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Economic Freedom and Quality of Life: Evidence from the OECD's Your Better Life Index

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Abstract
Measures of material standards of living such as gross domestic product dominate national debates on social and economic progress. Such measures, however, often fail to capture important dimensions of quality of life related to the strength of social networks, quality of education, frequency of civic engagement, personal health, and psychological well-being. In this paper, I provide some preliminary evidence on the relationship between economic freedom and more than twenty indicators of quality of life separated into eleven dimensions of well-being from a recently developed well-being index, Your Better Life Index, by the Organization of Economic Cooperation and Development (OECD). I find that economic freedom is strongly and positively correlated with most of these areas of well-being even after I control for the positive impact of income. More importantly, however, the strongest effect of economic freedom is associated with some of the nonmaterial dimensions of quality of life such as community, safety, and life satisfaction, which are still underresearched areas in the economic freedom literature. Additional evidence from the Human Development Index from 1972 to 2010 for a large set of developed and developing countries further shows that changes in economic freedom foster human development in both the short run (five years) and the long run (ten years).

JEL Codes: O10, I31, H10
Keywords: Economic freedom, Quality of life, Formal institutions

I. Introduction

Measures of material standards of living such as gross domestic product (GDP), or household and individual income, dominate national debates about social and economic progress. Economists have used such measures as a proxy for well-being despite limitations

long recognized by social scientists.[1] GDP, for example, does not take into account environmental externalities and the depletion of natural resources; it does not recognize social and economic inequalities or the value of nonmarket work such as raising a child or volunteering; it increases after a natural disaster or health epidemic as infrastructure is renewed and new patients are diagnosed. More importantly, GDP is a poor measure for quality of life because it fails to account for the crucial dimension of psychological well-being.

The measurement of social and economic progress, however, is undergoing a fundamental change. Some have called it a revolution (Frey 2010), and others have called for a revolution (Layard 2005). In 2008, for example, the French president, Nicolas Sarkozy, formed a commission of twenty-five members, including five Nobel Prize laureates, that produced the most comprehensive study on measuring quality of life to date (Stiglitz, Sen, and Fitoussi 2009).[2] The so-called Sarkozy Report, a 292-page document, represents a "remarkable breakthrough in economist's [*sic*] thinking about the direction in which economic measurement needs to go." (Easterlin and Sawangfa 2010, p.1) The commission recognizes that quality of life is a much broader concept than economic production and living standards, and its key message is that there must be a shift from measuring economic production to measuring people's well-being.

Such a shift is now happening and gathering momentum. In Britain, for example, a coalition led by Prime Minister David Cameron is starting to measure general well-being by asking people how happy, anxious, and satisfied they are with their lives. For the past couple of years, the OECD has published an index on well-being, Your Better Life Index, which includes eleven different dimensions of quality of life: housing, income, jobs, community, education, civic engagement, environment, health, work-life balance, safety, and life satisfaction. Most of these categories are constructed using both objective measures (e.g., life expectancy) and subjective ones (e.g., self-reported level of health). Similarly, Gallup is now

[1] For a comprehensive overview of the limitations of GDP see Bergh (2009). The author also explains why GDP has been traditionally used as a measure of social performance regardless of the overwhelming criticism that it is not a good measure for quality of life.

[2] One of the key motivations for the formation of the commission by Nicolas Sarkozy was the huge discrepancy between standard measures of socioeconomic performance such as economic growth, inflation, and unemployment and the population's widespread perceptions about quality of life.

conducting surveys in 140 countries that ask people about their life-evaluation and emotional states. In the United States, the Rockefeller Foundation launched a project in 2010, The State of the USA, which aims to create a national dataset of key indicators that go beyond GDP.

This paper provides some preliminary evidence on the relationship between economic freedom and quality of life and is thus exploratory in its nature. The first part of the paper examines a dashboard of indicators for quality of life from the OECD's Your Better Life Index and how they relate to the Economic Freedom of the World Index (EFWI) (Gwartney et al. 2012). Some of these indicators, such as household income and unemployment rate, have been studied extensively in the literature. Others, such as social support networks, crime, and work-life balance, have received little or no attention so far. Thus, instead of concentrating on particular outcomes, the goal of this study is to provide a more holistic approach and present a comprehensive set of well-being indicators, which individually may be less robust, but as a whole will hopefully be convincing and suggest some important patterns for future research. One advantage of using this new index is that selected indicators for quality of life can be evaluated on the basis of inequality across genders and income classes, which is something that previous studies rarely take into account due to lack of data.

Furthermore, the majority of previous studies emphasize the importance of economic freedom in promoting higher material standards of living through faster rates of capital investment (Hall et al. 2010; Gwartney et al. 2006), more rapid economic growth, and lower unemployment and poverty rates (Azman-Saini 2010; Heckelman et al. 2009; Feldmann 2007; Scully 2002; Grubel 1998). The evidence in this paper, however, suggests that economic freedom may play an even more important role in promoting quality of life through other dimensions of well-being. Higher level of economic freedom, for example, may help strengthen social networks, improve the quality of the local environment, encourage more people to pursue higher education, and discourage people from engaging in socially destructive behaviors such as crime. These areas are still largely underresearched in the economic freedom literature. Only one study, for example, explores the effect of economic freedom and social capital, measured by the generalized level of trust in society, and finds a positive link between the two (Berggren and Jordahl 2006). In addition, only a few papers look at the effect of economic

freedom on education and health. In one of them, Hall et al. (2010) suggest that economic freedom may encourage higher investment in human capital, which may lead to better educational outcomes. Similarly, Stroup (2007) finds that countries with more economic freedom tend to have a higher adult literacy rate, longer life expectancy, lower mortality rate, and better disease prevention. Finally, there is an emerging literature on the relationship between economic freedom and happiness (e.g., see Gropper et al. 2012; Ovaska and Takashima 2006; Veenhoven 2000), which is still in its infancy.

The relationship between these variables is always uncertain because it is difficult to isolate the effect of economic freedom from the effect of other variables, such as income, even with standard econometric techniques. What makes causal inferences especially difficult in this study is that the OECD's Your Better Life Index contains data for only one year. Thus, in the second part of this paper, I use a large dataset from 1970 through 2010 to explore the cross-country and longitudinal relationship between economic freedom and the Human Development Index (HDI). I find that the positive effect of economic freedom is strong and long lasting. Interestingly, changes in the EFWI also have a strong and positive effect on human development over both the short run (five years) and also the long run (ten years).

II. Approaches to Measuring Quality of Life

The Sarkozy Report identifies three conceptual approaches to measuring quality of life. The first approach is based on the notion of *subjective well-being*. This approach views people as the best judges of their own condition. It is linked to the philosophical tradition of utilitarianism and has a strong appeal because it recognizes the popular view that the end goal of human existence is to be "happy" or "satisfied" with one's life. Based on extensive research evidence, the commission agrees that subjective well-being can be measured in a reliable and meaningful manner. Nevertheless, since subjective well-being has different dimensions—cognitive evaluations of one's life, positive emotions such as joy and pride, and negative emotions such as joy and worry—the commission suggests that each of these

aspects should be measured separately to gain a complete appreciation of people's lives.[3]

The second approach to measuring quality of life is based on the notion of *capabilities*. This approach views people's lives as

> a combination of various "doings and beings" (functionings), and of the freedom to choose among these functionings (capabilities). Some of these capabilities may be quite elementary, such as being adequately nourished and escaping premature mortality, while others may be more complex, such as having the literacy required to participate actively in political life. The foundations of the capability approach, which has strong roots in philosophical notions of social justice, reflect a focus on human ends and on respecting the individual's ability to pursue and realize the goals that he or she values; a rejection of the economic model of individuals acting to maximize their self-interest heedless of relationships and emotions; an emphasis on the complementarities between various capabilities; and a recognition of human diversity, which draws attention to the role played by ethical principles in the design of the "good" society. (Stiglitz et al. 2009, p. 42)

The third approach is developed within the economics tradition and is based on the notions of *fair allocations*. This approach is common in welfare economics and requires weighing the nonmonetary dimensions of quality of life (beyond the goods and services traded on the market) in a way that respects people's preferences.

The capabilities and fair allocations approaches favor measurement of people's objective conditions and the opportunities available to them. Although these objective features can be instrumental to one's happiness, both of these conceptual approaches consider the expansion of people's functionings and freedoms as intrinsically valuable. And while the list of objective features depends on value judgments, there seems to be a universal agreement across

[3] For additional justification of using subjective well-being data see Frey and Stutzer (2002), Kahneman and Kruger (2006), and Di Tella and McCulloch (2006). These studies argue that aggregated subjective well-being data pass different validation tests and move predictably with other external variables (such as income, marriage, unemployment, and growth in GDP) and are thus valid, reliable, and comparable.

individuals, cultures, and times about the most important aspects that determine quality of life. The commission identifies eight dimensions important to quality of life: health, education, economic well-being, work, political voice, personal relationships, environment, and security (Stiglitz et al. 2009, pp. 45–58). Finally, the commission recommends that each dimension for quality of life should be evaluated on the basis of inequality across people, socioeconomic groups, and generations.

III. Economic Freedom and Quality of Life in the OECD Countries

This section describes the data that are used for the analytical part of this study.

A. Data

My main analysis uses data from the OECD's Your Better Life Index to examine the relationship between economic freedom and quality of life for a group of developed and emerging economies. The index consists of eleven areas that the OECD has identified as essential to well-being. The areas reflect material living conditions (housing, income, and jobs) and quality of life (community, education, environment, governance, health, life satisfaction, safety, and work-life balance). Each area is created using one to three specific measures, which are based on either objective or subjective indicators, or both. For example, the area "health" is created by taking into consideration life expectancy (an objective indicator) and the self-reported level of health (a subjective indicator). Thus, it is a good representation of the two approaches, the capability and the subjective well-being approaches, suggested by the Sarkozy Report. Table 3 in the Appendix provides descriptions and sources of all indicators in each one of the eleven areas.

To avoid the criticism that aggregated indicators are subjectively constructed, I examine eighteen of the twenty-three variables that built each one of the eleven areas separately.[4] Data on these indicators cover thirty-four countries that are members of the OECD and represent most of the world's developed economies and a number of emerging economies. Unfortunately, data are available only for 2010, which constraints my analysis to a cross section of

[4] For a detailed report with justification for using each one of these areas please see OECD (2013).

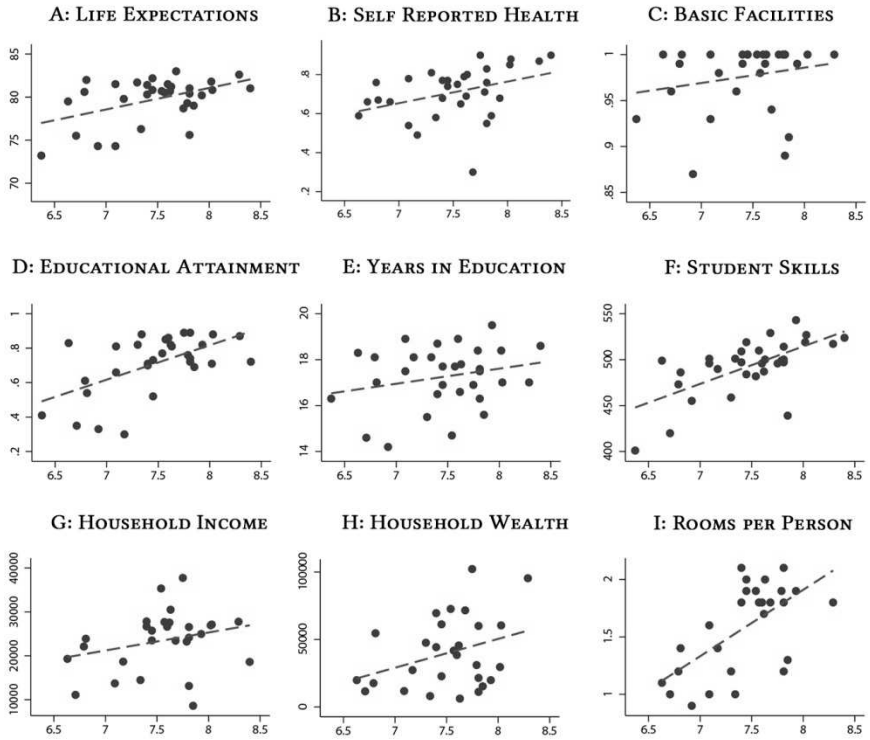
countries. Finally, data on selected indicators are available for different socioeconomic groups, which allows me to compare differences between women and men, and between the top and bottom 20 percent of income earners.

The measure of economic freedom came from the 2012 Economic Freedom of the World Index by Gwartney et al. (2012). The index measures the degree of economic freedom in five major areas: (1) size of government: expenditures, and taxes, enterprises; (2) legal structure and security of property rights; (3) access to sound money; (4) freedom to trade internationally; and (5) regulation of credit, labor, and business. Within these five major areas, there are twenty-three policy components. Many of these components are themselves made up of several subcomponents. In total, the index consists of forty-two distinct variables. Each component and subcomponent is placed on a scale from 0 to 10 that reflects the distribution of the underlying data. The subcomponent ratings are averaged to determine each component. The component ratings within each area are then averaged to derive ratings for each of the five areas. In turn, the five area ratings are averaged to derive the summary rating for each country. The EFWI is measured on a scale from 1 (least free) to 10 (most free). The mean value of the EFWI in the OECD subsample is 7.43, with values ranging from 6.37 to 8.4.

B. Results for the Overall Sample

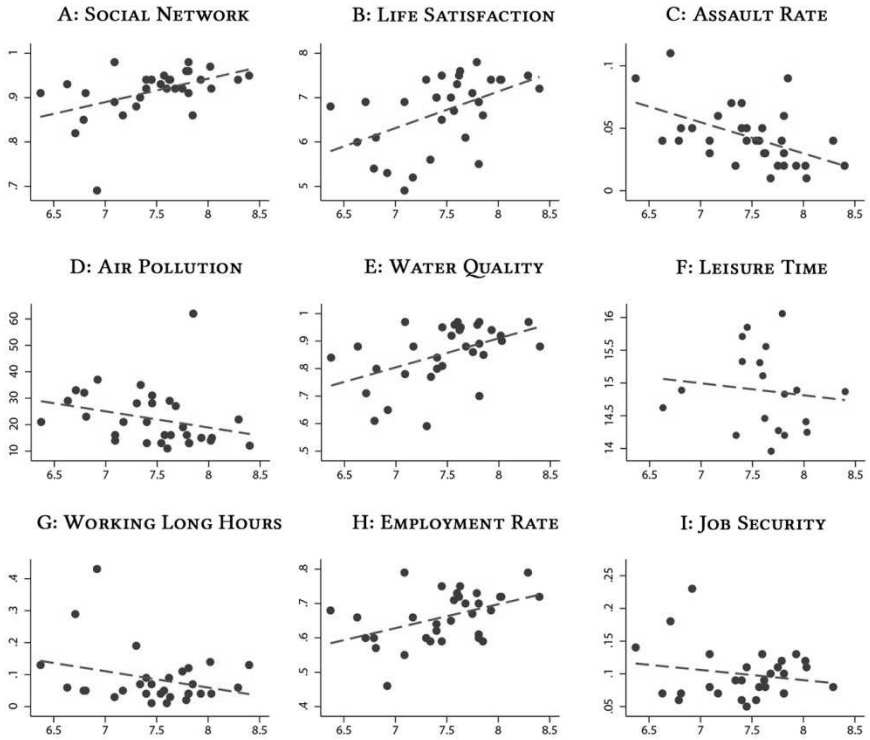
I start the analysis by showing graphically how the EFWI correlates with eighteen indicators that measure quality of life in eleven different categories from the OECD's Your Better Life Index. The main results are presented in Figures 1 and 2, which show country averages for each one of the eighteen indicators for 2010. Although the analysis relies primarily on simple bivariate correlations, it is nevertheless suggestive that people who live in countries with a high degree of economic freedom also enjoy a higher material standard of living and better quality life.

Figure 1. Economic Freedom and Quality of Life in 34 OECD Countries, 2010



Note: See Table 3 in the Appendix for detailed definitions and sources of all variables used. Panel A: Life Expectancy represents the average length of life. Panel B: Self-Reported Health is based on a question: "How is your health in general?" and represents the proportion of respondents answering "good" or better. Panel C: Basic Facilities measures the proportion of dwellings with basic facilities for personal hygiene. Panel D: Educational Attainment shows the proportion of the population holding at least an upper secondary degree (as defined by the OECD-ISCED classification). Panel E: Years in Education represents the average duration of formal education. Panel F: Student Skills measures students' reading ability, math skills, and level in science. Panel G: Household Income represents disposable income (net of taxes, social security, and social transfers in-kind) in U.S. dollars, PPP, per capita. Panel H: Household Wealth shows financial wealth from various assets such as cash, bonds, and shares net of financial liabilities. Panel I: Rooms per Person measures the number of rooms in a dwelling divided by the number of persons living in the dwelling.

Figure 2. Economic Freedom and Quality of Life in 34 OECD Countries, 2010



Note: See Table 3 in the Appendix for detailed definitions and sources of all variables used. Panel A: Social Network shows the proportion of the population reporting that they have relatives and friends they could count on for help if they were in trouble. Panel B: Life Satisfaction measures overall life satisfaction based on the Cantril Ladder (from 0, "worst possible life," to 10, "best possible life"). Panel C: Assault Rate represents the percentage of people who report being a victim of an assault crime in the last twelve months. Panel D: Air Pollution represents the population-weighted average concentrations of fine particles (PM10) in the air we breathe (measured in micrograms per cubic meter). Panel E: Water Quality shows the percentage of people who report being satisfied with the quality of local water. Panel F: Time Devoted to Leisure measures the number of hours devoted to leisure and personal care in a typical day. Panel G: Working Long Hours shows the proportion of employees who work for pay more than fifty hours a week. Panel H: Employment Rate represents the share of working-age population (15 years or older) who are currently employed in a paid job. Panel I: Job Security shows the share of dependent employment with job tenure of less than six months.

The figures suggest that economic freedom is strongly and positively correlated with higher educational attainment and student skills, and with better health outcomes, including self-reported health. In addition, people who live in countries with institutions that are consistent with the principles of economic freedom are less likely to work long hours, more likely to find a job, and have higher income and household wealth. Further, they are more likely to enjoy clean air and water, safer neighborhoods, stronger social networks, and ultimately to report higher levels of life satisfaction.

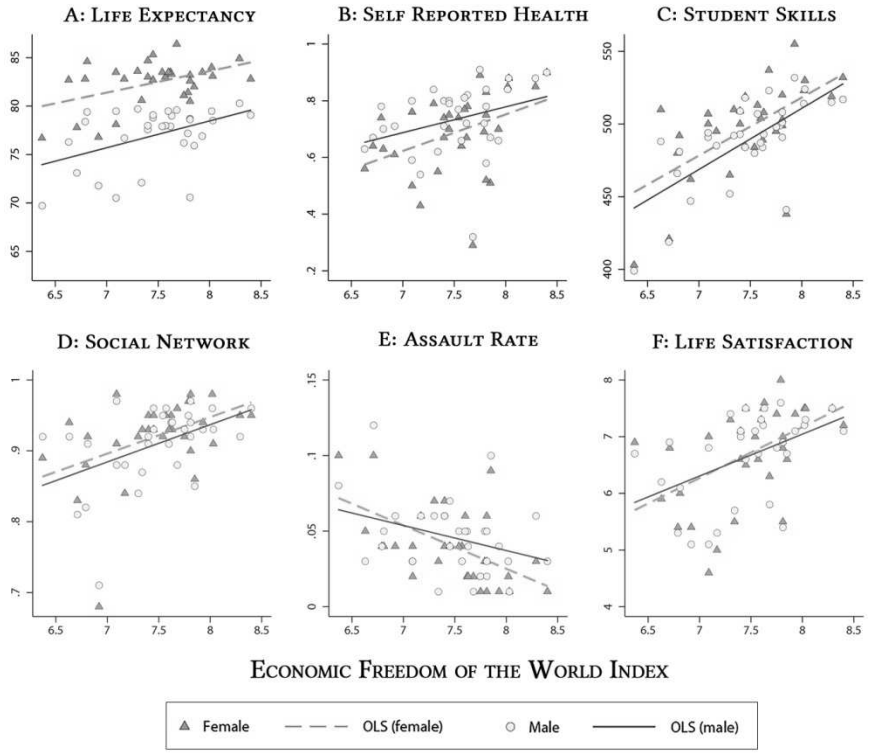
The only indicator suggesting a "bad" outcome is time devoted to personal care and leisure. The data, however, are not very convincing that such relationship exists, as it is scattered randomly around the plot, suggesting a slightly negative relationship. On the other hand, the other graph related to the category "work-life balance" suggests that fewer people in countries with a higher level of economic freedom work long hours. In addition, people who live in countries with higher degree of economic freedom are less likely to experience long-term unemployment, have greater job security, and earn more.

Undoubtedly, many of these indicators have already been studied extensively in the economic freedom literature. For example, a large number of studies find that economic freedom is robustly correlated with many positive outcomes, such as faster rates of economic growth, higher investment in physical capital, lower unemployment rates, and rapid reduction of poverty (for an excellent summary of this literature see Hall and Lawson [2013]). However, limited research has been done on the effect of economic freedom on social capital, educational achievement, crime rate, work-life balance, health, and environmental quality. The graphs presented here (and in the following sections) suggest that the effect of economic freedom may be much stronger when it comes to some of these other dimensions of well-being.

C. Gender Differences

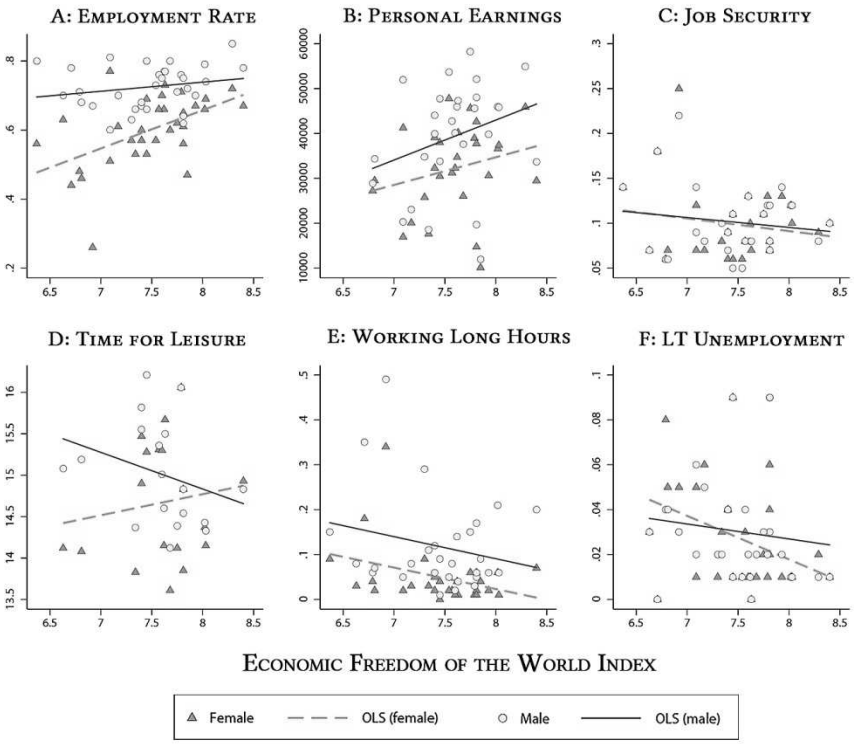
One advantage of the OECD's Your Better Life Index is that data for selected indicators are available for the different subgroups of the population. In this section, I provide some preliminary evidence on the relationship between economic freedom and these indicators, separating it by gender. Figures 3 and 4 present the main results.

Figure 3. Economic Freedom and Quality of Life across Genders



Note: See Table 3 in the Appendix for detailed definitions and sources of all variables used. Panel A: Life Expectancy represents the average length of life. Panel B: Self-Reported Health is based on a question, "How is your health in general?" and represents the proportion of respondents answering "good" or better. Panel C: Student Skills measures students' reading ability, math skills, and level in science. Panel D: Social Network shows the proportion of the population reporting that they have relatives and friends they could count on for help if they were in trouble. Panel E: Assault Rate represents the percentage of people who report being a victim of an assault crime in the last twelve months. Panel F: Life Satisfaction measures overall life satisfaction based on the Cantril Ladder (from 0, "worst possible life," to 10, "best possible life").

Figure 4. Economic Freedom and Quality of Life across Genders



Note: See Table 3 in the Appendix for detailed definitions and sources of all variables used. Panel A: Employment Rate represents the share of working-age population (15 years or older) who are currently employed in a paid job. Panel B: Personal Income shows the average earnings per full-time employee in U.S. dollars, PPP. Panel C: Job Security shows the share of dependent employment with job tenure of less than six months. Panel D: Time Devoted to Leisure measures the number of hours devoted to leisure and personal care in a typical day. Panel E: Working Long Hours shows the proportion of employees who work for pay more than fifty hours a week. Panel F: LT (Long-Term) Unemployment represents the proportion of people in the labor force who have been unemployed for one year or more.

Although there are differences between the two groups, the figures suggest that the effect of economic freedom is consistent across both genders. For example, while women have a higher average life expectancy than men, both men and women are more likely to live longer in countries with more economic freedom. Similarly, while men are more likely to be employed than women, countries with a higher level of economic freedom also have much higher employment rates for both genders. In fact, this relationship is

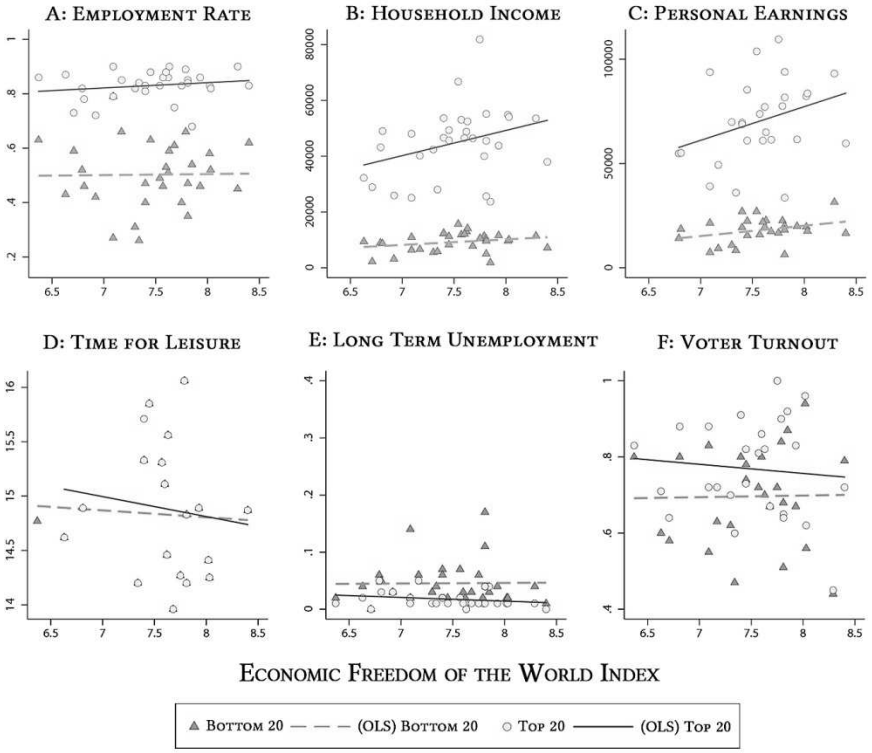
especially pronounced for women. This is also true for other areas of quality of life. For example, economic freedom has a greater positive impact on the health, safety, and overall life satisfaction of women than it does for men.

D. Differences across the Top and Bottom Income Quintiles

Next, Figures 5 and 6 compare outcomes on several indicators by separating the sample into high and low socioeconomic status. High socioeconomic status refers to the top income quintile, and low socioeconomic status refers to the bottom income quintile. When it comes to material standards of living, economic freedom seems to benefit the richest income quintile more than it does the poorest members of society. Nevertheless, even the poorest 20 percent of the population have slightly higher incomes in the countries with a higher degree of economic freedom. There does not seem to be much of an effect when it comes to long-term unemployment and civic engagement.

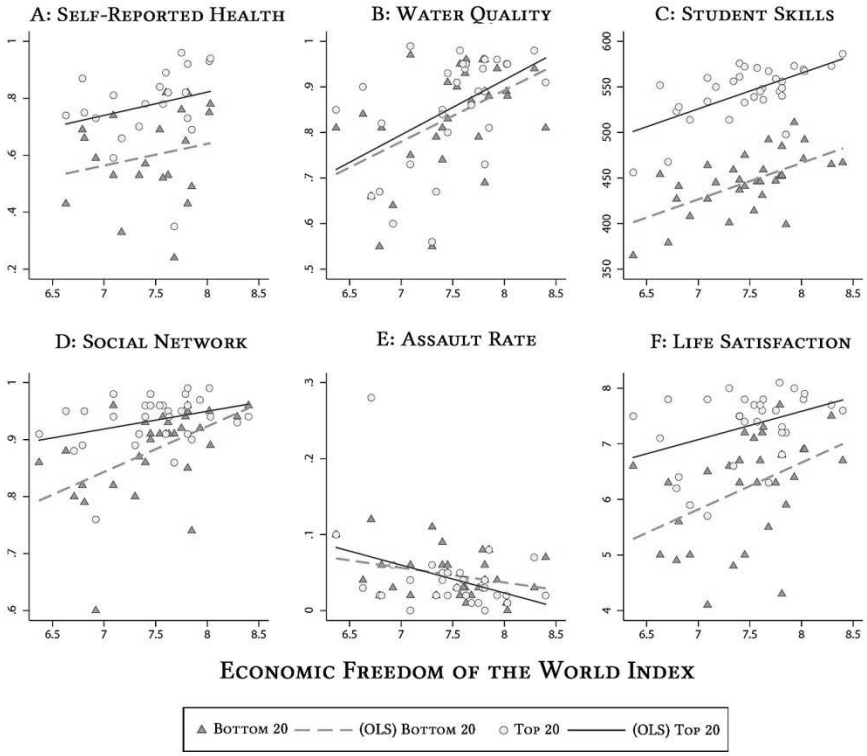
Economic freedom, however, has a noticeable effect on the health, education, safety, and living conditions of both the rich and the poor. Poorer people, for example, who live in countries with high degree of economic freedom enjoy a less-polluted environment and are more likely to report better health. They are less likely to be assaulted and more likely to have a stronger social support network and to demonstrate higher educational skills. Ultimately, even the poorest quintile of income earners reports significantly higher life satisfaction in countries that have institutions consistent with the principles of economic freedom.

Figure 5. Economic Freedom and Quality of Life, Top vs. Bottom 20 Percent of Earners



Note: See Table 3 in the Appendix for detailed definitions and sources of all variables used. Panel A: Employment Rate represents the share of working-age population (15 years or older) who are currently employed in a paid job. Panel B: Household Income represents disposable income (net of taxes, social security, and social transfers in-kind) in U.S. dollars, PPP. Panel C: Personal Income shows the average earnings per full-time employee in U.S. dollars, PPP. Panel D: Time Devoted to Leisure measures the number of hours devoted to leisure and personal care in a typical day. Panel E: Long-Term Unemployment represents the proportion of people in the labor force who have been unemployed for one year or more. Panel F: Voter Turnout measures the extent of electoral participation in major national elections.

Figure 6. Economic Freedom and Quality of Life, Top vs. Bottom 20 Percent of Earners



Note: See Table 3 in the Appendix for detailed definitions and sources of all variables used. Panel A: Self-Reported Health is based on a question, "How is your health in general?" and represents the proportion of respondents answering "good" or better. Panel B: Water Quality shows the percentage of people who report being satisfied with the quality of local water. Panel C: Student Skills measures students' reading ability, math skills, and level in science. Panel D: Social Network shows the proportion of the population reporting that they have relatives and friends they could count on for help if they were in trouble. Panel E: Assault Rate represents the percentage of people who report being a victim of an assault crime in the last twelve months. Panel F: Life Satisfaction measures overall life satisfaction based on the Cantril Ladder (from 0, "worst possible life," to 10, "best possible life").

E. Isolating the Effect of Income

To obtain more comparable results across the different dimensions for quality of life, I next standardize all indicators so that:

$$Standardized\ Variable\ = \frac{x - \mu}{\sigma}$$

where x is the original indicator, μ is its mean, and σ is its standard deviation. The new standardized variables have a mean of 0 and a standard deviation of 1, which allows for easier comparison between the different categories of well-being. In the cases where more than one indicator is used to define a category, I use the mean of all standardized variables in this particular category.

Next, I compare outcomes in each of the eleven dimensions for quality of life by splitting the sample of OECD countries into two groups based on their level of economic freedom: high or low level of economic freedom. I split the sample into halves instead of quintiles because most of the OECD member countries are highly developed economies with relatively free economies. The lowest value of the EFWI in the whole sample, for example, is 6.4, which is approximately equal to the mean value of the EFWI across all countries (both OECD and non-OECD ones). In addition, the mean difference in EFWI scores between the two groups is 0.76 points, which is approximately two-thirds of a standard deviation in the overall sample. Furthermore, one difficulty in comparing these outcomes is that economic freedom generates economic growth and higher personal income, which then affects many dimensions of well-being, such health and education. Thus, it is important to separate the effect of economic freedom from the effects of income. To do this, I run OLS regressions in the sample of OECD countries in which I control for the level of personal income and report the relative mean difference between countries with high and low levels of economic freedom.

Figure 7. Economic Freedom and Quality of Life, Isolating the Effect of Income

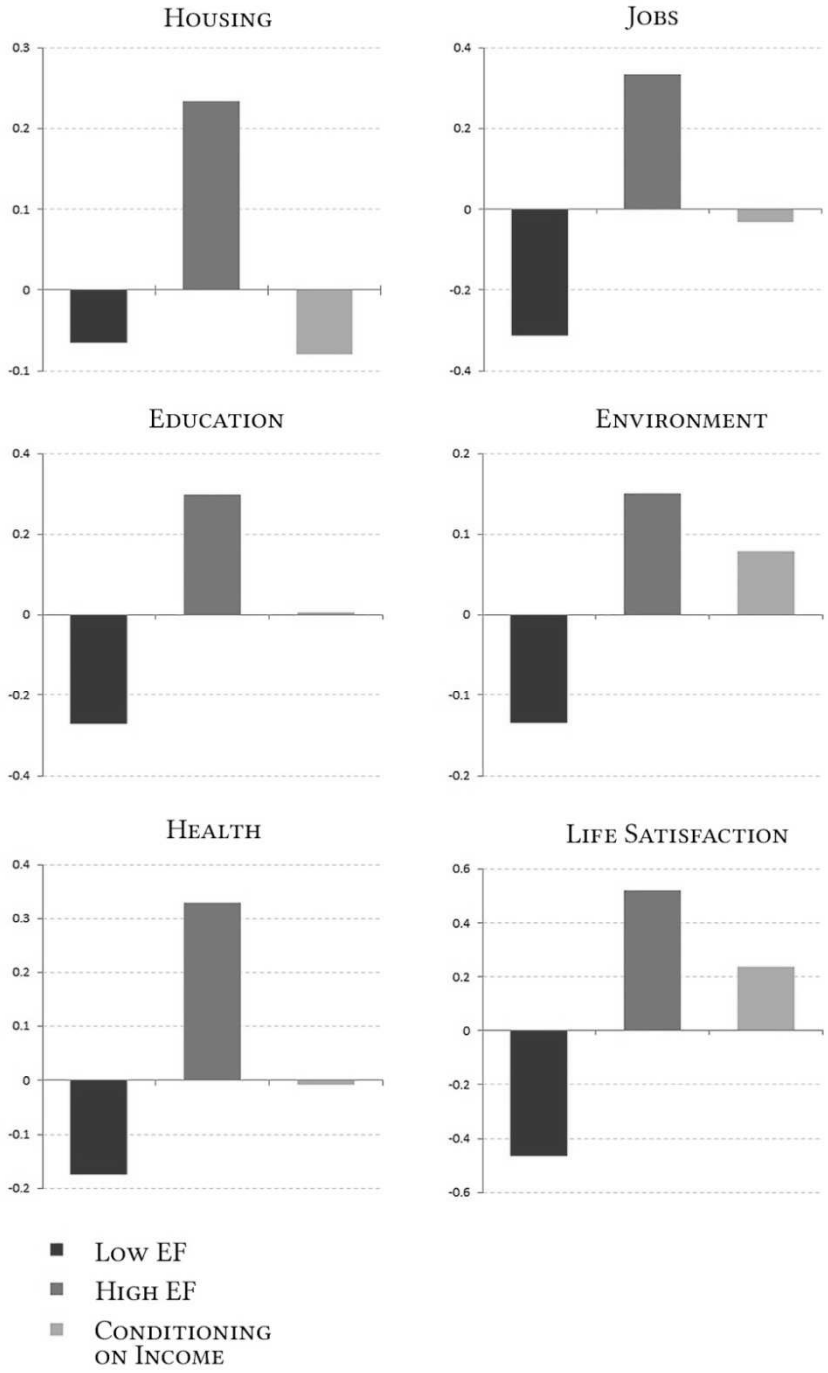
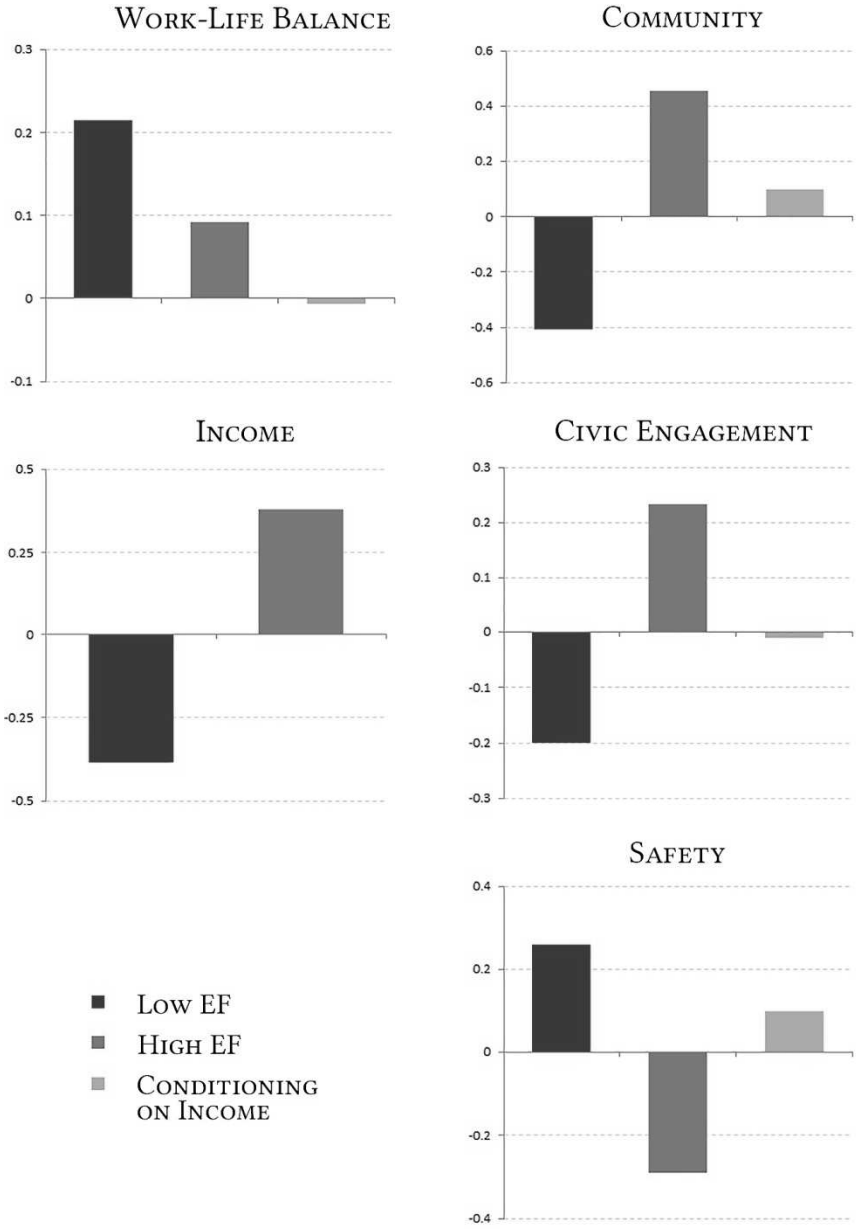


Figure 8. Economic Freedom and Quality of Life, Isolating the Effect of Income



Figures 7 and 8 present the results. Each graph shows the average value of the standardized indicators in each cluster of countries based on their level of economic freedom: low EFWI (left bar) and high EFWI (middle bar). In addition, the last bar in each graph (to the

right) reports the mean difference between countries with high and low levels of economic freedom while holding the level of income constant. This difference is evaluated relative to the mean value of the indicator in the group of countries with a low level of economic freedom.

Several interesting conclusions emerge from the patterns suggested in Figure 7. First, the effect of economic freedom is substantial and positive in most of the eleven categories of well-being. This relationship holds even after conditioning on income. The only negative outcome is associated with the work-life balance category, and much of the difference between countries with high and low levels of economic freedom in the "housing" category seems to be due to the effect of income.

Second, the largest differences in outcomes between countries with high and low levels of economic freedom are associated with the categories "community" and "life satisfaction": more than 0.8 of a standard deviation. The categories on civic engagement, safety, health, and education show the next largest difference in outcomes: approximately one-half of a standard deviation. As expected, higher economic freedom is also associated with a better material standard of living as suggested by the categories "jobs" and "income." Thus, although most of the previous studies in the economic freedom literature examine material outcomes such as income, unemployment, and poverty, the results in Figure 7 suggest that economic freedom may have even stronger effects in other areas of well-being, especially those associated with nonmaterial outcomes such as the strength of social networks and life satisfaction. One possible explanation comes from Inglehart et al. (2008, p. 266):

> Under conditions of scarcity, people focus on survival needs, giving top priority to economic and physical security. Economic development increases people's sense of existential security, leading them to shift their emphasis from survival values toward self-expression values and free choice, which is a more direct way to maximize happiness and life satisfaction. This model proposes that human development shifts emphasis from the pursuit of happiness through economic means toward a broader pursuit of happiness by maximizing free choice in all realms of life.

Beyond some level of economic development, then, economic freedom may play a far more important role in maximizing psychological well-being than does money itself as economic freedom allows people to maximize their choices in all realms of life. In a recent study, for example, Paolo Verme (2009) shows that a variable that measures freedom of choice and the locus of control is found to predict life satisfaction better than any other known factor such as health, employment, income, marriage, or religion, both across countries and within countries.

IV. Economic Freedom and the Human Development Index

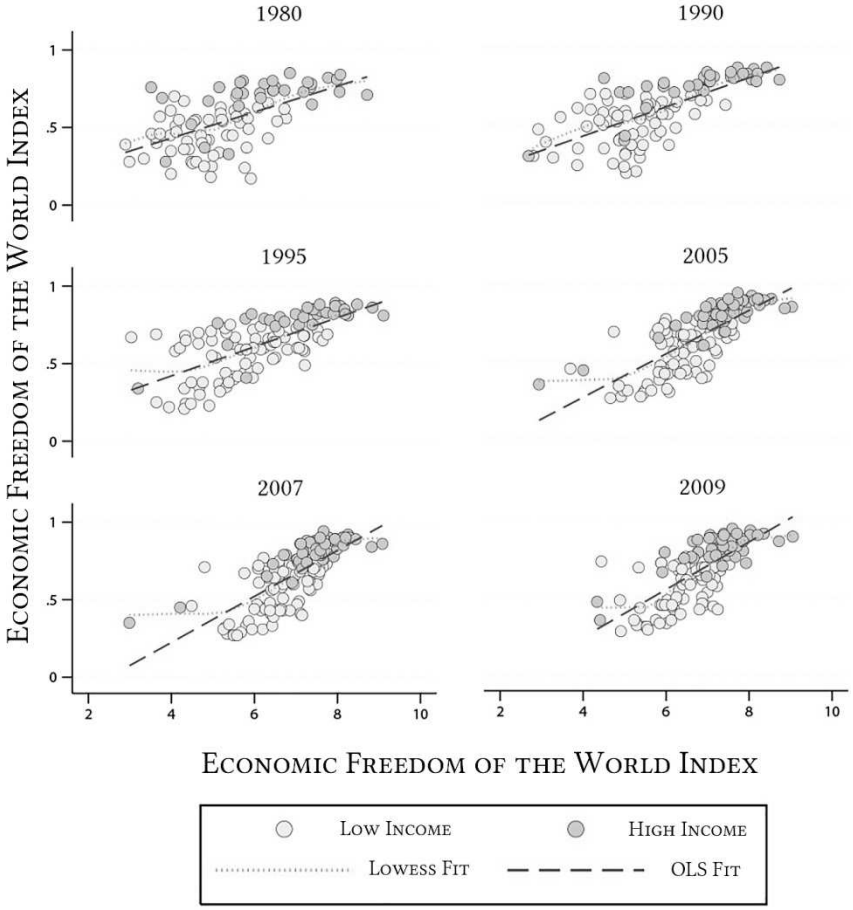
Unfortunately, the indicators from the OECD's Your Better Life Index are available only for 2010. To analyze the effect of economic freedom over time and across a larger number of countries, I use data from the HDI from 1970 to 2010. The HDI is an attempt to track the *capabilities*, or opportunities, that people have to exercise their freedom to attain a better life. Since it was first launched in 1990, the HDI captures three essential components of human development: a long and healthy life, access to knowledge, and a decent standard of living. The "longevity and knowledge refer to the formation of human capabilities, and income is a proxy measure for the choices people have in putting their capabilities to use" (UNDP 1990, p. 14). The HDI is a geometric mean of the normalized indices in each one of the three dimensions of human development:[5]

$$HDI = (I_{Life}{}^{1/3} * I_{Education}{}^{1/3} * I_{Income}{}^{1/3})$$

The health subindex is calculated using data on life expectancy. The education subindex combines data from mean years of schooling (Barro and Lee 2012) and expected years of schooling from UNESCO. Finally, the income subindex is based gross national income (GNI) per capita from the World Bank and IMF. Although the HDI does not account for other important dimensions of human life, it is nevertheless the best measure that exists, which allows comparison of a large number of countries over a long period of time. Figure 9 provides some preliminary evidence on the relationship between the EFWI and the HDI. This relationship seems to be as strong and positive today as it was in the early 1980s.

[5] For technical notes on the calculation of each dimension of the HDI and main data sources, please see Malik (2013).

Figure 9. Economic Freedom and Human Development, 1980–2009



Examining the long-run relationship between economic freedom and human development is important because a large literature has emerged over the past several decades that suggests that beyond some level of economic development, higher economic growth is not the answer to improving quality of life and psychological well-being. One of the main arguments behind the widespread view that economic growth does not lead to better quality of life is that growth does not make us happier. This view is based on the empirical observation that although material standards of living have dramatically improved in the past several decades, reported happiness levels have stayed relatively flat (Easterlin 1974, 1995, 2010).

A more recent criticism by Wilkinson and Pickett (2010) goes a step further. Economic growth in developed countries improves neither the psychological nor material well-being of people. Beyond some level of economic development, most social problems cannot be solved by higher GDP but are caused by inequalities in income. Among the rich countries, those that have the widest gap between the rich and poor also tend to have lower life expectancies, higher rates of crime, higher rates of infant mortality, lower standards of education, and higher murder rates.

Following the approach of Easterlin (2010), I start the analysis with a parsimonious specification that examines the effect only of economic freedom and income inequality on human development for a pooled cross-country sample of more than 100 countries for the period 1980–2010. In addition, I examine the lagged effect of economic freedom for five, ten, and twenty-five year periods. I also test how changes in economic freedom and income inequality over the medium run (five years) and longer run (ten years) affect human development. Finally, I include a variable from Solt (2009) that measures income inequality in all regressions to address recent criticisms by Wilkinson and Pickett (2010), who argue that beyond some level of economic development, the strongest determinant of quality of life is the level of income inequality in a country.

Table 1. Economic Freedom, Income Inequality, and Human Development

Variables	(1) HDI	(2) HDI	(3) ΔHDI (5 years)	(4) ΔHDI (10 years)
Freedom	0.0474***	0.0456**		
	(.0100)	(.0199)		
Gini (Net)	-0.0025***	-0.0038***		
	(.0011)	(.0012)		
Freedom (5-year lag)		0.0376***		
		(.0114)		
Freedom (10-year lag)		0.0218*		
		(.0128)		
Freedom (25-year lag)		0.0109		
		(.0117)		
Δ Freedom (5 year)			0.0049***	
			(.0014)	
Δ Gini (5 year)			0.0000***	
			(.0002)	
Δ Freedom (10 year)				0.0035**
				(.0017)
Δ Gini (10 year)				0.0002
				(.0002)
Year (period) dummies	YES	YES	YES	YES
R squared	0.64	0.68	0.066	0.029
Observations	555	222	429	326
Number of Countries	129	87	103	97

Note: ***(**)[*] indicate significance at p<.01(p<.05)[p<.01]. Clustered robust standard errors are reported in parentheses.
All estimates are pooled OLS.

Table 1 presents the main results for four different pooled OLS models with clustered robust standard errors. First, both economic freedom and income inequality have the expected signs and are statistically significant at the .01 level in all four models. Interestingly, model 2 suggests that the five- and ten-year lagged effect of economic freedom is also significantly and positively correlated with human development. This might be because some dimensions of economic freedom, such as the institutions that define the legal system, have relatively high transformation costs. Thus, it may take a substantial period of time for significant changes to take place, changes that may have an impact on the allocation of entrepreneurial talent (Baumol 1990). In fact, in area 2 of the EFWI, "Legal Structure and Security of Property Rights," the average change in the pooled sample is only 0.01 points. And although some countries experience rapid changes over the thirty-year period (e.g., Zimbabwe), most of the variation in this area of economic freedom is found not within but across countries. Finally, models 3 and 4 show that an increase in the level of economic freedom is associated with strong and

significant improvement in the HDI over the short run (five years) and medium run (ten years).

On the contrary, income inequality seems to affect the HDI negatively. As a comparison, the Gini coefficient will have to decrease by 25 percentage points (where Gini=0 is perfect equality, and Gini=100 is perfect inequality) to match the positive effect of a one-point increase in the EFWI score (EFWI=10 is perfect economic freedom and EFW=0 is no economic freedom). Surprisingly, an increase in income inequality over time is associated with improvement in human development. This effect is statistically significant only over the short run (five years.)

Table 2. Economic Freedom, Income Inequality, and Human Development, High vs. Low Income

	GDP<$14,000		GDP>$14,000	
Variables	HDI	ΔHDI (5 years)	HDI	ΔHDI (5 years)
Freedom	0.0630***		0.0344***	
	(.0086)		(.0076)	
Gini (Net)	-0.0026***		-0.0027***	
	(.0014)		(.0012)	
Δ Freedom (5 year)		0.0034***		0.0095***
		(.0016)		(.0018)
Δ Gini (5 year)		0.0000		0.0001
		(.0002)		(.0005)
Year dummies	YES			
R squared	0.42	0.02	0.066	0.064
Observations	365	194	190	132
N of Countries	97	65	38	37

Note: ***(**)[*] indicate significance at p<.01(p<.05)[p<.01]. Clustered robust standard errors are reported in parenthesis.
All estimates are pooled OLS.

Since the effectiveness of the institutions that define economic freedom may differ based on the level of economic development, Table 2 reports the results from models 1 and 3 for two subsamples of the population: high- and low-income countries. High-income countries are defined as having higher GDP per capita than $14,000, and low-income countries as having GDP per capita less than or equal to $14,000. This number is relatively close to the mean GDP per capita in the sample for 2010. It also splits the sample in a way so that one-third of the countries belong to the high-income group and two-thirds to the low-income group. This leaves enough variation and observations in each subsample so that the appropriate econometric tests and models can be performed. The results are consistent with those in Table 1, suggesting that both rich and poor

countries benefit from increase in economic freedom. The positive effect of economic freedom on less-developed countries, however, is twice as strong as the effect on more developed ones. Similarly, changes in the level of economic freedom are associated with higher human development over the short run (five years).

V. Conclusion

Measures of material standards of living such as GDP dominate national debates on social and economic progress. Such measures, however, often fail to capture important dimensions of quality of life related to the strength of social networks, quality of education, frequency of civic engagement, personal health, and, most importantly, psychological well-being. In this paper, I provide some preliminary evidence on the relationship between economic freedom and quality of life using data from the Economic Freedom of the World Index, the OECD's Your Better Life Index, and the Human Development Index.

The analysis suggests that countries with high degree of economic freedom experience better outcomes in many essential dimensions for quality of life, from better job opportunities and higher incomes to stronger social support networks and ultimately higher life satisfaction. The positive effect of economic freedom tends to be consistent across genders and income classes, although some differences exist. A high degree of economic freedom, for example, tends to benefit the material standard of living of the richest quintile more than the material well-being of the poorest quintile. A high level of economic freedom, however, is associated with stronger social support networks, better educational outcomes, and higher life satisfaction even among the bottom quintile of income earners. Most importantly, the evidence in this paper suggests that the positive effect of economic freedom might be further reaching than merely improving people's material standards of living, as it is commonly believed. Finally, using data from the Human Development Index from 1972 to 2010, this study shows that economic freedom leads to improvement in human development in both the short run (five years) and the long run (ten years).

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Appendix

Table 3. Definitions and Sources of Variables in the OECD Better Life Index

Area/ Indicators	Definitions	Sources
Area 1: Housing		
1A: Rooms per person	It signals whether the persons occupying a dwelling are living in crowded conditions. It is measured as the number of rooms in a dwelling divided by the number of persons living in the dwelling.	European Union Statistics on Income and Living Conditions (EU-SILC) for European countries and from comparable national surveys for non-EU countries
1B: Housing expenditure	It is calculated by dividing the final consumption expenditure of households in housing and maintenance of the house by the net adjusted disposable income of the households.	OECD National Accounts database
1C: Dwelling with basic facilities	It provides an assessment of the potential deficits and shortcomings of accommodations, focusing on personal hygiene facilities. One basic facility is considered here: a lack of indoor flushing toilet (measured as the percentage of dwellings not having an indoor flushing toilet for the sole use of their household).	EU-SILC and national statistical offices of Brazil, Canada, Chile, Japan, Korea, Mexico, Turkey, and the United States

Area 2: Income		
2A: Household disposable income	It includes income from work, property, imputed rents attributed to homeowners, and social benefits in cash, net of direct taxes and social security contributions paid by households. It also includes the social transfers in kind, such as education and health care, that households receive from governments. Income is measured net of the depreciation of capital goods that households use in production.	OECD National Accounts at a Glance
2B: Household financial wealth	It consists of various financial assets owned by households (e.g., cash, bonds, and stock) net of all types of financial liabilities.	OECD National Accounts at a Glance
Area 3: Jobs		
3A: Employment rate	It is the share of the working age population (people age 15 to 64 in most OECD countries) who are currently employed in a paid job. Employed persons are those age 15 and over who declare having worked in gainful employment for at least one hour in the previous week, following the standard ILO definition.	OECD Employment Outlook

3B: Long-term unemployment rate	It is the number of persons who have been unemployed for one year or more as a share of the labor force. Unemployed persons are those who are currently not working but are willing to do so and actively searching for jobs.	OECD Employment Outlook
3C: Personal earnings	It shows the average annual earnings per full-time employee.	
3D: Job security	It is the share of dependent employment with job tenure of less than six months.	OECD Employment Outlook
Area 4: Community		
4A: Quality of support network	It shows the proportion of the population reporting that they have relatives, friends, or neighbors they could count on to help if they were in trouble.	OECD Factbook
Area 5: Education		
5A: Educational attainment	It profiles the education of the adult population as captured through formal educational qualifications. Educational attainment is measured as the percentage of the adult population (25 to 64 years of age) holding at least an upper secondary degree, as defined by the OECD-ISCED classification.	OECD Education at a Glance

5B: Years in education	It measures the average duration of formal education in which a five-year old child can expect to enroll during his or her lifetime.	
5C: Students skills in math, reading and science	It measures the capacity of students near the end of compulsory education. Students were tested on their reading ability, skills in math, and level in science. This indicator comes from the 2009 edition of OECD's Programme for International Student Assessment (PISA), which focused on reading.	OECD PISA Results

Area 6: Environment		
6A: Air pollution	It refers to the population-weighted average concentrations of fine particles (PM10) in the air we breathe (measured in micrograms per cubic meter); data refer to residential areas of cities larger than 100,000 inhabitants. Particulate matter consists of small liquid and solid particles floating in the air, and includes sulfate, nitrate, elemental carbon, organic carbon matter, sodium, and ammonium ions in varying concentrations. Of greatest concern to public health are the particles small enough to be inhaled into the deepest parts of the lung: these particles are less than 10 microns in diameter (PM10). PM10 also includes fine particulate matter known as PM 2.5.	OECD Environmental Outlook
6B: Water quality	It shows the percentage of people reporting to be satisfied with the quality of local water.	

Area 7: Civic Engagement		
7A: Voter turnout	It measures the extent of electoral participation in major national elections. Only the number of votes cast over the population registered to vote are considered. The voting-age population is generally defined as the population age 18 or older, while the registered population refers to the population listed on the voters' register. The number of votes cast are gathered from national statistics offices and national electoral management bodies.	OECD Society at a Glance
7B: Consultation on rulemaking	It describes the extent to which formal consultation processes are built in at key stages of the design of regulatory proposals and whether mechanisms exist for the outcome of that consultation to influence the preparation of draft primary laws and subordinate regulations. This indicator is a composite index aggregating various information on the openness and transparency of the consultation process used when designing regulations.	OECD Indicators of Regulatory Management Systems Surveys 2005, 2008 and 2009, OECD, Paris

Area 8: Health		
8A: Life expectancy	It is the standard measure of the length of people's life. Life expectancy measures how long on average people could expect to live based on the age-specific mortality rates currently prevailing. Life expectancy can be computed at birth and at various ages.	OECD Health Database
8B: Self-reported health	It is based on questions of the type: "How is your health in general?" Data are based on general household surveys or on more detailed health interviews undertaken as part of the official surveys in various countries.	OECD Health Database
Area 9: Subjective Well-Being		
9A: Life Satisfaction	It measures overall life satisfaction as perceived by individuals. Life satisfaction measures how people evaluate their life as a whole rather than their current feelings. It is measured via the Cantril Ladder (also referred to as the Self-Anchoring Striving Scale), which asks people to rate how they value their life in terms of the best possible life (10) to the worst possible life (0). The score for each country is calculated as the mean value of responses to the Cantril Ladder for that country.	OECD Society at a Glance

Area 10: Safety		
10A: Homicide rate	It measures the number of police-reported intentional homicides reported each year, per 100,000 people. The data come from the United Nations Office on Drugs and Crime (UNODC) and are based on national data collected from law enforcement, prosecutor offices, and ministries of interior and justice, as well as Interpol, Eurostat, and regional crime prevention observatories.	UNODC
10B: Assault rate	It is based on the percentage of people who declare that they have been victim of an assault crime in the last twelve months. The data presented here are drawn from the Gallup World Poll.	
Area 11: Work-Life Balance		
11A: Employees working very long hours	It shows the proportion of employees who usually work for pay for more than 50 hours per week. The data exclude self-employed workers who are likely to choose deliberately to work long hours.	OECD Labor Force Statistics
11B: Time devoted to leisure and personal care	It presents data from national time use surveys on the hours devoted to leisure and personal care in a typical day.	OECD Time Use Survey