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How does economic freedom influence public health? Evidence from U.S. cities

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Abstract

Although there is substantial agreement how microeconomic forces—income, risk aversion—shape public health outcomes, there is substantial disagreement about the relationship between macroeconomic forces—market liberalization and economic freedom—on public health. In this paper, we investigate the relationship between public health, economic freedom, and wealth using a large sample of metropolitan-level data from the United States. We find that economic freedom does have a statistically significant and positive impact on general, physical, and mental health, but the overall results are small in magnitude. When we disaggregate the three areas of economic freedom, we find that areas with lower government spending and freer labor markets have the strongest positive effect on physical and mental health. However, our results are strongest for the richest group of respondents, suggesting that the economic freedom-health relationship is perhaps indirect, and shown through income.

KEYWORDS

economic freedom, mental health, physical health, public health, socioeconomic inequality

JEL CLASSIFICATION

I10, H00, P00

1 | INTRODUCTION

Although public health is likely explained by microeconomic forces, macroeconomic forces such as market liberalization are increasingly implicated as an explanation for lower levels of public health. In both the academic and public spheres, some say that market liberalization is implicated in public health outcomes because capitalism has been linked to rising inequality (Piketty, 2014), declining bargaining power of workers in response to globalization of capital (Bromley, 2019), and erosion of universalistic public health regimes that provide broader healthcare and health-related services to citizens (Lynch, 2020). Case and Deaton (2020) propose that income inequality is associated with worse public health outcomes, including rising deaths of despair–deaths from suicide, overdose, and alcoholism and alcoholism-related disease. According to these arguments, market liberalization is the catalyst for declining health in less market-restrictive countries.

Market liberalization, broadly defined as "neoliberalism" or "classic liberalism," is a low-regulatory style of government. As measured by economic freedom, market liberalization could possibly contribute to improvements in public health. Economic freedom and limited government are associated with wealth (Acemoglu & Johnson, 2005; Bennett et al., 2017; Gwartney et al., 1999). Wealth, in turn, is expected to improve public health, either at the micro level (higher income households have better access to healthcare and education, both of which are associated with improvements in health outcomes), or at the macro level (such as through increasing ability to fund the public health welfare state). From this vantage point, economic freedom—a central component of market liberalism and capitalism—could improve public health outcomes.

As evidence by the two sides of the argument, the literature on institutional determinants of health is unresolved. Troesken (2015), using evidence from U.S. economic history, finds that liberalized markets reduced the ability of governments at the state and local levels to make disease-reducing improvements in public health.[1] However, Geloso et al. (2021) argue that it is important to conceptually distinguish diseases of commerce from diseases of poverty in investigating the link between public health and economic freedom. Diseases of commerce are those which are highly contagious and hard to contain, such as COVID-19; diseases of poverty are those which can be eradicated through investments in public goods, such as malaria, which is caused by mosquitoes, or typhoid fever, which is caused by contaminated food and water. These water-borne diseases depend on public infrastructure. Since economic freedom contributes to wealth and, hence, increases ability to provide public goods, freer societies may be more immune from diseases of poverty because they are richer (Bologna Pavlik & Geloso, 2021). Thus, identifying precisely how public health, economic freedom, and wealth relate is an important ongoing question in scholarly and policy debates about how to improve public health.

Our paper contributes to these conversations on market liberalism and public health by considering the relationship between wealth, health, and economic freedom using evidence from metropolitan areas in the United States. Initially, studies of economic freedom considered national-level indicators of economic freedom (Berggren, 2003; Williamson & Mathers, 2011). Subsequently, research has focused on the U.S. states (Bennett, 2021), including which components of economic freedom matter most for economic growth (Compton et al., 2011) and

[1]See also Troesken (2001, 2004).

differences in the consequences of economic freedom for Black and white households (Hoover et al., 2015).

Recent research has focused on metropolitan area economic freedom using the Metropolitan Level Economic Freedom (MEFI) index (Stansel, 2013, 2019). Bologna Pavlik (2015) was the first to utilize this index, finding a direct (and indirect) effect of metropolitan level economic freedom on entrepreneurial activity. Along similar lines, Bennett (2021) finds that MEFI is positively correlated to "dynamism," defined as firm and job creation. Metropolitan statistical area (MSA) level economic freedom, though, is negatively related to patent concentration, suggesting that liberal institutions provide for an environment conducive to diverse innovation (Wagner & Bologna Pavlik, 2020). Economic freedom at the metropolitan level also positively correlates to incomes (Bologna et al., 2016); this is true even during the Great Recession (Callais & Bologna Pavlik, 2023). Furthermore, it appears that people chose to move towards places with higher MEFI (Arif et al., 2020). In sum, MSA economic freedom corresponds strongly to normatively positive outcomes.

There are several reasons to focus on metropolitan area-level data to examine public health outcomes. Metropolitan areas have a significant role in allocating resources to provide for health and welfare (Peterson, 1981). Higher levels of these expenditures may be attractive to groups who are more likely to depend on government for health care services (unemployed, immigrants, etc.). In addition, much of the conversation about public health inequities focuses on regions such as the Rust Belt, especially its largest metropolitan areas, such as Detroit and Pittsburgh (Kahn & McComas, 2021). Although metropolitan areas also vary in economic freedom, it remains unclear how economic freedom relates to health outcomes.

Using data from the SMART (Selected Metropolitan Area Risk Trends): BRFSS (Behavioral Risk Factor Surveillance System) database and economic freedom data in 2002, 2007, and 2012, we assess the relationship between economic freedom and health outcomes. Our results suggest that economic freedom is related to greater physical and mental health. When we split the sample by income groups to test the wealth effects of economic freedom on health outcomes, we find that the richest group (those that earn $50,000 or more) appear to benefit the most from the impact of economic freedom. Economic freedom and its components are mostly either positively associated to greater health, or not a significant influence. However, for the poorest group, we find a negative association between the taxation component of economic freedom and physical and general health.

Our main contribution is metropolitan level empirical evidence that speaks to ongoing debates about the link between market liberalization and public health. We build upon the previous work connecting economic freedom to positive health outcomes on larger levels. Hall et al. (2018a) use the BRFSS dataset and find that states with higher levels of economic freedom have lower rates of exercise participation. This contrast to Ruseski and Maresova (2014), who found that among a dataset of 34 countries, countries with higher economic freedom engage in physical activity more. Using state-level economic freedom measurements, Hall et al. (2018b) show that economic freedom is connected with worse self-reported health overall, but the gap between white and Black households in health outcomes is actually lower in states with greater levels of economic freedom.

In addition, our research adds to the literature which considers the impact of economic freedom on overall well-being through our analysis of economic freedom and mental health outcomes. Esposto and Zaleski (1999) show a positive relationship between economic freedom and "quality of life" (measured by life expectancy and literacy rates). This can be seen as an objective well-being measure. Furthermore, subjective well-being seems to be greater in

places with high levels of economic freedom as well (Berggren & Bjørnskov, 2020; Bjørnskov et al., 2010; Gropper et al., 2011). Since public health is related to happiness in the deaths of despair literature, an investigation into the link between health and economic freedom using metropolitan area data is a natural extension of the research on economic freedom and subjective well-being.

In the next section, we discuss the theoretical considerations on economic freedom, well-being, and public health. Then, we discuss the empirical model and data. We show our results and conclude with a discussion and implications.

2 | ECONOMIC FREEDOM AND PUBLIC HEALTH

Economists are broadly in agreement that institutions are a significant driver of economic, political, and social outcomes. Though this consensus was reached with economist Douglass North's 1993 Nobel Prize for research on the institutional foundations of prosperity, the role of institutions has been acknowledged in economics since its beginnings. Adam Smith wrote in the late eighteenth century that an appropriate constitutional structure—an appropriate set of rules—was necessary for markets to work well (Brennan & Buchanan, 1985). Twentieth century Austrian economists contented that property rights and limited government are critical to the workings of markets (Hayek, 1988).

The standard definition of institutions is that they are the rules of the game in society (North, 2005). Much of the economic analysis of institutions has focused on liberal, or capitalistic, institutions (McCloskey, 2019). Economic liberalism is often operationalized as economic freedom—rules that are oriented towards personal choice, voluntary exchange, freedom to compete, and protection of personal property (Gwartney et al., 2022).

The literature has already found a strong, and likely causal, relationship between economic freedom and incomes at the country (Bennett et al., 2017; Grier & Grier, 2021, Callais & Young 2023), state Compton et al., 2011; Callais 2022), and metropolitan level (Bologna et al., 2016; Callais & Bologna Pavlik, 2023). Besides wealth, economic freedom is associated with entrepreneurship (Bjørnskov & Foss, 2008), tolerance (Berggren & Nilsson, 2013, 2020), happiness (Bennett & Nikolaev, 2017), and gender equity (Davis & Williamson, 2019).[2]

Since our interest is in how economic freedom relates to public health, we briefly review economic perspectives on public health. One reason why economists have focused on public health is because it is related to economic well-being. An individual's health (or the health of a nation) is an input to production and a form of human capital (Bleakley, 2007). Public health investments contribute to income per capita, and income per capita relates to public health: when people are richer, they are more likely to be healthier (and vice versa).

Microeconomic studies of public health consider how individual risk behavior influences health outcomes (Rice, 2013), the relationship between health and wages and related economic outcomes (Cawley, 2004), the net economic benefits of public health interventions (Philipson, 2000), and the relationship between specific businesses and individual health outcomes (Courtemanche & Carden, 2011). Micro-oriented studies also consider how the design of rules influence incentives for individuals to invest in addressing health-related externalities,

[2]The economic freedom indexes above each include measures of formal rules governing economic relationships. Although informal institutions are not our focus, previous research has found that informal institutions, including social norms such as tolerance, are significant to understand economic behavior and outcomes (Williamson, 2009).

such as incentives for businesses to take measures to prevent spread of disease because doing so is profitable for them (Leeson & Thompson, 2023). Macro-oriented economic studies of public health consider the relationship between institutions and public health. These studies took on greater significance as economists began to focus on how the institutional context shaped and constrained the response to the coronavirus pandemic (Boettke & Powell, 2021), including prospects for democratic governments to control pandemics as a consequence of their economic and political freedoms (Geloso & Murtazashvili, 2021).[3]

The institutional economics literature on public health has focused on the relationship between rules which promote economic liberty and public health outcomes. One of the mechanisms is in the provision of public goods. Here, the perspectives on public health are informed by the state capacity literature in economics, which considers whether expansion of state capacity, defined as the ability to provide public goods and services, contributes to riches. The mainstream view suggests that state capacity contributes to the modern economy, and its riches, through increased provision of goods and services that encourage exchange, such as transportation infrastructure and postal services (Acemoglu et al., 2016; Besley & Persson, 2010). If it indeed makes us richer and overall better, investments in state capacity could improve public health outcomes, meaning that greater government spending and taxation is a potential avenue for health improvements. However, if something else (market liberalization/economic freedom) makes us rich, then perhaps through this channel we can achieve better health outcomes. As it relates to public health, there are theoretically competing claims that must be assessed empirically.

The literature above suggests that if economic freedom contributes to public health outcomes, its effect is likely indirect. In those studies, economic freedom contributes to greater wealth, which, in turn, contributes to improvements in public health. However, economic freedom, like political freedom, may also be associated with health outcomes through a more direct channel, as economic freedom may shape and constrain the ability of governments to respond to disease. Because of the institutional bias towards economic exchange typically found in economically free countries, combatting the spread of some kinds of disease may be more challenging in the short run. From a longer-run perspective, the effects of economic freedom on wealth are likely positive.

On the other hand, the literature referenced in the introduction suggests that economic freedom, by contributing to economic inequality, worsening the bargaining position of labor in the economy, or undermining the public health welfare state, would be associated with worsening public health.

Another possibility is that economic freedom has heterogeneous effects on different income groups, as suggested by previously conducted empirical research on the distributional consequences of economic freedom. Some studies find economic freedom increases inequality (Carter, 2007), decreases it (Clark & Lawson, 2008), and some with null results (Sturm & De Haan, 2015). As pointed out by Bennett and Nikolaev (2017), the results are largely contingent on time period, measure of inequality used, and empirical method implemented. Dean and Lawson (2021) and Callais and Young (2023) find that economic freedom increases the average incomes of each income decile group. Bergh and Bjørnskov (2021) also find that economic

[3]"Macro" approaches in economics are vast, as they consider any aspects of how government action relates to public health, including the relationship between autocracy and public health (Geloso & Pavlik, 2021), comparison of centralized with decentralized responses to public health (Paniagua, 2022), and how non-market forces such as lobbying influence public health policies (Geloso & March, 2021).

freedom increases incomes of each income quintile. On the state-level, Compton et al. (2014) show that economic freedom positively contributes to income growth at more quintiles, the results are insignificant for those at the bottom of the income distribution. Callais and Geloso (2021, 2022) find that economic freedom improves income and social mobility. Hall et al. (2020), although, find that within the United States, economic freedom widens the gender income gap. Each of these studies more broadly relates to the impact of economic freedom on different groups. We attempt to address health outcomes using empirical tests to evaluate the direct and indirect effects of economic freedom on public health.

3 | DATA AND MODEL

3.1 | Data: Economic freedom

We use the Stansel's (2013, 2019) MEFI as the independent variable of interest. While the index is available every 5 years from 1972 through 2012 for 383 U.S. metropolitan statistical areas (MSA) and 41 metro divisions (MDiv),[4] we use only the MEFI scores from 2002, 2007, and 2012 as it matches with our health variables.

Economic freedom is largely based on the ability for individuals to engage in market activities with minimal state interference. The index is based off the Fraser Institute's global economic freedom index (Economic Freedom of the World) as well as the state and province-level North American index (Economic Freedom of North America). MEFI is constructed on a scale from 0 to 10, with higher scores indicating greater economic freedom. The index is a simple average of three areas. Area 1 (less government spending) is based on government consumption, transfers and subsidies, and insurance and retirement payments. Area 2 (lower tax burden) collects data on income and payroll taxes, sales tax revenue, revenue from property tax, and tax revenue from each source except severance taxation.[5] Area 3 (labor market freedom) scores MSAs based on minimum wage, government employment shares, and private union density.

To give a brief idea of the scaling of the MEFI index, let us take the New York-Newark-Jersey City, NY-NJ-PA, MSA as an example. In 2012, its MEFI is 5.44, ranking 353rd among 383 MSAs. The national average is 6.55, and the standard deviation is 0.74. If the NY-NJ-PA MSA was having a one-standard-deviation increase, it would bring its MEFI to 6.18. Although this is still under the national average, the NY-NJ-PA MSA ranking would jump 85 spots, up to 268th.

3.2 | Data: Health outcomes and controls (SMART: BRFSS)

The health outcomes data are from the BRFSS, which is conducted and published annually by the Centers for Disease Control and Prevention (CDC) in the United States. The BRFSS is "the nation's premier system of health-related telephone surveys that collect state data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services" (Centers for Disease Control and Prevention, 2022a). Developed in 1984,

[4]The very majority of our sample is from MSAs. For the sake of simplicity, we use metropolitan areas to refer to both metropolitan statistical areas and its metro divisions in the following context.

[5]Severance taxes are excluded since they are oftentimes paid by consumers of natural resources throughout the country and world more broadly, and thus not having much an impact on economic freedom in the MSA itself.

TABLE 1 Summary statistics (entire sample).

Variable	Obs.	Mean	SD	Min	Max
General health	464,600	3.509	1.091	1	5
Physical health	413,994	25.958	8.527	0	30
Mental health	415,534	26.595	7.647	0	30
MEFI	466,286	6.757	0.652	4.815	8.514
Area 1 (Gov't)	466,286	6.637	1.032	2.532	8.931
Area 2 (Tax)	466,286	5.804	0.693	3.508	8.320
Area 3 (Labor)	466,286	7.830	0.781	4.848	9.480

Note: Higher scores of General Health correspond to better self-reported general health. In the original BRFSS SMART data, higher scores correspond to worse health, but we inverted. Similar inversion is done for Physical Health and Mental Health.

the system has expanded to collecting data in all 50 states, the District of Columbia, and three U.S. territories. More than 400,000 adult interviews are completed annually. The BRFSS is the largest continuously conducted health survey system in the world (Center for Disease Control and Prevention, 2022a). However, the BRFSS data only have state-level geographical information for each participant in the survey.

The CDC also analyzes the BRFSS data for metropolitan and micropolitan statistical areas (MMSAs), and we use this SMART: BRFSS City and County Data and Documentation (Centers for Disease Control and Prevention, 2022b) in our analysis, which has more detailed information about the county-level geographical information of the participants. The SMART: BRFSS data have about half of the observations from BRFSS and, therefore, provide about 200,000 interviews each year, among which the majority participants answered all the key questions that are needed for our empirical analysis. Because the MSA-level economic freedom data by Stansel (2013, 2019) only have that in 2002, 2007, and 2012, we also only use the SMART: BRFSS in these 3 years.[6]

In detail, the dependent variables used in our research are from the following three questions in the survey, the first question is on the general health: "Would you say that in general your health is: ...", and the response values are: 1—excellent, 2—very good, 3—good, 4—fair, and 5—poor. To make the regression results more intuitive to the readers and following the common practice in the literature using SMART: BRFSS data, we revert the values for the regression analysis and recode to where higher scores correspond to greater general health.

The other two questions are more specific and on physical and mental health: the respondent is asked to report the number of days which they experienced poor physical or mental health, respectively out of the previous 30 days. Like the modification of the general health question, we revert the values of the answers to these two questions by "30 minus the original value," and now a larger value to each question means a better health situation.

The other controls are all from SMART: BRFSS which provide the demographic, economic, and other information of each respondent. The variables we included in this are: education,

[6]In an earlier version of the manuscript, we attempted to conduct a linear calculation of the missing economic freedom values in the missed years. Although the results do not change the main implications meaningfully, we believe it was not accurate nor careful; thus, we decided to not include them in the manuscript.

race, sex, marital status, age, and year of interview. The income data used to categorize the respondents into different income groups are also from SMART: BRFSS.

Summary statistics for the entire sample can be found in Table 1. With respect to general health, the mean is 3.509 (with 1 being the lowest and 5 being the highest). A closer look into the data indicates that 246,860 out of the 464,600 participants (53.1%) who answered this question reported a very good or excellent health. The standard deviation of this question is 1.091 which is a one-scale difference. Respondents also report that their physical health is "not poor" for roughly 26 of a possible 30 days. The same is true of mental health. Meanwhile, there is wide variation in responses for physical and mental health.

We split the sample in four income groups and report the summary statistics from each group in Table 2. Unsurprisingly, richer respondents tend to have better general health (general health averaged at 3.879 for the richest group, compared to only 2.753 for the poorest group). The same is true for physical health (28 days of "not poor" health for the richest group, but only 22 days for the poorest) and mental health (28 days of "not poor" health for the richest group, but only 23 days for the poorest). The raw data reveal that richer people tend to have better overall health.

3.3 | Model

The baseline regression models used in this research are a basic OLS model with fixed effects. Note that the SMART: BRFSS data's waves in different year are not continuous: a respondent in

TABLE 2 Summary statistics (by income group).

Variable	Obs.	Mean	SD	Min	Max
Panel a: Richest group ($50,000 or more)					
General health	189,156	3.879	0.923	1	5
Physical health	172,887	27.673	6.215	0	30
Mental health	172,968	27.724	5.901	0	30
Panel b: 2nd richest group ($25,000 to $49,999)					
General health	106,841	3.474	1.028	1	5
Physical health	93,306	26.139	8.257	0	30
Mental health	93,679	26.682	7.445	0	30
Panel c: 3rd richest group ($15,000 to $24,999)					
General health	64,734	3.085	1.116	1	5
Physical health	57,213	23.998	10.136	0	30
Mental health	57,574	25.176	9.111	0	30
Panel d: 4th richest group ($14,999 or less)					
General health	41,139	2.753	1.185	1	5
Physical health	36,378	21.822	11.824	0	30
Mental health	36,669	22.855	10.803	0	30

Note: Higher scores of General Health correspond to better self-reported general health. In the original BRFSS SMART data, higher scores correspond to worse health, but we inverted. Similar inversion is done for Physical Health and Mental Health.

1 year is unlikely to participate in the following years. Specifically, for respondent i in MSA s in year t, their general/physical/mental health is estimated in general as:

$$\text{Health}_{ist} \sim \beta_1 \text{EF}_{st} + \beta_2 X_{ist} + \varepsilon_{ist}$$

where Health_{ist} is the general health, physical health, or mental health. EF_{st} is the economic freedom of the MSA the respondent is in and in that year, and we also use the three areas separately to estimate the effect, in addition to the overall economic freedom. X_{ist} is the controls, which are included as fixed effects into the regression. ε_{ist} is the unexplained error term. Standard errors of the estimated coefficients are clustered at the MSA level, unless specified otherwise.

However, note that the details for each specification will be further provided under each regression table reported. Because of the multiple-level ordinal pattern of the general health variable, we also employ an ordered probit model when conducting the regression analysis for that. For physical health and mental health results, we first use a Poisson model and estimate our standard errors using clusters at the MSA-level, since Poisson model is more appropriate for the count data. For the Poisson results, we also compute Conley standard errors (Conley, 1999) using a 100 km radius, as well as 200 km.

In addition to the pooled-income-groups analysis, we also investigate different income groups as subsamples and report the results in separate tables. We will provide more detailed interpretations in the following Results section.

4 | RESULTS

4.1 | Economic freedom and health outcomes: All income groups

We start our analysis with the entire sample to analyze the impact of MSA-level economic freedom on health outcomes. In the baseline analysis, we use only the years in which MEFI data

TABLE 3 General health and economic freedom (ordered probit).

	(1)	(2)	(3)	(4)
Variables	**General health**	**General health**	**General health**	**General health**
MEFI	0.023*			
	(0.012)			
Area 1 (Gov't)		0.018**		
		(0.008)		
Area 2 (Taxation)			−0.024***	
			(0.008)	
Area 3 (Labor)				0.039***
				(0.010)
Num.Obs	457,650	457,650	457,650	457,650

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included, and the values are inverted thus higher value indicating better health.

TABLE 4 Marginal effects of general health and economic freedom.

Variable	Gen health = 1	Gen health = 2	Gen health = 3	Gen health = 4	Gen health = 5
MEFI	−0.0018***	−0.0036***	−0.0038***	0.0032***	0.0060***
	(0.0002)	(0.0004)	(0.0004)	(0.0003)	(0.0006)
Area 1	−0.0014***	−0.0028***	−0.0030***	0.0025***	0.0047***
	(0.0001)	(0.0003)	(0.0003)	(0.0002)	(0.0004)
Area 2	0.0019***	0.0038***	0.0040***	−0.0033***	−0.0064***
	(0.0002)	(0.0004)	(0.0004)	(0.0003)	(0.0006)
Area 3	−0.0030***	−0.0061***	−0.0064***	0.0053***	0.0102***
	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0005)

Note: MEFI is the MSA-level economic freedom index, Area 1 corresponds to lower government. Spending, Area 2 corresponds to lower tax burden, and Area 3 is the component measuring labor market freedom. Higher scores of General Health correspond to better self-reported general health. In the original BRFSS SMART data, higher scores correspond to worse health, but we inverted.

and SMART: BRFSS data are both available (2002, 2007, and 2012). In Table 3, we report the main results from the general health variable. Given the 1–5 scale of our dependent variable, we use an ordered probit with MSA-level clustered standard errors. The overall economic freedom index is positively associated with better general health. The same is true for Area 1 (less government spending) and Area 3 (labor market freedom). However, Area 2 (lower taxation levels) is *negatively* associated with overall health and significant at the 1% level; in other words, higher taxation level is associated with overall better health.[7]

We report the marginal effects at each of the five levels of general health in Table 4.[8] Notably, the marginal effects of MEFI and its areas have the opposite effects on the two sub-groups who have different general health—as shown in the table, the signs of the coefficients of respondents with not great health (1–3) are always the opposite of the other group with great health (4–5). As observed in the summary statistics, richer people tend to have better health: this corresponds to our findings (shown in the following subsection) that economic freedom has different effects on individuals' health outcomes across different income groups.

It is possible that there are spatial correlations among these MSAs, and as we described above, we estimate the Conley standard errors when possible. However, we could not have the Conley SEs computed for our main ordered probit model given the large size of the spatial variance and co-variance matrices needed; we do, however, cluster the traditional SEs at the MSA level. Therefore, we use the baseline OLS model with Conley SEs as a complementary and the results of the 100 km radius and 200 km radius are reported in Tables 5 and 6, respectively. Note that the coefficients on MEFI, Area 1, and Area 3 are no longer statistically significance, while the sign and statistical significance for Area 2 (lower taxation burden) is consistent with

[7]To be fully transparent, there was a convergence issue when including all the dummy controls in the ordered probit models. Therefore, we did not include the dummies when the recorded answer is NA and dropped a baseline dummy in each group of control variables. We also tried to drop a few age groups that have a small proportion of observations in some regressions that were not reported. They do not meaningfully change the results for the explanatory variables. The results are robust.

[8]The standard errors in the marginal effects Table 4 are not clustered at the MSA level. Clustering does not meaningfully change the results. The statistical significance for some coefficients of MEFI and Area 1 decreases from 1% to 5% or 10%, and that for Area 2 and Area 3 remain at the 1% level.

TABLE 5 General health and economic freedom (OLS, Conley SE, 100 km cut-off).

	(1)	(2)	(3)	(4)
Variables	**General health**	**General health**	**General health**	**General health**
MEFI	−0.007			
	(0.009)			
Area 1 (Gov't)		−0.003		
		(0.007)		
Area 2 (Taxation)			−0.023***	
			(0.006)	
Area 3 (Labor)				0.010
				(0.011)
Num. Obs	457,650	457,650	457,650	457,650

Note: Education, race, sex, marital status, age, and year fixed effects included. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included, and the values are inverted thus higher value indicating better health.

TABLE 6 General health and economic freedom (OLS, Conley SE, 200 km cut-off).

	(1)	(2)	(3)	(4)
Variables	**General health**	**General health**	**General health**	**General health**
MEFI	−0.007			
	(0.012)			
Area 1 (Gov't)		−0.003		
		(0.009)		
Area 2 (Taxation)			−0.023***	
			(0.007)	
Area 3 (Labor)				0.010
				(0.014)
Num. Obs	457,650	457,650	457,650	457,650

Note: Education, race, sex, marital status, age, and year fixed effects included. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included, and the values are inverted thus higher value indicating better health.

the ordered probit model. Since OLS models are likely not accurately estimating the effects, we do not rely much on these findings but take this into consideration when drawing the overall conclusions.

Regarding physical health, we start with OLS and clustered standard errors in Table 7. Overall, physical health reveals a similar story as with general health. The aggregate MSA-level economic freedom index is positively related to physical health, which, again, is measured as days in the past month where one's physical health was not described as "poor." The same is true for Area 1 and Area 3. However, now Area 2 (lower taxation) is statistically insignificant. The results, however, are very small in magnitude. A standard deviation increase in

TABLE 7 Physical health and economic freedom (Poisson, clustered standard errors).

	(1)	(2)	(3)	(4)
Variables	**Physical health**	**Physical health**	**Physical health**	**Physical health**
MEFI	0.003**			
	(0.002)			
Area 1 (Gov't)		0.002*		
		(0.001)		
Area 2 (Taxation)			−0.001	
			(0.002)	
Area 3 (Labor)				0.006***
				(0.002)
Num. Obs	407,783	407,783	407,783	407,783

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do *not* describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included.

TABLE 8 Physical health and economic freedom (Poisson, Conley SE, 100 km cut-off).

	(1)	(2)	(3)	(4)
Variables	**Physical health**	**Physical health**	**Physical health**	**Physical health**
MEFI	0.003*			
	(0.002)			
Area 1 (Gov't)		0.002*		
		(0.001)		
Area 2 (Taxation)			−0.001	
			(0.002)	
Area 3 (Labor)				0.006***
				(0.002)
Num. Obs	407,783	407,783	407,783	407,783

Note: Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do *not* describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included.

MEFI, Area 1, and Area 3 result in increases in physical health that are less than 1% of a standard deviation.

Our Poisson results with Conley standard errors at 100 and 200 km radii can be found in Tables 8 and 9. They uncover almost identical results to that of Table 7. The only difference is that when we expand our radii, the statistical significance for Area 1 (less government spending) disappears. The strongest results, in terms of magnitude and statistical significance, are labor market freedom (Area 3).

TABLE 9 Physical health and economic freedom (Poisson, Conley SE, 200 km cut-off).

	(1)	(2)	(3)	(4)
Variables	**Physical health**	**Physical health**	**Physical health**	**Physical health**
MEFI	0.003*			
	(0.002)			
Area 1 (Gov't)		0.002		
		(0.001)		
Area 2 (Taxation)			−0.001	
			(0.002)	
Area 3 (Labor)				0.006***
				(0.002)
Num. Obs	407,783	407,783	407,783	407,783

Note: Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do not describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included.

TABLE 10 Mental health and economic freedom (Poisson, clustered standard errors).

	(1)	(2)	(3)	(4)
Variables	**Mental health**	**Mental health**	**Mental health**	**Mental health**
MEFI	0.006***			
	(0.002)			
Area 1 (Gov't)		0.004***		
		(0.001)		
Area 2 (Taxation)			0.002	
			(0.002)	
Area 3 (Labor)				0.007***
				(0.001)
Num. Obs	409,352	409,352	409,352	409,352

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do not describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included.

In Tables 10–12, we report the relationship between economic freedom and self-reported mental health. Recall that mental health is reported in the same manner as physical health (number of past 30 days in which your mental health was not described as "poor"). Now, the overall MEFI *and* the same two components (less government spending and labor market freedom) are positive and statistically significant. The taxation component is now positive, but statistically insignificant. This suggests that respondents in economically free MSAs tend to have better mental health. Whether we use OLS with MSA-clustered standard errors (Table 10), or

TABLE 11 Mental health and economic freedom (Poisson, Conley SE, 100 km cut-off).

	(1)	(2)	(3)	(4)
Variables	**Mental health**	**Mental health**	**Mental health**	**Mental health**
MEFI	0.006***			
	(0.002)			
Area 1 (Gov't)		0.004***		
		(0.001)		
Area 2 (Taxation)			0.002	
			(0.002)	
Area 3 (Labor)				0.007***
				(0.001)
Num. Obs	409,352	409,352	409,352	409,352

Note: Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do not describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included.

TABLE 12 Mental health and economic freedom (Poisson, Conley SE, 200 km cut-off).

	(1)	(2)	(3)	(4)
Variables	**Mental health**	**Mental health**	**Mental health**	**Mental health**
MEFI	0.006***			
	(0.002)			
Area 1 (Gov't)		0.004***		
		(0.001)		
Area 2 (Taxation)			0.002	
			(0.002)	
Area 3 (Labor)				0.007***
				(0.001)
Num. Obs	409,352	409,352	409,352	409,352

Note: Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do not describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included.

Poisson with Conley standard errors (Tables 11 and 12), the statistical significance holds strong at the 1% level or greater. We do note, though, that the economic significance is not very high. A one standard deviation increase in MEFI and its areas are still associated with less than 1% of a standard deviation increase in self-reported mental health.

One should take note of a few interesting findings. First, we do not control for income, but do control for other factors like sex, race, marital status, age group, education level, and year fixed effects. Next, since we do not control (or split the sample) by income, we are measuring

the direct effect of economic freedom on health outcomes. Furthermore, recall that Hall et al. (2018a) found that states with more economic freedom tend to exercise less. Taken this as true, our findings suggest that, despite the lack of exercise, there is no adverse effect on physical or mental health. In fact, MSAs with more economic freedom actually have *better* self-reported physical and mental health. Perhaps, the wealth effect of economic freedom is enough to counteract the lack of physical exercise displayed in those areas.

4.2 | Economic freedom and health outcomes: Splitting income groups

We now assess how economic freedom impacts self-reported health for those at different income groups. As outlined in the data section, income is defined as "annual household income from all sources" and self-reported by eight possible choices of categories. We separate this into four groups. The richest group come from options seven and eight ($50,000 or more), the second richest group comes from options six and five ($25,000 to $49,999), the third richest group comes from options three and four ($15,000 to $24,999), and the fourth group is from options one and two ($14,999 or less).

We report these results in the Appendix. Starting with general health (Tables A1–A4), we find that the results on MEFI, Area 1, and Area 3 are positive and statistical significance for the two richest groups (Tables A1–A2), and that is also true for the third richest group regarding Area 1 and Area 3. The coefficients are economically and statistically more significant as the group we assess is richer. For the poorest group ($14,999 or less, Table A4), the impact is no longer statistically significant. In fact, low tax areas are negatively associated with general health, and is significant at the 1% level.

This could reflect that poorer groups depend on mean-tested programs more than other groups in the population and these programs depend on taxation. In the MEFI index, Area 1B is "Transfers and Subsidies as a Percentage of Personal Income" and Area 2A is "Income and Payroll Tax Revenue as a Percentage of Personal Income." Therefore, we separately analyzed the effect of the subareas 1B and 2A and they are reported throughout Tables A1–A4, B1–B4, and C1–C4.[9] Although including these two subareas does lead to some statistically significant results, it does not meaningfully change the conclusion.

Economic freedom is, again, significantly associated with greater self-reported physical health. However, for the richest subset (Table B1), this is only true for Area 3. For the second richest group (Table B2), the aggregate measure of economic freedom, along with Areas 1 and 2, are now positive and statistically significant. The results damper down as we move to the third richest group (Table B3) and are significant and negative for the poorest subset (Table B4).

The results are largely the same for mental health (Tables C1–C4); however, area 2 (low taxation) is now positive and significant for the richest group (Table C1). This significance dampers off quickly, as the second income group has no real statistical significance (Table C2). At face value, this suggests that economic freedom is more beneficial to one's health for those in the richest group. This speaks to potentially the "wealth effect" of economic freedom being important for health outcomes only to those with high incomes.

[9]We thank one reviewer for this helpful suggestion.

5 | DISCUSSION

Among the entire sample, we find that economic freedom has a positive association with general, physical, and mental health. Specifically, less government spending and more lax labor regulations are correlated to better physical and mental health. The impact of taxation is ambiguous and the association with physical health is not clear. This is particularly interesting as Hall et al. (2018a) found that states with greater economic freedom engage in less physical activity. The lack of physical activity does not seem to come at the cost of worsening physical health, perhaps due to the wealth effects that comes from economic freedom.

When we split the sample by income groups, we find that the richest group seems to benefit the most, both in terms of economic and statistical significance, from economic freedom as it relates to physical and mental health. Almost all income groups, though, have a relationship between economic freedom and mental health. Since we know that economic freedom is positively associated with greater incomes (Callais & Bologna Pavlik, 2023; Grier & Grier, 2021), these results could speak to the channel (wealth effect) of which these results occur.

It is important to note that most of our results are statistically significant while economically small. Without any intention to oversell our results, we acknowledge the qualitive implications that economic freedom does not lead to worse health outcomes in general. One possible reason why the economic magnitude is small is that the economic freedom individuals enjoy is not at their best potential. In other words, even an economy that is relatively free may still be "unfree" in an absolute sense, that is, a state may be at the top of an economic freedom index but may still be inside their production possibilities frontier through rent-seeking activity.[10] As Buchanan (1975) pointed out in *The Limits of Liberty*, there are limits to individual freedom that are necessary for the functioning of society.

The finding goes against many theoretical claims seeking to blame market capitalism, globalization, and neoliberal policies for worsening mental and physical health in the United States. Lynch (2020) argues that health inequities provided center-left politicians with an opportunity to challenge neoliberal capitalism without focusing on market regulation or redistribution. While this may have been politically popular, redistributive taxation is easier to implement that healthcare reform. Thus, attempting to address health inequities led to ineffective public policy for healthcare and did little to address the socioeconomic inequities that generate health inequities.

In this paper we have operationalized market liberalization as economic freedom. The presumption is that neoliberal policies generate health inequities, which informs policy responses. Our evidence shows that neoliberal policies and institutions may not be the reason for declining health outcomes. Our analysis suggests that for some aspects, policies strengthening economic freedom could improve health outcomes.

There are potential important policy implications here. Self-reported physical health is higher in places with greater economic freedom scores, even though they engage in less physical activity. What this could mean, if taken at face value, is that the increase in incomes allows for better access to products and services that improve health unrelated to physical activity. Economic freedom can have many indirect impacts that improve daily lives and overall betterment of society.

With respect to mental health especially, a topic that has increasingly gained importance in the public sphere, we find a strong association between better mental health and economic freedom. This is also consistent with the literature on economic freedom and subjective well-being. It seems that being in an environment that is conducive to voluntary activities could improve mental health and overall well-being. Similar to physical health, this is potentially true because

[10]We thank one reviewer for this insightful suggestion.

economic freedom improves incomes, which allows for greater access to mental health services and products.

Given the limitations of both data and model, it is difficult to claim causality here. Ideally, the SMART: BRFSS survey would be able to track the same people over time to see how their health outcomes changed over time. This would lead to an interesting way to see if people who move to economically free areas have improved health outcomes, or if people who stay in places that then become more or less economically free over time experience differing health outcomes as a result. Nevertheless, our work is an important start in assessing this relationship. Furthermore, as pointed out by Dean and Geloso (2022), given the nature of sub-national economic freedom data available, we are unable to include measures on property rights and legal systems, which are often seen as the most important of the different facets.[11] Therefore, any results found are, in fact, a lower bound of the true effect of economic freedom on various outcomes.

Future research can use the SMART: BRFSS dataset to assess how economic freedom impacts health outcomes differently for other groups. Following the work that Hoover et al. (2015) conducted on the impact of economic freedom on the Black/white income gap, work can assess how economic freedom impacts health outcomes differently for Black people and white people. Hall et al. (2018b) does this, but on the state level. Similarly, work can be done with splitting the BRFSS sample by gender, education level, and other races.

6 | CONCLUSION

In this paper, we investigate competing theories regarding the relationship between market institutions and health outcomes. One view is that less government spending and lower taxes would likely mean less public spending on health, which could worsen health outcomes. On the other hand, economic freedom is associated with large wealth gains, which could, in turn, positively impact health. In this paper, we test this theory empirically using metropolitan-level data.

Our empirical analysis of a large amount of data on health outcomes, along with recently developed measures of economic freedom, provides insight into the data. We find that economic freedom is positively associated with greater mental and physical health. We test how the "wealth effect" from economic freedom can influence health outcomes by splitting the sample by different income groups. Wealthier individuals appear to benefit the most from economic freedom with respect to their physical and mental health.

To reemphasize, we do not interpret our results as causal. Despite the immense scope of the SMART: BRFSS data, there are still limitations. For example, this is self-reported data and is reliant on the subjective nature of how one perceives their own health.[12] To some extent, this can be seen as parallel to the issues in the corruption literature, where one must distinguish between perceptions of corruption versus actual corruption. Similarly, the happiness literature must wrangle with the self-reported nature of their data.[13] Much like in these two spaces, both perception and more "objective" measures matter and are important avenues of research but

[11]For instance, Callais and Geloso (2022) find that the legal systems and property rights area of economic freedom is the most critical in explaining upward income mobility.

[12]On the other hand, measures like state expenditures on health (Hoffer et al., 2019) or health migration (Berta et al., 2022) can be seen as more objective.

[13]See, for instance, work by Bernini and Tampieri (2022), who examine the role of urbanization on happiness.

need to be clearly defined. Furthermore, the results are not very large in magnitude, so we caution against making broad claims from these findings.

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APPENDIX

TABLE A1 General health and economic freedom (ordered probit, income group of $50 k or more).

	(1) General health	(2) General health	(3) General health	(4) General health	(5) General health	(6) General health
MEFI	0.028***					
	(0.010)					
Area 1		0.016**				
		(0.007)				
Area 1B			0.009			
			(0.013)			
Area 2				−0.013		
				(0.008)		
Area 2A					−0.007***	
					(0.002)	
Area 3						0.044***
						(0.008)
Num. Obs	187,755	187,755	187,755	187,755	187,755	187,755

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE A2 General health and economic freedom (ordered probit, income group of $25 k to $49,999).

	(1) General health	(2) General health	(3) General health	(4) General health	(5) General health	(6) General health
MEFI	0.015*					
	(0.008)					
Area 1		0.012**				
		(0.005)				
Area 1B			0.002			
			(0.009)			
Area 2				−0.010		
				(0.008)		
Area 2A					−0.002	
					(0.002)	
Area 3						0.021***
						(0.008)
Num. Obs	105,890	105,890	105,890	105,890	105,890	105,890

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE A3 General health and economic freedom (ordered probit, income group of $15 k to $24,999).

	(1) General health	(2) General health	(3) General health	(4) General health	(5) General health	(6) General health
MEFI	0.017					
	(0.011)					
Area 1		0.012*				
		(0.007)				
Area 1B			−0.002			
			(0.013)			
Area 2				−0.004		
				(0.009)		
Area 2A					0.000	
					(0.002)	
Area 3						0.020**
						(0.010)
Num. Obs	64,095	64,095	64,095	64,095	64,095	64,095

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and subsidies as a percentage of personal income; Area 2A: Income and payroll tax revenue as a percentage of personal income.

TABLE A4 General health and economic freedom (ordered probit, income group of $14,999 or less).

	(1) General health	(2) General health	(3) General health	(4) General health	(5) General health	(6) General health
MEFI	−0.008					
	(0.014)					
Area 1		0.006				
		(0.008)				
Area 1B			−0.013			
			(0.014)			
Area 2				−0.048***		
				(0.010)		
Area 2A					−0.012***	
					(0.003)	
Area 3						0.010
						(0.014)
Num. Obs	40,577	40,577	40,577	40,577	40,577	40,577

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE B1 Physical health and economic freedom (Poisson, clustered standard errors, income group of $50 k or more).

	(1) Physical health	(2) Physical health	(3) Physical health	(4) Physical health	(5) Physical health	(6) Physical health
MEFI	0.003					
	(0.002)					
Area 1		0.002				
		(0.002)				
Area 1B			0.005*			
			(0.003)			
Area 2				0.000		
				(0.001)		
Area 2A					0.000	
					(0.000)	
Area 3						0.005***
						(0.002)
Num. Obs	171,615	171,615	171,615	171,615	171,615	171,615

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do *not* describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE B2 Physical health and economic freedom (Poisson, clustered standard errors, income group of $25 k to $49,000).

	(1) Physical health	(2) Physical health	(3) Physical health	(4) Physical health	(5) Physical health	(6) Physical health
MEFI	0.008*					
	(0.004)					
Area 1		0.006**				
		(0.003)				
Area 1B			0.004			
			(0.005)			
Area 2				0.007*		
				(0.004)		
Area 2A					0.001	
					(0.001)	
Area 3						0.004
						(0.004)
Num. Obs	92,473	92,473	92,473	92,473	92,473	92,473

Note: Standard errors are clustered at the MSA-level. Education, Race, Sex, Marital Status, Age, and Year Fixed Effects Included. Physical health is reported as the number of days out of the month (30 days max) that respondents do *not* describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE B3 Physical health and economic freedom (Poisson, clustered standard errors, income group of $15 k to $24,999).

	(1) Physical health	(2) Physical health	(3) Physical health	(4) Physical health	(5) Physical health	(6) Physical health
MEFI	0.000					
	(0.006)					
Area 1		−0.002				
		(0.004)				
Area 1B			−0.004			
			(0.004)			
Area 2				0.001		
				(0.006)		
Area 2A					0.000	
					(0.001)	
Area 3						0.004
						(0.005)
Num. Obs	56,641	56,641	56,641	56,641	56,641	56,641

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do *not* describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE B4 Physical health and economic freedom (Poisson, clustered standard errors, income group of $14,999 or less).

	(1) Physical health	(2) Physical health	(3) Physical health	(4) Physical health	(5) Physical health	(6) Physical health
MEFI	−0.009*					
	(0.006)					
Area 1		−0.007*				
		(0.004)				
Area 1B			−0.002			
			(0.004)			
Area 2				−0.016***		
				(0.005)		
Area 2A					−0.006***	
					(0.001)	
Area 3						0.002
						(0.005)
Num. Obs	35,880	35,880	35,880	35,880	35,880	35,880

Note: Standard errors are clustered at the MSA-level. Education, Race, sex, marital status, age, and year fixed effects included. Physical health is reported as the number of days out of the month (30 days max) that respondents do *not* describe their physical health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE C1 Mental health and economic freedom (Poisson, clustered standard errors, income group of $50 k or more).

	(1) Mental health	(2) Mental health	(3) Mental health	(4) Mental health	(5) Mental health	(6) Mental health
MEFI	0.008***					
	(0.002)					
Area 1		0.004***				
		(0.001)				
Area 1B			0.004			
			(0.002)			
Area 2				0.006***		
				(0.002)		
Area 2A					0.001	
					(0.001)	
Area 3						0.007***
						(0.002)
Num. Obs	171,698	171,698	171,698	171,698	171,698	171,698

Note: Standard errors are clustered at the MSA-level. Education, Race, Sex, Marital Status, Age, and Year Fixed Effects Included. Mental health is reported as the number of days out of the month (30 days max) that respondents do not describe their mental health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset.***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE C2 Mental health and economic freedom (Poisson, clustered standard errors, income group of $25 k to $49,000).

	(1) Mental health	(2) Mental health	(3) Mental health	(4) Mental health	(5) Mental health	(6) Mental health
MEFI	0.006					
	(0.004)					
Area 1		0.004				
		(0.002)				
Area 1B			0.002			
			(0.003)			
Area 2				0.007*		
				(0.004)		
Area 2A					0.001	
					(0.001)	
Area 3						0.003
						(0.004)
Num. Obs	92,852	92,852	92,852	92,852	92,852	92,852

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. Mental health is reported as the number of days out of the month (30 days max) that respondents do not describe their mental health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE C3 Mental health and economic freedom (Poisson, clustered standard errors, income group of $15 k to $24,999).

	(1) Mental health	(2) Mental health	(3) Mental health	(4) Mental health	(5) Mental health	(6) Mental health
MEFI	0.007					
	(0.005)					
Area 1		0.005*				
		(0.003)				
Area 1B			0.007*			
			(0.004)			
Area 2				0.003		
				(0.006)		
Area 2A					0.001	
					(0.001)	
Area 3						0.008**
						(0.004)
Num. Obs	57,003	57,003	57,003	57,003	57,003	57,003

Note: Standard errors are clustered at the MSA-level. Education, race, sex, marital status, age, and year fixed effects included. Mental health is reported as the number of days out of the month (30 days max) that respondents do not describe their mental health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.

TABLE C4 Mental health and economic freedom (Poisson, clustered standard errors, income group of $14,999 or less).

	(1) Mental health	(2) Mental health	(3) Mental health	(4) Mental health	(5) Mental health	(6) Mental health
MEFI	0.001					
	(0.005)					
Area 1		0.001				
		(0.004)				
Area 1B			0.006			
			(0.007)			
Area 2				−0.005		
				(0.004)		
Area 2A					−0.002	
					(0.001)	
Area 3						0.006
						(0.006)
Num. Obs	36,176	36,176	36,176	36,176	36,176	36,176

Note: Standard errors are clustered at the MSA-level. Education, Race, Sex, Marital Status, Age, and Year Fixed Effects Included. Mental health is reported as the number of days out of the month (30 days max) that respondents do not describe their mental health as "poor." Note this is the inverse of the reported data from BRFSS Smart dataset. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 2002, 2007, and 2012 are the only years included. Area 1B: Transfers and Subsidies as a Percentage of Personal Income; Area 2A: Income and Payroll Tax Revenue as a Percentage of Personal Income.