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Happiness Economics: Validity of subjective wellbeing measures and considerations for public policy

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Abstract: Happiness is a relatively new discipline within economics. Traditionally, economists have not paid too much attention to it since they considered that both indicators and theoretical assumptions in which this discipline was based were not neither reliable nor useful for policy recommendations. However, especially in the last decade, there has been extensive research which, if not proved, at least has provided enough arguments to believe that this discipline can be worthy for anyone interested in understanding what are the truly determinants that make people think they have a good life. This literature review emphasizes the validity, reliability and usefulness of happiness economics as a novel discipline to provide new insights in economics research, especially in public policy decision-making.

Key words: Happiness economics, subjective wellbeing, personality traits, Easterlin Paradox, public policy

Content

Introduction

People usually tend to associate wellbeing with economic issues or with living conditions. However, many indicators that take into account these topics fail to measure other more personal concerns about what people really think about their lives or how do they feel. Aspects such as the quality of their relationships, their psychological status, their emotions and resilience, the realization of their potential, and, in a broader sense, their general satisfaction with life, are also important. Indeed, the notion of "wellbeing" generally incorporates universal judgments of life satisfaction and feelings ranging from hopelessness to joyfulness. In this sense, the "Centers for Disease Control and Prevention" of the United States, defines wellbeing as a "positive outcome that is meaningful for people and for many sectors of society, because it tells us that people perceive that their lives are going well"[1]. In the economics field, the term "wellbeing" acquires a more quantitative interpretation and it is used to construct indicators intended to evaluate people's quality of life.

On the other hand, measurement of wellbeing has been always a controversial issue. Despite the endeavor made in order to improve the indexes and indicators used to this purpose, there is still not a broad consensus about which is the best manner to evaluate and compare wellbeing among individuals and countries. Academic research usually distinguishes between objective and subjective wellbeing. The first one is related to socioeconomic features and it is generally gauged by economic or living standards such as GDP per capita, GNI per capita or consumption. However, during the last two decades these indicators have been hardly criticized for being too much reductionist in order to measure welfare[2]. As a response to this criticism, International Organizations have progressively included a multidimensional approach in their wellbeing measurements. In this sense, the United Nations Development Program (UNDP) integrates education and health (aside from income) in the Human Development Index (HDI), an

indicator elaborated since 1990[3] which compares wellbeing across countries and over time. In the same vein, the OECD launched the "Better Life Index Project" in May 2011 as an attempt to provide even a more complete index than HDI, including objective measures but also some affective and subjective components such as work-life balance or life satisfaction. Yet, this index has a major drawback: it is still not comparable over time.

Regarding subjective wellbeing (henceforth, SWB), it is more associated with the utilitarian approach in the Benthamite's sense[4]. SWB makes reference to "people's evaluations of their own lives that are both affective and cognitive" (Gudrun, 2011, p.1084). Psychologists and other social scientists associate the cognitive side of SWB with "life satisfaction" and the affective one with "happiness". Economists for their part, use both terms interchangeably[5]. In line with the SWB research, there has been a growing bulk of literature which studies the relationship between self-reported measures of wellbeing (subjective wellbeing) and some socioeconomic variables. This discipline, known as "happiness economics", tries to assess welfare merging the techniques classically used by economists with those more frequently used by other social scientists such as sociologists or psychologists. It appeals to wider utility and wellbeing notions than conventional economics does, including interdependent utility functions as well as the interaction between rational and non rational determinants of economic behavior. Aside from income, happiness economics also takes into account the important role of non-income factors affecting wellbeing, such as health, education, marital status, labor conditions or civic trust. Furthermore, subjective indicators used in happiness economics are generally extracted from large sample surveys made across countries and, usually, over time. These surveys, in which individuals provide self reported measures of their wellbeing, shed many details about personal and demographic characteristics as well. This information can be very helpful when the one obtained through contingent valuation methods and revealed preferences from observed

behavior is not good enough; for instance, in the case of the welfare effects of inequality

or some macroeconomic policies (Graham, 2004). Nonetheless, there are some

economists who are still reluctant about using SWB indicators and prefer to look at

what people do, rather than pay attention to what people say (Di Tella & MacChuloch,

2006).

One of the significant reasons why this discipline is getting adepts is because

happiness economists think that the indicators they managed with can be applied to

public policy decision-making. Frey & Stutzer (2002) put forward that happiness

research can be also useful to better understand the configuration of SWB, delving into

the basics assumptions of economic theory which allow estimating new ways to assess

the effects of government expenditure, the anti-poverty policy or the tax policy.

Moreover, they argue that happiness studies could help to disentangle some empirical

puzzles which are still unresolved, like the "Easterlin Paradox". This paradox basically

makes reference to the empirical fact that within a country at a particular time, those

persons with higher incomes are happier on average, but however, since the Second

World War, despite there have been significant increases in average incomes across

countries, the average levels of happiness have remained more or less constant

(Easterlin, 1974, 1995). This Paradox has been widely studied in the economic literature

pointing to big support to its existence. However, using larger and more updated data

Deaton (2008) and more recently Stevenson & Wolfers (2008, 2013), have claimed that

not only richer people are happier within a country at a concrete moment of time, but

also between countries those with higher incomes are happier on average. They also

suggest that this relationship between income and happiness holds over time, albeit the

results are not as clear as the former ones. These outcomes directly crash with

Easterlin's arguments, and provide a key role to absolute income in explaining societies' wellbeing.

Reached this point, several interesting questions come to mind: What should be the main purpose of governments, increase citizens' income or increase their happiness? Are both options similar? If not, which of them is better? In sooth, when people are queried about what happiness mean for them, we should expect many diverse responses, as, for instance, the concept of life satisfaction or the things that make one person feel happy are probably not the same as for other person. Yet, economic matters appear to be ranked among the foremost for individuals interviewed both within and across countries. Nonetheless, Graham (2005, p.47), claims that "after basic needs are met, other factors such as rising aspirations, relative income differences, and the security of gains become increasingly important, in addition to income"[6].

Thus, it seems to be that, even though income is one of the fundamental determinants of happiness, we should also bear in mind other non-pecuniary variables, since "[they are probably] key elements of welfare and people have different preferences for material and non-material goods". In this sense, Oswald (1997, p.1823) found that happiness is "high among those who are married, on high income, women, whites, the well-educated, the self-employed, the retired, and those looking after the home. Happiness is apparently U-shaped in age (minimizing around the 30s)[7]". Likewise, Graham (2005) points out that happiness surveys can contribute to improve the policy decision-making in the area of behavioral economics as well. For example it can enlarge our understanding of how addictive behaviors such as alcoholism or smoking would be affected in response to a public health program or campaign.

Alternatively, there are other relevant socioeconomic factors which scholars consistently pointed up to have an effect on or be influenced by happiness measures.

Throughout this dissertation, I will consider two of them: unemployment and inflation. Both represent an important tradeoff and a challenge for economic policy. It has been widely showed in the academic literature that both unemployment and inflation affect negatively to happiness levels (Clark & Oswald, 1994; Frey & Stutzer, 2000; Stutzer & Lalive, 2004; Winkelmann & Winkelmann, 1998). Particularly interesting is the fact that unemployed individuals are happier when the unemployment rates are higher. Clark and Oswald (1994) have called "social stigma" to this situation. It seems to be that the positive result on wellbeing coming from reducing social stigma prevails over the negative consequence of a lesser probability of finding a job in the future. In summary, this dissertation intends to provide a broad review on issues related to the discipline of happiness economics. As far as I know, there is no other review which encompasses all the aspects to understand the key points of happiness economics as this one will do. In this sense, this dissertation aims to be a reference guide for all researchers interested in self reported measures, and above all in its interactions with other socioeconomic factors. Concretely, I will attempt to give answers to some interesting questions to which there are still a few unclear issues: Does income increase happiness? Are there other factors which may influence happiness measures? Are these factors more or less important in explaining happiness levels than income? Could or should we focus public economic policy on subjective wellbeing measures? Some clues to these questions' responses have been offered along this introduction. The rest will come up in the subsequent sections.

Hence, this thesis will deal with the complicated challenge of measuring wellbeing, particularly analyzing some bias that can arise when using self-reported happiness or life satisfaction measures (section I). Section II will cope with the most common econometric problems that researchers have to face when studying the

determinants of happiness, in particular inferring causality, and the methods employed

to address them. In section III, I will focus on the relationship between happiness and

income, as this variable is probably one of the main determinants of happiness.

Particularly, I will discuss the existence or not of the "Easterlin Paradox" as well as

some arguments provided in the literature to explain this "anomalous" result. In section

IV, I will analyze how unemployment and inflation affect happiness. These two factors

usually mean a tradeoff for economic policy and even more in crisis situations. Along

section V, I discuss the possibilities of using happiness indicators as a cornerstone for

public policy decision-making. Finally, section VI exposes some concluding remarks.

I.   Measuring Wellbeing: Objective and subjective measures

As aforementioned, measuring wellbeing is not an easy task. Perhaps, the

greatest challenge consists on deciding how we will gauge it. In this sense, it is essential

to settle on which aspects we want to include and what kind of indicators we will use.

There is still a heated debate on how determining the wellbeing of societies: Is it wealth

all that matters or individuals are also worried about other questions such as the work-

life balance, their health status or the security in their neighborhood?

Certainly, people are commonly concerned about money that they can obtain. In

that way, policy-makers usually tend to focus their economic policies on fostering

economic growth, which implies higher GDP per capita of the society as a whole.

Nonetheless, even though a minimum level of earnings is probably a necessary

condition to reach higher levels of living standards and welfare; one wonders if it is an

enough condition. Over many years, the economic and social progress has been

exclusively evaluated using indicators related to income or consumption, like GDP per

capita. In the last two decades, this postulation has been hardly criticized for being too

much reductionist**.** At present, it is widely accepted that the process of development is more than the mere growth of income per capita, despite, obviously, they have a clear and positive relationship. Thus, when it comes to measure wellbeing, we should differentiate between objective and subjective components. The first ones make reference to certain requirements or necessities broadly common to everyone that, when satisfied, are identified with a good quality of life (Gillen-Royo & Velazco, 2005). The second ones are based on the "people's cognitive and affective evaluation of their own lives" (Diener, 2000, p.34). In this sense, they have a more psychological and personal point of view, and therefore can vary substantially among different individuals. Through this section, firstly I will recall the most common elements and theories frequently deemed to measure objective wellbeing, paying attention to two widespread indicators used to this purpose (GDP per capita and Human Development Index) and its main strengths and weaknesses. Next, I will focus on the subjective measures. These will be the ones employed in the rest of this thesis to perform my analysis, and therefore I will explain them carefully, particularly underlying some bias and other measurement errors which can arise when using them.

Measuring "objective wellbeing"

Objective Wellbeing (OWB) measurements reckon welfare as multidimensional reality. This statement rises the questions of how to quantify the overall progress and how to compare achievements from distinct scopes. The World Bank (2001, p.19) proposes several alternatives. The welfare function and composite indices are among them. Both are based on weights assigned pursuant to diverse methodologies as well as try to set up certain standards to facilitate making comparisons between countries or individuals, and over time.

The welfare function is an estimate based on the preferences expressed by individuals in their observable actions. Of course, this approach allows to compare different situations and assess to what extent they need to improve in one dimension to keep welfare when a decline in another dimension The difficulty lies in making comparisons among a majority of individual wellbeing elements that are not valued by the market, such as social exclusion, lack of representation, vulnerability or physical health. Furthermore, the choice of appropriate weights (the weight each dimension should have in the function) has turned into a serious problem, since it requires estimating the importance that individuals give to each concrete aspect of wellbeing.

In the case of composite indexes, various indicators are synthesized into a single one, but instead of using weights estimated from the behavior of people, they are chosen in a more or less reasonable way (although somewhat arbitrary), which greatly simplifies processing compared with the welfare function . The most important proposal in this line has been the Human Development Index (UNDP, 1990), which I will discuss on below. Composite indexes are also very simple to deal with, but do not solve the problem of weighting and assigning arbitrary weights, which, in many cases, are identical to the diverse dimensions of welfare. However, the fact that its management does not require a great effort facilitates its use by many countries as well as it also enables comparison between them and over time, which makes them a very useful instrument when programming and assessing compliance with international agreements on human development.

Another important concern when gauging wellbeing with objective indicators is the selection of the elements to incorporate in our measurement. The most recurrent is obviously the economic facet. There is a strong bidirectional relationship between economic growth and human development: in one way, the growth of per capita income

provides the resources needed to maintain sustained improvements in human development and enlarge the welfare state, and in the opposite way, these sustained improvements contribute essentially to economic growth. Thereby, income and consumption are probably the most widely objective indicators managed to measure wellbeing, and GDP per capita (henceforth, GDP pc), the reference value. However, as I mentioned before, these indicators mislead a lot of information about other elements that certainly people all over the world consider important about their lives. Stiglitz, Sen, & Fitoussi (2009) have indicated that GDP is basically a measurement of "market production" and, therefore, it seems to be more appropriate to gauge the economies' aggregate supply of rather than the citizens' quality of life. They claim that "Too much importance on GDP as the unique benchmark can lead to misleading indications about how well-off people are and run the risk of leading to the wrong policy decisions" (Stiglitz, Sen, & Fitoussi, 2009; p.85). Alternatively, Kroops (2009) makes reference to the problems that come up when measuring non market output as well as the fact that GDP ignores the impact of productive activities on stock, like for example stocks of natural resources. Furthermore, GDP does not take into account the distribution of income, which probably is its biggest drawback as a tool to evaluate wellbeing. It is a well known fact that the global income distribution is very unequal: the poorest 40% of the population has only 3.3% of total output, while the richest 15% receives 80% of world GDP. This gap grows even more when considering income per capita. But not only income is unevenly distributed across countries, also within the same, disparities are very pronounced. Therefore, if we aim to measure more precisely society's welfare, it is necessary to supplement the GDP pc indicator with other ones that reflect the distribution of income in the country. (World Bank, 2008), given that, as mentioned in the introduction section and pointed out by Graham (2005), a high income inequality is

one of the major risk factors for the emergence of social conflicts. Since 2010, the

UNDP elaborates a version of Human Development index which accounts for

inequality[8], adjusting the standard HDI according to the inequity level in the country,

calculated by the Atkinson index[9].

Health is another common component in wellbeing measures. By the early

twentieth century, some scholars of poverty already found a strong relationship between

mortality and income level, showing that the mortality rate could be used as a proxy of

both income poverty and consumption as well as the absence of welfare in a broader

sense. Today, this tradition is reflected in the international development goals,

particularly through the Millennium Development Goals[10]. Some popular indicators

employed to proxy health are mortality figures such as infant, children or maternal

mortality and life expectancy.

Education is also a very frequent element deemed to be important for wellbeing.

It has been broadly illustrated in the literature that education has a strong positive

relationship with income, so that the more educated is the population of a country, the

more income you will have and vice versa. Therefore, both dimensions are mutually

reinforcing. Besides this, it is believed that the possibility of access to knowledge is a

prerequisite for any person to develop their potential. Bjorklund and Lindahl (2005, p.7)

state that "education creates a general and more flexible knowledge that facilitates both

individual and societal change"[11]. Usually, education is gauged by years of schooling,

literacy rate or the enrollment rate.

From a general point of view, income, health and education are traditionally the

most representative elements of wellbeing measurement. For instance, the HDI

incorporates these three dimensions in its calculation. It sets a minimum and a

maximum for each dimension (called goalposts) and then displays the position of each

country in relation to these goalposts values, expressed as a number between 0 ("no" development) and 1 (maximum development). The foremost avail of this composite index is that it is a single statistic which allows for comparison across countries and over time[12]. Conversely, the HDI has also received several critics. They essentially refer to the arbitrary way of assigning the weights to each component in the index's computation. Nowadays, the three components of HDI (income, health and education) have the same weight. However, this choice is based on the normative judgment that all three dimensions are equally important, but this is arguable. Some authors such as Noorkbakhsh (1998) provide a statistical justification.

Finally, even though the three components detailed explained above continue to be the fundamental ones at the time of measure wellbeing, they have been enriched progressively including other issues that are relevant for individual's wellbeing as well. For example, environmental questions such as a cleaner air or other material needs like the availability of dwelling in good condition, sewerage and running water are putting forward on the debate concerning OWB.

Measuring subjective wellbeing

Subjective wellbeing (SWB) makes reference to how people evaluate their own lives both emotionally (affectively) and cognitively. According to Diener (2000), SWB can be disaggregated in three fundamental components: Life satisfaction (general ruling of a person's life), satisfaction with particular spheres of one's life (e.g., work satisfaction) and affective experiences which can be positive or negative. This affective side of SWB is colloquially called "happiness". Veenhoven (1991, 1993) defines happiness as the extent in which a person regards his life as a good one. Nowadays, many countries and organizations all over the world implement SWB surveys in which people are asked "broadly speaking, how happy are you with your life?" or "taking all

together, how satisfied are you with your life"? The answers are usually based on a four, seven or ten point scale in which the lowest number corresponds to "not happy or very unhappy" and the highest number corresponds to "very happy". Psychologists usually prefer "life satisfaction questions" and economists happiness ones, but actually there is no big difference between the two kinds of questions because answers given to them have a very high correlation (around 0.95). When measuring SWB, there are two fundamental aspects to look at carefully: What are the factors that can influence self reported measures and which kind of problems we must tackle when examining SWB data. Both questions are deeply discussed below.

What influences SWB? The hypothesis of adaptation

There are many factors that can influence on the individuals' self reported status, not only psychological, but also social and cultural. Hence, much effort has been made in order to grasp the forming elements of SWB and offer some explanations about how people's feelings, attitudes and moods are defined, as well as how do them affect to SWB reports. Consistent with the academia, "adaptation" seems to play a central role. This hypothesis was first suggested by Brickman and Campbell (1971). These authors claimed that people live in a "hedonic treadmill", so as individuals get more achievements or material possessions, their expectations also increase. Thus, what firstly made people to become or feel happier; it no longer does, because they have "adapted" to the new status according to the also higher expectations. Respective the negative face, people usually reports low levels of SWB when they have to come upon some misfortune or calamity, but after certain time, these events do not affect so much to their levels of SWB. In sum, Brickman & Campbell (1971) conclude that, in the long run, adaptation provokes hedonic neutrality.

Over the years, several versions of the "hedonic treadmill" have been implemented in different studies attempting to provide answers about relevant questions[13]. One of them argues that temperament influences on a person's initial happiness level. Steel, Schmidt, & Schultz (2008) discuss that this is due to the fact that self reported measures are strongly related to personality traits and SWB tends to be more or less stable over time. Conversely, Mehnert, Kraus, & Boyd (1990) advocate that there can be some situations or some factors to which people do not completely adapt, even after a long time. Comparing individuals who had physical disabilities since birth and other ones who had not, they found that those with disabilities reported lower levels of SWB than those who were physically healthy. Therefore, they concluded that, even though there is no doubt about personality traits have a significant effect on long-term self reported wellbeing, it seems to be that there are some circumstances for which it is quite difficult to adapt as well.

Analyzing SWB data: Some concerns

SWB data are being increasingly used by economists, since many subjects in economics have to deal with questions that make people feel better or happier. However, there are still some scholars that are reluctant to utilize happiness measures, mainly because they believe that self reported data suffers from important bias and therefore they lack of validity. Given this reliability problem of SWB data, several authors have analyzed the bias that can arise from it and have proposed some possible insights to solve them. Chen & Spector (1991) assert that self reported measures are a compilation of four aspects: circumstances, aspirations, individuals' happiness perceptions and the relative comparison with others. These factors (personality traits) can affect people's responses in happiness surveys. For example, Schwarz & Strack (1999) concluded that general life satisfaction measures are sometimes affected by how

the person feels when answering to the survey. In this sense, if the individual has had some hardship in the last days, he maybe can report a lower level of satisfaction despite that he generally has a happy life. In contrast, Eid & Diener (1999) assert that long-term influences are much more important in explaining wellbeing indicators than the individual's mood or feeling at a concrete moment. Graham (2005) highlights that these personality traits are often not observable and could be correlated with either the error term or other observable variables. Nevertheless, she argues that this problem can be partially corrected using individual fixed effects models when panel data are available.

Another problem to bear in mind when using happiness surveys is that the ordering and wording of the questions matter. Graham, Eggers, & Sukhtankar (2004) claim that when happiness questions are in the middle of the survey, subsequent to others related to earnings or occupational status (two variables highly correlated with happiness in a determined point of time), the self reported wellbeing may be influenced by the responses given to the previous questions, since people tend to be consistent in their answers respecting to what have they responded before. Gudrun (2005) advocates that happiness questions should be asked at the commencement of the survey in order to play down the order bias. Bertrand & Mullainathan (2001) also underline the relevance of the question wording. In a real research, people were queried whether they would permit public speeches in opposition to democracy. Answers to two questions were compared: "Do you think the United States should forbid public speech against democracy?" and "Do you think that the United States should allow public speeches against democracy?" In the first case, more than 50 percent of the respondents answered "yes, public speeches against democracy should be forbidden", whereas in the second one three out of four Americans said that "no, public speeches against democracy should not be allowed". As it can be observed, both responses have the same meaning.

However, considerably more people would not allow public speeches against democracy compared with individuals that would forbid them, despite they want the same final result: In this example, it seems to be that the word "forbid" is considered more negative than "not allow".

A further concern is how to scale the answers to SWB questions. Graham, Eggers, & Sukhtankar (2004) point out that when there is a neutral alternative among all feasible, this could slant the distribution of responses to the center. One possible explanation to this problem is given by Bertrand & Mullainathan (2001), who argue that sometimes respondents are lazy about trying to remember the information required to reply the question or they simply do not want to read all the options available.

On the other hand, reference or social "norms" are also important for people and can influence their answers. It could happen that respondents maybe feel that they are judged by the interviewer in some way and therefore they will answer what is considered "good" or "desirable" from a social point of view (Bertrand & Mullainathan, 2001; Diener, 2000). This situation is similar to that in which individuals are inquired to report how much money they earn or what would be the minimum income with which they will deem that their needs are met or they feel happy. Often, rich people do not want to say they are rich. In the same way, when people are asked to set up an income that will make them feel happy, they frequently based their replies in their current earnings, rising them by a concrete fraction, since it is probably not socially well regarded to state that I will need to increase a lot my current income in order to be happy (Graham, 2004). While this argument makes sense and it is consistent with patterns observed across different surveys, it should not be generalized. In some societies, certain "ambition" can be seen as a positive value.

Lastly, some additional considerations about the validity of SWB measures should be bear in mind, given its importance for economics investigation. Firstly, one may wonder if happiness scores can really be compared. In this sense, Di Tella & MacChuloch (2006) argue that the fact that self reported measures are usually ordinal sets up cognitive bounds at the time of answering the happiness questions, and this affects to the validity of interpersonal comparisons. This setback turns out to be even worse when reporting the highest or the lowest happiness score since they cannot rise or fall more. Furthermore, these bounds can also lead us to think erroneously "that marginal utility is decreasing as consumption increases, when actually the scores are reaching the top of the scale and that is why they are become less responsive to rising utility" (Di Tella & MacChuloch, 2006; p.29). However, if we compare groups instead of individuals, this drawback is substantially diminished, given that it is unlikely to discover systematic differential reporting biases when comparing large groups of individuals. In a similar vein, Frey & Stutzer (2000, p.4) [advocates that interpersonal comparability of happiness scores is not such a big problem in practice, and therefore SWB indicators] "have high consistency, reliability and validity". Moreover, there are some robustness findings in the literature which contributes to support the validity of SWB measures. For example, people who define themselves as happy are more likely to be considered as happy by friends and less likely to suffer from psychological illnesses or to attempt suicide (Frank, 1985, 1987). Happier people also tend to smile more frequently during social relations (Fernández-Dols and Ruiz-Belda, 1995). Finally, there is wide support on SWB literature which asserts that these measures depict a noteworthy pattern of stability over time. Graham et. al (2004) discuss that his steadiness could be due to the fact that happiness levels are in some way directed by self-esteem or other personal traits, and not uniquely influenced by life experience.

II. Quantitative happiness and econometrics methods: Strengths and weaknesses

One of the greatest differences between economists and other social scientists when analyzing SWB data is the use of econometric techniques. In fact, economists believe that the quantitative analysis is the key point which helps to give reliability to SWB measures. Nonetheless, no econometric method is perfect or is free from troubles. In the previous section, I pointed out some possible concerns about the bias that SWB indicators may suffer. In this section, I keep on the discussion about SWB measures, but I focus on the quantitative approaches carried out in the happiness literature in order to address the problems mentioned above, underlying its main strengths and weaknesses.

In the first place, before performing any analysis, there are some considerations which should be tabled. Bertrand & Mullainathan (2001) indicate that measurement errors seem to be an important factor to bear in mind when analyzing SWB data. In this sense, self reported variables such as happiness or life satisfaction do not appear to be a good approximation for being used as dependant variables, since the measurement error probably has a causal link with many independent variables included in the regressions. However, these authors assert that SWB measures may be useful as explanatory variables in order to predict effects on other socioeconomic variables, but taking into account that the coefficients interpretation need not be causal. In contrast, many scholars have used SWB measures as dependant variables. This will be the spotlight of this dissertation. Throughout this section, I will expose the alternative strategies implemented in the literature to tackle the problems mentioned by Bertrand & Mullainathan (2001).

Happiness equations usually have a similar form, independently the number of controls we wish to include. Self reported measures are typically placed in the left hand side as the dependant variable. In the right hand side, a vector of known and observable variables is commonly incorporated, together with some fixed individual, time or country effect, according to the model. The control variables can vary depending on the investigation and the aim, but generally classic socioeconomic and socio demographic characteristics such as income, labor status, age, number of children, education or health status are accounted for. Unobserved factors as personality traits and measurement errors are captured in the error term. Precisely, this is one of the major concerns of economists when trying to establish causality links in their analysis. In this sense, cross-section method frequently failed to control for individual time persistent effects. In fact, SWB literature have drawn the attention on the sensitivity of the results to the introduction or not of these individual effects (Ferrer i Carbonell & Ramos, 2012). Nevertheless, despite this potential drawback, cross-country studies (cross-sections of big samples of individuals across countries) are quite common in happiness economics literature, and have showed quite consistent patterns about the determinants of happiness. Graham (2005; p.44) asserts that "many errors are uncorrelated with the observed variables, and do not systematically bias the results". However, panel data are usually better than cross-sections since personality traits and correlated measurement errors over time can be corrected, at least partially, introducing fixed time effects. Therefore, panel data allow for setting up stronger causality links (Ferrer i Carbonell & Ramos, 2012).

Regarding the estimation techniques utilized, Graham (2005) advocates the use of ordered logit or probit models, given that happiness measures are ordinal. Yet, these regressions usually bring about very small R-square coefficients, suggesting that

psychological components of wellbeing (included in the error term) explain a large part of changes in happiness, rather than the "typical" determinants of happiness. Following this argument, Graham et al. (2004) examine through a Russian panel data if "unexplained happiness" (residual term in the standard happiness regression after controlling for the usual determinants and correcting for individual personality fixed effects) affects itself to income, health and other socioeconomic and demographic factors. They perform a two steps OLS regression concluding that residual or "unexplained" happiness has an effect on the aforementioned factors. In the preceding section, I discussed that features associated with positive cognitive bias such as self-esteem, self-control or optimism, had a lot to do in explaining stable SWB levels over time. Graham et. al (2004) point out that similar factors seem to drive the results in their investigation: People who are happier in a determined point of time tend to earn more income and have better health in the future. With this example, it can be observed that 2SLS regression can improve the causality links between SWB measures and its determinants respecting standard OLS or probit-logit models. Nonetheless, both OLS and ordered probit-logit models regularly yield similar regression coefficients. In this line, Graham (2005, p.45) states that "while it is impossible to measure the precise effects of independent variables on true well-being, happiness researchers have used the OLS coefficients as a basis for assigning relative weights to them". Alternatively, another good way to strength causality links in empirical analyses consists of looking for a source of exogeneity, like unexpected or unanticipated events. This is what Frijters, De New, & Shields (2004) do. They exploit the fall of the Berlin wall as an exogenous episode to study how the sizeable increase in real household income in East Germany after the reunification contributed to self reported levels of life satisfaction. To accomplish that, they make use of the German Socioeconomic Panel (GSOEP) during

the period 1991-2001 and apply a new fixed effect estimator for ordinal life satisfaction, performing a decomposition approach which bears in mind the distinct unobservable personality traits and the panel attrition[14]. They also test for the suitability of random effects versus fixed effects based on the assumption that the unobservable personality traits are uncorrelated with the independent variables, rejecting this hypothesis. Their results indicate that both income and labor status are very significant predictors of SWB and there were also important improvements in personal freedom and public services. Moreover, life satisfaction converged between East Germany and West Germany in the period considered. Finally, these authors stress that it is essential to control for changes in the fixed effects distribution when we use an unbalanced panel in which they are continuously new incoming and outgoing individuals. Otherwise, we can get misleading results.

Summing up, notwithstanding that it is practically impossible to settle a clear causal link between SWB measures and other variables, the emergence and progressive availability of more panel data as well as more accurate statistical and econometric techniques is contributing to perform more solid and robust analyses, which may allow establishing stronger causal links, particularly in regard to the direction of causality.

III.   The relationship between happiness and income: The Easterlin paradox

In previous sections I have argued that establishing causal links between happiness and other socioeconomic variables is very difficult since reverse causality or endogeneity problems are usually present. Particularly in the case of income, it has been showed that money matters to happiness in some way because richer people are on average typically happier. Even though there are numerous variables affecting self reported wellbeing, income is still considered one of the principal inputs for people to

declare they are satisfied with their lives. But the connection between income and SWB could go in the opposite direction: If a person feels good about her life, she generally will perform better at her job, being more productive and earning more income in the future (Oswald, 1997; Graham et. al, 2004). Anyhow, as I stated before, personality traits appear to be the key factors when studying the relationship between these two variables. Given the difficulty to account for these aspects, vast part of happiness literature has concentrated on simply examining the correlation between income and SWB. Indeed, several scholars have advocated that the analysis of these correlations could have implications for public policy: If happiness and income go hand-in-hand, policy-makers should focus on fostering economic growth because more income per head would increase the society's SWB. However, if the relationship between happiness and income is weak, this would mean that governments must be more worried about maximizing citizens' life satisfaction instead of income.

Frey & Stutzer (2002; p.32) claimed "most economists take it as a matter of course that higher income leads to higher happiness". In fact, higher incomes generally enlarge individuals' set of opportunities allowing them to consume more goods and services if they want. People not interested in acquiring or having more possessions would not be harmed since "they are free to costless dispose of any unwanted surplus" (Frey & Stutzer, 2002; p.32). In this sense, it seems to be that income and happiness would be greatly correlated. Nevertheless, there are many academics that do not support this idea. Easterlin heads up this group of scholars. In 1974, he proposed his famous paradox related to the link between happiness and income. He stated that at a determined point of time within a concrete country, those people who are richer are on average also happier. However, when he moved the analysis to cross-country data, he found a weaker relationship between income and happiness, and this link practically

disappeared when he analyzed the two variables over time, concluding that economic growth does not lead to higher levels of SWB. This paradox has been broadly revised in the academic literature given that it is considered one of the cornerstones of happiness economics discipline. Indeed, it has been used to justify public policies centered on rising SWB levels, discarding economic growth as the fundamental aim of governments' economic policy. Precisely this sturdy statement is one of the major critics to the paradox, which has led Easterlin to revisit his paradox through a series of articles in which he uses better data in order to strongly defend his conclusions.

Along this section, I will discuss the Easterlin paradox and some explanations provided in the literature to elucidate this ambiguous result. Moreover, I will show some of the empirical evidence which is available to date, putting forward the arguments for and against the paradox as well as the existence or not of a "satiation point" beyond which more income would not produce more happiness.

Theoretical explanations to the Easterlin paradox: Adaptation, omitted variables and relative income

Despite the large amount of literature dealing with the Easterlin paradox, there is still a heated debate discussing its validity. Basing essential economic policies for the future countries' performance on Easterlin outcomes requires a deep understanding of the actual relationship between income and SWB. In this subsection, I will contend with some explanations that have been offered by the academic research on the topic to better comprehend this link. Concretely, I will comment three of these arguments: Adaptation, omitted variables and relative income.

The idea of adaptation was already mentioned in the first heading of this dissertation. Brickman and Campbell (1971) were the first authors to tackle this proposal. They asserted that people usually react sharply to the events that occur in their

lives. These events can lead to increases or decreases in their life satisfaction depending on the characteristics of these events. But as time goes on, people tend to adapt and come back to their original level of happiness. Moving this hypothesis in order to interpret the Easterlin paradox, as individuals get more achievements or material possessions, their expectations also rise. Thus, what firstly made people to become or feel happier; it no longer does, because they have "adapted" to the new status according to the also higher expectations

The second explanation makes reference to the existence of omitted variables when we analyze the influence of income on happiness. I have shown before that there are more variables aside from income that can affect self reported wellbeing. Some of these variables could be negatively correlated with income per capita, therefore offsetting any possible positive effect of income on happiness and probably resulting in an unchanged level of SWB. The dilemma with this interpretation is that most of the variables that researchers can plausibly believe to influence happiness have evolved in a different way from what one might logically be able to have imagined a priori. To shed light on this argument, Di Tella & MacChuloch (2003) use the U.S. General Social Survey and the Euro-Barometer Survey Series to study the correlation between happiness and a set of variables which can be reasonably considered to be part of the individuals' utility function. Given the evolution of some of these variables, happiness should have risen more than it did. These authors therefore conclude that including omitted variables in our models does not solve the Easterlin Paradox. Instead, it complicates it even more.

The third and last explanation about which I am going to comment on refers to the hypothesis of "relative income". Easterlin (1974) argued that his paradox underlies in the particular nature of welfare judgments. Individuals tend to evaluate their living

standards according to the commodities they should have compared to a relative social rule. Economic development results in both a general rise of incomes and the social norm by which our living standards are assessed. When living standards increase, so does the subjective living level. In this sense, a person whose income has not changed enough to reach the social norm level will feel poorer respecting the rest of the society, albeit her actual personal circumstances have not varied. Hence, economic progress does not yield a growth in happiness that one might have expected from the increase in material progress and opportunities. Thus, boosting the income of all does not raise the happiness of all (Easterlin, 1995). Formally, this argument is based on models of interdependent preferences in which individuals' utility depends positively on their own income and negatively on the income of others (Duesenberry, 1949; Parducci, 1968; Pollak, 1976; Blanchflower & Oswald, 2004).

Empirical evidence of the Easterlin Paradox

When Easterlin first identified the paradox, there was very few data available, particularly panel data. This drawback prevented to make proper cross-country and time series analysis as well as provoked several scholars to set up wrong statements, confounding the lack of evidence of a solid link between GDP and happiness with proof of its absence (Stevenson & Wolfers, 2008). Notwithstanding that, there is substantial agreement among academics about the first statement of Easterlin paradox: within a country at a determined moment of time, richer individuals are on average happier than poorer individuals.

However, there is more controversy about the second part of the paradox: Are rich countries happier than poor ones? Does happiness increase over time as national income expands? Easterlin has not found any significant statistical evidence to answer affirmatively neither of the two questions, and he has pointed out to adaptation and

relative income hypothesis to advocate his conclusions. Until the first decade of this century, practically nobody could or seriously attempted to cast doubt on Easterlin outcomes. Diener & Suh (1999) take advantage of representative samples coming from the World Value Surveys (World Values Study Group[15]) between 1990 and 1993 to make a cross-country analysis for selected nations. The correlation between mean life satisfaction and mean purchasing power income (measure as an index number compared with United States standard basket) was 0.62 across all nations in the survey. Diener (2000) explain these results asserting that wealthier nations have more probabilities to accomplish the basic human needs for food and other material and immaterial components of wellbeing. At the same time, China, India and Nigeria –the poorest nations in the survey- did not shed so low self reported wellbeing as one would have expected from their income levels. This could be due to the fact that, despite GDP is increasing in these countries, expectations probably are not growing at the same rhythm and they are significantly lower than in the West World, which are the nations that set up the "social norm" nowadays. Finally, these authors highlight that even though much of the SWB variance across countries is accounted for by the wealth of nations, there are also other factors such as cultural features or political turmoil that have an influence as well. Hagerty & Veenhoven (2006) used trend data for the period 1946-2004 showing that average happiness has faintly rose in rich countries whereas it significantly increased in poor nations. They therefore conclude that the Easterlin paradox does not hold[16]. But perhaps, the most revolutionary results opposed to Easterlin's ones are those provided by Stevenson & Wolfers (2008) first and Sacks, Stevenson, & Wolfers (2010, 2012) later. Using a compilation of multiple, more updated and newly available data sets of up to 140 countries covering several decades, these scholars found economically and statistically significant evidence of a positive association between income and

SWB, not only among individuals within a country at a determined moment of time, but also across countries and within countries over time. Additionally, the estimated income-wellbeing gradients for the three cases were remarkably similar (around 0.4) and the results were robust across different data sets and using various measures of SWB. This outcome also contradict Easterlin's findings, who stated that the positive relationship between income and SWB is much stronger within countries than across nations. Moreover, the time series analysis suggests that the process of economic growth is associated with increases in individuals' self reported wellbeing, and those countries which experienced faster economic growth, on average had greater growth in SWB. Hence, contrary to Easterlin's affirmation, "raising the income of all does indeed raise the wellbeing of all". Nevertheless, this analysis should be taken cautiously. Sacks, Stevenson, & Wolfers (2010) indicate that comparisons over time frequently involve coding breaks, which make more difficult to find statistical significance due to the addition of measurement error. Moreover, we should be careful when making strong inferences about changes in wellbeing over long periods of time, since even very little measurement error can lead misleading conclusions. The authors also recognize that there is scarce panel data; therefore some of their estimations are both noisy and imprecise. Krueger also criticizes Stevenson & Wolfers findings claiming that "It is also puzzling that the evidence of an effect of income on satisfaction is notably weaker when the differences are taken over a longer period of time; one would expect there to be greater signal in GDP changes over longer periods" (Stevenson & Wolfers, 2008; p.98).

On the other hand, some happiness researchers have proposed that the relationship between income and SWB is practically nil in richer countries but it is positive in poorer countries (Easterlin, 1995), albeit no time series verification had been exposed until few years ago. However, Sacks et. al (2012) illustrate a strong positive

relation for almost every country using a sample of 25 most populous nations, among which there are rich and poor ones. These relationships are represented graphically, using a line for each country. The figures depict approximately parallel lines, suggesting that the link between income and SWB are quantitatively similar amongst countries, despite they have many different languages and cultures. In the same line, Deaton (2008) and Stevenson & Wolfers (2013) question the traditional belief of a curvilinear relationship between income and SWB, in which the marginal impact of an additional currency unit diminishes as income rises, and after a certain level of income is reached, more income has little or even nil effect on happiness (Frey & Stutzer, 2002; Layard, 2003, 2005). Instead, using regression analysis and cross-tab of happiness and household income, they hint that this linkage is log-linear. This means that the log of income is positively associated with SWB, and therefore the same proportional increase in income turns out equivalent augmentation in self reported wellbeing for lower incomes than for higher ones, independently of the initial level of income[17]. This also would imply that there is no necessary reason for the existence of an income threshold or satiation point beyond which more income is no longer associated with more SWB. Aside from these repercussions, Stevenson & Wolfers (2013) findings are robust across several data sets[18] as well as for a range of SWB measures and income thresholds. The quantitative magnitude holds roughly equal in both cross-country and within country analysis comparing the rich and the poor, which gives more credibility to their results[19].

On the other side, I considered an interesting and relevant addition to this debate relating the empirical results of the Easterlin paradox to the "adaptation" and "relative income" explanations discussed above, which are the ones commonly used to proof the existence of this paradox. Respecting to the support of adaptation hypothesis, Myers (2000) studied the association between income and SWB from the fifties until the end

of the century. Despite income has noticeably increased since World War II, SWB has basically remained flat in Western countries. Myers explained this fact affirming that people's wishes appear to increase as their incomes go up, so that they get used to the upper income levels whereas there is no gains in SWB. More recently, Easterlin (2003) offered evidence about full adaptation to income and living standards but partial adaptation to life's events such as marriage or disability. However, Stevenson & Wolfers (2008) reject this strong version of adaptation theory as a possible argument in favor of the existence of Easterlin Paradox. Based on their results I mentioned before, they conclude that softer versions of adaptation are probably consistent with their findings against the validity of Easterlin Paradox.

Alternatively, Easterlin and his supporters have widely drawn on the relative income argument to advocate the survival of the paradox. They claim that, if only relative concerns are significant, economic growth can make everyone richer and countries wealthier, but the difference between any individual's income and the average income does not vary. Hence, average SWB should not rise. This insight suggest that the cross-section relationships between income and SWB within and across countries and over time should be different. Moreover, as the cross-section individual relationship is stronger than that one revealed by cross-country and time series assessment, this implies that the role of relative concerns become more important. This is actually what Easterlin found; concluding then that relative income is what really determines SWB. Luttmer (2004) examine a U.S. panel of nearly 9000 individuals comparing their incomes with the average earning in the village they live. He detects roughly similar individual happiness declines when personal income drops as when the village's average income goes up. Thus, there are substantial relative income effects and these effects curiously seem larger amongst those individuals who tend to be more sociable

with their neighbors, suggesting that income disparities are more visible in these kind of situations.

On the other hand, Sacks, Stevenson, & Wolfers (2010, 2012) obtained rather similar linkages between income and SWB both within and across nations. Furthermore and contrary to Easterlin, they observe that the process of economic expansion and income growth observed since the World War II was accompanied by greater levels of SWB. These conclusions hint that it has been absolute and not relative income the main factor in shaping SWB levels during the last decades; although they do not discard that relative income could have had some partial role too.

To end up with this section, it is worth noting to stress some interesting points in order to shed light on the understanding of the Easterlin paradox. In the first place, along all this section, my analysis only intended to involve the study of the correlation between income and SWB, rather than establishing causal links. I have shown that it is actually very difficult to ascertain in which direction the causality goes.

Secondly, even though there is empirical research either supporting or rejecting the validity of Easterlin paradox, the second one seems to be more robust. While Easterlin failed to refuse neither the presence nor the nonexistence of his paradox hypothesis due to the lack of proper data to make any statement, the authors suggesting absence of Easterlin paradox have employed newly available trend data across both numerous developed and developing countries. These updated data sets have allowed obtaining more precise estimates of the correlation between income and SWB among individuals within a country and across national comparisons. However there is still an important challenge pending. The scarcity of continuous series of SWB data for many countries have represented and obstacle when making time series comparisons. Whilst Easterlin and other proponents of his paradox did not found evidence of SWB increases

associated with income growth, Stevenson & Wolfers (2008) did it. Moreover, they assert that Easterlin results reflect insufficient statistical power to discard the null hypothesis that neither the effects are nil nor the time series relationship between income and well-being is approximately of the same magnitude as that one observed in the cross-country comparisons.

Finally, both absolute and relative income as well as adaptation in its "soft" version appear to determine self reported wellbeing in some way. Regarding the two first explanations, Easterlin's supporters advocate that relative income is the real and fundamental determinant of SWB, since they have not found correlation between income and SWB when analyzing trend patterns and they claimed that the link amid these two variables is much stronger in individual cross-sections than in cross-country studies. On the contrary, Easterlin's detractors discovered a positive association between income growth and SWB increases over time as well as they obtained quantitatively similar income-SWB relationships both with individual and national cross-sections, suggesting that absolute income is more relevant in shaping SWB than relative income. With respect to the role played by adaptation theory, I agree with Sacks et. al that the "strong" version of adaptation as exposed by Brickman & Campbell (1971) and later adapted by Easterlin is difficult to believe. I do not think that everyone in the world increases their life, economic or social expectations as their income goes up. Probably in rich societies in which there is more social pressure to consume more and have more material possessions this strong version of adaptation can fit better. But I would not use it as a general statement for everybody. However, milder versions of adaptation have room to explain changes in happiness as income rises.

IV.   Happiness Economics and the Unemployment-Inflation tradeoff

Academic literature on the macroeconomics of happiness has consistently found that both unemployment and inflation are strongly negative correlated with SWB (Dolan, Peasgood, & White, 2008). This literature has been sometimes criticized because, according to the "rational expectations hypothesis"[20], economic magnitudes such as inflation should not affect in the long term to individuals' decisions if they behave as "rational" agents. Aside from this question, there is another one related to the unemployment-inflation tradeoff which is still pending: How much unemployment is necessary to compensate from a percentage point of higher inflation or vice versa? Several scholars have addressed this difficulty, getting different numbers but drawing out similar conclusions: Rising unemployment by one percentage point is more detrimental to happiness than one percentage point increase of inflation. Di Tella et.al (2003) estimated a model including country-specific time trends as control variables, concluding that unemployment was twice more harmful to happiness than inflation. To understand and interpret this result, imagine that the unemployment rate of a country is 5% and inflation is 3%. Then, if for example, unemployment goes up from 5 to 6 percent (1 percentage point); inflation should be reduced by 2 percentage points until 1% to maintain constant the wellbeing of population.

In the same vein, Di Tella & MacChuloch (2006) used an ordered probit model transforming crude happiness scores into continuous ones for data from OECD countries over the period 1975-1992. They found that an increase of one percentage point of unemployment was 4.7 times more damaging to happiness than an additional percentage point of inflation. These authors also asserted that the misery index[21], which considers that both inflation and unemployment are equally damaging to society, "would underestimate the costs of joblessness" (Di Tella & MacChuloch, 2006; p.39).

These results cast doubt about using the "misery index" for public policy purposes. Frey & Stutzer (2000; p.3,) highlight that "people have a strong aversion towards inflation and are prepared to carry significant cost to evade it" and they also conclude that unemployment affects more negatively to SWB than inflation: In European countries concretely, it is necessary to decrease inflation by 1.7 percentage points in order to compensate for an increase of one percentage point in unemployment. They also affirm that rising the household income would not change so much the happiness levels of jobless people, and call the attention about the relevance of non-pecuniary factors to explain the unhappiness of the unemployed when controlling for income in the regressions. However, Wildman and Jones (2002) put forward that current income could not be the most appropriate measure to represent financial status, and therefore some of the unhappiness coming from unemployment situation may be due to higher apprehension or uncertainty over future earnings.

Focusing only on unemployment, studies which have applied models treating SWB indicators as continuous variables have found differences in happiness scores between unemployed and employed people. These differences range from 5 to 15% (Dolan et. al, 2008). For instance, Lelkes (2007) used a European survey and a probit model in order to estimate the effect of unemployment on SWB. She found that unemployment decreases the probability of having a high life satisfaction and overall happiness by 19% and 15% respectively. Additionally, many studies have also found that men usually suffer more from having no job (Dockery, 2003; Gerlach & Stephan, 1996; Theodossiou, 1998) and middle aged people are more affected as well due to unemployment than the old or the young (Pichler, 2006; Winkelmann & Winkelmann, 1998). Particularly interesting is the fact unemployed individuals are happier when the unemployment rates are higher. Clark and Oswald (1994) have called "social stigma" to

this situation. Graham (2005) explains this upshot arguing that the positive result on

wellbeing coming from reducing social stigma prevails over the negative consequence

of a lesser probability of finding a job in the future. In a similar vein, Clark (2003a)

underlines the role of social networks and work partnership in explaining why

unemployment have different effects on wellbeing depending on whether you have a

partner unemployed as well or not. He analyzes data coming from the British

Household Panel Survey and finds that for those who have a job, having an unemployed

partner affects negatively to their SWB, whereas for those who are jobless it has a

positive effect. Moreover, he calculates that the negative effect of unemployment on

SWB would disappear when its rate reaches 24%. This conclusion seems to be in the

same line as the hypothesis of "social stigma". Finally, despite the existence of

consistent evidence of a strongly negative correlation between SWB and

unemployment, there is some literature which does not find support to this assertion.

For instance, Gudrun (2013) studies how the economic and financial crisis in Iceland

affected happiness. Using a sample of 5918 individuals from a longitudinal national

survey carried out in 2007 and 2009, she estimates a cross-section multiple linear

regression including socio-demographic and economic factors, health status and social

networks as control variables. She finds that happiness among Icelandic people was

lower in 2009 respecting to 2007, but economic factors, and concretely unemployment,

could not predict this decline in SWB. Graham & Pettinato (2001) and Smith (2003)

obtain similar results. Nevertheless, most of studies which show evidence contrary to

the negative effect of unemployment on happiness tend to use small samples of

unemployed people which actually can affect to the representativeness of the results

(Dolan et. al, 2008). Additionally, the econometric method utilized, and particularly

cross-section analysis, can also lead to misleading conclusions if unobserved personality

traits and correlated measurement errors are not taken into account.

Regarding studies on inflation, there is one handicap we must take into account:

The impact of inflation on SWB indicators is limited to cross-country studies using

panel data (over time). Within countries, it is impractical to separate the effect of

inflation from other time effects (Dolan et. al, 2008). Hence, most of attempts (or at

least, the most reliable ones) to examine the relationship between inflation and

happiness have borne in mind to control for country and year fixed effects. As showed

before with unemployment, inflation has also a regular harmful effect on SWB. Di Tella

et. al (2003) calculate this effect obtaining that one percentage point increase of

inflation reduces happiness by 0.01 units. This implies that if inflation rate boosts 5

percentage points (historically not a rare event), SWB would decrease 0.05 units, which

means that 5 percent of the population are shift downwards from one life satisfaction

category to the next lower one, e.g. from being "fairly satisfied" to "non very satisfied".

Alesina et. al (2004) gets support to this statement for Europe and the USA using data

from the General Social Survey (GSS) for USA and from the Eurobarometer for

Europe. Particularly appealing is their result about the influence of political ideology on

the preferences for inflation and the subsequent effect on SWB. They find that inflation

has a bigger negative impact on happiness for "right wingers" than for "left wingers". In

a similar line, Di Tella & MacChuloch (2006) offer attention-grabbing evidence about

the correlation between political leanings and preferences for inflation and

unemployment for a sample of OECD countries between 1975 and 1992. Their

outcomes shed that left-wing individuals are more concerned about unemployment and

its effects on happiness relative to inflation than right-wingers, underwriting the

conclusions obtained by Alesina et. al (2004). Wolfers (2003) investigates the impact of

business cycles volatility on SWB measures. He obtains robust evidence that macroeconomic volatility undermines happiness and life satisfaction. Concretely, he estimates that without unemployment instability, SWB would rise by an amount similar to that from diminishing the average level of unemployment by 0.25 percentage points. Regarding the influence of inflation volatility, he argues that they are slightly difficult to perceive and possibly smaller.

To end up with this section, it is important to recall that many studies incorporate a limited number of macro variables, which release the possibility that other relevant magnitudes are not satisfactorily controlled for. For example, inflation may correlate with income inequality or lack of trust and unemployment can be correlated with suicide or other mental disorders.

V.   Happiness economics and public policy

Happiness economists rely on SWB measures as a guideline for public policy implementation. They believe that happiness or life satisfaction indicators represent better the citizens' welfare rather than typical national indicators based on the production or consumption of goods and services. Diener (2000, p.40) states "Ideally, the national SWB indicators would include various components of SWB, such as pleasant affect, unpleasant affect, life satisfaction, fulfillment, and more specific states such as stress, affection, trust, and joy". He also indicates that national indicators of SWB could offer useful information about which society groups are unhappy or less happy and targeting policies on them. Di Tella & MacChuloch (2006), for its part, discuss that, in order to evaluate policies, economists usually first observe the social agents' conducts and then inferred some "preferences" derived from that behavior. Next, they link these preferences with some theoretical assumptions with the aim of

estimating how the policy will affect wellbeing. But a problem arises here: Even if there is consensus about the policy effects on social agent's behavior, it is very difficult to agree how they will broadly affect welfare. Sometimes, the information obtained from "revealed preferences" is not good enough, for example when we want to estimate the welfare effects of inequality or other macroeconomic policies (Graham, 2005).

But before deciding if SWB indicators can be adequate to implement public policies, there are some concerns that should be borne in mind. Particularly those related to the reliability of SWB data and the bias which can come up of it have been widely discussed throughout this dissertation. I argued that we must pay special attention to control for unobservable personality traits in our happiness regressions, given that they seem to have much more importance in explaining happiness than the typical "observable" determinants. Besides this, happiness surveys sometimes turn out contradictory results which can be useful for psychology investigation but are not suitable for public policy recommendations (Graham, 2005). For example, the case of "social stigma" (unemployed individuals are happier in contexts with higher unemployment rates) mentioned in the previous section appears to be somewhat confusing. In principle, we might expect that unemployed respondents should be unhappier when the unemployment rates that they must face are higher, since they have fewer possibilities to find a job. However, the positive result on wellbeing coming from reducing social stigma prevails over the negative consequence of a lesser probability of finding a job in the future. Following this result, a policy maker should implement policies to rise unemployment rates because that makes unemployed feel happier. But obviously, at least from the point of view of common sense, this would be a tremendous mistake. Thus, while it is practically impossible to compute the exact effects of happiness determinants on self reported wellbeing measures, we can use the coefficients

yielded by OLS happiness regressions as a foundation to allot weights to the different explanatory variables and check for example how much income would a standard individual need to turn out the same variation in declared happiness that hails from a welfare loss resulting from unemployment (Graham, 2005).

On the other hand, Diener (2000) puts forward another interesting question to take into consideration at the time of applying public policy based on happiness indicators. He wonders if increasing SWB is actually something desirable, because too much life satisfaction probably could lead people to be more and more unmotivated. Nevertheless, there is broad evidence about happier people are more productive at work (Veenhoven, 1988), are rated as happier by friends (Frank, 1985), tend to have better health (Graham et. al, 2004) or earn higher incomes (De Neve & Oswald, 2012). Hence, it does not seem that high levels of SWB are prejudicial for the society, rather quite the contrary.

Despite these concerns, happiness economists are convinced about the usefulness of SWB indicators as instruments for public policy decision-making. There are three aspects in which they broadly agree happiness measures are particularly worthy. The first one makes reference to the effects of government expenditure. We often believe that the more government expenditure, the better, whereas that is not always true; we have to keep in mind efficiency considerations. Frey & Stutzer (2002) discuss that, at the microeconomic level, it is habitually not viable to suggest Pareto-optimal proposals due to social interventions may imply costs for some part of the society. Thus, an evaluation of the net effects in terms of individual utilities is required, and this can be better estimated using SWB measures. Government projects and interventions are usually gauged following cost-benefit analysis. Microeconometric happiness functions that include a large number of determinants can be complementary

to the cost-benefit approach in order to assess the general effect of expansionary expenditure policies.

Tax policy is another field in which happiness economics puts its attention. Taxes affect in a dissimilar way to the different income groups. Happiness research has hinted that relative income position respecting the rest of society matters more to individual's happiness than own income. If we believe in this argument of relative concerns, then redistributive tax policy has something to do. Hopkins (2008) highlights that there are significant externalities which suggest that redistribution of income can have noteworthy positive effects on efficiency and even those who loss financially with the redistribution can be better off afterwards. In this sense, taxes would have the potential of be Pareto-improving. But unfortunately, not all good news. We also must take into account further aspects such as the probability of rich people could avoid paying raised taxes. If this situation happens very often in reality, then the positive effects of progressive taxes would be reduced.

VI.   Conclusions

Happiness is a relatively new discipline within economics. Traditionally, economists have not paid too much attention to it since they considered that both indicators and theoretical assumptions in which this discipline was based were not neither reliable nor useful for policy recommendations. However, especially in the last decade, there has been extensive research which, if not proved, at least has provided enough arguments to believe that this discipline can be worthy for anyone interested in understanding what are the truly determinants that make people think they have a good life. Throughout this dissertation, I have carried on the discussion about the relevance of happiness and subjective wellbeing in economic research. Moreover, I have attempted

to shed light on some issues related to the validity and utility of SWB indicators. Reached this point, it is possible to answer the questions that I set out at the beginning of this document.

Most of academic literature asserts that money matters to happiness because richer people are on average typically happier. Even though there are numerous variables affecting self reported wellbeing, income is still considered one of the principal inputs for people to declare they are satisfied with their lives. Likewise, the connection between income and SWB could go in the opposite direction: Some studies have shown that happier people tend to be more productive at work and earn more income in the future. Anyhow, as I stated before, it is almost impossible to set up clear causality links among income and SWB, and personality traits appear to be the key factors when studying the relationship between these two variables. Given the difficulty to account for these aspects, vast part of happiness literature has concentrated on simply examining the correlation between income and SWB. Individual cross-sections studies within countries have generally reported high correlations among these two variables: Richer individuals in the same country tend to report higher life satisfaction. Conversely, there is not so much clarity in cross-national and time series comparisons. Easterlin and his supporters advocate that, despite there have been significant increases in average incomes across countries after the Second World War, the average levels of happiness have remained more or less constant. Thus, according to this empirical fact known as the "Easterlin paradox", the income growth and economic development would not be associated with increases in individual SWB. However, there are also some authors who do not believe in this intuition. In section III of this document, I exposed some empirical studies both supporting and rejecting the validity of the Easterlin paradox. Even though the research casting doubt the existence of this paradox

is relatively new and still scarce compared to the paradox's supporters, these investigations have normally used better and more updated data, introducing more developed and developing countries in their samples and managing several data sets at the same time, providing more robustness to their outcomes. Furthermore, the Easterlin paradox has been broadly revised in the academic literature given that it is considered one of the cornerstones of happiness economics discipline. Indeed, it has been used to justify public policies centered on rising SWB levels, discarding economic growth as the fundamental aim of governments' economic policy. However, if happiness and income go hand-in-hand and this relationship holds within and across countries as Easterlin's critics defend, policy-makers should focus on fostering economic growth because more income per head would increase the society's SWB.

Respecting the arguments provided to explain the trends in SWB over the last decades, Easterlin's followers and detractors have again opposing views. The first ones assert that relative income concerns are the fundamental determinant in explaining SWB levels, while the second ones claim that absolute income played a major role leaving relative income on the back burner. Last, adaptation also has something to do in shaping happiness, although, as I discussed before, its stronger version is hard to imagine.

Apart from income, there are numerous factors that influence levels of reported SWB. Health, marriage or education are usually positively associated with higher levels of happiness whereas unemployment or inflation affect negatively to SWB. Nonetheless, it is practically impossible to settle clear causal links between SWB measures and other variables. When performing happiness regressions, measurement errors and unobservable personality traits seem to drive the results and be more relevant in explaining happiness levels than the typical socio demographic and socioeconomic determinants. Controlling for these individual effects is essential to give validity and

reliability to our results. The progressive availability of more panel data as well as more

accurate statistical and econometric techniques is contributing to perform more solid

and robust analyses, which may allow establishing stronger causal links, particularly

with regard to the direction of causality.

Regarding the utilization of SWB measures for public policy, I have discussed

that, despite there are some concerns we should bear in mind, there is room for

happiness economics to be taken into account for public policy decision-making.

Particularly when analyzing the effects of government expenditures or what tax policy

to carry out, self reported measures can be a good complement to the classic revealed

preferences or contingent valuation surveys used by economists in order to evaluate the

effects of public policies.

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[1] See http://www.cdc.gov/hrqol/wellbeing.htm

[2] See Kroops (2009); Stiglitz, Sen,& Fitoussi (2009)

[3] See, Human Development Report (1990)

[4] Bentham believed that wellbeing measurement ought to be steadfastly based on the personal valuations and concerns of those ones directly affected by that concerns

[5] The correlation between the answers in surveys to life satisfaction and happiness questions is approximately 0.95 (Graham, 2004)

[6] The relationship between happiness and income alongside the study of the "Easterlin Paradox" have been widely discussed in the happiness literature. For this reason, I will not pay too much attention to it in this dissertation.

[7] While one may first think that "determinants" mean or refer to the causes that define people's happiness status, in practice it is tremendously difficult to establish a complete causal link between personal or observable characteristics and life satisfaction or happiness, since how do we feel about our lives can be influenced by the mood in the concrete moment we are asked or even by our self esteem and other personality traits that are very difficult to account for. Nonetheless, scholars have made great efforts in order to at least establish certain correlations between self reported measures and socio-demographic features. See Dolan, Peasgood, & White (2008) for a deep review.

[8] See http://hdr.undp.org/en/statistics/ihdi

[9] The Atkinson index is a popular measure for income inequality created by the English economist Anthony B. Atkinson. The main particularity of this index is that it includes a coefficient which represents the grade of inequality aversion. See Atkinson (1970) for details in the calculation and interpretation of the index.

[10] See http://www.undp.org/content/undp/en/home/mdgoverview/

[11] For a deeper discussion in the relationship between income (economic growth) and education, see Easterlin (1981), Psacharopoulos (1985), Sianesi & Van Reenen (2003), Nilsson (2010).

[12] The comparisons over time were incorporated in 2010 after the revision of the HDI calculation's methodology to mark the 20th anniversary since its creation in 1990.

[13] See Graham & Pettinato (2002) for a review

[14] Attrition makes reference to the fact that people do not want o cannot respond (basically because they have died or they have migrated) in the surveys. It is a very important factor to take into account since the major strength of panel data surveys is that they allow following the same individuals over time, and attrition can significantly reduce the sample.

[15] http://www.worldvaluessurvey.org/wvs.jsp

[16] In the sample that these authors use, there were very few poor nations which have collected SWB data. Thus, their outcomes should be considered carefully.

[17] For instance, a 10% increase in income from 1000€ to 1100€ and from 20000€ to 22000€ would produce the same proportional increase in happiness. Hence, the log-linear relationship means that the proportional growth in incomes for the poor and the rich would yield the same proportional increase in happiness for both.

[18] To evaluate SWB measures through different data sets, Stevenson & Wolfers (2013) standardize self reported wellbeing by subtracting the mean and dividing by the representative happiness cross-section within a country at a determined moment of time. Thereby, they "create" a comparable measure across the data sets which also yields estimations of the wellbeing-income gradient nearly equivalent to those obtained examining ordered probit models.

[19] Nonetheless, there are a couple of limitations we should bear in mind with these results. Firstly, the standardization approach is specific for these authors' purposes, since they considered the same distance between different scale responses. Secondly, when analyzing the cross-tab of happiness and household income, it is probable that at the highest levels of income we have very few respondents, as it happens with the Gallup poll for the United States. This means that, despite at higher levels of incomes, there are more percentage of people who report to be very happy, there are also fewer respondents, casting doubt about the representativeness of these responses.

[20] This economic hypothesis assert that the predictions about the future evolution of relevant economic variables (e.g. inflation) made by economic or social agents are correct on average over time, and these predictions are not systematically biased, since all mistakes made are random. This assumption is very important when studying how individuals, firms and government altogether take decisions under uncertainty about the future.

[21] See http://www.miseryindex.us/. This index was originally proposed by economist Arthur Okun in USA during the sixties. It is obtained by summing the unemployment and inflation rate, given that a rise in these two variables are viewed as prejudicial and provoke important social and economic costs for a country. When calculating it, both magnitudes have the same weight. This assumption has been criticized by happiness economists, who claim that unemployment is more damaging to society that inflation.