Chapter 3 Economic Freedom, Individual Perceptions of Life Control, and Life Satisfaction

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1 Introduction

Empirical studies on the determinants of life satisfaction have produced many important new insights over the past decades. Today, we know a lot more on the main correlates for individual well-being and happiness, including the identification of both monetary and non-monetary effects. The driving factors range from individual life circumstances, like personal income, employment situation, or health status, through personal traits such as social trust, all the way to macro-economic and political determinants at the country level, like real GDP per capita and political democracy.[1]

In *Economic Freedom of the World: 2013 Annual Report*, Rode, Knoll, and Pitlik (2013) focus on the life satisfaction outcomes of economic freedom and democracy, showing that there is a welfare benefit derived from living in an economically free society that goes beyond pure income-enhancing effects. The well-being associated with economic freedom is valued by people in its own right, above and beyond the material wealth that it produces for society. More recently, a number of articles have also found that the degree to which people feel they are in control of their own lives is an important correlate of subjective measures of well-being (e.g., Inglehart, Foa, Peterson, and Welzel, 2008; Verme, 2009; Bavetta and Navarra, 2011). According to this literature, people who perceive they are more in control of their own fate are also found to be systematically happier.

1 Reviews by Dolan, Peasgood, and White, 2008 or Frey, 2008 provide good overviews of the topic.

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This latter strain of literature frequently draws on findings from sociopsychological studies in an attempt to explain life circumstances by defining certain personality types. The *locus of control* concept originally developed by Rotter (1966) features prominently among those studies. This approach pinpoints the degree to which individuals expect outcomes to be contingent on their own behavior or personal characteristics compared to the degree to which they expect outcomes to be a function of pure chance or fate. Individuals who perceive themselves to have a high *internal locus of control* interpret personal choices as the main cause of individual success or failure. In contrast, people with an *external locus of control* believe that control over events is largely outside their sphere of influence.

In a related observation, Verme (2009) highlights that the extent to which an individual values free choice might well be driven by the degree to which that same person feels to be in control of his (or her) own life. Therefore, the question whether or not someone is able to reap the benefits of choice in markets might crucially depend on an underlying internal locus of control. Verme (2009) argues that at low income levels choice is disproportionately increased by a positive marginal change in income. The author identifies this increase in choice to be the main reason for the strong relationship of per-capita income and life satisfaction in developing countries, while marginal increases in developed countries have a much smaller impact on choice and life satisfaction. According to similar arguments put forward by Buchanan (2005), a fear of freedom and anxiety when one is responsible for one's own actions forms the basis for the parental role of the welfare state, as it fuels demand for big government.

A next logical step is to investigate the possible macro-determinants of individual life-control perceptions themselves: What are the factors that determine whether people feel largely in control of their lives, or not? To date, related issues have been addressed by only a few authors. Notable exceptions are Inglehart, Foa, Peterson, and Welzel (2008) and Welzel (2014). Inglehart and colleagues, for example, report that scarcity is one of the most important constraints on individual choice, and growing resources will therefore also enhance the latter. Provided that enhanced economic freedom contributes to a reduction in economic scarcity, one might also expect that such constraints are relaxed over time, which in turn is the main factor identified behind the rising levels of life satisfaction. Both studies draw on lifestyle changes during the past 30 years to explain the perceived increase in life control, finding that these may be driven by economic development, democratization, and increased tolerance.

In two recent contributions, Pitlik and Rode (2014) and Bennett and Nikolaev (2015) further recognize that capitalism and free markets are important elements of individual freedom. In particular, both studies find economic institutions that are built on the principle of freedom of choice, as represented in unrestricted choice among the options available, to be major drivers of life control perceptions.

Taking into account these recent findings, it might well be the case that the effect of economic freedom on life satisfaction substantially passes through the feeling of being in control of one's own life. The present chapter examines this relationship by employing individual data from the latest version of the World Values Survey and the European Values Study (WVS/EVS). We find that high overall economic freedom is a major determinant of personal life satisfaction, and the perception of control of one's own life, even if we control for per-capita income and a full range of other individual characteristics. In addition, the effect of economic freedom on life satisfaction does seem to be mediated by life control to a large degree, while democratic institutions are not relevant for an enhanced feeling of life control.

2 What is life control and how does it relate to life satisfaction, income, and democracy?

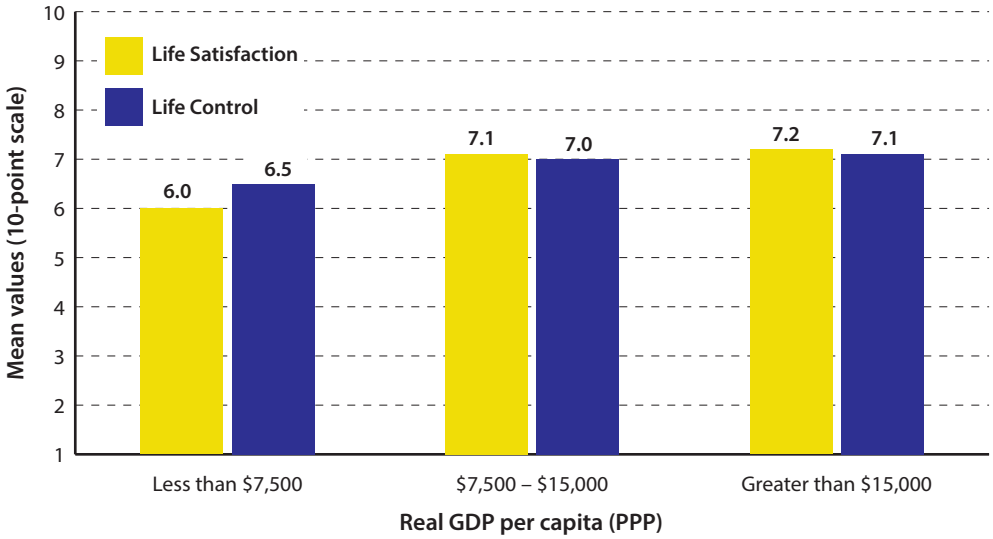
Just like the study of life satisfaction, the quantitative study of locus of control (or life control for the present purpose) has its origin in psychology and makes use of large-scale surveys to measure the overall feeling of control that individuals perceive to have over the course of their life. In a series of six waves, the World Values Survey (WVS) and European Values Study has interviewed different people in a large number of countries since the early 1980s, employing a similar methodology throughout all waves. The following question is adopted from the WVS survey to measure the concept of life control: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale [...] to indicate how much freedom of choice and control you feel you have over the way your life turns out." Respondents answer on a ten-point scale, ranging from "none at all" (1) to "a great deal" (10). This survey question captures the notion of external versus internal locus of control, and it is nowadays accepted as a brief version of the more extensive Rotter scale that was designed to measure locus of control (c.f., Rotter, 1966).

In turn, the following standard question is adopted from the WVS survey to measure life satisfaction: "All things considered, how satisfied are you with your life as a whole these days?" Also here, respondents answer on a ten-point scale, ranging from "dissatisfied" (1) to "satisfied" (10). Nowadays, there is a widespread consensus among scholars that this measure captures relevant and comparable information on human subjective well-being, and many important objections to these surveys have been judged to be unfounded (c.f., Dolan, Peasgood, and White, 2008; Frey, 2008).

All of the data in this chapter stems exclusively from the integrated file of the European Values Study and the World Values Survey (2014), which is freely available to all users. Generally, these surveys are all conducted for a representative sample of the adult population of each country. Therefore, the country means of life control and life satisfaction can be viewed as a rough measure of both concepts. In the following, we employ average country values to exemplify some of the more intuitive points of our analysis, highlighting some notable facts to the reader. In turn, the empirical section will employ individual-level data for the econometric analysis, giving us much more detailed information on the determinants of individual life control and life satisfaction.

Figure 3.1 connects life control and life satisfaction to real per-capita income in terms of purchasing power parity. The 132 country observations on which this graph is based were taken from the last three waves of the WVS, conducted between 1999 and 2013. These are divided into three groups: the first group consists of countries with a per-capita GDP below $7,500; the second group all has an annual GDP per capita between $7,500 and $15,000; and the third group an annual GDP per capita above $15,000. We then calculated the corresponding average life control and life satisfaction for each group. Figure 3.1 illustrates that countries with an annual per-capita income below $7,500 also present the lowest average life control and life satisfaction scores of 6.5 and 6.0, respectively. Both variables show a level of 7.0 for life control and 7.1 for life satisfaction in countries with an annual income between $7,500 and $15,000. As one would expect, the group of countries with an income above $15,000 presents the highest average life control score of 7.1, and also the

Figure 3.1: Life Control, Life Satisfaction, and income



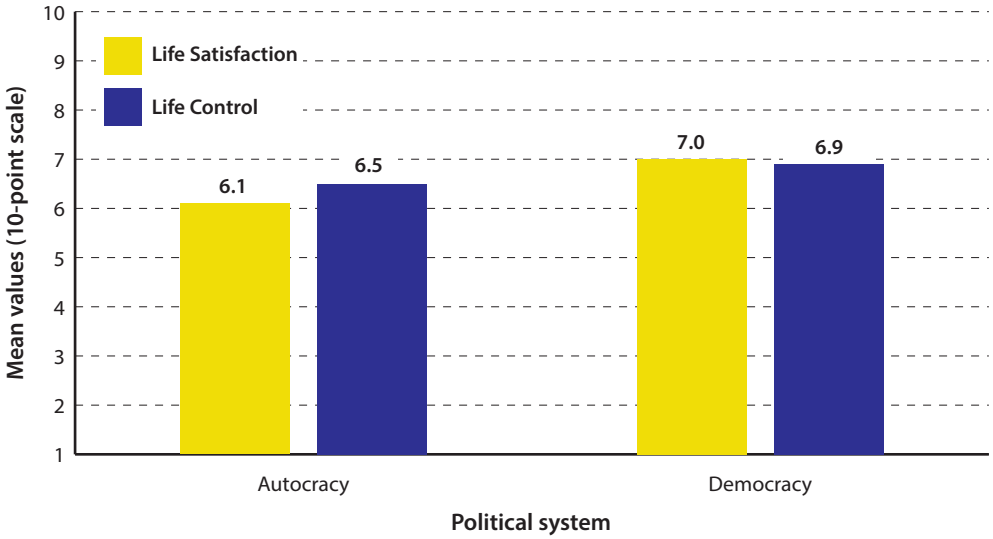
Sources: Feenstra, Inklaar, and Timmer, 2015 (Penn World Table); World Values Survey, 2014.

highest life satisfaction score of 7.2. These differences are quite notable, especially if we consider that the standard deviation of both variables is about 0.9 for the whole sample. As already stated, the relationship of per-capita GDP to both variables is therefore considerable, even though it seems to be somewhat less important for average perceptions of life control than for average life satisfaction. This is highly interesting, as recent research also finds relative personal income to be the single most important element that determines individual life control, and not absolute per-capita income differences (Pitlik and Rode, 2014). This finding might also be reflected in our relatively simple graphic.

Just as impressive are the life-satisfaction and life-control asymmetries among different political regimes. The latter is illustrated in figure 3.2, where we divide the countries of our dataset into autocracies and democracies, according to the DD dataset by Cheibub, Gandhi, and Vreeland (2010). This dataset is based on a minimalist definition of democracy, which classifies countries as democratic when legislative and executive officials are selected by free and open elections. Even though such a reductionist concept of democracy is debatable, it serves our present purpose of cataloging countries according to their basic political institutions. Figure 3.2 shows that both the life control and life satisfaction of democratic nations is substantially above that of autocracies. The average life-control and life-satisfaction levels of autocratic countries were 6.5 and 6.1, respectively. In turn, the average life-control and life-satisfaction scores of democratic countries were 7.0 and 6.9, respectively. The division suggests that the utility derived from political democracy is important in terms of life control and life satisfaction for the average citizen. It also suggests though, that the potential life-satisfaction utility from free and fair elections is larger than for the perceptions of life control. So, on average, political democracy seems to matter more for life satisfaction than for the feeling of being in control of one's own life, which is comparatively higher under autocratic regimes.

Table 3.1 and table 3.2 present additional data on life satisfaction and life control. Table 3.1 lists the ten countries with the highest mean values for these two variables, while table 3.2 presents the ten with the lowest values. Both tables employ average values from the last three waves of the WVS, conducted between 1999 and 2013.

Figure 3.2: Life Control, Life Satisfaction, and political regime



Source: Marshall, Gurr, and Jaggers, 2014 (Polity IV Project); World Values Survey, 2014.

Table 3.1: The ten countries with the highest values for Life Satisfaction and Life Control

Life Satisfaction		Life Control	
Colombia	8.4	Mexico	8.3
Mexico	8.3	Trinidad & Tobago	8.2
Norway	8.0	Colombia	8.2
Qatar	8.0	Peru	8.0
Switzerland	8.0	United States	8.0
Ecuador	7.9	Kuwait	8.0
Brazil	7.8	Qatar	7.9
Argentina	7.8	Slovenia	7.9
Finland	7.8	Romania	7.9
Canada	7.8	Ecuador	7.9

Source: World Values Survey, 2014.

Table 3.2: The ten countries with the lowest values for Life Satisfaction and Life Control

Life Satisfaction		Life Control	
Bulgaria	5.2	Bulgaria	5.6
India	5.1	India	5.5
Ethiopia	5.0	Turkey	5.2
Rwanda	5.0	Rwanda	5.2
Georgia	5.0	Ghana	5.2
Pakistan	4.9	Pakistan	4.7
Egypt	4.9	Burkina Faso	4.6
Moldova	4.6	Mali	3.6
Tanzania	3.9	Morocco	2.9
Zimbabwe	3.9	Egypt	2.7

Source: World Values Survey, 2014.

As table 3.2 shows, Latin American countries are over-represented among the countries with the highest values for life satisfaction and life control. The high values for life satisfaction in Latin America have previously been documented in the happiness literature (Rode, Knoll, and Pitlik, 2013). But, a similar pattern is also present for life control. Mexico, Colombia, and Ecuador are all among the countries with the highest mean values for life satisfaction and perception of life control. In fact, Latin American countries make up half of the top ten for both. Other than Latin American countries, those with high incomes dominate the top ten for life satisfaction. The situation is somewhat different for life control. Here, three high-income countries, the United States, Qatar, and Kuwait are included in the top ten. However, two former centrally planned economies, Slovenia and Romania are also in the top group.

Conversely, table 3.2 also shows a high coincidence between the ten worst performers of life satisfaction and life control. Five of the bottom ten countries are present in both rankings, namely Bulgaria, India, Rwanda, Pakistan, and Egypt. Living in Southern Asia seems to be particularly detrimental for one's feeling of life satisfaction and the perception of being in control. This is a rather striking fact, considering that roughly about one-fifth of the world's population live in India and Pakistan. For the remaining countries, table 3.2 shows that life satisfaction and life control are particularly low in a number of African countries. Interestingly, while there is only one European country on the list for the worst performers for life control, namely Bulgaria, three European countries are among the worst life-satisfaction performers, namely Bulgaria, Georgia, and the Republic of Moldova. The latter finding mirrors the well-known fact that post-communist countries are usually found to have comparatively low levels of life satisfaction (Rode, Knoll, and Pitlik, 2013). Still, the minimal presence of former centrally planned economies among the ten lowest life-control performers, and the appearance of Romania and Slovenia among the ten best life-control performers (table 3.1) might indicate that an equivalent post-communist phenomenon is absent for the variable, life control. While living in post-communist countries results in lower levels of life satisfaction, this is not the case for life control.

The coincidence of countries with the highest and lowest levels of life satisfaction and life control indicate how strongly the concepts seem to be related to one another. In addition, per-capita income seems to be a fundamental determinant of both, with wealthier economies also presenting higher average levels of both life control and life satisfaction. Notwithstanding, it seems that per-capita income is, relatively speaking, a more important determinant of life satisfaction than life control, highlighting that the two concepts are certainly not equivalent and seem to capture different perceptions of life circumstances. Likewise, political democracy also seems to play a much less important role for average life control than average life satisfaction.

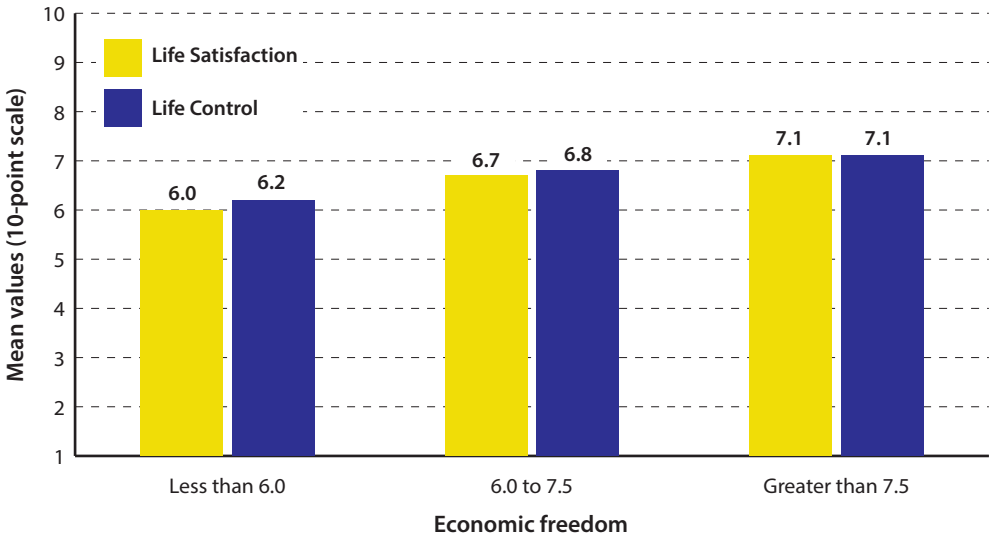
3 The association of life control and life satisfaction with economic freedom

In this section, the relationship between economic freedom on the one hand and life control and life satisfaction on the other is analyzed empirically. Economic freedom is measured by the index published in *Economic Freedom of the World: 2014 Annual Report* (EFW) (Gwartney, Lawson, and Hall, 2014). Prior research has shown that this measure is related to many other important economic variables. These include:

overall income levels and growth (Pitlik, 2002; De Haan, Lundström, and Sturm, 2006; Doucouliagos and Ulubasoglu, 2006; Rode and Coll, 2012), inequality (Berggren, 1999), political democracy (Rode and Gwartney, 2012), and subjective well-being (Rode, Knoll, and Pitlik, 2013). In recent works, Pitlik and Rode (2014) and Bennett and Nikolaev (2015) further find economic freedom to be a major driver of individual life-control perceptions, raising the issue of the extent to which economic freedoms' impact on life satisfaction operates through variations in personal life-control perceptions.

Before we examine this issue econometrically, consider figure 3.3, which gives a graphical overview, employing again average country data from the last three waves of the WVS. All 136 observations in the dataset are divided into three groups, according to their level of economic freedom. The first group consists of countries with an EFW score below 6.0; the second group of countries all have an EFW score between 6.0 and 7.5; and all countries in the third group have EFW scores above 7.5. Just as with the different income categories, we calculate the corresponding average life control and life satisfaction for each group. As one can observe in figure 3.3, countries with economic freedom below 6.0 also have the lowest average scores for life control and life satisfaction, 6.2 and 6.0, respectively. In the second group with EFW scores between 6.5 and 7.0, both variables show the substantially higher values of 6.8 for life control and 6.7 for life satisfaction. The group of countries with an economic freedom level above 7.5 is also the freest and happiest, recording an average score of 7.1 for both life control and life satisfaction. Again, these differences are notable and they suggest that living in an economically free society has an important impact on the average citizen. Of course, the observed effects might be driven by the high correlation between EFW scores and GDP per capita, which is not controlled for in these simple graphics. This issue will be examined in the following section.

Figure 3.3: Life Control, Life Satisfaction, and economic freedom



Sources: Gwartney, Lawson, and Hall, 2014 (*Economic Freedom of the World*); World Values Survey, 2014.

The empirical estimations employ individual data to measure life control and other personal characteristics of respondents. We use the integrated data file that includes longitudinal aggregates from all six waves of the WVS, covering the period

between 1981 and 2014. EFW variables are chosen to be from the year before the actual survey was conducted. If data for a particular year was not available, we used linear interpolation to arrive at a hypothetical score. Such a procedure is only relevant for the 1980s and 1990s, where EFW data is available only at five-year-intervals. To test our hypotheses, we perform pooled Ordinary Least Squares (OLS) regressions of personal life satisfaction on life control and the level of economic freedom, introducing individual-level controls, country-level controls, country fixed effects to account for unobserved heterogeneity, and time fixed effects to proxy for common external shocks. Formally, our baseline specification models life-satisfaction and life-control perceptions of individual *i* living in country *j* at time *t*, as follows:

1 $\text{life satisfaction}_{ijt} = \beta_0 + \beta_1 \text{life control}_{ijt} + \beta_2 \text{EFW}_{jt} + \beta_3 \text{individual controls}_{ijt} + \beta_4 \text{macro controls}_{jt} + \text{cfe}_j + \text{tfe}_t + \varepsilon_i$,

2 $\text{life control}_{ijt} = \beta_0 + \beta_1 \text{EFW}_{jt} + \beta_2 \text{individual controls}_{ijt} + \beta_3 \text{macro controls}_{jt} + \text{cfe}_j + \text{tfe}_t + \varepsilon_i$,

3 $\text{life satisfaction}_{ijt} = \beta_0 + \beta_1 \textit{residual life control}_{ijt} + \beta_2 \text{EFW}_{jt} + \beta_3 \text{individual controls}_{ijt} + \beta_4 \text{macro controls}_{jt} + \text{cfe}_j + \text{tfe}_t + \varepsilon_i$.

Specification 1 employs life satisfaction as the dependent variable, introducing life-control perceptions and economic freedom as primary control variables. This model is designed to capture the direct impact of both variables on life satisfaction. Nonetheless, it seems very plausible from our analysis above that economic freedom also exerts an independent impact on life control, which is not captured in specification 1. For that reason, specification 2 employs life-control perception as a dependent variable, introducing economic freedom as a primary control variable. Finally, specification 3 tries to assess the complete impact of economic freedom on variations in life satisfaction, including the indirect effects through life control. Here, we employ a methodology used by Gwartney, Holcombe, and Lawson (2006) and Rode, Knoll, and Pitlik (2013) to deal with the present problem of estimating the full effect of economic freedom on life satisfaction. Using the residuals from specification 2, this model includes the values of life control that are not correlated with economic freedom, which allows us to capture the total outcome of economic freedom on life satisfaction.

In all three specifications we further include the following individual characteristics, which affect personal life-satisfaction and life-control perceptions:

Income Individual income rank is the individual's self-declared income decile ranking. It is a subjective measure of relative income, not an objective measure of absolute purchasing power. We expect it to be positively associated with life satisfaction and life control, meaning that individuals that declare themselves to be higher up on the income ladder also report higher life satisfaction and life control.

Social trust Trust in other people is expected to be associated positively with perceptions of life satisfaction and life control, as trusting other people has been shown to enhance individual happiness, capturing the quality of informal institutions in a society (Bjørnskov, 2003).

Religiosity While religiosity has been shown to have a positive impact on life satisfaction (e.g., Rode, Knoll, and Pitlik, 2013), its impact on life control is ambiguous. Individuals with a strong belief in God may at the same time believe they have less personal control over their life; however, one may also expect religious people to have greater confidence in their ability to influence the direction of their life if they trust in the backing of a higher authority.

Health A good health status is expected to be associated positively with the perception of control over one's own life and the satisfaction derived from it, as compared to a perceived bad health status. We control for this fact by introducing a dummy for persons that declare to be in a good or very good state of health.

Employment Being unemployed is expected to be associated with a reduced perception of life control and life satisfaction. In fact, the latter has been established in numerous studies on unemployment and happiness (Helliwell, 2003) and we expect it to be similar for the case of life control. With regard to self-employment this may be different, as it has been argued to enhance individual life satisfaction (Frey, 2008). Depending on the circumstances, self-employment may also give individuals the feeling that they have more control over their lives. Two dummy variables account for unemployment and self-employment, while regularly employed persons serve as the reference group.

Age A person's age has been shown to influence life satisfaction in a U-shaped manner. While younger and older people tend to report higher life satisfaction, middle-aged people—those "in the treadmills of everyday life"—report lower life satisfaction (Frey, 2008). We expect to find a similar effect for life control. In order to account for age, we include dummy variables for age groups 30 to 60, and over 60 years, while the younger 15-to-30 age group serves as the reference group.

Marriage People who live in a stable relationship have been shown to be happier, while being divorced or separated is a major factor that reduces individual life satisfaction (Frey, 2008). We thus include a dummy variable that accounts for both facts, making singles into the reference group. With respect to life control, the association with being married is again ambiguous, but a negative relationship is expected for those who are separated or divorced.

Children Having children is ambiguous in both cases, as it may enhance or reduce both life satisfaction and life control. In addition, the number of children may affect this association. We proxy for both facts by introducing two dummy variables, one if people have one or two children, and another if they have three or more. The group of people with no children is thus our reference group.

Education One would expect that individuals with a higher education would also report that they experience higher life satisfaction and higher life control. Our model includes two dummy variables for a person's maximum educational level, where having no formal education at all is the reference group.

Descriptive statistics of all variables in our sample can be found in table 3.3. Total sample size covers responses from 262,960 individuals in 76 countries. Because a

Table 3.3 Summary statistics

Variable	Obs	Mean	SD	Min	Max	Source
			Individual			
life satisfaction	262,960	6.87	2.33	1	10	World Values Survey, 2014
life control	262,960	6.90	2.34	1	10	World Values Survey, 2014
income decile	262,960	4.84	2.44	1	10	World Values Survey, 2014
socialtrust	262,960	0.30	0.46	0	1	World Values Survey, 2014
religiosity	262,960	0.70	0.46	0	1	World Values Survey, 2014
female	262,960	0.52	0.50	0	1	World Values Survey, 2014
age31 60	262,960	0.53	0.50	0	1	World Values Survey, 2014
age60plus	262,960	0.17	0.38	0	1	World Values Survey, 2014
goodhealth	262,960	0.67	0.47	0	1	World Values Survey, 2014
selfemployed	262,960	0.11	0.31	0	1	World Values Survey, 2014
unemployed	262,960	0.08	0.26	0	1	World Values Survey, 2014
fulltime	262,960	0.38	0.49	0	1	World Values Survey, 2014
married	262,591	0.64	0.48	0	1	World Values Survey, 2014
separated	262,362	0.13	0.33	0	1	World Values Survey, 2014
children 1o2	262,362	0.37	0.48	0	1	World Values Survey, 2014
children 3more	262,362	0.38	0.49	0	1	World Values Survey, 2014
education mid.	258,396	0.45	0.50	0	1	World Values Survey, 2014
education high	258,396	0.24	0.43	0	1	World Values Survey, 2014
			Macro			
EFW	183	6.76	1.06	3.39	8.59	Gwartney, Lawson, and Hall, 2014
logGDPpc	183	9.31	1.05	5.44	10.85	Penn World Tables (8.1) (Feenstra et al., 2015)
Democracy	183	7.08	4.57	–7	10	Marshall, Gurr, and Jaggers, 2014
Gini	183	34.83	9.58	19.7	64.8	World Bank, 2014

number of countries were repeatedly surveyed in the World Values Survey, the actual number of country-level observations in our dataset is 183. The sample mean of the life-control variable is 6.9, with a standard deviation of 2.3; the sample mean of the EFW summary index is 6.75, with a standard deviation of 1.1.

In addition to the individual controls and the EFW Index, we introduce a number of country-wide covariates into our models: the log of real Gross Domestic Product per capita in PPP adjusted US-Dollars from the Penn World Tables (Feenstra, Inklaar, and Timmer, 2015), lagged by one year; and the country's Polity IV score by Marshall, Gurr, and Jaggers (2014) to capture political democracy,

coinciding with the respective survey year. In addition, Gini coefficients from the World Bank (2015) to measure overall income inequality, based on household disposable income measures by Deininger and Squire (1996). Country fixed effects (cfe) capture unobserved heterogeneity and cultural differences that drive the subjective perception of one's own life control and life satisfaction, while time period dummies (tfe) account for unobserved common shocks that jointly affect individual values in all countries. Note, however, that tfe may substantially absorb effects of changes over time of EFW, per-capita income, and so on. All estimations are performed with pooled Ordinary Least Squares (OLS) regressions. To account for the bias that causes the standard errors of macro-covariates to be far too small, which is inherent in such a survey data setting (Moulton, 1990), we corrected by clustering standard errors on the country level.

Regarding the direction of causality, it is unclear at the aggregate country level whether economic freedom causes higher life control or whether higher average perception of life control leads to increased political support for economic freedom. However, identification of the cause-and-effect relationship is less of a problem in the case of the individual data. In the latter case, overall levels of economic freedom may surely have an effect on the personal perception of life control, but the impact of a single individual's perception of life control on country-wide economic freedom policies is marginal, at best. To be sure, this does not rule out the possibility of some positive feedback effects, but it does give us greater confidence that the channel we find actually exists and is not purely a product of reverse causality. Therefore, we opted to estimate the effects at the individual level, which enhances our ability to identify the direction of causality accurately. The results are presented in the next section.

4 Estimation results

The results of our OLS fixed-effects regressions are displayed in table 3.4, where we also present the full set of individual control variables. Columns (1) to (3) show estimates for specification 1 with life satisfaction as a dependent variable, where equation 1 uses the full set of control variables. Because the questions on educational attainment and health status were not asked in all countries and survey waves, we exclude these variables in equation 2 so as to increase our observations from about 140,000 to more than 220,000. Finally, equation 3 repeats this estimation, employing only data from the last three survey waves, which were conducted between 1999 and 2013. This provides us with a robustness check and also makes it possible to examine potential structural changes across time. Columns 4 to 6 estimated the same samples for specification 2, using life control as the dependent variable. Finally, columns 7 to 9 estimate specification 3 for the same samples, introducing the residuals from the corresponding equations 4 to 6. This procedure includes the values of life control in the model that are not correlated with economic freedom, permitting us to assess the total effect of economic freedom and other variables on life satisfaction.

As equations 1 to 3 indicate, life control and economic freedom are both highly significant determinants of individual life satisfaction, with both variables presenting quite similar coefficients. The latter indicates that a change of one standard deviation in perceived life control, which amounts to a little more than a two-point

Table 3.4: Life Satisfaction, Life Control, and Economic Freedom

Dependent variable	Life Satisfaction			Life Control			Life Satisfaction		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
life control	0.277***	0.307***	0.295***				0.277***	0.307***	0.295***
	(10.84)	(13.04)	(10.72)				(10.84)	(13.04)	(10.72)
EFW	0.499***	0.291***	0.287**	0.234*	0.178**	0.343**	0.563***	0.345***	0.387***
	(8.92)	(4.13)	(1.99)	(1.69)	(2.41)	(2.12)	(9.96)	(4.93)	(2.69)
log GDP pc	0.256	0.352	1.854***	−0.332	0.249	0.878	0.163	0.429*	2.112***
	(0.95)	(1.52)	(3.47)	(−1.00)	(0.84)	(1.15)	(0.61)	(1.85)	(3.69)
Demo	−0.000	0.012	−0.004	−0.008	0.026	−0.059	−0.003	0.019	0.013
	(−0.02)	(0.89)	(−0.17)	(−0.25)	(1.18)	(−0.90)	(−0.15)	(1.50)	(0.59)
Gini	−0.028**	−0.014	−0.023	−0.054	−0.012	−0.053**	−0.043***	−0.018	−0.038**
	(2.25)	(1.52)	(1.21)	(1.52)	(0.58)	(2.09)	(3.48)	(1.56)	(−2.08)
incomedecile	0.113***	0.105***	0.128***	0.084***	0.102***	0.119***	0.137***	0.137***	0.162***
	(9.34)	(8.88)	(12.02)	(8.86)	(10.70)	(12.25)	(11.25)	(11.81)	(16.49)
socialtrust	0.177***	0.239***	0.276***	0.178***	0.255***	0.271***	0.226***	0.317***	0.356***
	(4.91)	(7.93)	(7.45)	(5.17)	(7.57)	(6.18)	(6.43)	(10.91)	(9.80)
religiosity	0.247***	0.245***	0.243***	0.086*	0.077*	0.056	0.271***	0.269***	0.259***
	(8.11)	(9.05)	(7.24)	(1.84)	(1.83)	(1.11)	(9.20)	(10.35)	(7.95)
female	0.152***	0.112***	0.133***	−0.075***	−0.121***	−0.127***	0.131***	0.075***	0.095***
	(6.91)	(5.58)	(5.51)	(−2.99)	(−4.18)	(−3.92)	(5.61)	(3.42)	(3.58)
age31 60	−0.179***	−0.252***	−0.306***	−0.060	−0.143***	−0.171***	−0.196***	−0.296***	−0.356***
	(−5.57)	(−8.69)	(−9.47)	(−1.62)	(−4.25)	(−4.32)	(−6.28)	(−10.66)	(−11.29)
age60plus	0.150***	−0.037	0.130**	0.067	0.194***	0.223***	0.167***	−0.097*	−0.196***
	(2.60)	(−0.68)	(2.40)	(1.03)	(2.75)	(2.73)	(2.60)	(−1.80)	(−3.63)
good health	0.847***			0.521***			0.991***		
	(19.25)			(14.60)			(26.36)		
self employed	−0.077***	−0.059*	−0.075*	0.167***	0.162***	0.130***	−0.031	−0.009	−0.038
	(−2.55)	(−1.88)	(−1.86)	(4.69)	(4.73)	(3.06)	(−0.97)	(−0.27)	(−0.89)
unemployed	−0.513***	−0.603***	−0.577***	−0.185***	−0.255***	−0.233***	−0.565***	−0.681***	−0.646***
	(−8.21)	(−9.88)	(−8.33)	(−3.69)	(−5.56)	(−4.04)	(−9.02)	(−11.32)	(−9.57)
married	0.294***	0.292***	0.262***	−0.002	−0.036	−0.021	0.293***	0.281***	0.255***
	(10.35)	(10.71)	(9.31)	(−0.70)	(−1.57)	(−0.84)	(10.33)	(10.36)	(9.10)
separated	−0.168***	−0.247***	−0.256***	−0.027	−0.063	−0.071**	−0.175***	−0.267***	−0.277***
	(−4.88)	(−7.73)	(−6.23)	(−0.58)	(−1.62)	(−2.25)	(−5.10)	(−8.38)	(−6.78)
children 1o2	−0.057**	−0.022	−0.022	−0.041	−0.056***	−0.026	−0.069**	−0.039	−0.030
	(−2.10)	(0.90)	(−0.81)	(−1.57)	(−2.67)	(−0.95)	(−2.50)	(1.57)	(−1.09)
children 3m	0.018	0.016	0.021	0.017	−0.105**	−0.075	0.014	0.016	−0.001
	(0.46)	(0.48)	(0.55)	(0.38)	(−2.47)	(−1.47)	(0.35)	(0.46)	(−0.03)
education mid	0.014			0.176***			0.063		
	(0.33)			(5.06)			(1.34)		
education high	0.021			0.294***			0.102**		
	(0.50)			(7.57)			(2.18)		
Adj. R^2	0.30	0.28	0.27	0.12	0.11	0.11	0.30	0.28	0.27
N	142,795	221,269	136,809	143,452	222,195	137,470	142,795	221,269	136,809
Countries	62	63	61	62	63	61	62	63	61
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: all regressions include a constant term; t−statistics in parenthesis; * significant at 10%; ** significant at 5%; *** significant at 1%

increase on the ten-point scale, is associated with a marginal increase in life satisfaction that is around 0.3 points. In turn, a one-point increase in EFW (roughly one standard deviation) is on average related to a marginal increase in individual life satisfaction that is roughly between 0.3 and 0.5 points. Interestingly, none of our other macro-controls have an effect comparable to that of economic freedom: GDP per capita and the Gini coefficient are only significant in one out of the three samples, while democracy is never significant at conventional levels.[2] To a degree, this result may be influenced by collinearity of EFW, GDP per capita, and democracy as described by Rode, Knoll, and Pitlik (2013).

In turn, all of the individual control variables behave as expected: good health status seems especially to be strongly and positively related to life satisfaction. Having a higher relative income, trusting other unknown people, religiousness, and being a woman are also associated positively with life satisfaction. We also find the expected U-shaped effect of age, while being unemployed significantly reduces individual life satisfaction. Interestingly, being self-employed is associated with a reduction in overall happiness, which contradicts some previous findings on this topic. Being married is again associated with higher overall life satisfaction, while being divorced or separated has exactly the opposite impact. Finally, our results indicate that neither having children nor completing higher levels of education exert a significant impact on life satisfaction.

In equations 4 to 6, life control is the dependent variable, and the control variables and data bases are the same as for equations 1 to 3. Again, economic freedom is a significant determinant of individual life control, even though the coefficients and significance levels are somewhat lower than for the case of life satisfaction. The coefficients indicate that a one-point increase in economic freedom is associated with a marginal increase in individual life satisfaction that is roughly between 0.2 and 0.3 points, on average. This might also be due to our time fixed effects, which are all highly significant in the life control models, showing that there is a common trend over time that might be reflecting the impact of economic freedom to some degree. All other macro-controls are insignificant in these three models, including real GDP per capita.

It is interesting that the cross-country variation in real per-capita income never presents a statistically significant relationship with life satisfaction or life control in our models, despite contrary evidence in the relevant literature (Dolan, Peasgood, and White, 2008; Frey, 2008; Rode, Knoll, and Pitlik, 2013). Apart from the fact that this effect might also be captured by the time fixed effects to some degree, there are other explanations. First, by controlling for the relative income of individuals, we might actually be capturing what is more relevant to most people, when they compare themselves socially with others in their vicinity (Haagerty and Veenhoven, 2003). Second, by including economic freedom in the estimations, we are in fact capturing the underlying institutional reason for varying GDP per-capita levels in our dataset (De Haan, Lundström, and Sturm, 2006; Rode and Coll, 2012). Third, similar to the effect of economic freedom, several of the individual control variables that are included in our model have also been shown to be important determinants of GDP per capita at an aggregated level, namely education and social trust (Bjørnskov, 2003).

2 The following result also holds when we employ the underlying elements of the polity indicator. These are never significant determinants of life satisfaction or life control in our models.

Returning to the results in equations 4 to 6, the individual control variables behave similarly to the life satisfaction models, with a number of notable exceptions. While women seem to be more satisfied with their lives than men, they also perceive themselves as having significantly less control over their lives than their male counterparts, which is shown by the negative and highly significant coefficients on our gender variable. While the life satisfaction of self-employed individuals was significantly lower than that of employed persons in equations 1 to 3, the life control perceptions of the self-employed are significantly higher than those of regular employees in equations 4 through 6. This is consistent with the view that, while self-employment provides individuals with greater control over their lives, it also generates personal conditions (e.g., greater stress, less security, and more anxiety) that affect life satisfaction adversely. While being married increases life satisfaction, it does not seem to enhance life control, as shown by the negative but insignificant coefficients on the corresponding dummy variable. Furthermore, we find some indications that having children significantly reduces life control, while there was no significant impact on life satisfaction in the foregoing models. Similarly, education seems to significantly enhance life control for the individual, even though there was no evidence that it increased the individual's happiness.

Regarding the relation of income and economic freedom, it is a widespread common belief that economic freedom benefits primarily people at the top of the income distribution. Theoretically, the effects are however not so clear cut, as high-income earners in general enjoy choice, whereas those at the bottom of the income distribution may be "double constrained" by low income and restricted opportunities. At the individual level, our results imply that a high personal income rank in society indeed has a substantial positive impact on the perceived control over one's own life.

Nonetheless, a more liberalized economy, which is characterized by increased freedom of choice and competition for all, does not automatically contribute to perceptions of increased life control on the part of the rich. On the contrary, increased choice and opportunities may comparatively strengthen life-control perceptions of relatively poor people more than those of relatively rich people. High-income earners are more constrained in a competitive setting than in an institutional environment with state-granted privileges, while people at the lower end of the income distribution may be constrained by their smaller incomes but not, at the same time, by restricted opportunities. In a recent paper, Pitlik and Rode (2014) find empirical evidence for this interpretation.

Finally, equations 7 to 9 introduce the residuals from the corresponding equations 4 to 6 to our basic model, thereby including the values of life control that are not correlated with economic freedom**.** As one can observe for the values on life control, these are now exactly equivalent to those of equations 1 to 3. In turn, the coefficients on the remaining control variables will now capture their full impact on life satisfaction, including the impact that passes through changes in life control.

Comparing equations 1 to 3 with equations 7 to 9, one sees that the signs, coefficients, and significance levels of our macro-control variables, including GDP per capita, democracy, and Gini coefficients are practically identical. Only the coefficients for economic freedom are substantially higher. In the case of economic freedom, the impact increases from 0.5 in equation 1 to 0.56 in equation 7. This indicates that a one-standard-deviation shock in economic freedom has the potential to raise individual happiness by almost six percentage points via direct and indirect

channels. This effect is comparable to an upward leap of roughly four income deciles in our model, which amounts to almost two standard deviations in this variable. So, while the estimated joint effects of economic freedom on life satisfaction across countries are not huge, they cannot be disregarded either, as the comparison to relative income shows. On an individual level, they demonstrate the welfare generated by living in an economically free society.

Furthermore, some of the individual controls change their impact on life satisfaction quite significantly, when one takes into account the effect via life control. For instance, a substantial part of the positive association of social trust on individual life satisfaction seems to pass through enhanced life control, as demonstrated by the substantially higher coefficients in equations 7 to 9. Women are still more satisfied with their lives in equations 7 to 9, but coefficients drop significantly when compared to equations 1 to 3, taking into account the reduced life control that we find for women, as compared to men. Similarly, coefficients on self-employment are still negative in the present model, but insignificant as opposed to specification 1. So, once we adjust the estimation for the positive effect of self-employment on life control, we cannot confirm a globally negative effect for life satisfaction anymore. Finally, equation 7 points to a possible positive impact of education on individual life satisfaction, once the effect that passes through enhanced life control is also accounted for.

It may take time for institutional factors like economic freedom and democratic institutions to exert an impact on the individual data. In order to check on this possibility, we re-run the equations of table 3.4 lagging the macro variables by an additional decade. This would provide for a sufficient time lag for individuals to adjust to macro changes. Moreover, the EFW for the earlier year could be thought of as an instrument for its current value. The results still show that EFW exerts a positive impact on life satisfaction, while democracy remains insignificant. These findings increase our confidence that living in a more economically free country enhances personal life satisfaction. While our findings indicate that institutions supportive of economic freedom exert a strong and persistent impact on the control of individual citizens over their life, and also their personal life satisfaction, this was not true for democracy. There was no tendency for individuals living in democratic countries to exhibit either more control over their life, or to achieve more personal happiness. Perhaps this reflects the fact that economic freedom exerts more impact than democracy on the daily lives of ordinary people. Put another way, restrictions on your ability to trade with others, choose your occupation, enter freely into business, and keep what you earn, tend to exert more impact on large parts of a society than whether the "rules of the game" are established democratically. From an individual perspective this makes some sense, since the whole point of democracy is to substitute collective control of people's lives for individual life choice. This is a feature of democracy, not a "bug", but it highlights how individual choice is inherent in economic freedom, as compared to democratic political institutions.

In prior research, Rode, Knoll, and Pitlik (2013), among others, have found that the mean country value of life satisfaction was higher under democracies than for authoritarian regimes when testing on a national or macro level. This paper reports tests on a micro or individual level. The problems accompanying both potential reverse causality and correlation of life satisfaction with left out variables are more severe in the case of analysis based on macro data. Thus, there is reason to have more confidence in the micro results, indicating that living in a democracy fails to

enhance life satisfaction and economic freedom does indeed exert a positive impact on life satisfaction. Further, as we employ country fixed effects in our individual estimates, the coefficients signal pure within-country variations over time, which says nothing about the influence of democracy on cross-country variations. Future research in this area is needed to determine in more detail why democracy appears to exert only a weak impact on the personal life control and life satisfaction of the residents of a country.

5 Conclusions

The individual and societal determinants of happiness have been heavily investigated in recent years and the findings indicate that one important correlate of life satisfaction is the degree to which people feel they are in control of their own lives. In a parallel manner, it has been shown that economic freedom exerts an independent impact on life satisfaction over and above its impact on per-capita income levels and other indicators of material well-being. Following Buchanan (2005), we examine the impact of economic institutions built on the principle of free choice upon individual perceptions of life control and consider the potential benefit that accrues to individuals in terms of their life satisfaction.

We find that living in a country with high overall economic freedom is a relevant determinant of feeling in control of one's own life. As one might expect, a substantial share of the impact of economic freedom on life satisfaction is actually channeled through life control. Therefore, economic freedom also influences individual happiness by giving people the feeling of being more in control of their own lives and having the freedom to choose between different options in the market.

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