Economic Freedom and Happiness in U.S. Metropolitan Areas

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Abstract

Economic freedom has been shown to be positively associated with economic growth and a multitude of other outcomes, including measures of individual subjective well-being. We provide the first local-level examination of that latter relationship by conducting a multi-faceted investigation into the relationship between economic freedom, measured at the U.S. metropolitan statistical area level, and subjective well-being measures in the Gallup daily polls and the General Social Survey. Like previous work looking at countries and states, our results show a generally positive association between economic freedom and subjective well-being. The association is robust to the inclusion of Bartik-style instruments to control for endogeneity.

1 Introduction

The effect of economic freedom on both economic and social outcomes is of increasing importance. Surprising to many, economic freedom has been found to be correlated with many of the outcomes associated with social justice (Horpedahl et al., 2018) including: tolerance (Berggren and Nilsson, 2013; Gehring, 2013; Berggren and Nilsson, 2016), health and education (Nikolaev et al., 2014), civil and political rights (Aixalá and Fabro, 2009; Lawson and Clark, 2010), and social capital (Berggren and Jordahl, 2006). Social capital itself is also correlated with a host of desirable outcomes, yet as a policy goal itself, it remains incompatible with the social justice ideal of equal distribution (Jackson and Palm, 2017).

The study of institutions is foundational to the study of economic growth and development (North et al., 1990; Acemoglu et al., 2005). Institutions are also a key determinant of happiness and well-being (Frey and Stutzer, 2000; Berggren and Bjørnskov, 2020). According to Frey and Stutzer (2000, p. 918) "institutional conditions with regard to the extent and form of democracy have systematic and sizeable effects on individual well-being, in addition to demographic and economic factors." The importance of institutions for well-being has become so recognized as to have been the subject of a special issue in the European Journal of Political Economy (Bennett et al., 2016). Political institutions (Alvarez-Diaz et al., 2010; Frey and Stutzer, 2000, 2010), ideology (Bixter, 2015; Wassmer et al., 2009), and partisan politics (Di Tella and MacCulloch, 2005; Gabe and Silva, 2011; Jackson, 2019, 2020) have all been found to influence well-being.

One of the key institutional variables that has been found to be correlated with happiness and well-being is economic freedom. Economic freedom could influence well-being through many channels. Economic freedom is a well-known correlate to economic growth and income (Compton et al., 2011; Easton and Walker, 1997), which both in turn are associated with increased happiness (Diener and Oishi, 2000; Easterlin et al.,

2010; Inglehart et al., 2008; Veenhoven and Vergunst, 2014). Economic freedom also could influence entrepreneurship (Bennett, 2021a,b; Murphy et al., 2020) which then spills into economic growth and income in addition to causing happiness directly (Aghion et al., 2016; Murphy et al., 2020; Naudé et al., 2014). Furthermore, economic freedom has been shown by some to be associated with social capital and trust (Berggren and Jordahl, 2006; Graafland and Compen, 2015), which are amongst the most enduring causes of happiness and well-being (Bartolini et al., 2016; Bjørnskov, 2008; Helliwell, 2003). However, findings on that have been mixed, as Jackson et al. (2015) and Jackson (2017b) question the relationship between economic freedom and social capital in the United States.

While the effect of economic freedom on well-being has been explored using international variation (Veenhoven, 2000; Gropper et al., 2011) and variation across states in the U.S. (Jackson, 2017a), it has not yet been explored at the local level. Since there can be substantial variation in economic policy within states, this is a potentially fruitful area for further research on this topic. In the U.S. there are two large scale surveys which have consistently asked respondents questions regarding well-being: the Gallup daily polls and the General Social Survey (GSS). Geocodes for respondents' metropolitan area are available for both of these sources of data. We use both of these datasets on well-being to estimate the relationship with economic freedom at the metropolitan statistical area (MSA) level as measured by the 2022 update of the Metropolitan Area Economic Freedom Index (Stansel, 2013, 2019). We find that economic freedom at the MSA level is positively associated with happiness both for individual survey respondents and for aggregate responses in MSA's. We find that failing to correct for the endogeneity of the freedom index leads to an underestimation of that positive association of economic freedom with well-being.

The paper is organized as follows: Section 2 provides a literature review, Section 3 describes the data and methods used for our analysis, Section 4 gives our results, and Section 5 offers a conclusion.

2 Literature Review

Economic theory demonstrates that economic freedom can affect happiness and well-being through the choice set of individuals. When an individual has higher (lower) economic freedom, that individual has greater (fewer) options economically. Increasing (decreasing) the size of the constraint set that an individual optimizer is subject to, even while holding income constant, cannot make an individual less (more) well off and will likely allow (force) that individual to choose a better (worse) optimum. This effect doesn't include the psychological effects of increased autonomy and self-actualization which have also been shown to increase happiness (Howell et al., 2011; Ryan and Deci, 2001; Verme, 2009).

There are many studies that examine the effect of economic freedom on happiness and well-being using cross-country data. The majority of these papers use the Economic Freedom of the World (EFW) index (Gwartney et al., 2022) to measure economic freedom and the World Values Survey (WVS) for well-being data. Veenhoven (2000) finds that economic freedom as measured by the EFW, in addition to other notions of freedom, is positively correlated with the average happiness level in countries from the WVS. Welsch (2003) uses the same happiness data from the WVS yet focuses on the concept of political freedom as measured by Freedom House (2000) also finding a positive relationship between freedom and happiness. Gropper et al. (2011) again confirm the finding of Veenhoven (2000) while expanding the analysis to a much larger sample of countries. Gehring (2013) uses a panel of data covering the years 1990-2005 finding additional evidence of a positive relationship between economic freedom and happiness. The use of panel data allows for many potentially confounding factors to be controlled for as compared to the previous literature, which was primarily cross-sectional.

The study by Graafland and Compen (2015) does not use panel data but does conduct a more thorough analysis of the different dimensions of economic freedom while previous studies focused only on overall freedom. They find a positive relationship between economic freedom and happiness even while allowing trust and income to mediate the relationship. Nikolaev et al. (2014) looks at economic freedom and an expanded set of well-being indicators finding that economic freedom is positively associated with life satisfaction as well as many other dimensions of quality of life including: strong social support networks, better educational outcomes, civic engagement, safety, better job opportunities, and improved human development. Spruk and Kešeljević (2016) conduct both cross-sectional and longitudinal analysis. In their cross-sectional analysis they

provide extensive documentation of the positive relationship between economic freedom and happiness after controlling for cross-country institutional variation and potential endogeneity using instrumental variables. This is also the first paper to apply generalized method of moments estimation of a dynamic panel model to look at the effect of economic freedom on average country happiness. Unlike previous literature, their dynamic panel estimation reveals a negative effect of economic freedom on happiness over time.

In addition to the EFW, the Fraser Institute also publishes the Economic Freedom of North America index (EFNA) (Stansel et al., 2022) which measures variation in economic freedom across US states, Mexican states, and Canadian provinces. Jackson (2017a) used the EFNA index along with happiness data from the General Social Survey to look at the relationship between economic freedom and happiness in U.S. states. The analysis looked at both individual happiness and average state happiness, finding a positive association with both. Of particular importance, Jackson (2017a) closely followed the dynamic panel methods of Spruk and Kešeljević (2016) and corrected for several of its methodological shortcomings. Jackson's findings contradict those of Spruk and Kešeljević (2016) finding the effect of economic freedom at the state level to be positive even using dynamic panel estimation. In a series of two papers (Belasen and Hafer, 2012, 2013), authors Belasen and Hafer use the well-being index of Pesta et al. (2010) and the EFNA to test the effect of economic freedom on well-being in US states. These papers find that increases in economic freedom (measured as a change) are correlated with higher well-being index scores.

The EFNA index has also been used in a number of studies that show its relationship with known covariates of well-being. An extensive review of papers using the EFNA can be found in Tuszynski and Stansel (2018). In particular, EFNA has been found to be positively associated with economic growth (Compton et al., 2011), income (Wiseman and Young, 2018), entrepreneurship (Powell and Weber, 2013; Murphy et al., 2020; Wiseman and Young, 2018), and charitable giving (Jackson and Beaulier, 2023).

While economic freedom indices exist to document variation across countries and across states within a country, economic freedom also varies across metropolitan areas. Stansel (2013) developed the U.S. Metro Area Economic Freedom Index (MEFI) for metropolitan areas within the U.S. which mimics much of the methodology of the EFNA. The MEFI has now been updated to span multiple time periods (Stansel, 2019). (Most of the local data used to construct the index is from the U.S. Census Bureau and is available only every five years. To maximize our use of available data, we used linear interpolation to fill in the values for the intervening years.) To date, no research has explored the connection between economic freedom at the local level and measures of well-being. However, the MEFI has been used successfully in many recently published studies. Millsap et al. (2019) found that MEFI scores were positively correlated with increased intergovernmental competition. It has long been held that such competition amongst political jurisdictions allows mobile residents to better align their preference for local public goods and taxes with their preferred mix (Tiebout, 1956). This increased competition should then lead to increases in reported well-being.

Bennett (2021a) shows that MEFI is positively correlated with firm and job creation while having no effect on job destruction. Bennett (2021b) further explores this by deconstructing the MEFI into its subcomponents to expose the effect that each has on firm entry and exit rates at the MSA level. Finally, Arif et al. (2020) found that higher metro area economic freedom was associated with higher net population in-migration, supporting the idea that people vote with their feet in favor of greater economic freedom. Each of these papers is able to exploit the panel nature of the data to control for fixed effects at the metropolitan area level. We build on that literature by employing the MEFI to examine the relationship between metropolitan area economic freedom and well-being.

The MEFI index provides an overall index of economic freedom as well as sub-indices for three areas. Area 1 is an index based upon measures of government spending at the state and local level as a percentage of personal income. Higher government spending in the marketplace displaces private spending and reduces economic freedom. Therefore, metropolitan areas with lower government spending have a higher value for the area 1 sub-index. The area 2 sub-index is based upon measures of state and local tax revenue as a percentage of personal income. The more private income that is appropriated by government through taxation the less freedom individuals have to spend their income as they see fit. Higher scores in the area 2 sub-index correspond to lower tax revenue relative to personal income. The last sub-index, area 3, is based upon measures of freedom in labor markets. A higher minimum wage, increased government share of local employment, and increased union density all correspond to lower economic freedom. For a more detailed description of the MEFI index and the sub-indices see Stansel (2019).

3 Data and Methods

Our objective is to examine the relationship between economic freedom as measured by the MEFI and individual well-being. To do this we use data from four sources: the MEFI index itself, the Gallup Daily polls, the GSS, and the U.S. Bureau of Economic Analysis.

While many economists have described well-being measures as something akin to the notion of utility, they are actually measuring something quite different. Subjective well-being (SWB) is an individual self-assessment of how life is going and is usually measured by survey questions. Survey respondents are asked to think about their life overall, perhaps comparing their life to some ideal, and provide a numerical score, from a provided scale, of their own SWB. This is different than the notion of utility as a function to be maximized in the course of decision-making. Utility, for the economist, is something that is maximized to choose from available alternatives at the moment a decision is made. Subjective well-being is a retroactive assessment of the overall satisfaction with one's life taken as a whole and is not an assessment of any one decision previously made. Indeed, SWB goes well beyond an assessment of the utility one receives from consumption goods and encompasses notions of a life well-lived. There are two main sources of large-scale data on SWB in the U.S. The Gallup U.S. Poll started in 2008 and continued through 2017.

Every day Gallup polled one thousand U.S. adults as a part of the Gallup Daily Poll. The poll asked respondents a variety of demographic and topical questions including a SWB question known as the Cantril Self-Anchoring Scale. The GSS has been conducted by NORC at the University of Chicago since 1972. The survey had been run annually, excluding a few years, until 1994, after which it has been run in even years only. The GSS also asks respondents a variety of demographic and topical questions including a general happiness question. While the Gallup Daily Poll is administered over the phone (both landlines and cell phones), the GSS is administered by in-person interview. Thousands of individuals complete a GSS interview each year. Both the GSS and Gallup Daily Poll are designed to be representative of the U.S. population and not any one geographic region. Despite this limitation, geographic codes, including the metropolitan area of residence for the respondent, are available for both surveys.

The Cantril life satisfaction question asked by the Gallup Daily Poll is unique amongst survey self-reported SWB because it is self-anchoring. Individuals are given a frame to interpret the different numerical responses of the question. The life satisfaction question is stated as follows:

> "Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"

The general happiness question administered by the GSS has a much shorter scale. The question asked by the GSS is stated as follows:

> "Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?"

The GSS question only gives respondents a selection of three options. We have coded responses so that a response of very happy is a 3, pretty happy is a 2, and not too happy is a 1. In our sample the average response to the Cantril life satisfaction question is 7.06 and the average response to the general happiness question is 2.17.

We have responses for the Gallup U.S. Daily Polls for the years 2008 through 2017 along with the metropolitan area geocode of the respondent. However, due to a lack of survey weights in 2008 and sparce survey weights in 2009, our sample makes use of Gallup individual responses from 2010 to 2017.[1] For the GSS, our sample uses individual responses and metropolitan area geocodes for the years 1993 through 2017.[2]

[1] All of our analysis of Gallup and GSS data makes use of survey weights to correct for selection probability and nonresponse biases and further make the analysis representative of the U.S. population.

[2] The GSS was conducted in the years 1993 and 1994. Following 1994, the survey was conducted in even years only.

Table 1: Summary Statistics for GSS Individual Data Sample

Variable	**N**	**Mean**	**SD**	**Min**	**Max**
Happy	64,068	2.172	0.641	1	3
Overall	42,844	6.452	0.913	3.430	8.807
Area 1	42,844	6.852	1.193	1.046	9.628
Area 2	42,844	5.839	0.869	1.687	9.258
Area 3	42,844	6.664	1.642	1.908	9.819
Real Income	61,802	32,214	30,290	218	162,607
Age	68,285	46.43	17.57	18	89
Children	68,596	1.926	1.764	0	8
Education Years	68,603	12.98	3.187	0	20
Male	68,754	0.441	0.497	0	1
Female	68,754	0.559	0.497	0	1
White	68,792	0.802	0.399	0	1
Black	68,792	0.140	0.347	0	1
Race Other	68,792	0.0581	0.234	0	1
Married	68,810	0.525	0.499	0	1
Widowed	68,810	0.0945	0.292	0	1
Divorced	68,810	0.131	0.338	0	1
Separated	68,810	0.0340	0.181	0	1
Never Married	68,810	0.215	0.411	0	1
Working Full Time	68,817	0.489	0.500	0	1
Working Part Time	68,817	0.103	0.304	0	1
Employed Not Working	68,817	0.0213	0.144	0	1
Unemployed Looking	68,817	0.0355	0.185	0	1
Retired	68,817	0.147	0.354	0	1
In School	68,817	0.0303	0.171	0	1
Keeping House	68,817	0.152	0.359	0	1
Other	68,817	0.0213	0.144	0	1

We investigate the correlation between MEFI and well-being using linear regression methods. To isolate this relationship, we also control for a variety of individual characteristics that explain individual variation in SWB based on previous literature and mimick the controls from Jackson (2017a). We include controls for income, age, number of children, education, sex, race, marital status, and work status. Table 1 gives summary statistics for the GSS data used to study general happiness and Table 2 gives summary statistics for the Gallup Daily Poll data used to study life satisfaction.

To investigate the relationship between well-being and MEFI, we first estimate equation 1 below using pooled cross-sectional data from the GSS where the dependent variable is the happiness score for individual i residing in metropolitan area j, α is the constant, β is a vector of parameters of interest, MEFI is a vector of MEFI scores; γ is a vector of parameters for variables in control matrix X, and δ is a vector of parameters for matrix D which includes metro area dummies and time trends. The error term is ϵ_{ij}.

$$\text{Happy}_{ij} = \alpha + \beta \text{MEFI}_j + \gamma X_i + \delta D_j + \epsilon_{ij} \tag{1}$$

We then conduct a similar pooled cross-sectional analysis of individual responses to the Gallup Daily polls. We estimate equation 2 below where the dependent variable is the life satisfaction score for individual i residing in metropolitan area j, α is the constant, β is a vector of parameters of interest, MEFI is a vector of MEFI scores; γ is a vector of parameters for variables in control matrix X, and δ is a vector of parameters for matrix D which includes metro area and time dummies. The error term is ϵ_{ij}.

$$\text{Life Satisfaction}_{ij} = \alpha + \beta \text{MEFI}_j + \gamma X_i + \delta D_j + \epsilon_{ij} \tag{2}$$

Our GSS and Gallup data contains observations of individuals at different points of time. While we don't have repeat observations of individual survey responses, it is possible to calculate metropolitan area average

Table 2: Summary Statistics for Gallup Individual Data Sample

Variable	**Mean**	**SD**	**Min**	**Max**
Life Satisfaction	7.06	1.89	0.00	10.00
Overall	6.77	0.80	3.82	8.81
Area 1	6.40	1.01	2.11	9.04
Area 2	5.94	0.90	1.85	9.26
Area 3	7.98	0.89	4.07	9.82
Under $720	0.01	0.12	0.00	1.00
$720 to $5,999	0.01	0.11	0.00	1.00
$6,000 to $11,999	0.04	0.21	0.00	1.00
$12,000 to $23,999	0.12	0.32	0.00	1.00
$24,000 to $35,999	0.13	0.33	0.00	1.00
$36,000 to $47,999	0.11	0.32	0.00	1.00
$48,000 to $59,999	0.11	0.31	0.00	1.00
$60,000 to $89,999	0.19	0.39	0.00	1.00
$90,000 to $119,999	0.10	0.29	0.00	1.00
$120,000 and over	0.18	0.39	0.00	1.00
Age	52.43	17.79	18.00	99.00
Children	0.58	1.07	0.00	15.00
Less than high school diploma	0.05	0.22	0.00	1.00
High school degree or diploma	0.19	0.39	0.00	1.00
Technical/Vocational school	0.06	0.23	0.00	1.00
Some college	0.25	0.43	0.00	1.00
College graduate	0.24	0.43	0.00	1.00
Post graduate work or degree	0.21	0.41	0.00	1.00
Female	0.49	0.50	0.00	1.00
Male	0.51	0.50	0.00	1.00
Asian	0.02	0.15	0.00	1.00
Black	0.10	0.30	0.00	1.00
Hispanic	0.09	0.28	0.00	1.00
Other Race	0.02	0.14	0.00	1.00
White	0.78	0.42	0.00	1.00
Divorced	0.11	0.32	0.00	1.00
Domestic Partnership	0.04	0.20	0.00	1.00
Married	0.54	0.50	0.00	1.00
Separated	0.02	0.14	0.00	1.00
Single/Never Married	0.20	0.40	0.00	1.00
Widowed	0.09	0.29	0.00	1.00
Employed Full Time	0.44	0.50	0.00	1.00
Self Employed Full Time	0.05	0.21	0.00	1.00
Part Time, Don't Want Full Time	0.07	0.26	0.00	1.00
Part Time, Want Full Time	0.05	0.22	0.00	1.00
Not in Work Force	0.35	0.48	0.00	1.00
Unemployed	0.04	0.20	0.00	1.00
Observations	1,165,088			

happiness for each year. Jackson (2017a) did a similar analysis aggregating happiness by state for each year. To maintain comparability to Jackson (2017a) we also obtained data on personal income and population for each metropolitan area from the Bureau of Economic Analysis. We used this to calculate personal income per capita. Because the GSS is designed as a nationally representative sample, most metropolitan areas have a low number of responses in any single year which precludes the validity of any panel analysis on MSA averages. However, the Gallup data contains a large sample size at the MSA level. Table 3 gives summary statistics for the Gallup Daily Poll data organized for panel analysis of MSA average life satisfaction for the years 2010-2017.

To analyze the data in a panel format, we estimate equation 3 below where the dependent variable is the

Table 3: Summary Statistics for Gallup Data Sample, MSA Averages

Variable	**Mean**	**SD**	**Min**	**Max**
Life Satisfaction	6.94	0.25	5.69	8.42
Overall	6.72	0.78	3.82	8.81
Area 1	6.36	1.05	2.11	9.04
Area 2	6.11	0.84	1.85	9.26
Area 3	7.70	0.96	4.07	9.82
Personal Income	0.04	0.01	0.02	0.12
Observations	2784			

average life satisfaction of Gallup respondents residing in the j-th metro area in year t, α is the constant, β is a vector of parameters of interest, MEFI is a vector of MEFI scores; γ is a vector of parameters for variables in control matrix X, δ is a vector of parameters for matrix D which includes metro area and time dummies, and ϵ_{jt} is the error term.

$$\text{Life Satisfaction}_{jt} = \alpha + \beta \text{MEFI}_{jt} + \gamma X_{jt} + \delta D_j + \epsilon_{jt} \tag{3}$$

Both equations 1 and 2 are estimated, primarily, using OLS regression. Test statistics for panel estimation of equation 3 demonstrate that the correct method of estimation is to use a random effect approach using GLS regression. All standard errors are robust and clustered by metro area. All regressions were conducted using the appropriate survey weights.

In almost any correlational research design, the possibility of endogeneity exists. This is true in our design as well. In particular, endogeneity is of concern because the metropolitan area of residence is not subject to random assignment but is in fact a choice made by the individual or household. In an effort to provide additional evidence that the coefficient estimates for MEFI can be interpreted as possibly causal, we also conduct analysis using instrumental variable methods. There are no firmly established instruments to use for economic freedom indices and many past studies have relied on internally created instruments as are generally used in system GMM estimation of dynamic panel models. This is not possible in the present study. Instead, we create Bartik style shift share instruments (Broxterman and Larson, 2020; Goldsmith-Pinkham et al., 2020) for MEFI following the same procedure as Jackson and Beaulier (2023) did for economic freedom of US states. Bartik instruments were first developed (Bartik, 1991) to create a plausibly exogenous instrument for local employment growth rates for the study of local economic growth. Bartik style instruments are now applied to estimate causal effects for a wide range of "endogenous treatment variables that are aggregated at some regional level" (Broxterman and Larson, 2020, p. 678).

The instruments used in our IV analysis are constructed from the following procedure. First, we calculate the sum of the MEFI index values over all metropolitan areas in 1972. Then, we subtract the 1972 value of MEFI for each individual metro area. From this we then calculate the share of total economic freedom for metro area j as below.

$$S_j = \frac{\text{MEFI}_{(j,t=1972)}}{\sum_{\forall j} \text{MEFI}_{(j,t=1972)} - \text{MEFI}_{(j,t=1972)}}$$

These shares are then used to predict the MEFI values for future years according to the following equation.

$$\text{Predicted MEFI}_{jt} = S_j \cdot \left(\sum_{\forall j} \text{MEFI}_{jt} - \text{MEFI}_{jt} \right)$$

These Predicted MEFI values are then used as instruments for each respective metro area freedom index. A good instrument needs to satisfy two conditions: relevance and exclusion. A relevant instrument needs to be strongly correlated with the endogenous variable. By construction, the Predicted MEFI values are highly correlated with the actual index values, and this is confirmed by first stage regression results of our two-stage least squares estimates.

Institutional variables such as economic freedom display persistence over time and are slow moving. The instruments evolve over time based on the general growth trend of economic freedom across all metro areas and the distribution of economic freedom as it was in 1972. The instruments satisfy exclusion as long as the economic freedom across metro areas is independent from the others, and the economic freedom of one metro area has no effect on the well-being in the other metro areas.

For time periods beyond 1972, the economic freedom of metro area j is not included in the Predicted MEFI$_{jt}$ value as it is only used for the share calculation. The shares of economic freedom in 1972 "measure the differential exogenous exposure to the common" trend in economic freedom. [3] By construction, our Bartik style instruments remove variation from exogenous trends in the aggregate economic freedom, with identification coming from local deviations that aren't explained by the aggregate trend.

4 Results

We begin our empirical analysis with OLS regression of equation (1) using the pooled cross-sectional data from the GSS.[4] Table 4 shows regression output of equation 1 without any controls included while Table 5 includes them. Column 1 of each table gives regression results for the overall economic freedom index while columns 2-4 include the respective freedom sub-indices individually. The results in column 5 come from a regression that includes all sub-indices together in one regression.

Table 4: Regression Results

Variables	(1)	(2)	(3)	(4)	(5)
Overall	0.0307*				
	(0.0163)				
Area 1		-0.00965			-0.0222**
		(0.00953)			(0.0107)
Area 2			-0.0278		-0.00442
			(0.0173)		(0.0188)
Area 3				0.0341***	0.0380***
				(0.00838)	(0.00940)
Observations	26,750	26,750	26,750	26,750	26,750
R-squared	0.014	0.014	0.014	0.015	0.015

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4 reveals a positive and highly statistically significant relationship between happiness and MEFI measured at the overall level and for the area 3 sub-index on labor market freedom. When all three indices are included together, area 1, government size, has a negative coefficient that is significant at the 5% level while area 3 has a positive coefficient that is significant at the 1% level. When controls are included, as in Table 5, the correlational patterns are quite similar. Overall economic freedom maintains a positive coefficient which is significant at the 10% level. The only sub-index that remains with a statistically significant, at the 1% level, is the one for area 3.

With controls included, the coefficient for the overall economic freedom index is .0302. An increase in the overall freedom index of one standard deviation results in an increase in average happiness of .0463. This explains 4.3% of the standard deviation in individual happiness scores. (A one SD increase in economic freedom is 0.913 on the 0 to 10 scale. That would be equivalent to the New York City MSA moving up from 52nd out of the 53 largest MSA's to 41st or the Dallas-Ft. Worth MSA moving down from 5th to 23rd.) The coefficient for area 3 in column 5 is .306. From this we calculate that a one standard deviation increase in the area 3 sub-index score results in an increase in average happiness that explains 7.8% of the standard deviation in individual happiness.

[3] Quote taken from Goldsmith-Pinkham et al. (2020).

[4] All regressions reported using individual GSS responses used the wtssall weights provided by NORC. For details on these weights please see the GSS documentation.

Table 5: Regression Results

VARIABLES	(1)	(2)	(3)	(4)	(5)
Overall	0.0302*				
	(0.0173)				
Area 1		-0.00316			-0.0133
		(0.0102)			(0.0111)
Area 2			-0.0199		-0.00251
			(0.0180)		(0.0195)
Area 3				0.0282***	0.0306***
				(0.00828)	(0.00952)
Real Income	1.82e-06***	1.81e-06***	1.81e-06***	1.82e-06***	1.82e-06***
	(1.59e-07)	(1.58e-07)	(1.58e-07)	(1.59e-07)	(1.59e-07)
Age	0.00154***	0.00152***	0.00153***	0.00155***	0.00155***
	(0.000485)	(0.000486)	(0.000483)	(0.000482)	(0.000482)
Children	-0.00925***	-0.00931***	-0.00928***	-0.00913***	-0.00913***
	(0.00262)	(0.00263)	(0.00263)	(0.00261)	(0.00261)
Education Years	0.0102***	0.0103***	0.0103***	0.0101***	0.0101***
	(0.00156)	(0.00156)	(0.00156)	(0.00156)	(0.00156)
Male	0.0477***	0.0479***	0.0480***	0.0474***	0.0473***
	(0.00975)	(0.00975)	(0.00976)	(0.00975)	(0.00974)
Black	-0.113***	-0.112***	-0.112***	-0.113***	-0.112***
	(0.0146)	(0.0146)	(0.0146)	(0.0147)	(0.0147)
Race Other	-0.0418*	-0.0418*	-0.0420*	-0.0424**	-0.0426**
	(0.0213)	(0.0214)	(0.0214)	(0.0213)	(0.0213)
Widowed	-0.265***	-0.264***	-0.265***	-0.265***	-0.265***
	(0.0175)	(0.0175)	(0.0174)	(0.0174)	(0.0174)
Divorced	-0.262***	-0.262***	-0.262***	-0.263***	-0.263***
	(0.0152)	(0.0151)	(0.0151)	(0.0152)	(0.0152)
Separated	-0.354***	-0.354***	-0.354***	-0.354***	-0.354***
	(0.0291)	(0.0291)	(0.0292)	(0.0291)	(0.0292)
Never Married	-0.200***	-0.200***	-0.200***	-0.200***	-0.200***
	(0.0117)	(0.0117)	(0.0116)	(0.0116)	(0.0116)
Working Full Time	-0.00868	-0.00894	-0.00888	-0.00830	-0.00831
	(0.0134)	(0.0134)	(0.0134)	(0.0134)	(0.0134)
Working Part Time	-0.0214	-0.0226	-0.0224	-0.0205	-0.0210
	(0.0286)	(0.0283)	(0.0284)	(0.0285)	(0.0283)
Employed Not Working	-0.218***	-0.219***	-0.218***	-0.216***	-0.216***
	(0.0294)	(0.0294)	(0.0293)	(0.0294)	(0.0293)
Unemployed Looking	0.0430**	0.0431**	0.0431**	0.0433**	0.0435**
	(0.0187)	(0.0187)	(0.0186)	(0.0187)	(0.0187)
Retired	0.0715***	0.0705***	0.0708***	0.0720***	0.0716***
	(0.0268)	(0.0268)	(0.0268)	(0.0268)	(0.0268)
Keeping House	0.00410	0.00290	0.00313	0.00546	0.00529
	(0.0151)	(0.0152)	(0.0152)	(0.0150)	(0.0150)
Other	-0.196***	-0.197***	-0.197***	-0.195***	-0.195***
	(0.0305)	(0.0305)	(0.0305)	(0.0306)	(0.0306)
Observations	24,012	24,012	24,012	24,012	24,012
R-squared	0.093	0.093	0.093	0.094	0.094

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Tables 6 and 7 present the results from two stage least squares regressions using Predicted MEFI values as instruments for each respective MEFI index using the same pooled cross-sectional data as was used to construct Tables 4 and 5. For the most part, Tables 6 and 7 reflect the same relationships found in Table 4 and 5: a positive relationship between overall economic freedom scores and happiness which appears to be attributed primarily to area 3, labor market freedom.

However, the magnitude of coefficients is much larger in the two stage least squares regressions suggesting that endogeneity biased some of the OLS results downwards. The coefficient value for the overall score in Table 7 of .0864 indicates a magnitude of effect such that a one standard deviation increase in the overall economic freedom score will correspond with an increase in happiness that is more than 12% of its standard deviation. Using the .0492 coefficient for the area 3 score in Table 7, a one standard deviation increase in the area 3 economic freedom score also explains more than 12% of a standard deviation in happiness,

Table 6: Regression Results

VARIABLES	(1)	(2)	(3)	(4)	(5)
Overall	0.0828***				
	(0.0276)				
Area 1		-0.0166			-0.0621*
		(0.0262)			(0.0330)
Area 2			-0.0861***		0.0336
			(0.0291)		(0.0471)
Area 3				0.0410***	0.0581***
				(0.00913)	(0.0180)
Observations	26,750	26,750	26,750	26,750	26,750
R-squared	0.014	0.014	0.014	0.015	0.014

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

almost three times more than in the previous results. There are negative coefficient estimates that appear for areas 1 and 2 but this pattern is inconsistent across the specifications and estimation methods. The positive relationship between happiness and the overall freedom score and the area 3 sub-index remains consistent.

We now move to an analysis of the Gallup Daily Poll life satisfaction data. We begin our empirical analysis with OLS regression of equation (2) using the pooled cross-sectional data from the Gallup Daily Polls.

Tables 8 and 9 give estimation results analogous to the results in Tables 4 and 5 for the GSS both without and with, respectively, control variables included in the regressions. Regardless of the inclusion of controls, the coefficients for the overall freedom score and the area 2 sub-index, taxation, have positive and statistically significant coefficients across specifications. The area 3 sub-index also has a positive and statistically significant coefficient when it is the only variable of interest in the equation but fails to get significance when all three sub-indices are included simultaneously. Using the coefficient estimate of .059 for the overall freedom score, a one standard deviation increase in the overall freedom index corresponds to an increase in life satisfaction of .0472 on average. This increase is 2.5% of a standard deviation in reported life satisfaction. (In this sample, a one SD increase in economic freedom is 0.80 on the 0 to 10 scale. That would be equivalent to the New York City MSA moving up from 52nd out of the 53 largest MSA's to 42nd or the Dallas-Ft. Worth MSA moving down from 5th to 20th.) Using the coefficient estimate of .053 on sub-index 2, taxation, a one standard deviation increase in the area 2 score corresponds to an increase in life satisfaction that is 2.5% of a standard deviation in life satisfaction.

Appendix Tables A1 and A2 present the results from two stage least squares regressions using Predicted MEFI values as instruments for each respective MEFI index using the same pooled cross-sectional data as was used to construct Tables 8 and 9. The coefficient estimates for the overall index are positive and statistically significant at the 5% and 1% levels in Tables A1 and A2, respectively. Not only are the coefficients from two stage least squares more statistically significant, they also have a substantially higher magnitude. Using the coefficient estimate for the overall freedom score of .317, a one-standard deviation increase in the overall freedom score corresponds to an increase in life satisfaction that explains nearly 13% of the standard deviation in life satisfaction, over five times more than in the previous results. The only subindex to get a statistically significant coefficient is that of the area 2 score in column 3 of Table A2. Here, the coefficient for the area 2 sub-index is negative and statistically significant at the 10% level. The area 2 coefficient is insignificant in all other specifications.

We now move to a panel analysis of metropolitan area averages (rather than individual-level data) for life satisfaction scores from the Gallup Daily Polls. For this analysis we conducted random effects estimation of equation 3. Table 10 shows regression output for random effects regression on the Gallup panel data for the years 2010-2017. Odd columns include no controls while the even columns include per capita personal income as a control. This maintains comparability with Tables 6-9 of Jackson (2017a) which performed a similar analysis of GSS data using state averages and the Economic Freedom of North America index for U.S. states.

Table 7: Regression Results

VARIABLES	(1)	(2)	(3)	(4)	(5)
Overall	0.0864***				
	(0.0274)				
Area 1		0.0126			-0.0254
		(0.0268)			(0.0330)
Area 2			-0.0583**		0.0431
			(0.0282)		(0.0544)
Area 3				0.0353***	0.0492**
				(0.00869)	(0.0199)
Real Income	1.83e-06***	1.82e-06***	1.81e-06***	1.82e-06***	1.82e-06***
	(1.58e-07)	(1.57e-07)	(1.56e-07)	(1.57e-07)	(1.58e-07)
Age	0.00157***	0.00153***	0.00154***	0.00156***	0.00155***
	(0.000479)	(0.000480)	(0.000476)	(0.000476)	(0.000479)
Children	-0.00915***	-0.00929***	-0.00922***	-0.00909***	-0.00910***
	(0.00258)	(0.00259)	(0.00260)	(0.00258)	(0.00257)
Education Years	0.0101***	0.0103***	0.0103***	0.0100***	0.00990***
	(0.00154)	(0.00154)	(0.00154)	(0.00155)	(0.00154)
Male	0.0473***	0.0479***	0.0481***	0.0472***	0.0468***
	(0.00967)	(0.00966)	(0.00969)	(0.00966)	(0.00964)
Black	-0.113***	-0.113***	-0.111***	-0.113***	-0.113***
	(0.0146)	(0.0145)	(0.0144)	(0.0146)	(0.0146)
Race Other	-0.0418**	-0.0416**	-0.0424**	-0.0425**	-0.0426**
	(0.0210)	(0.0211)	(0.0213)	(0.0211)	(0.0210)
Widowed	-0.266***	-0.265***	-0.265***	-0.266***	-0.266***
	(0.0172)	(0.0173)	(0.0172)	(0.0172)	(0.0173)
Divorced	-0.264***	-0.262***	-0.262***	-0.263***	-0.263***
	(0.0150)	(0.0150)	(0.0150)	(0.0150)	(0.0150)
Separated	-0.354***	-0.354***	-0.354***	-0.354***	-0.353***
	(0.0287)	(0.0288)	(0.0290)	(0.0288)	(0.0288)
Never Married	-0.199***	-0.200***	-0.200***	-0.200***	-0.199***
	(0.0116)	(0.0115)	(0.0115)	(0.0115)	(0.0115)
Working Full Time	-0.00821	-0.00887	-0.00881	-0.00814	-0.00804
	(0.0132)	(0.0133)	(0.0133)	(0.0132)	(0.0131)
Working Part Time	-0.0193	-0.0219	-0.0222	-0.0201	-0.0205
	(0.0287)	(0.0283)	(0.0281)	(0.0283)	(0.0281)
Employed Not Working	-0.216***	-0.218***	-0.216***	-0.215***	-0.216***
	(0.0290)	(0.0290)	(0.0291)	(0.0290)	(0.0289)
Unemployed Looking	0.0428**	0.0429**	0.0431**	0.0433**	0.0438**
	(0.0185)	(0.0185)	(0.0184)	(0.0185)	(0.0186)
Retired	0.0730***	0.0712***	0.0711***	0.0724***	0.0716***
	(0.0265)	(0.0265)	(0.0264)	(0.0265)	(0.0267)
Keeping House	0.00617	0.00336	0.00339	0.00608	0.00625
	(0.0150)	(0.0151)	(0.0150)	(0.0149)	(0.0149)
Other	-0.195***	-0.197***	-0.196***	-0.195***	-0.195***
	(0.0302)	(0.0301)	(0.0303)	(0.0303)	(0.0302)
Observations	24,012	24,012	24,012	24,012	24,012
R-squared	0.093	0.093	0.093	0.094	0.093

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 10 shows a general positive and statistically significant relationship between MEFI and average metropolitan area life satisfaction. The overall index has positive and statistically significant coefficients at the 1% and 5% level in columns 1 and 2, respectively. Using a coefficient value of .0258, a one standard deviation increase in the overall freedom score results in an increase in average metropolitan area life satisfaction of .020124. This is an increase that is 8% of the standard deviation in average metropolitan area life satisfaction. (In this sample, a one SD increase in economic freedom is 0.78 on the 0 to 10 scale. That would be equivalent to the same changes in MSA rankings described previously for the individual-level analysis of the Gallup data.) The strongest relationship between average life satisfaction and the economic freedom subindices come from areas 1 and 2. The coefficient for area 1 is positive and statistically significant in columns 3, 4, 9, and 10. The coefficient for area 2 is positive and statistically significant in columns 5, 6, and 10 but fails to gain significance in column 9. Using coefficient estimates of .0196 and .0236 for area 1 and 2,

Table 8: Regression Results

	(1)	(2)	(3)	(4)	(5)
Overall	0.0610*				
	(0.0313)				
Area 1		0.00820			-0.00550
		(0.0208)			(0.0203)
Area 2			0.0691**		0.0631*
			(0.0319)		(0.0334)
Area 3				0.0250*	0.0186
				(0.0138)	(0.0142)
Observations	1,165,088	1,165,088	1,165,088	1,165,088	1,165,088
R-squared	0.004	0.004	0.004	0.004	0.004

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Regression Results

	(1)	(2)	(3)	(4)	(5)
Overall	0.306**				
	(0.121)				
Area 1		2.279			-0.0374
		(9.097)			(1.574)
Area 2			-0.392		-0.889
			(0.241)		(1.169)
Area 3				0.0233	0.175
				(0.0358)	(0.176)
Observations	1,165,088	1,165,088	1,165,088	1,165,088	1,165,088
R-squared	0.004	0.003	0.004	0.001	

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

respectively from column 10, a one standard deviation increase in either the area 1 or area 2 sub-index results in an increase in average life satisfaction that is approximately 8% of the standard deviation in average life satisfaction.

Table 10: Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Overall	0.0367***	0.0258**								
	(0.0111)	(0.0107)								
Area 1			0.0329***	0.0196**					0.0336***	0.0159*
			(0.00863)	(0.00846)					(0.00932)	(0.00889)
Area 2					0.0233***	0.0236***			0.00668	0.0167*
					(0.00841)	(0.00775)			(0.0105)	(0.00898)
Area 3							0.0111	0.00683	-0.00794	-0.00602
							(0.00790)	(0.00750)	(0.00813)	(0.00796)
Personal Income		6.306***		6.118***		6.581***		6.497***		6.248***
		(0.953)		(0.964)		(0.944)		(0.951)		(0.949)
Observations	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784
Adj. R-squared	0.00944	0.0448	0.00798	0.0428	0.00291	0.0444	0.00817	0.0418	0.00652	0.0440

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 11 shows the corresponding regression output for two-stage least squares estimation using our Bartik style instruments for MEFI. Coefficients for the Overall index remain positive and statistically significant when controlling for potential endogeneity of economic freedom and the magnitude of the effect of overall freedom on average life satisfaction is highly comparable to the results in Table A2. The coefficient for the area 1 sub-index remains positive and statistically significant in all specifications except column 10 where it fails to be significant. The magnitude of the area 1 coefficients is slightly larger than the magnitude from Table A2. Area 2 only has a significant, and positive, coefficient in column 6 while area 3 now has positive

and statistically significant, at the 1% level, coefficients in columns 7 and 8. None of the coefficients for the economic freedom sub-indices were statistically significant in column 10.

Table 11: Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Overall	0.0238*	0.0261**								
	(0.0133)	(0.0128)								
Area 1			0.0320***	0.0288**					0.0467**	0.0336
			(0.0123)	(0.0122)					(0.0212)	(0.0210)
Area 2					0.0216	0.0287**			-0.00306	0.0127
					(0.0132)	(0.0120)			(0.0180)	(0.0162)
Area 3							0.0223*	0.0200*	-0.0141	-0.0157
							(0.0116)	(0.0111)	(0.0203)	(0.0192)
Personal Income		5.359***		5.854***		6.545***		5.780***		5.900***
		(0.977)		(0.973)		(0.944)		(0.972)		(1.006)
Observations	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784
Adj. R-squared	0.00944	0.0448	0.00798	0.0413	0.00291	0.0442	0.00817	0.0426	0.00531	0.0395

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

While there were a few negative coefficients for the area 2 and area 3 sub-indices in our analysis of happiness and life satisfaction from the GSS and Gallup Daily Polls, these negative results were inconsistent across the range of our analysis. Strikingly, the coefficient for the overall economic freedom index was positive and statistically significant in every regression of our analysis. Table 12 provides a summary of the sign and significance of coefficients reported in Tables 4 through 10. Coefficients for area 1 were consistently positive and statistically significant in the panel analysis but only got statistical significance in cross-sectional analysis of the GSS data when no controls were included. The coefficients for area 3 were positive and statistically significant in all regressions using the GSS data and was also positive and statistically significant in some of the regressions with Gallup individual and panel data. The coefficients for area 2 were the most mixed in the study. Of the 11 regressions with a statistically significant coefficient for area 2, eight were positive and three were negative.

Table 12: Regression Results summary

		GSS Individual				Gallup Individual				Gallup Panel			
		No Controls		Controls		No Controls		Controls		No Personal Income		With Personal Income	
		OLS	IV	OLS	IV	OLS	IV	OLS	IV	RE	IV	RE	IV
Separate	Overall	+*	+***	+*	+***	+*	+***	+**	+***	+***	+*	+**	+**
	Area 1									+***	+***	+**	+**
	Area 2		-***		-**	+**		+**	-*	+***		+***	+**
	Area 3	+***	+***	+***	+***	+*		+*			+*		+*
Combined	Area 1	-**	-*							+***	+**	+*	
	Area 2					+*		+*				+*	
	Area 3	+***	+***	+***	+**								

5 Conclusion

We have provided the first examination of the relationship between economic freedom at the U.S. metropolitan area level and well-being measures from the GSS and Gallup Daily Polls. Previous research has explored this same relationship with data for countries and for U.S. states. As we zoom in at a more highly refined level of geography, we also make use of two premier well-being data sources: the GSS and the Gallup Daily Polls. With these data we perform analysis of both pooled cross-sectional individual well-being responses as well as panel analysis of metropolitan area averages.

Our overall analysis reveals a consistently positive association between economic freedom and well-being. The association also survives instrumental variable analysis using a novel Bartik-style instrument approach which hints that the association may be causal. While the positive relationship between the overall economic freedom index and well-being is robust across all of our specifications, the relationship is more tenuous

amongst the economic freedom sub-indices. Panel analysis of the Gallup data reveals a positive relationship between the area 1 sub-index (government spending) and average life satisfaction. Pooled cross-sectional analysis of the GSS data reveals a positive relationship between the area 3 sub-index (labor market freedom) and individual happiness. The relationship between well-being and the area 2 sub-index (taxation) was more varied but the analysis revealed a largely positive relationship. This suggests that policies targeted at reducing the share of government spending relative to personal income and reducing governmental impact and control of labor markets may be the most effective at increasing individual well-being. For policymakers, previous research indicates that such reforms may make their jurisdiction relatively more attractive to residents and businesses, which should lead to an increase in population in-migration and the health of the local economy in general.

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Conflict of Interest

Authors declare that they have no conflict of interest.

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Appendix

Table A1: Regression Results

	(1)	(2)	(3)	(4)	(5)
Overall	0.0590**				
	(0.0264)				
Area 1		0.0116			-2.26e-05
		(0.0170)			(0.0167)
Area 2			0.0611**		0.0530*
			(0.0287)		(0.0304)
Area 3				0.0236*	0.0181
				(0.0126)	(0.0134)
$720 to $5,999	0.376***	0.376***	0.376***	0.376***	0.376***
	(0.0347)	(0.0347)	(0.0347)	(0.0347)	(0.0347)
$6,000 to $11,999	0.181***	0.181***	0.181***	0.181***	0.181***
	(0.0282)	(0.0282)	(0.0282)	(0.0282)	(0.0281)
$12,000 to $23,999	0.311***	0.311***	0.311***	0.311***	0.311***
	(0.0272)	(0.0272)	(0.0272)	(0.0272)	(0.0272)
$24,000 to $35,999	0.517***	0.517***	0.517***	0.517***	0.517***
	(0.0325)	(0.0325)	(0.0325)	(0.0325)	(0.0325)
$36,000 to $47,999	0.708***	0.708***	0.708***	0.708***	0.708***
	(0.0357)	(0.0357)	(0.0357)	(0.0357)	(0.0357)
$48,000 to $59,999	0.861***	0.862***	0.861***	0.862***	0.861***
	(0.0418)	(0.0418)	(0.0418)	(0.0418)	(0.0418)
$60,000 to $89,999	1.025***	1.025***	1.025***	1.025***	1.025***
	(0.0408)	(0.0408)	(0.0408)	(0.0408)	(0.0408)
$90,000 to $119,999	1.185***	1.185***	1.184***	1.185***	1.185***
	(0.0422)	(0.0423)	(0.0422)	(0.0422)	(0.0422)
$120,000 and over	1.395***	1.394***	1.394***	1.395***	1.395***
	(0.0378)	(0.0378)	(0.0378)	(0.0378)	(0.0378)
Age	0.00110***	0.00110***	0.00110***	0.00109***	0.00109***
	(0.000353)	(0.000352)	(0.000353)	(0.000353)	(0.000353)
Children	-0.0146***	-0.0146***	-0.0146***	-0.0146***	-0.0146***
	(0.00264)	(0.00264)	(0.00264)	(0.00264)	(0.00264)
High school degree or diploma	0.0782***	0.0782***	0.0782***	0.0782***	0.0782***
	(0.0126)	(0.0126)	(0.0126)	(0.0126)	(0.0126)
Technical/Vocational school	-0.0908***	-0.0909***	-0.0908***	-0.0908***	-0.0908***
	(0.0151)	(0.0151)	(0.0151)	(0.0151)	(0.0151)
Some college	0.0349***	0.0350***	0.0350***	0.0350***	0.0350***
	(0.0133)	(0.0133)	(0.0133)	(0.0133)	(0.0133)
College graduate	0.219***	0.219***	0.219***	0.219***	0.219***
	(0.0139)	(0.0139)	(0.0139)	(0.0139)	(0.0139)
Post graduate work or degree	0.372***	0.372***	0.372***	0.372***	0.372***
	(0.0143)	(0.0143)	(0.0143)	(0.0143)	(0.0143)
Female	0.262***	0.262***	0.262***	0.262***	0.262***
	(0.00823)	(0.00822)	(0.00823)	(0.00823)	(0.00823)
Asian	0.0710***	0.0712***	0.0711***	0.0711***	0.0710***
	(0.0228)	(0.0228)	(0.0227)	(0.0228)	(0.0228)
Black	0.202***	0.202***	0.202***	0.202***	0.202***
	(0.0172)	(0.0172)	(0.0172)	(0.0172)	(0.0172)
Hispanic	0.436***	0.436***	0.436***	0.436***	0.436***
	(0.0169)	(0.0169)	(0.0169)	(0.0169)	(0.0169)

Other Race	0.0804***	0.0809***	0.0806***	0.0805***	0.0804***
	(0.0215)	(0.0215)	(0.0214)	(0.0215)	(0.0215)
Divorced	0.182***	0.182***	0.182***	0.182***	0.182***
	(0.0215)	(0.0215)	(0.0215)	(0.0215)	(0.0215)
Domestic Partnership	0.481***	0.481***	0.481***	0.481***	0.481***
	(0.0221)	(0.0221)	(0.0221)	(0.0221)	(0.0221)
Married	0.629***	0.629***	0.629***	0.629***	0.629***
	(0.0189)	(0.0189)	(0.0189)	(0.0189)	(0.0189)
Single/Never Married	0.519***	0.519***	0.519***	0.519***	0.519***
	(0.0201)	(0.0201)	(0.0201)	(0.0201)	(0.0201)
Widowed	0.606***	0.606***	0.606***	0.606***	0.606***
	(0.0209)	(0.0209)	(0.0209)	(0.0209)	(0.0209)
Employed Full Time	-0.0796***	-0.0796***	-0.0795***	-0.0796***	-0.0795***
	(0.00865)	(0.00865)	(0.00865)	(0.00866)	(0.00866)
Self Employed Full Time	-0.0648***	-0.0647***	-0.0647***	-0.0648***	-0.0648***
	(0.0124)	(0.0124)	(0.0124)	(0.0124)	(0.0124)
Part Time, Don't Want Full Time	0.300***	0.300***	0.300***	0.300***	0.300***
	(0.0103)	(0.0103)	(0.0103)	(0.0103)	(0.0103)
Part Time, Want Full Time	-0.397***	-0.397***	-0.397***	-0.397***	-0.397***
	(0.0117)	(0.0117)	(0.0117)	(0.0117)	(0.0117)
Unemployed	-0.671***	-0.671***	-0.671***	-0.671***	-0.671***
	(0.0139)	(0.0139)	(0.0139)	(0.0139)	(0.0139)
Observations	1,165,088	1,165,088	1,165,088	1,165,088	1,165,088
R-squared	0.087	0.087	0.087	0.087	0.087

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A2: Regression Results

	(1)	(2)	(3)	(4)	(5)
Overall	0.317***				
	(0.100)				
Area 1		2.367			0.216
		(9.354)			(1.827)
Area 2			-0.439*		-1.090
			(0.226)		(1.430)
Area 3				0.0108	0.197
				(0.0322)	(0.236)
$720 to $5,999	0.376***	0.368***	0.377***	0.376***	0.376***
	(0.0347)	(0.0414)	(0.0347)	(0.0347)	(0.0346)
$6,000 to $11,999	0.181***	0.175***	0.180***	0.181***	0.181***
	(0.0281)	(0.0313)	(0.0281)	(0.0281)	(0.0282)
$12,000 to $23,999	0.311***	0.301***	0.311***	0.311***	0.312***
	(0.0271)	(0.0391)	(0.0273)	(0.0271)	(0.0272)
$24,000 to $35,999	0.517***	0.512***	0.517***	0.517***	0.518***
	(0.0324)	(0.0303)	(0.0326)	(0.0324)	(0.0325)
$36,000 to $47,999	0.708***	0.704***	0.709***	0.708***	0.710***
	(0.0355)	(0.0315)	(0.0358)	(0.0356)	(0.0362)
$48,000 to $59,999	0.861***	0.856***	0.862***	0.862***	0.863***
	(0.0416)	(0.0352)	(0.0419)	(0.0417)	(0.0413)
$60,000 to $89,999	1.024***	1.017***	1.026***	1.025***	1.027***
	(0.0407)	(0.0368)	(0.0410)	(0.0408)	(0.0405)
$90,000 to $119,999	1.184***	1.176***	1.186***	1.185***	1.188***
	(0.0420)	(0.0385)	(0.0424)	(0.0422)	(0.0420)
$120,000 and over	1.395***	1.392***	1.395***	1.395***	1.397***
	(0.0377)	(0.0338)	(0.0378)	(0.0378)	(0.0384)
Age	0.00110***	0.00121*	0.00109***	0.00109***	0.00109***
	(0.000353)	(0.000714)	(0.000349)	(0.000352)	(0.000381)
Children	-0.0147***	-0.0145***	-0.0145***	-0.0146***	-0.0144***
	(0.00263)	(0.00271)	(0.00265)	(0.00263)	(0.00262)
High school degree or diploma	0.0779***	0.0728***	0.0783***	0.0782***	0.0780***
	(0.0125)	(0.0260)	(0.0126)	(0.0126)	(0.0130)
Technical/Vocational school	-0.0906***	-0.0929***	-0.0912***	-0.0908***	-0.0911***
	(0.0151)	(0.0159)	(0.0151)	(0.0151)	(0.0150)
Some college	0.0344***	0.0267	0.0355***	0.0350***	0.0350**
	(0.0133)	(0.0372)	(0.0133)	(0.0132)	(0.0146)
College graduate	0.219***	0.217***	0.219***	0.219***	0.218***
	(0.0139)	(0.0146)	(0.0139)	(0.0139)	(0.0139)
Post graduate work or degree	0.372***	0.367***	0.372***	0.372***	0.372***
	(0.0143)	(0.0235)	(0.0144)	(0.0143)	(0.0146)
Female	0.262***	0.263***	0.262***	0.262***	0.262***
	(0.00820)	(0.0110)	(0.00822)	(0.00821)	(0.00872)
Asian	0.0705***	0.0678***	0.0720***	0.0711***	0.0722***
	(0.0228)	(0.0198)	(0.0229)	(0.0227)	(0.0231)
Black	0.202***	0.201***	0.202***	0.202***	0.201***
	(0.0171)	(0.0157)	(0.0173)	(0.0172)	(0.0167)
Hispanic	0.436***	0.438***	0.436***	0.436***	0.437***
	(0.0168)	(0.0239)	(0.0169)	(0.0168)	(0.0188)
Other Race	0.0779***	0.0675	0.0833***	0.0808***	0.0818***
	(0.0215)	(0.0506)	(0.0216)	(0.0214)	(0.0215)

Divorced	0.182***	0.184***	0.181***	0.182***	0.181***
	(0.0215)	(0.0214)	(0.0214)	(0.0215)	(0.0214)
Domestic Partnership	0.480***	0.481***	0.480***	0.481***	0.479***
	(0.0221)	(0.0228)	(0.0220)	(0.0220)	(0.0228)
Married	0.629***	0.632***	0.629***	0.629***	0.628***
	(0.0189)	(0.0195)	(0.0188)	(0.0188)	(0.0189)
Single/Never Married	0.519***	0.523***	0.518***	0.519***	0.517***
	(0.0200)	(0.0255)	(0.0201)	(0.0200)	(0.0201)
Widowed	0.606***	0.607***	0.606***	0.606***	0.605***
	(0.0208)	(0.0216)	(0.0208)	(0.0208)	(0.0209)
Employed Full Time	-0.0797***	-0.0809***	-0.0798***	-0.0796***	-0.0805***
	(0.00863)	(0.00863)	(0.00865)	(0.00864)	(0.00826)
Self Employed Full Time	-0.0651***	-0.0689***	-0.0647***	-0.0647***	-0.0654***
	(0.0124)	(0.0188)	(0.0124)	(0.0124)	(0.0123)
Part Time, Don't Want Full Time	0.300***	0.299***	0.300***	0.300***	0.299***
	(0.0103)	(0.0115)	(0.0103)	(0.0103)	(0.0108)
Part Time, Want Full Time	-0.397***	-0.395***	-0.398***	-0.397***	-0.398***
	(0.0117)	(0.0156)	(0.0117)	(0.0117)	(0.0119)
Unemployed	-0.671***	-0.666***	-0.672***	-0.671***	-0.672***
	(0.0139)	(0.0262)	(0.0140)	(0.0139)	(0.0145)
Observations	1,165,088	1,165,088	1,165,088	1,165,088	1,165,088
R-squared	0.087	0.048	0.086	0.087	0.083

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.