagno line.

Last, we weight the Gini-coefficient score by state CPI to take account into different living costs across states and year. We then apply the same procedure to compute the Gini-coefficient measure of inequality for the overall health insurance coverage.

Figure 1: The Unequal Distribution of Private Health Insurance Coverage in Texas 1997



2 Check for Multicollinearity

In our empirical models, we include various political institution variables to measure state governments' and citizens' partisan/ideological orientation. High-correlations among these variables may raise concerns about troublesome multicollinearity. We check for pair-wise correlations among all explanatory variables and diagnose Variance Inflation Factors (VIFs) to make sure that we do not observe troublesome multicollinearity. Table 2 reports correlations among all explanatory variables used in Table 2 in the paper. Table 3 reports VIFs for all explanatory variables in a linear regression model. We observe that the correlation between *Democratic Seat Share* and *Democratic Majority* is 0.699. The correlation between *Democratic Seat Share* and *Citizen Liberalism* is 0.530. All the other correlations are less than 0.5. The VIFs associated with explanatory variables are all quite small, showing no evidence for troublesome multicollinearity.

Table 2: Correlation Matrix for Explanatory Variables

Variable	Seat Share	Diversity	Majority	Governor	Citizen Liberalism	Union	Spending	Universal	Unemp.	Income	Part -time
D. Seat Share	1.000										
Diversity	0.266	1.000									
D. Majority	0.699	0.044	1.000								
D. Governor	-0.048	0.020	-0.072	1.000							
Liberalism	0.530	0.044	0.403	-0.074	1.000						
Union	0.298	0.044	0.075	-0.051	0.492	1.000					
Spending	0.003	0.151	0.015	-0.107	-0.027	-0.102	1.000				
Universal	0.168	0.086	0.153	-0.027	0.216	0.084	0.064	1.000			
Unemp.	0.165	0.263	0.030	-0.073	0.022	0.090	0.252	0.267	1.000		
Income	-0.048	0.308	-0.072	-0.104	0.125	0.027	0.090	0.075	-0.180	1.000	
Part-time	0.032	-0.044	-0.032	0.033	0.150	0.334	-0.240	-0.038	-0.128	-0.080	1.0000

Table 3: Variance Inflation Factors (VIFs) for Explanatory Variables Specified in the Linear Model (1) in Table 1

Variable	VIF
Democratic Seat Share	2.67
Democratic Majority	2.18
Citizen Liberalism	1.90
Union Density	1.56
Racial Diversity	1.41
Per Capita Income	1.29
Unemployment	1.23
Part-Time Job Coverage	1.21
Universal Healthcare Bills	1.15
Δ Government Health Spending	1.15
Democratic Governor	1.06
Mean VIF	1.53

3 Robustness Analysis: Re-Specifying Dynamic Panel Models with Endogenous Regressors

To check for the potential that institution and health policy variables might be endogenous, we re-estimate our four panel models based on an alternative model specification. Specifically, we re-specify our empirical models using the Generalized Method of Moments (GMM) with endogenous regressors. The following variables are specified as endogenous regressors in the model: *Democratic Seat Share*, *Democratic Majority*, *Democratic Governor*, *Union Density*, *Citizen Liberalism*, *Universal Healthcare Bills*, and *Government Health Spending*. Table 4 reports the two GMM models corresponding to Model (1) and (2) in Table 2 in the paper. Re-specifying the two linear models as dynamic panel models with endogenous regressors finds comparable results as what we reported in the paper. Table 5 corresponds to Table 3 in the paper. Applying the alternative specification, we find stable coefficient estimations for *Democratic Seat Share*, *Racial Diversity*, and the interaction term between the two variables. In Table 5-Model (3), we find positive and significant coefficients for both *Democratic Seat Share*, *Racial Diversity*, and their interaction term is negative and statistically significant. In Table 5-Model (4), the coefficient for *Democratic Seat Share* is near 0 and insignificant. *Racial Diversity* has a positive and significant coefficient. The interaction term has a positive and significant coefficients. These findings are consistent with Table 3 in the paper. The GMM specification also yields comparable sizes of these coefficients; hence we would draw similar substantive conclusions about how *Democratic Seat Share* and *Racial Diversity* interactively affect the inequality of private and overall health insurance coverage.

Table 4: GMM Specification for Table 2: With Endogenous Regressors

	Model (1)		Model (2)	
Variable	Coefficient	(Std. Err.)	Coefficient	(Std. Err.)
Democratic Seat Share	-0.091**	(0.008)	-0.042**	(0.008)
Racial Diversity Index	0.066**	(0.006)	0.064**	(0.006)
Democratic Majority	-0.017**	(0.002)	-0.007**	(0.002)
Democratic Governor	-0.002	(0.002)	-0.007**	(0.002)
Union	-0.002**	(0.000)	-0.001**	(0.0002)
Citizen Liberalsim	-0.001**	(0.0001)	0.0001†	(0.00006)
ΔGovernment Health Spending	-0.004**	(0.001)	-0.001	(0.001)
Universal Healthcare Bills	-0.004**	(0.001)	-0.001†	(0.001)
Unemployment	0.003**	(0.001)	0.004**	(0.001)
Per Capita Income	0.001**	(0.0002)	0.005**	(0.0003)
Part-time Job Coverage	-0.028**	(0.007)	-0.022**	(0.008)
Intercept	0.342**	(0.010)	0.132**	(0.011)
N	637		637	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Table 5: GMM Specification for Model (3) in Table 3: With Endogenous Regressors

	Model (3)		Model (4)	
Variable	Coefficient	(Std. Err.)	Coefficient	(Std. Err.)
Democratic Seat Share	0.260**	(0.014)	-0.007	(0.015)
Racial Diversity Index	0.361**	(0.021)	0.126**	(0.022)
Seat Share × Diversity	-0.526**	(0.037)	-0.110**	(0.038)
Democratic Majority	-0.013**	(0.002)	-0.006*	(0.002)
Democratic Governor	-0.002	(0.001)	-0.006**	(0.002)
Union Density	-0.001**	(0.0002)	-0.001**	(0.0002)
Citizen Liberalism	-0.001**	(0.0001)	0.0001†	(0.00006)
ΔGovernment Health Spending	-0.003**	(0.001)	-0.001	(0.001)
Universal Healthcare Bills	-0.003**	(0.001)	-0.001	(0.001)
Unemployment	0.001*	(0.001)	0.004**	(0.001)
Per Capita Income	0.001**	(0.0002)	0.005**	(0.0003)
Part-time Job Coverage	-0.017*	(0.007)	-0.020*	(0.008)
Intercept	0.276**	(0.011)	0.118**	(0.012)
N	637		637	

Significance levels : † : 10% * : 5% ** : 1%