

FREEDOM AND THE PURSUIT OF HAPPINESS

DARIO MAIMONE ANSALDO PATTI, PIETRO NAVARRA

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Dario Maimone Ansaldo Patti

University of Messina

Pietro Navarra

University of Messina

London School of Economics

Abstract

Very Preliminary. Please do not quote

1 Introduction

Three decades of freedom measurement show that economic freedom and economic prosperity go hand in hand (Gwartney, Lawson and Holcombe, 1999; De Haan and Sturm, 2000; Dawson, 2003). Though there are reasons to value such an important result, we should not overlook that the traditional paradigm of economics that emphasizes material prosperity has recently been criticized as it ignores subjective aspects of human well-being. Prosperity cannot and should not be limited to material wealth, it should encompass people's evaluation of a variety of aspects pertaining to how they feel and think about the quality of their lives (Clark, Frijters and Shields, 2008; Kittiprapas *et al.*, 2009).

The central importance that people attach to the quality of their lives retains a long and established tradition in the social sciences. Aristotle's ethics is built on the indisputable fact that all men aspire to be happy in life. However, although happiness is the undying quest of life, people cannot pursue it directly. Their search for happiness ought to rely on different other elements, each one of them contributing to secure this highly prized treasure. Those elements are defined by the socio-economic characteristics of the individual – i.e., income, employment status, family circumstances, health conditions, etc. – as well as by the features depicting the economic and institutional environment in which individuals live – macroeconomic stability, national wealth, income inequality, peace, etc. (for interesting surveys on the determinants of subjective well-being see: Frey and Stutzer, 2002a and 2002b; Di Tella and MacCulloch, 2006; Kahneman and Krueger, 2006).

Although this branch of research is rich of contributes and wide-ranging in terms of ground covered, one important aspect, although generally considered a relevant driver of individual well-being, did not received full attention in this large literature. We refer to the role played by freedom on subjective well-being. Thomas Jefferson, in the Declaration of Indipendence of the United States, wrote that individuals ought to be provided with the basic rights of *life, liberty and the pursuit of happiness*. This eloquent statement invites us to wonder about the relationship between freedom and the search for happiness. The ancient Greeks were amongst the first to convey the benefits of individual liberty as guarantees for the quality of life. The Greek historian Thucydides pointed out that freedom is the *true secret* for achieving happiness. In

modern democratic societies, freedom is often equated with happiness since a happy life is seen as decisively descending from living an active life of freedom (Frey, 2008).

In this paper we examine the relationship between freedom of choice and well-being by focussing on two different elements that allow individuals to make free choices: *opportunity to choose* and *autonomy to choose*. While the former is concerned with the extent to which people's choices are not coerced by the state, the latter focuses on each individual's responsible exercise of free choice (Bavetta and Navarrq, 2011). Intuitively, while the first element is a pre-condition for free choice and it is measured by the level of economic freedom, the second is concerned with individuals' conscious acting upon the available opportunities and it is measured by the extent to which people enjoy autonomy and control over their lives (...*CITE*...).

We claim that these two aspects of freedom complement each other in the enhancement of an individual's well-being. Our argument goes as follows. Let us take two individuals sharing the same level of autonomy to choose. The one who lives in a country where the opportunity to choose is higher enjoys greater well-being. This situation occurs since autonomy to choose generates well-being to the extent that individuals are used to the exercise of free choice. In such a situation, the responsibility that free choice entails is welcome by the individuals. Therefore, we claim that freedom requires some knowledge about how to use it, if its use should make us happy.

The paper is organized as follows. In Section 2 we review the literature on the relationship between freedom and individual well-being. In Section 3 we point out the limitations in the existing literature, adress the aim of the paper and state the theoretical hypotheses that support the complementarity between opportunity and autonomy to choose in enhancing individual well-being. In Section 4 we present the data. In Sections 5 we describe the empirical methodology, run the estimations and comment on the results. In Section 6 we carry out some robustness checks to test the solidity of our findings. In Section 7 we discuss the conceptual implications of our results. Finally, in Section 8 we draw some concluding remarks.

2 Freedom and individual well-being: The literature review

Different approaches have been proposed in the literature to evaluate the relationship between freedom and individual well-being. An important distinction relates to whether freedom ought to be considered as descending from the characteristics of the environment in which the individual lives or as an individual's subjective feeling. In the former case, freedom is represented by the set of opportunities open to a person in order to enhance the quality of his own life. Different features of the environment may indeed provide greater/lower opportunities for individuals to choose freely and advance their life prospects. In this paper we refer to that branch of the literature that links the extent of economic freedom to the level of individual well-being. This line of research makes use of indices of economic freedom to measure the range of effective choices available to people. Those indices correlate closely with measures of individual well-being, even after accounting for possible reverse causality (Sirgy *et al.*, 2006). Several studies provide empirical evidence that market liberalization, by guaranteeing wider range of opportunities to choose, improves the level of well-being that individuals enjoy (Welsch, 2003; Inglehart *et al.*, 2008).

A different way to analyze the role of freedom on individual well-being conceives the former as a subjective feeling emanating from the affirmation of one's own individuality through a process of self-development. Since the pioneering work of John Stuart Mill (1859), the free development of a person's individuality is considered as one of the leading essentials of well-being. In Mill's view each person ought to achieve well-being in his own way, acting on his own judgment. In this perspective, freedom is measured by the extent to which individual choices which shape the way a person lives truly express his own individuality. Free individuals, therefore, are those who believe that their choices are the outcome of an autonomous deliberation process that leads each person to consider himself the master of his own life (Bavetta and Guala, 2003, Bavetta and Peragine, 2006). In this sense, freedom is a subjective feeling emanating from autonomous and conscious choices that contribute to human flourishing.

2.1 Opportunity to choose and individual well being: The empirical evidence

The liberal tradition maintains that markets unconstrained by governments are appropriate environments in which individuals are guaranteed opportunities to choose through voluntary exchanges (Hayek, 1991). To measure the extent to which state intervention limits opportunities for choice, more than twenty years ago a group of distinguished economists, led by Milton Friedman and Michael Walker, gathered together in Vancouver and developed a methodology to construct an index of economic freedom (Walker, 1996). Two are the conceptual pillars of the empirical measures of economic freedom: free market and limited government. Combined together they guarantee economic freedom since they protect opportunities for choice (Gray, 1990). Countries in which the economic means of production are monopolized by the State provide individuals with very limited opportunities to choose and, therefore, deliver low levels of freedom. On the contrary, countries characterized by market oriented economic systems ensure greater opportunities to choose for the individuals and, therefore, display higher levels of freedom. In this perspective, economic freedom indices can be seen as describing different environments that provide individuals with different opportunities to choose (Scully, 1992; De Haan, 2003). Since higher levels of economic freedom grant greater *opportunities to choose* to individuals, from here onward we use these two terms interchangeably.

Does economic freedom affect individual well being? There is a relevant empirical literature that provides convincing evidence that it actually does. Freedom as opportunity to choose requires two elements: there should be something to choose from and people must make their choices without restrictions by others (Veenhoven, 2000). If the first element can be guaranteed by prosperity which provides individuals with more options to choose from, the second element depends on economic institutions that avoid impediments to voluntary exchange. Societal changes in the past decades have increased the prosperity of people and promoted market liberalization. In this dynamic global scenario economic institutions that recognize and respect rights and liberty of individuals and prevent undue policy constraints of various sorts, are likely to greatly enhance subjective well-being (Frey and Stutzer, 2002b; Inglehart and Klingemann, 2000).

Higher levels of economic freedom increase the chances that individuals have to make their preferred choices with less interference by the government and allow citizens to be freer and more in charge of their own fate (Ovaska and Takashima, 2006). This result, however, seems to be greater in poor countries, with low levels of education and stronger in rich countries with high education levels (Veenhoven, 2000). In same vein, a recent study examined the relationship between market-friendly government's policy choices and happiness (Tsai, 2008). This work empirically demonstrates that countries characterized by greater economic openness display higher levels of happiness and countries in transition from closed to open economies are more likely to show greater life satisfaction in their population.

An important point to be addressed, however, is the direction of causality between economic freedom and happiness. Say it differently, it remains open the debate of whether the former that enhances the latter or it is the other way round (Haller and Hadler, 2004). An interesting study pointed out the existence of a mutual dependence of pro-market attitudes with individual well-being (Graham and Pettinato 2001b). Both attitudes increase happiness, but happier individuals are also more likely to show pro-market attitudes.

2.2 Autonomy to choose and individual well-being: The empirical evidence

In Mill's view, freedom to choose one's own mode of living is essential for conducting a good life and the idea that human beings are unique individuals is central to his notion of happiness (Mill, 1859). Each person's uniqueness is established through the affirmation of his individuality which, in turn, is strengthened through the act of choosing. In this perspective, human flourishing requires the necessity of maximum freedom of choice since choosing is itself an essential part of human self-development and happiness.

The Millian notion of freedom has recently attracted the interest of scholars in the freedom of choice (FOC) literature who proposed a methodology for the measurement of the degree of individuality people enjoy (Bavetta and Guala, 2003). More specifically, they developed an axiomatic measure of individuality to assess the extent of autonomy to choose that people have in their decision-making (Bavetta, 2004; Bavetta

and Peragine, 2006). The empirical counterpart of the theoretical measurement of autonomy to choose consists in a survey question proposed in the *World Value Survey* dataset (WVS) in which individuals are asked how much freedom of choice and control they believe to retain over the way their life turns out (Bavetta *et al.*, 2009a; Bavetta and Navarra, 2011).

Several scholars have used the WVS question on how much freedom of choice and control people enjoy to evaluate the impact of freedom on individual well-being. An individual's belief of having free choice and control over his own life is closely linked to happiness and self-satisfaction (Johnson and Krueger, 2006). Using a cross-national data set Veenhoven (1999) finds that the correlation between free choice and control and happiness is positive on the whole. However, when the data set is differentiated by levels of income, the correlation turns out to be positive in rich and negative in poor countries. When the level of income in regression analysis is used as control to check for spurious correlation, correlates of happiness are frequently found to be insignificant (Veenhoven, 1995; Schyns, 1998). An interesting explanation for this result is offered by Welsch (2003). He examined the relationship between freedom of choice and control and happiness by considering that prosperity, although an important predictor of happiness, may itself be driven by free choice and control. He empirically demonstrated that freedom of choice and control has direct as well as indirect effects on happiness. The direct effect explains why some correlates of happiness tend to become insignificant when income is controlled for, while, at the same time, defeating the conclusion that these correlates do not affect happiness at all.

A different line of research suggests that rising happiness in the past 25 years can be explained by the greater sense of free choice and control experienced in most countries worldwide: such a positive effect on well-being increases as rising incomes increase the utility of freedom (Inglehart, 1997; Welzel *et al.*, 2003). In poorer societies people lack the resources to fulfill their basic needs. Therefore, in these societies economic resources are the major drivers of people's quality of life. Differently, in more prosperous societies, household income shows a diminishing impact on individual well-being. In such societies people attach higher values to free choice and self-expression. This shift in life strategies due to economic prosperity deemphasizes the pursuit of happiness through economic means toward the search for happiness by maximising people's self-expression, free choice and individual autonomy (Inglehart and Welzel, 2005; Inglehart

et al., 2008).

It is important to note that the concept of freedom of choice empirically measured by the WVS question on the extent of free choice and control individuals enjoy is never grounded on solid theoretical basis in the papers reviewed so far. Exceptions are the attempts made by Venhoven (2000) and Verme (2009). They give some theoretical justification for the use in their analyses of the WVS question. Veenhoven (2000) interpreted freedom of choice and control drawing from Bay (1965) who proposed a distinction between *social freedom* and *psychological freedom*. The former is considered as freedom from impediments, such as restrictive laws or oppression by the powerful, and the latter as the personal inclination to make choices. On the other hand, Verme (2009) adopted the concept of *the locus of control* proposed in social and personality psychology (Rotter, 1954; 1990). Such a concept suggests that people who believe that the outcome of their actions depends effort and skills rather than fate or destiny have a greater appreciation of freedom of choice. This led Verme to argue and empirically validate that a measure that combines freedom of choice with the locus of control predicts happiness better than measures of freedom alone.

3 Limitations in the literature and the aim of the paper

The literature on the relationship between freedom and individual well-being suffers from two main shortcomings. First, the empirical investigations reviewed above have never addressed the competing merits of the two concepts of freedom of choice - opportunity and autonomy to choose - in enhancing well-being. More specifically, although several papers have examined the effect of both freedoms on well-being, no study investigated whether opportunity and autonomy to choose complement each other or are substitute in boosting well-being. We believe that if, on the one hand, the extent of economic freedom - opportunity to choose - in a given country determines the opportunities available to its citizens, on the other, effective choices require that the individuals' recognition of such opportunities is acted upon - autonomy to choose. Say it differently, effective choices require both opportunity and autonomy to choose. To make an example, the owner of a pharmaceutical firm who recognizes in the market the

potential demand for a new drug discovered in his laboratories (opportunity) may let the prospect of increasing sales pass if he is not eager to take his fate into his own hands (autonomy). The example leads us to hypothesize the existence of a complementary effect between opportunity and autonomy freedom in enhancing individual well-being.

The second limitation in the literature on freedom and well-being is methodological. The empirical analyses that have been carried out to estimate the effect of freedom of choice on individual well-being have by and large used logistic regression models. In such studies while the extent of opportunities to choose are captured by macro-variables measured at country level (the indices of economic freedom), the level of autonomy to choose, being it a subjective feeling (the WVS question), is measured by micro-variables measured at the individual level. Merging information at both the individual and the country level may lead to a violation of one of the main assumptions of the classical regression model: the error terms may be correlated with one another when the individuals are clustered into different groups. Failing to account for those clusters may generate a downward estimation of standard errors that may conduct to a misleading inference. Logit estimations, therefore, appear to be unsatisfactory and this brings us to carry out a different econometric approach that accounts for differences among countries and disentangles the source of such differences.

In this paper we aim at testing the existence of a complementarity between opportunity and autonomy to choose in enhancing individual well-being. We carry out a multilevel logit (MLL) empirical model to overcome the methodological limitations in the existing literature. The MLL model allows us to disentangle the effects of two different components on individual well-being: a random component (upper level) given by the level of economic freedom (opportunity to choose) existing in the country where the individual lives and a fixed component (lower level) given by the extent of autonomy (autonomy to choose) the individual enjoys. This econometric technique allows us to examine whether and to what extent the impact of autonomy on the level of the individual well-being is either reinforced or moderated by the degree of economic freedom existing in the country where he lives.

3.1 The theoretical hypotheses

We claim that economic freedom and autonomy complement each other in the enhancement of an individual's well-being. We defend this claim by developing and testing two theoretical hypotheses.

Consider two countries. In the first, state intervention supplant individual decision processes and atrophy people's deliberative skills and attitudes. In such a country citizens are mere recipients of public goods and services whose quantity and quality are decided by others. Under these circumstances, it is unlikely that acting upon one's own autonomy delivers happiness since people do not have the 'know-how' to use freedom. In the second country, market institutions and private ownership are firmly established. People are the master of their lives and, acting out of their own choices, determine the quantity and quality of the goods and services they consume. In such a country, though the exercise of freedom of choice entails some costs, as far as it gives people control over their life, it makes them happier. Put it differently, people have the 'know-how' to use freedom.

The first country is representative of state-led economies, e.g., a former Communist country of Eastern Europe or an authoritarian state in the Middle East, where goods and services are publicly provided and people are passive recipients of heteronomous choices made by the government. The second is representative of market economies, e.g., an OECD country, where private enterprise guides the allocation of goods and services to their most efficient use out of people's voluntary choices.

The example described so far supports the complementarity between autonomy and economic freedom and leads us to formulate the following theoretical hypothesis:

H1 *For a given level of autonomy to choose, there is a higher probability of greater well-being for those individuals who live in countries with a higher level of economic freedom - opportunity to choose - and vice versa.*

Although changes in the level of economic freedom affect the relationship between autonomy to choose and well-being as described in Hypothesis 1, it is important to examine the effect on individual well-being of changes in autonomy to choose for different levels of economic freedom. We hypothesize that a given change in autonomy to choose grants higher well-being returns in those countries characterized by a lower level of autonomy freedom.

Consider two countries with different levels of economic freedom. In the first, a high degree of economic freedom makes a wider set of opportunities to choose available to individuals. Such a wider set, however, brings about higher deliberative costs for decision makers since it requires a greater effort to process the available information in order to make truly autonomous choices. The exercise of autonomous behavior has limited effects on well-being. In the second country, low levels of economic freedom leave few opportunities for choice to individuals. Under this circumstance, an increase in autonomy to choose is unlikely to entail a greater complexity of the deliberative process leading to significant improvements in the perceived level of well-being. Therefore, we expect that the same increase in the level of autonomy to choose provides greater well-being returns in those countries characterized a lower level of economic freedom. This leads us to state the following hypothesis:

H2 *For the same increase in autonomy to choose, there is a higher increase in well-being in those countries where economic freedom - opportunity to choose - is lower and vice versa.*

Hypotheses 1 and 2 will be empirically tested in the Section 4 where we describe the data and the empirical methodology and carry out the estimation.

4 The data

The data used in our empirical analysis are drawn from two main sources: the World Value Survey (WVS) database and Heritage Foundation index of economic freedom. The dataset that we compiled allows us to carry out a cross-country analysis that takes into consideration 89 countries over a time span covering the period 2004-2008.

The dependent variable in our empirical analysis is the extent of well-being (WB) enjoyed by individuals. According to the literature, we use happiness (HP) to measure the level of individual well-being. Data for both variables are drawn from the WVS database (2009). Happiness is assessed by asking respondents to indicate how happy they are, using four categories: ‘very happy’, ‘rather happy’, ‘not very happy’, and ‘not at all happy’. On the basis of this scale, we construct a binary dummy variable taking the value of 1 if the individual is rather or very happy and 0 otherwise.

The determinant of individual well-being is freedom of choice. As mentioned in the previous sections, we distinguish two aspects of free choice: opportunity to choose and autonomy to choose. To calculate the extent to which individuals enjoy opportunity to choose we use the Heritage Foundation index of economic freedom (HEF). This is a numerical indicator which ranges between 1 (low economic freedom) and 100 (high economic freedom). For the sake of a better data comparison, we have rescaled this index over a range that goes from 1 (low economic freedom) and 10 (high economic freedom). As far as the measurement of the individual's extent of autonomy to choose is concerned, we adopt the measure of autonomy freedom (AF) introduced in Bavetta *et al.* (2009). Such a measure is based on individual level data from the WVS (2009) in which survey respondents are asked to indicate to what extent they feel they have free choice and control over their lives, using a scale that ranges from 1 (none at all) to 10 (a great deal). Therefore, the higher the value of responses, the greater the extent of autonomy to choose.

Other independent variables are included in the dataset employed for our empirical analysis. They range from demographic to socio-economic characteristics of the individuals under investigation. The gender of respondents is captured by a binary dummy variable of value 1 if the individual is male and 2 if female. Age is expressed in years. To account for whether the respondent is engaged into a relationship with a partner and the type of such a relationship we use a variable ordered on a seven-point scale going from 1 if the individual is married to 7 if he is single. The respondents were also asked whether they had children and, if they did, in what number. The variable is therefore coded on an ascending order. The education level is computed on a nine-point scale in ascending order going from low to high levels of education. The level of income is self-reported over a ten-point scale with low and high values indicating low and high levels of income, respectively. The respondent's political opinion is measured over a ten-point scale whose values 1 and 10 indicate extreme left and extreme right political orientation, respectively. The individual's opinion about whether to trust others is measured by a binary dummy variable whose value is 1 if he believes that people should be trusted and 2 otherwise. The respondent's religiosity is indicated by his assessment of whether religion is important in life. A binary dummy variable is generated which takes values 0 if religion is not important in life and 1 if it is important.

Tables 1 and 2 about here

In Table 1 we show the summary statistics of the variables used in the empirical analysis and the list of countries under investigation. In Table 2 we display the correlation matrix.

5 The logit analysis

According to the theoretical hypotheses 1 and 2, we expect that a person’s well-being is affected by both individual and contextual variables. While the former refer to the individual’s demographic and socio-economic characteristics, the latter concerns environmental variables which describe the macro-context in which he/she lives.

Amongst the individual-level variables a critical role is played by individual’s autonomy to choose (AtC), while the other relevant variables at the country-level is the extent of opportunity to choose (OtC). Following the main literature on the relationship between freedom and individual well-being, we can estimate the following model:

$$WB_{ij} = \alpha_0 + \alpha_1 AtC_{ij} + \alpha_2 OtC_j + \alpha_3 (OtC_j \times AtC_{ij}) + \sum_{n=4}^k \alpha_n x_{n,ij} + \varepsilon_{ij}, \quad (1)$$

where WB measures the level of well-being enjoyed by individual i in country j , AtC_{ij} captures the level of the individual’s autonomy to choose, OtC_j indicates the extent of opportunity to choose, $x_{n,ij}$ is a set of k control variables describing the individual’s demographic and socio-economic characteristics, and, finally, ε_{ij} is the error term. We include in our set of regressors the cross effect between autonomy and opportunity to choose ($Otc \times AtC$) since we want to check whether the two components of freedom are complementary or substitutes. Since the dependent variable is dichotomous, as discussed in the data section, we estimate equation (1) using a logit approach.

The use of the logit estimator makes harder to evaluate the sign and significance of the parameter α_3 . As Ai and Norton (2003) and Norton, Wang and Ai (2004) clarify, if we were estimating a linear model, the interaction effect between OtC and AtC would be the coefficient α_3 . However, since the logit model is non-linear, we cannot compute the marginal impact of the interaction term in the same way. Let us indicate

the conditional expectation of WB_{ij} as follows:

$$E \left[WB_{ij} | \alpha_0 + \alpha_1 AtC_{ij} + \alpha_2 OtC_j + \alpha_3 (OtC_j \times AtC_{ij}) + \sum_{n=4}^k \alpha_n x_{n,ij} \right] = F(\mathbf{z}),$$

where $F(\cdot)$ is the logit cumulative distribution function. The impact of the interaction term on the dependent variable is the cross derivative of the cumulative density function with respect to OtC and AtC , i.e.:

$$\begin{aligned} \frac{\partial^2 F(\mathbf{z})}{\partial OtC_j \partial AtC_{ij}} &= \alpha_3 \{F(\mathbf{z}) [1 - F(\mathbf{z})]\} + \\ &(\alpha_1 + \alpha_3 OtC_j) (\alpha_2 + \alpha_3 AtC_{ij}) \{F(\mathbf{z}) [1 - F(\mathbf{z})] [1 - 2F(\mathbf{z})]\}. \end{aligned}$$

It is interesting to note that the interaction term effect can be different from zero, even though $\alpha_3 = 0$. Therefore, it is crucial to calculate it correctly to assess whether OtC and AtC are complement or substitute.

It is important to note that in equation (1) we are merging information at both the individual and the country level. This can be a critical issue to address since the nested structure of our data allows for the existence of correlation between individual in the same countries. This generates a dangerous bias in the estimation of the standard errors, which can be underestimated. The consequence is that we may obtain a fallacious statistical significance of the estimated parameters. In particular downward bias appears to be more severe with respect to the country level variables. Therefore, some caution is needed when we estimate equation (1).

To account for the potential bias generated by correlation among observations, we can adopt several approaches. The easiest one is to cluster the observations according to the country to which they belong. In this way, we relax the requirements that the errors are independent, by accounting for the possibility that they are correlated within each cluster. While this approach addresses the econometric concern, which we stressed above, without affecting point estimates, it appears to be unsatisfactory for our purposes. Indeed, it does not allow us to disentangle the between-country effects, which influence the relationship between individual well-being and AtC and pertain to the environment where the individuals live, from the within-country ones, which depend on individual characteristics.

In order to capture the between-country differences, we may follow another estimation approach, which allows us both to control for any correlation among observations within the same country and to capture heterogeneity among countries. More specifically, we estimate the following equation:

$$WB_{ij} = \alpha_0 + \alpha_1 AtC_{ij} + \sum_{n=3}^k \alpha_n x_{n,ij} + \sum_{j=1}^{J-1} d_j + AtC_{ij} \times \sum_{j=1}^{J-1} d_j + \varepsilon_{ij}. \quad (2)$$

The main difference between the models encapsulated in equation (1) and (2) relies on the fact that we introduce a set of country dummies to encompass between-country heterogeneity. Estimation of equation (2) brings some advantages but it does not lack of shortcomings. Compared to the model in equation (1), introducing a set of country dummies allows us to control for country heterogeneity, while interacting that set with the degree of *AtC* enjoyed by individual *i* in country *j* lets us to assess how the context may affect the relationship between individual well-being and autonomy to choose. As point out above, there are some drawbacks, which emerge from the estimation of equation (2).

The first one is that we are forced to drop the variable, which proxies the extent of *OtC* in a given country to avoid problems of multicollinearity with the set of country dummies. This is an important issue since we lose critical information to evaluate the hypotheses, stated above. The model depicted in equation (2) account for country heterogeneity in very general terms. While *OtC* may determine that heterogeneity, the use of country dummies covers its potential effect and mixes it with many other elements, which may characterize the environment in which individuals live. Clearly, there exists an identification issue since we cannot isolate the influence of the extent of opportunity to choose and distinguish it from other country-level variables. Therefore, we may simply derive an indirect evidence to support hypothesis *H1*, which should be re-formulated in terms of a generic effect of the environment on the relationship between individuals' well-being and autonomy to choose.

The second shortcoming is computational: the number of parameters grows dramatically and estimation can be cumbersome.

Although the estimation of equations (1) and (2) can be problematic, it is useful to analyze its results, since we may derive some important insights about the relationship between individual well-being and autonomy to choose. Moreover, the estimation

approach encapsulated in equations (1) and (2) appears to be consistent with the way in which previous literature operates in this field.

In Table 3 we display the results of both the estimation of equations (1) and (2). Our dependent variable is the probability for an individual to be happy or, more simply, the probability of happiness. We start by commenting the econometric results from the logit estimation described in equation (1). We report three different model specifications from a reduced form (model (1)) to a more sophisticated specification (models (2) and (3)) where we include the demographic and socio-economic controls. In model (4) we include amongst the regressors the interaction term between opportunity and autonomy to choose to test for the complementary effect of the two notions of freedom of choice on individual well being.

Table 3 about here

The signs and the significance of all regressors are consistent through all the specifications in models (1) to (3). Therefore, we comment on the results obtained in model (3) only. We note that both autonomy and opportunity to choose have a positive and significant effect on the probability for an individual to be happy. A unitary increase in autonomy to choose determines a rise in the probability of being happy of 16%. On the other hand, a unitary increase in economic freedom - opportunity to choose - determines a rise in the probability of being happy of 2%. This result is consistent with the findings in the literature that suggest a positive and significant impact of both autonomy and economic freedom on happiness.

As far as the set of demographic and socio-economic controls are concerned, we observe that the probability of happiness increases if the individual is female, old, married, well-educated, rich and in good health condition. Regarding the individual's opinions about politics, religion and society, we note that the probability of happiness goes up if he/she is right-wing politically oriented, more inclined to trust other people and a religious person.

Moving to model (4), we note that autonomy to choose does not seem to have a direct effect on the probability of individual happiness. On the other hand, opportunity to choose has a positive and significant impact. As mentioned above, in this

model specification we include the interaction term between autonomy and opportunity to choose in order to check for their complementary effect on well-being. The point estimate is statistically significant and support complementarity: the impact of opportunity to choose on the probability for an individual to be happy is reinforced by an increase in the level of autonomy to choose.

As mentioned above, mixing individual and country-level observations may lead to erroneous estimations and, as a consequence, to incorrect interpretations of the impact of the coefficients on the dependent variable. Therefore, we proceed by estimating equation (2) where the heterogeneity is captured by including a set of country dummies as regressors. Adding such dummies leads us to drop the country-level variable *OtC* measured by the level of economic freedom. The results of the logit estimation with country dummies are reported in models (5) to (8) in Table 3.

As before, we present different specifications from a reduced form of equation (2) (model (5)) to more sophisticated ones (models (6) and (7)). Once more, we note that point estimates are consistent across all models. Therefore, we comment on the results shown in model (7) only. Autonomy to choose impacts positively and significantly on the individual's probability of being happy: a unitary increase in autonomy to choose rises the probability of happiness by 15%. This result is again in line with the literature on the relationship between freedom and happiness. The effect of the control variables is by and large similar to that appearing in the logit estimation in models (1) to (3).

In model (8) we add the interaction terms amongst the regressor. As before, autonomy to choose does not show a significant direct effect on the probability of individual happiness. The interaction terms checking for cross-country differences in the effects of autonomy to choose on the probability of happiness are jointly statistically significant. This indicates the existence of a country effect on the relationship between autonomy to choose and the probability of happiness.

The comparison of the results from equation (1) with those from equation (2) clearly reveals that, although we gain efficiency in the estimation, we do that against the cost of losing critical information for the purposes of this analysis. Removing the level of opportunity to choose from the regressors prevents us from assessing the existence of the complementary effect of the two notions of freedom of choice on individual well-being.

In conclusion, while the logit estimation without country dummies may suffer from a downward bias in the standard errors, the logit estimation with country dummies muddles the effect of the context variable on the individual’s probability of being happy and prevents us to check for the complementarity of opportunity and autonomy to choose in enhancing well-being. In both cases the estimates are unsatisfactory. Therefore, a different approach is required to perform our analysis.

6 The multi-level logit analysis

Although the estimation of equations (1) and (2) can be useful to correct for the downward bias generated by merging individual and country-level variables, it is very difficult to disentangle and assess the role of *OtC* in determining individual well-being. In equation (1) we correct the problem of correlation between observations within the same cluster, but we cannot assess the impact of *OtC* in characterizing the relationship between individual well-being and *AtC*. Instead, when we estimate the model encapsulated in equation (2), we explicit the role of external environment in affecting the relationship between individual well-being and autonomy to choose through the inclusion of a set of country dummies in the model. The shortcoming of this approach is that we cannot disentangle the effect of *OtC* from other country-level variables.

In this section we present an alternative estimation strategy, which allows us to analyze deeper the determinants of individual well-being and the role played by *AtC* and *OtC* in shaping it. Moreover, the multi-level logit (MLL) approach, which we use, overcomes the problem of correlation among variables clustered within the same country.

Let us consider the following simplified version of equation (1):

$$WB_{ij} = \alpha_{0j} + \alpha_{1j}AtC_{ij} + \sum_{n=2}^k \alpha_{nj}x_{n,ij} + \varepsilon_{ij}. \quad (3)$$

According to the theory, which we presented in the previous section, the relationship between individual well-being and *AtC* may be driven by a shock, which are measured at country level. This shock may be determined by the extent of *OtC* available to each individual within the same country. The simplest way to incorporate the extent

of OtC in equation (3) is to specify a separate equation for the intercept:

$$\alpha_{0j} = \theta_{00} + \theta_{01}OtC_j + \omega_{0j}, \quad (4)$$

where θ_{00} is the average outcome for the entire population, if all the other regressors are set equal to 0, $\theta_{01}OtC_j$ captures the characteristics of the external environment and links them to the degree of the available opportunity to choose and, finally, ω_{0j} is a random variables with 0 mean and variance equal to τ_{00} which is country-specific.

Incorporating equation (4) into equation (3) yields:

$$WB_{ij} = \theta_{00} + \theta_{01}OtC_j + \alpha_{1j}AtC_{ij} + \sum_{n=2}^k \alpha_{nj}x_{n,ij} + \omega_{0j} + \varepsilon_{ij}. \quad (5)$$

We estimate equation (5) by employing a random intercept multilevel estimator. It is easy to understand the issues embodied in equation (5): θ_{00} can be interpret as the population (average) intercept. The latter can shift above or below according to the parameter $\theta_{01}OtC_j$, i.e. according to the extent of opportunity to choose available in each country of our sample. Finally, the term ω_{0j} , as recalled above, is a country-specific random shock, which accounts for all other possible sources of heterogeneity among country beyond OtC .

When estimating equation (5) we are concerned about the parameter θ_{01} . If it is positive and statistically significant, we may safely claim the correctness of our Hypothesis 1: other things being equal, a larger opportunity to choose increases individual well-being. That increase is testified by the fact that the intercept shifts above the mean for those countries, where opportunity to choose is larger than others.

It is important to note that estimation of equation (5) implies that the elasticity of individual well-being with respect to AtC is assumed to be the same for all individual. However, this assumption may seem to be too limitative. According to the theory developed in the previous sections and formalized in hypothesis 2, the environmental context should affect also that elasticity. In other words, a larger opportunity to choose should strength the impact of AtC on individual well-being. In order to verify the content of that hypothesis, we need to specify a separate equation also for the parameter α_{1j} as follows:

$$\alpha_{1j} = \theta_{10} + \theta_{11}OtC_j + \omega_{1j}. \quad (6)$$

Plugging equation (6) into equation (5) for α_{1j} and expanding it yields:

$$WB_{ij} = \theta_{00} + \theta_{01}OtC_j + \theta_{10}AtC_{ij} + \theta_{11}OtC_jAtC_{ij} + \sum_{n=2}^k \alpha_{nj}x_{n,ij} + \omega_{0j} + \omega_{1j}AtC_{ij} + \varepsilon_{ij}. \quad (7)$$

We estimate the latter equation by using a random slope multilevel estimator. Differently from equation (5) we have two new regressors, i.e. the interaction term between OtC and AtC and a random component, $\omega_{1j}AtC_{ij}$. The latter can be interpreted as the random shock due to the OtC on the elasticity of AtC on individual well-being. The interaction term is much more interesting for our purposes. In particular we are interested in the parameter θ_{11} . If it is found positive and statistically significant, we have enough evidence to prove the correctness of the content of Hypothesis 2: other things being equal, OtC strengthens the impact of AtC and, therefore, we may claim that the two elements are complementary in determining individual well-being. In graphical terms, complementarity between OtC and AtC makes the function, which represents the relationship between individual well-being and autonomy to choose, steeper for countries with higher opportunity to choose and flatter for countries with a smaller OtC .

As for the computation of the interaction term in equation (1), we need to pay great attention to the way in which we calculate it.

In this section, we present the results of the MLL analysis. Once more our dependent variable for WB is the probability for an individual to be happy. In Table 4 we display six different MLL regression models. The first three are random intercept MLL models (equation ??), whereas the last three random slope MML models (equation ??). We start by commenting the results obtained in models (1) to (3) where the between-country heterogeneity, captured by differences in the opportunity to choose, is only given by shifts in the intercept of the regression.

It is important to note from the outset that the LR test ($\chi^2(2)$) safely supports the choice of the MLL approach as compared to the logistic one. Since the results appear to be consistent across all the first three model specifications, we comment on the estimates reported in model (3). The results indicate that a rise in autonomy to choose as well as in opportunity to choose increase the individual's probability of being happy. The MLL analysis shows also that the extent of opportunity to choose explains

14.1% of country-level differences in the relationship between autonomy to choose and the probability for an individual to be happy. This implies that opportunity and autonomy to choose are two complementary aspects of freedom of choice in enhancing the individual's probability of feeling happy: for a given level of autonomy to choose, the probability of being happy is higher (lower) in countries where the extent of economic freedom - opportunity to choose - is higher (lower). The theoretical Hypothesis 1 is therefore confirmed by the data.

Table 4 about here

Recall that the MLL model is carried out in order to overcome the problem of downward bias in the estimated standard errors. The results in Table 4 show that the standard errors of the contest variable are always larger than those obtained from the logit estimations that appear in Table 3. This supports the correctness of the MLL approach and makes us confident about the appropriate inference of the point estimates.

When we examine the set of demographic and socio-economic characteristics we note that the probability for an individual to be happy is greater if he is female, married, well-educated, with high income, lives in big cities, enjoys good health conditions, is right-wing politically oriented, thinks that other people can be trusted and is a religious person.

In models (4) to (6) we display the results obtained by estimating a random slope model illustrated in equation (??). This model allows us to examine the between-country heterogeneity in terms of opportunity to choose by moves in the intercept as well as in the slope of the regression line. As before, we comment on the more sophisticated model specification (model (6)). The results confirm the positive effect of both autonomy and opportunity to choose on the individual's probability of being happy. They also show that opportunity to choose affects the relationship between autonomy to chose and the probability of happiness in both the intercept and the slope. The level of opportunity to choose explains 61.7% of the country-level differences in the relationship between autonomy to choose and happiness in terms of shifts in the intercept and 2.5% in terms of changes in the slope. These findings bring about two important implications. First, as in models (1) to (3), for a given level of autonomy to choose the individual's probability of being happy is greater (smaller) in countries

with higher (lower) levels of economic freedom (opportunity to choose). Therefore, Hypothesis 1 is once more confirmed by the data. Second, the same change in the level of autonomy to choose increases the individual's probability to be happy in countries characterized by lower (higher) levels of economic freedom - opportunity to choose. This result empirically confirms the theoretical Hypothesis 2.

It is important to note that the LR test ($\chi^2(3)$) supports the random slope model against the random intercept one. The results in Table 4 show once more that the standard errors of the contest variable are always larger than those from the logit estimations in Table 3. This solves the problem of downward bias in the estimated standard errors and confirms the correctness of the MLL approach.

As far as the control variables are concerned, the individual's probability of being happy is greater if he is female and with a more stable relationship with his partner, with a low number of children, well-educated, with high income, enjoying good health conditions, righ-wing politically oriented, believing that other people can be trusted and if he is a religious person.

6.1 Sensitivity analysis (to be modified according to the previous section)

The consistency of our empirical findings can be checked out by assessing their sensitivity to sub-sample estimations. Therefore, in this section we carry out an empirical analysis in which we partition the information in our dataset on the basis of some demographic and socio-economic characteristics of the individuals under investigation. This leads to change the estimated equation (??) as follows:

$$WB_{ij}^s = \alpha_0 + \alpha_1 AF_{ij}^s + \alpha_2 EF_j + \sum_{n=3}^k \alpha_n x_{n,ij}^s + v_{0j} + v_{1j} EF_j + \varepsilon_{ij} \quad (8)$$

where the superscript s indicates the demographic and/or the socio-economic sub-group which an individual belongs to.

In Table 5 we show six different MLL models in which the individuals under our empirical scrutiny are grouped into six different sub-samples according to some of their demographic characteristics. Let us point out from the outset that all the estimations are carried out by using random slope models since LR test ($\chi^2(3)$) indicates their superiority with respect to the random intercept specifications.

We split the individuals in our dataset according to their gender (male in model (1) and female in model (2)), age (young in model (3) and old in model (4)) and marital status (single in model (5) and married in model (6)). All the estimates replicate the same results obtained in Table 4. Autonomy and opportunity to choose have a complementary effect on the probability for an individual to be happy. A given level of autonomy to choose is associated to a greater (lower) probability of being happy in those countries characterized by greater (smaller) level of opportunity to choose. The same increase in the level of autonomy to choose rises (lowers) the individual's probability of feeling happy in those countries displaying smaller (greater) level of opportunity to choose. Thus, Hypotheses 1 and 2 are both confirmed by the estimates in all models whose results are displayed in Table 5. It is interesting to note that the effect of autonomy to choose is slightly larger on the probability to be happy for those individuals who are females, old and married. The marginal effect of opportunity to choose on the probability of happiness is slightly larger for those who are female, old and single.

Table 5 about here

In Table 6 we display six different MLL models in which the individuals under investigation are grouped into different sub-samples according to some of their socio-economic characteristics. Again, all the estimations are carried out by using random slope models since LR tests ($\chi^2(3)$) indicate their superiority with respect to the random intercept specifications.

We group the individuals according to their self-reported income (low income in model (1) and high income in model (2)), their political orientation (left in model (3) and right in model (4)) and their religious attitudes (not religious in model (5) and religious in model (6)). Regression estimates show once more that the theoretical Hypothesis 1 and 2 are confirmed by the data. Regardless whether the respondent is rich or poor, left- or right-wing politically oriented, a religious or a non-religious person, autonomy and opportunity to choose are complementary in enhancing the his/her probability to be happy. As far as the marginal effect of the two concepts of freedom of choice on well-being is concerned, we note that autonomy to choose exercises a greater impact on the probability of happiness for those individuals who display high self-reported income, left-leaning political orientation and who are little religious. On the other

hand, the effect of opportunity to choose on individual happiness is marginally greater for those who have high self-reported income, are right-leaning politically oriented and are highly religious.

Table 6 about here

The results of the sensitivity analysis shown in Tables 5 and 6 indicate that no matter whether the individuals under scrutiny in this paper are splitted in different groups according to their demographic and/or socio-economic characteristics, the complementarity between opportunity and autonomy to choose is strongly supported by the data.

7 Robustness checks

To corroborate the findings of our empirical analysis we carry out some robustness checks. We start by changing happiness to proxy individual well-being with other dependent variables that have been used in the literature. Therefore we re-run the MLL estimation substituting happiness with life satisfaction (LS). This variable is constructed by asking respondents to indicate how satisfied they are with their life as a whole, using a scale that ranges from 1 (not at all satisfied) to 10 (very satisfied). Again, as we have done for happiness, we derive a binary dummy variable taking the value of 1 if the individual's level of life satisfaction falls between 6 and 10 and the value of 0 otherwise.

Since happiness and life satisfaction are two different elements of subjective well-being, we combine each person's responses to the questions about happiness and life satisfaction to produce a composite measure of subjective well-being (SWB) by giving equal weight to each variable. However, to accomplish this task, we ought to consider two facts. First, life satisfaction is measured on a 10-point scale, while happiness on a 4-point scale. Second, the two survey questions have opposite polarity. Therefore, following Inglehart *et al.* (2008), we construct the SWB composite index as follows: $SWB = LS - 2.5 \times HP$. If in a given country 100% of its people is very happy and extremely satisfied, such a country would get the maximum score of 7.5. If happiness and life-satisfaction are evenly balanced, the country would get a score of zero. If there are more people dissatisfied or unhappy than satisfied or happy, the country would get

a negative score. As before, we construct a binary dummy variable taking the value of 1 if SWB ranges between 5 and 7.5 and 0 otherwise.

In Table 7 we show our econometric results. In columns (1) to (4) we examine the relationship between freedom of choice and both life satisfaction and the composite measure of subjective well-being. We note that the estimation results mirror those already obtained for happiness and, therefore, represent a further evidence of the validity of Hypotheses 1 and 2. First, opportunity and autonomy to choose are two aspects of freedom of choice that complement each other in determining life satisfaction and subjective well-being. Second, a change in the level of autonomy to choose grants higher (lower) returns in terms of life satisfaction and/or subjective well being in those countries characterized by higher (lower) opportunity to choose. Third, the same change in the level of autonomy to choose awards higher (lower) returns in terms of both life satisfaction and subjective well-being in those countries displaying greater (lower) opportunity to choose.

Table 7 about here

It is well-known that countries displaying higher levels of economic freedom are also those with higher income (Miller and Holmes, 2009). Therefore, the statistically significant relationship between economic freedom - i.e., opportunity to choose - and individual well-being might be misleading since this result can be driven by and should be inferred to the level of GDP. Our second robustness check address this issue by adding GDP per capita to the set of regressors. If, economic freedom ought to be considered as proxy for GDP, the former should not be statistically significant, while the latter should have a statistically positive impact on the probability of individual well-being.

The structure of our dataset, however, prevents us from including amongst the set of regressors the level of GDP per capita. This is because GDP per capita is a country level variable that would be collinear with the extent of economic freedom, being it another country-level independent variable. To overcome this problem, we aggregate the measure of individual well-being at country level and estimate the following equation:

$$\overline{WB}_c^* = \gamma_0 + \gamma_1 OtC_c + \gamma_2 \overline{GDP}_c + \varepsilon_c \quad (9)$$

where the subscript c refers to the country and $\varepsilon_c \sim N(0, \sigma^2)$ is the error term. \overline{WB}^*

is a latent variable that is observed for values greater than 0 and censored otherwise. Therefore, the observed \overline{WB}_c is defined by the following measurement equation:

$$\overline{WB}_c = \begin{cases} \overline{WB}^* & \text{if } \overline{WB}_c^* > 0 \\ 0 & \text{if } \overline{WB}_c^* \leq 0 \end{cases}$$

Equation (9) is estimated by using a Tobit estimator. In Table 8 we show our results. Note that we carried out nine different model specifications. In models (1) to (3) the probability of well-being is captured by happiness, whereas in models (4) to (6) and in models (7) to (9) it is captured by life-satisfaction and by the composite measures of subjective well-being, respectively. We start by considering the effect of opportunity to choose and per-capita GDP on individual well-being in two separate regressions. Then we move on to assessing the effect of both the two above independent variables in a single regression.

Table 8 about here

Results are qualitatively similar across specifications. Both the extent of opportunity to choose and of per capita GDP are statistically significant and affect positively the three different measures of individual well-being. These results are obtained if the two independent variables are included one by one in the estimation as well as if they are used together in the same regression. The empirical findings in Table 8, therefore, corroborate the results obtained in Section 6: they show that economic freedom and GDP capture different aspects affecting individual well-being.

8 Conceptual implications

The empirical analysis suggests that opportunity and autonomy to choose complement each other. Such a suggestion has a parallel at the theoretical level. In a celebrated essay on freedom, Isaiah Berlin singled out the notion of negative freedom (Berlin, 1969). This coincides with the principle of voluntariness, i.e., with being free from impediments (chiefly coercion by other people or the state) in the exercise of one's voluntary actions. Voluntariness' empirical counterpart is opportunity to choose.

This is quantified by the Heritage Foundation's index of economic freedom (HEF). The introductory chapter to the 2009 Report is adamant in this sense:

A comprehensive definition of economic freedom should encompass all liberties and rights of production, distribution, or consumption of goods and services. The highest form of economic freedom should provide an absolute right of property ownership; fully realized freedoms of movement for labor, capital, and goods; and an absolute absence of coercion or constraint of economic liberty beyond the extent necessary for citizens to protect and maintain liberty itself. In other words, individuals in an economically free society would be free and entitled to work, produce, consume, and invest in any way they please under a rule of law, with their freedom at once both protected and respected by the state (Miller and Holmes, 2009).

All the features of the economic freedom rod mentioned by the Report’s authors – and foremost the explicit reference to voluntary exchange – recall, within the Berlinian frame, the idea of voluntariness of action and absence of coercion by the state, while reference to low taxes prevents positive rights from spreading. The HEF index is, therefore, a measure of voluntariness and, as such, of limited government since voluntariness is guaranteed whenever a person’s actions are not restricted or prevented by the coercive activity that the state exercises over individuals in society. Yet, the principle of voluntariness cannot exhaust the domain of negative freedom.

In his fundamental contribution to a contractarian theory of the state, James Buchanan writes that “the free market offers maximal scope for private, personal eccentricity, for individual freedom in its most elementary meaning” (Buchanan, 1975). Similarly, Milton Friedman highlights, chiefly in *Capitalism and Freedom* and *Free to Choose*, the intimate relationship that ties economic freedom to diversity (Friedman, 1962). Consider the following, enlightening, passage:

The characteristic feature of action through political channels is that it tends to require or enforce substantial conformity. The great advantage of the market, on the other hand, is that it permits wide diversity. It is, in political terms, a system of proportional representation. Each man can vote, as it were, for the color of the tie he wants and get it; he does not have to see what color the majority wants and then, if he is in the minority, submit.

It is this feature of the market we refer to when we say that the market provides economic freedom (Friedman, 1962).

The interesting point in both Buchanan and Friedman's quotations is that they identify the possibility of shaping one's own view of life in a unique fashion offered by market exchanges as the essential feature of economic freedom. This is hardly surprising. Within the negative freedom camp, many authors share the romantic view – masterly canvassed by John Stuart Mill – that self-determination is a fundamental part of being free. What is surprising, on the contrary, is that such a constitutive dimension of freedom receives no treatment in the measurement of economic freedom, despite Buchanan and Friedman. The empirical measure of autonomy to choose captures just the notion of diversity or eccentricity so strongly put forward by Buchanan and Friedman.

In other words, the way we read Buchanan and Friedman – or the way we interpret negative freedom – highlights that negative (and economic) freedom possesses two dimensions: voluntariness or absence of coercion, on the one hand, and diversity (Friedman) or eccentricity (Buchanan), on the other. Our empirical analysis shows that such a distinction is analytically fruitful since the two dimensions of negative freedom reinforce each other in the pursuit of happiness.

9 Policy prescriptions and concluding remarks

In this paper we argued that opportunity and autonomy to choose are complementary measures of negative freedom. We demonstrated our claim by means of an empirical analysis. Estimation results show that both opportunity to choose (proxied by the index of economic freedom) and autonomy to choose (proxied by a variable from the WVS database) foster individual well-being. More specifically, a given level of autonomy to choose grants higher happiness in those countries displaying higher opportunity to choose. The reason for such a conclusion depends on the favorable role played by the know how to use autonomy to choose that people enjoy in countries where market mechanisms prevail. However, a change in autonomy to choose increases the probability of happiness more in those countries in which opportunity to choose - i.e., economic freedom - is low. The reason for such a conclusion depends on the limited cost of choice

imposed on decision makers where opportunities are restricted by the pervasiveness of the state or the absence of material prosperity.

Our results lead us to formulate some considerations concerning the role of autonomous choice as a policy instrument for the advancement of well-being. A dissenting view states that an increase in the complexity of the deliberative process jeopardizes the achievement of higher levels of well-being. This is more so in advanced countries that enjoy the benefit of high levels of economic freedom and that offer, as a consequence, wide possibilities for choice to decision makers. As the exercise of autonomous behavior is increased, frustration pushes individual well-being backwards since people have to face a degree of complexity of the deliberative process whose costs they can hardly manage. Yet, our results reject such an hypothesis. As a matter of fact, high economically free countries are institutional environments where decision makers learn how to use the opportunities on offer. The positive slope of the relationship between autonomy and happiness shows that the know how people acquire systematically prevails over the complexity of the deliberative process. Contrarily to some dissenting position, we conclude that autonomy never depresses well-being, no matter how the latter term is defined in these pages.

The second consideration – that applies to countries that do not experience substantial levels of economic freedom – is an intuition more than a direct consequence of our analysis. The intuition derives from the fact that our results show that economic freedom and autonomy complement each other. Observing the incredible variety of consequences produced by liberalization processes, we cannot do without thinking that autonomy plays a fundamental role for their success. As state-led economies open to market oriented reforms, it is likely that material and immaterial well-being increase. Yet, because of complementarity, this requires that the degree of autonomy enjoyed by the individuals increases too. If it does not, we should expect liberalizations without prosperity or, alas, a failure of our model. Restricting our reflections to the first case only, the policy consequence is that any government genuinely interested in the implementation of effective liberalization policies must foster autonomy or run the risk of being unsuccessful.

Be that as it may, one should always remember that autonomy is a delicate plant that can never be fruitfully imposed from above. Policy makers should never lose sight of the fact that the desire for responsibility, the search for one's unique identity and

way of living, is a seed that delivers fruit only if planted in each individual's soul. The sole effective instrument to grow it is through the transmission of favorable cultural values and traditions that pass across generations such a fragile trait, i.e., the sense of a person's dignity inscribed in the affirmation of his identity.

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Table 3**Autonomy and economic freedom and individual well-being: The logit approach**

	(a)	(b)	(c)	(d)	(e)	(f)
_cons	0.174*** (0.018)	0.358*** (0.027)	0.399*** (0.033)	0.133*** (0.028)	0.373*** (0.030)	0.407*** (0.034)
af	0.050*** (0.002)	0.064*** (0.003)	0.057*** (0.004)	0.064*** (0.005)	0.056*** (0.005)	0.055*** (0.005)
ecfr	0.071*** (0.003)	0.085*** (0.004)	0.078*** (0.005)			
afxecfr	-0.004*** (0.000)	-0.007*** (0.000)	-0.006*** (0.001)			
gender		-0.013*** (0.002)	-0.008*** (0.003)		-0.017*** (0.002)	-0.011*** (0.003)
age		-0.004*** (0.000)	-0.004*** (0.001)		-0.005*** (0.000)	-0.005*** (0.001)
age2		0.000*** (0.000)	0.000*** (0.000)		0.000*** (0.000)	0.000*** (0.000)
married		0.061*** (0.003)	0.053*** (0.004)		0.073*** (0.003)	0.069*** (0.004)
single		0.012** (0.005)	0.003 (0.006)		0.018*** (0.005)	0.013** (0.006)
children		-0.010** (0.004)	-0.014*** (0.005)		-0.007* (0.004)	-0.010** (0.005)
unempl		-0.083*** (0.005)	-0.081*** (0.006)		-0.057*** (0.005)	-0.060*** (0.006)
state of health (subjective)		-0.111*** (0.002)	-0.103*** (0.002)		-0.105*** (0.002)	-0.100*** (0.002)
education level (recoded)		0.007*** (0.002)	0.010*** (0.002)		0.010*** (0.002)	0.009*** (0.002)
scale of incomes		0.012*** (0.001)	0.010*** (0.001)		0.014*** (0.001)	0.012*** (0.001)
size of town		0.003*** (0.000)	0.002*** (0.001)		0.001** (0.001)	0.001 (0.001)
Political Orientation			0.003*** (0.001)			0.002*** (0.001)
trust			0.022*** (0.003)			0.013*** (0.003)
Religiosity			-0.007*** (0.001)			-0.005*** (0.001)
Country Dummies				62.65 [0.000]	35.25 [0.000]	22.19 [0.000]
Country Dummies × AF				25.24 [0.000]	9.57 [0.000]	6.85 [0.000]
Log-Likelihood	-85,647.46	-36,379.83	-23,737.03	-80,013.55	-33,395.76	-21,783.67
Number of observations	195,138	93,270	64,782	195,138	93,270	64,782
Overall	3,344.190 [0.000]	1,077.900 [0.000]	566.240 [0.000]	170.090 [0.000]	195.060 [0.000]	125.090 [0.000]
Adjusted R2	0.054	0.152	0.145	0.107	0.204	0.194

Table 4
Autonomy and economic freedom and individual well-being.
The ML random intercept

	(a)	(b)	(c)
_cons	0.386*** (0.016)	0.720*** (0.028)	0.668*** (0.031)
af	0.027*** (0.000)	0.019*** (0.001)	0.019*** (0.001)
ecfr	0.038*** (0.002)	0.028*** (0.003)	0.038*** (0.004)
gender		-0.016*** (0.002)	-0.010*** (0.003)
age		-0.005*** (0.000)	-0.005*** (0.001)
age2		0.000*** (0.000)	0.000*** (0.000)
married		0.075*** (0.003)	0.071*** (0.004)
single		0.019*** (0.005)	0.014*** (0.006)
children		-0.006 (0.004)	-0.009* (0.005)
unempl		-0.059*** (0.004)	-0.061*** (0.005)
state of health (subjective)		-0.106*** (0.001)	-0.099*** (0.002)
education level (recoded)		0.010*** (0.002)	0.010*** (0.002)
scale of incomes		0.014*** (0.001)	0.012*** (0.001)
size of town		0.002*** (0.001)	0.001* (0.001)
Political Orientation			0.002*** (0.001)
trust			0.012*** (0.003)
Religiosity			-0.005*** (0.001)
Between-countries variance	0.009*** (0.000)	0.009*** (0.000)	0.009*** (0.000)
Within-country variance	0.134*** (0.0004)	0.120*** (0.0006)	0.115*** (0.0006)
Log-Likelihood	-80,984.30	-33,806.28	-22,072.74
Number of observations	195,138	93,270	64,782
Overall	6,367.577 [0.000]	11,995.650 [0.000]	7,961.530 [0.000]
LR test	9,443.569 [0.000]	5,389.710 [0.000]	3,444.340 [0.000]

Table 5
Autonomy and economic freedom and individual well-being.
The ML random slope

	(a)	(b)	(c)
_cons	0.353*** (0.037)	0.691*** (0.053)	0.579*** (0.060)
af	0.035*** (0.005)	0.028*** (0.006)	0.036*** (0.007)
ecfr	0.042*** (0.005)	0.033*** (0.007)	0.053*** (0.008)
afxecfr	-0.001 (0.001)	-0.001 (0.001)	-0.003** (0.001)
gender		-0.017*** (0.002)	-0.011*** (0.003)
age		-0.005*** (0.000)	-0.005*** (0.001)
age2		0.000*** (0.000)	0.000*** (0.000)
married		0.074*** (0.003)	0.070*** (0.004)
single		0.018*** (0.005)	0.013** (0.006)
children		-0.007* (0.004)	-0.009* (0.005)
unempl		-0.058*** (0.004)	-0.061*** (0.005)
state of health (subjective)		-0.105*** (0.001)	-0.099*** (0.002)
education level (recoded)		0.011*** (0.002)	0.010*** (0.002)
scale of incomes		0.013*** (0.001)	0.012*** (0.001)
size of town		0.002*** (0.001)	0.001 (0.001)
Political Orientation			0.002*** (0.001)
trust			0.013*** (0.003)
Religiosity			-0.005*** (0.001)
var(af)	0.0002*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)
var(_con)	0.027** (0.005)	0.021** (0.005)	0.019** (0.004)
cov (af, _con)	-0.002*** (0.0004)	-0.001*** (0.0003)	-0.001*** (0.0003)
var(res)	0.133*** (0.0004)	0.119*** (0.0005)	0.115*** (0.0006)
Log-Likelihood	-80,153.52	-33,590.49	-21,935.76
Number of observations	195,138	93,270	64,782
Overall	645.942	9,109.696	6,085.362
LR test	1,637.284	431.588	273.967

Table 6
Autonomy and economic freedom and individual well-being.
Demographic Interactions

	(a)	(b)	(c)	(d)	(e)	(f)
_cons	0.577*** (0.060)	0.571*** (0.060)	0.613*** (0.061)	0.578*** (0.060)	0.568*** (0.060)	0.559*** (0.060)
af	0.036*** (0.007)	0.036*** (0.007)	0.036*** (0.007)	0.035*** (0.007)	0.036*** (0.007)	0.035*** (0.007)
ecfr	0.053*** (0.008)	0.053*** (0.008)	0.053*** (0.008)	0.052*** (0.008)	0.053*** (0.008)	0.053*** (0.008)
afxecfr	-0.003** (0.001)	-0.003*** (0.001)	-0.003** (0.001)	-0.003** (0.001)	-0.003*** (0.001)	-0.003** (0.001)
afxecfrxgender	-0.000 (0.000)					
afxecfrxage1		0.000 (0.000)				
afxecfrxage3			-0.000*** (0.000)			
afxecfrxsingle				-0.000 (0.000)		
afxecfrxedu1					0.000*** (0.000)	
afxecfrxedu3						-0.000*** (0.000)
gender	-0.007 (0.008)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)
age	-0.005*** (0.001)	-0.005*** (0.001)	-0.007*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
age2	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
married	0.070*** (0.004)	0.070*** (0.004)	0.070*** (0.004)	0.070*** (0.004)	0.070*** (0.004)	0.070*** (0.004)
single	0.013** (0.006)	0.014** (0.006)	0.012** (0.006)	0.028*** (0.011)	0.013** (0.006)	0.013** (0.006)
children	-0.009* (0.005)	-0.009** (0.005)	-0.010** (0.005)	-0.009* (0.005)	-0.009* (0.005)	-0.010** (0.005)
unempl	-0.061*** (0.005)	-0.061*** (0.005)	-0.061*** (0.005)	-0.061*** (0.005)	-0.061*** (0.005)	-0.061*** (0.005)
state of health (subjective)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)
education level (recoded)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)	0.017*** (0.003)	0.020*** (0.003)
scale of incomes	0.012*** (0.001)	0.012*** (0.001)	0.011*** (0.001)	0.012*** (0.001)	0.012*** (0.001)	0.012*** (0.001)
size of town	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001* (0.001)	0.001 (0.001)	0.001 (0.001)
Political Orientation	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)
trust	0.013*** (0.003)	0.013*** (0.003)	0.013*** (0.003)	0.013*** (0.003)	0.013*** (0.003)	0.014*** (0.003)
Religiosity	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
var(af)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)
var(_con)	0.020*** (0.004)	0.020*** (0.004)	0.020*** (0.004)	0.020*** (0.004)	0.020*** (0.004)	0.020*** (0.004)
cov(af, _con)	-0.001*** (0.0003)	-0.001*** (0.0003)	-0.001*** (0.0003)	-0.001*** (0.0003)	-0.001*** (0.0003)	-0.001*** (0.0003)
var(res)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)
Log-Likelihood	-21,935.58	-21,934.76	-21,929.79	-21,934.50	-21,931.09	-21,926.28
Number of observations	64,782	64,782	64,782	64,782	64,782	64,782
Overall	6,086.347 [0.000]	6,089.318 [0.000]	6,104.729 [0.000]	6,091.375 [0.000]	6,095.047 [0.000]	6,106.172 [0.000]

Table 7
Autnomy and economic freedom and individual well-being.
Geo and Beliefs Interactions

	(a)	(b)	(c)	(d)	(e)	(f)
_cons	0.528*** (0.062)	0.603*** (0.059)	0.580*** (0.060)	0.569*** (0.060)	0.568*** (0.060)	0.583*** (0.060)
af	0.043*** (0.007)	0.037*** (0.007)	0.036*** (0.007)	0.036*** (0.007)	0.035*** (0.007)	0.035*** (0.007)
ecfr	0.061*** (0.009)	0.054*** (0.008)	0.053*** (0.008)	0.053*** (0.008)	0.052*** (0.008)	0.053*** (0.008)
afxecfr	-0.004*** (0.001)	-0.004*** (0.001)	-0.003** (0.001)	-0.003** (0.001)	-0.002** (0.001)	-0.003*** (0.001)
afxecfrxoecd	0.001*** (0.000)					
afxecfrxreligion		0.000*** (0.000)				
afxecfrxleft			-0.000 (0.000)			
afxecfrxright				-0.000** (0.000)		
afxecfrxtrust					-0.001*** (0.000)	
afxecfrxunempl						0.001*** (0.000)
gender	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)
age	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
age2	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
married	0.070*** (0.004)	0.071*** (0.004)	0.070*** (0.004)	0.070*** (0.004)	0.070*** (0.004)	0.070*** (0.004)
single	0.014** (0.006)	0.014** (0.006)	0.013** (0.006)	0.014** (0.006)	0.013** (0.006)	0.013** (0.006)
children	-0.009* (0.005)	-0.009* (0.005)	-0.009* (0.005)	-0.009* (0.005)	-0.010** (0.005)	-0.009** (0.005)
unempl	-0.061*** (0.005)	-0.060*** (0.005)	-0.061*** (0.005)	-0.061*** (0.005)	-0.061*** (0.005)	-0.109*** (0.013)
state of health (subjective)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)	-0.099*** (0.002)
education level (recoded)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)	0.010*** (0.002)
scale of incomes	0.012*** (0.001)	0.012*** (0.001)	0.012*** (0.001)	0.012*** (0.001)	0.012*** (0.001)	0.012*** (0.001)
size of town	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Political Orientation	0.002*** (0.001)	0.002*** (0.001)	0.002** (0.001)	0.003*** (0.001)	0.002*** (0.001)	0.002*** (0.001)
trust	0.013*** (0.003)	0.013*** (0.003)	0.013*** (0.003)	0.013*** (0.003)	0.066*** (0.009)	0.013*** (0.003)
Religiosity	-0.005*** (0.001)	-0.013*** (0.002)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
var(af)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)	0.0001*** (0.000)
var(_con)	0.019*** (0.004)	0.019*** (0.004)	0.020*** (0.004)	0.020*** (0.004)	0.019*** (0.004)	0.019*** (0.004)
cov (af, _con)	-0.001*** (0.003)	-0.001*** (0.003)	-0.001*** (0.003)	-0.001*** (0.003)	-0.001*** (0.003)	-0.001*** (0.003)
var(res)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)	0.115*** (0.0006)
Log-Likelihood	-21,931.30	-21,921.62	-21,935.74	-21,932.74	-21,915.35	-21,927.62
Number of observations	64,782	64,782	64,782	64,782	64,782	64,782
Overall	6,103.999 [0.000]	6,149.702 [0.000]	6,085.387 [0.000]	6,095.014 [0.000]	6,133.984 [0.000]	6,101.174 [0.000]