Seminar of Well-being by European Researchers

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Presentation by Dr. Conchita D'Ambrosio

This paper merges two literatures we have been working on, the objective measures of individual well-being and the subjective measures of well-being.   The latter are central in the OECD and in the national governments' debate.   Italy, for example, has just proposed its index for going beyond GDP which includs measures of subjective well-being.   However, within the European social policy debate, subjective well-being is not central at present.

The paper I will present today investigates empirically the relationship between self-declared satisfaction with life and individual well-being measured by indices of deprivation and social exclusion proposed in the traditional income distribution literature.   The main result of the paper is that these indices of deprivation and of social exclusion do add something to the measurement of individual well-being, which is life satisfaction.   In our exercise, in addition to income and relative income, deprivation and social exclusion appear to be determinants of satisfaction with life.

Both happiness and income distribution studies look at individual well-being and at the determinants of individual well-being but do not overlap so much in research papers. However, there is a clear overlap among these two branches of economics because both want to look at individual well-being and share the similar view that individual well-being is multidimensional.   Happiness studies show that income matters but other factors are also important in explaining differences in well-being since individual well-being is multidimensional.

In the income distribution literature, Amartya Sen's contribution is probably the most

famous approach to multidimensionality. He argues that the proper space for social evaluation is that of functionings. Not only material resources but also social attributes matters. Hence, deprivation and poverty are not simply measured by lack of monetary resources, but by a more comprehensive concept involving individual's entire quality of life. Deprivation and poverty, thus, can be defined as a condition in which a person is deprived of the essentials for reaching a minimum state of well-being in life.

The social exclusion approach regards poverty and deprivation as a multidimensional issue. It is the key concept in the political debate in Europe and can be interpreted as inability of an individual to participate in basic societal activities due to persistent state of deprivation.

In the Treaty of Amsterdam of 1997, the EU included the reduction of social exclusion among its objectives. Promoting social inclusion is one of the five key areas of Europe 2020 strategy and fight against poverty and social exclusion is one of the seven flagship initiatives to catalyze progress in Europe 2020.

This paper measures deprivation and social exclusion with the indices proposed in the income distribution literature and asks whether the deprived and excluded are less satisfied with their lives as expected and if deprivation and social exclusion explain well-being in addition to income and relative income. Now, the definition of relative deprivation adopted in the income distribution studies is due to Runciman in 1966 who writes that a person is relatively deprived of X when he does not have X but sees it feasible that he should have X. Runciman further ads that the magnitude of relative deprivation is the difference between desired situation and that of the person desiring it.

One key variable in measuring individual deprivation is the reference group. Deprivation in a society has traditionally been conducted analyzing individuals' incomes as income summarizes command over resources and is an index of the individual's ability to consume commodities. The framework of deprivation used here was proposed by Yitzhaki, while the interpretation of deprivation based on comparisons with others was proposed by Hey and Lambert. The characteristic of deprivation is that it is generally based on income, on asymmetric sentiment, and looks at one period of time. It is asymmetric because an individual compares himself only with those who are better off. The deprivation an individual feels is given by the distance between his income

and all the incomes of those who are better off than him. Hence, total deprivation of an individual is the average of this comparison with better-off individuals.

Recently, other indices of deprivation have been proposed such as the one suggested by me with Bossert and Peragine based on various functionings. We construct the measure of functioning failure which indicates the degree to which functionings considered relevant in the country are unavailable to the individual. The sentiment is always asymmetric and looks at only one period of time. Now, QI, the deprivation score, indicate the degree to which relevant functionings of that society are unavailable to that individual. Hence, an individual feels alienated only when he compares himself with others who are better off, and the better-offs are those who have less functioning failures. The index expression proposed is made of two parts, lack of identification and aggregate alienation. Aggregate alienation is the gap with those who are better off. This alienation is weighed with lack of identification given by all better-off individuals.

Next, social exclusion is based on functionings because it is a multidimensional concept. It has asymmetric sentiment and looks at overtime. An individual is not excluded from the society if he is poor in one period, but he is excluded if his condition of deprivation is persistent or worsens overtime. Therefore, an individual experiences a higher degree of exclusion when deprivation is persistent in consecutive periods as opposed to equal levels of deprivation interrupted by periods without deprivation. Thus, the measure of individual's social exclusion proposed is based on previous measure of deprivation including number of consecutive periods that have been spent in that state.

To investigate empirically the relationship between self-declared satisfaction with life and well-being, a simple measure of individual deprivation is also used which sums the functioning failures but does not incorporate comparisons with better-offs. We used the European Community Household Panel (ECHP) for this application and based our analysis on all the available waves of ECHP which cover 1994-2001. For various reasons, we could only use 15 EU member states. The unit of analysisof our application is the individual. Since we were interested in analyzing persistent state of deprivation, only individuals who were interviewed in all the waves were considered. The variables available in ECHP cover five domains; financial difficulty, basic necessities, housing conditions, durables, and social contact. QI then is simply the number of items which the individual does not have access to. Since there are 12 items, an individual will have QI of 12 if he lacks everything or zero if he has everything.

ECHP does not have information on satisfaction with life, but there are four questions on different types of satisfaction: satisfaction with main activity, financial situation, housing situation, and amount of leisure time. Each satisfaction variable is measured on a scale from 1 to 6. Based on these four questions, standard data reduction technique is used to obtain life satisfaction variable. This variable is then constructed using principle component analysis and factor analysis. Since the variables are ordinal, a special version of principle component and factor analysis is used.

In the first model, we estimate the overtime relationship, so we use all 8 years of ECHP. Life satisfaction is the dependent variable. We estimate this as depending on a measure of individual's deprivation estimated with the method described before. Life satisfaction depends first on household income of the individual that is transformed making it equivalent income. Then, we include also measure of relative income, which is the mean income of the country of individual's residence. We also include a set of standard controls such as social demographic variables.

The second model is estimated only for the last wave of ECHP. We assume that life satisfaction depends on the level of social exclusion. Life satisfaction depends in addition on the mean income of the country. We include measure of permanent income of the individual measured by the mean income of this individual across all the waves. Looking at the regression results table, the first table is life satisfaction determined with principle component and the second one is life satisfaction determined with factor analysis. The important result of this table is the TDP, which is the coefficient of deprivation of the individual. This is negative and significant. Life satisfaction of an individual depends positively and significantly on his equivalent income, but deprivation adds something. It is the same using factor analysis. The third and fourth tables use the same distinction, principle component and factor analysis, and looksonly at the last year. In these two tables, social exclusion is important in determining life satisfaction of an individual and has a negative effect on it. Our result corroborated the finding of happiness studies that individual income matters together with many other factors.

We have proposed to include some indices of multidimensional well-being recently introduced in the income distribution literature, and our result confirms that deprived and excluded individuals are less satisfied with their lives. This finding supports the

decision of the European Union to include the fight of social exclusion among its objective.

<div align="center">**Question and Answer Session**</div>

Q : In regression work analysis, between SUMC and BDP indicator which is the better regressor for life satisfaction?

A : SUMC is a simple count that does not take into account the comparisons with other. Unfortunately, in this paper, we did not add the log-likelihood, so I am not able to respond, but L^2 is higher when you use BDP. Hence, BDP has a higher explanatory power than SUMC.

<div align="center">Dr. Conchita D'Ambrosio (R)</div>

Presentation by Dr. Andrew Clark

I have good news and bad news. The good news is that economists and policymakers are starting to believe that subjective well-being is an important variable. The bad news is we do not know how to measure it. There are many questions people ask such as life as you experience it versus life as you remember it and question regarding hedonic versus eudaimonic measures of well-being.

Eudemonia is less well known in economics than simple measures of happiness or satisfaction. In surveys, generally we ask questions about meaning, motivation, autonomy, interests in what you do. The distinction is between individuals who are happy but have little meaning in their life and individuals who have a meaningful life but are unhappy. However, it could be that we do not know if happy people always have meaning in their lives. This is what we tried to find out.

Using data from the European Social Survey (ESS), the paper cited tries to compare happiness and sense of meaning of people across 25 different European countries. Using this dataset, we were able to introduce a special module on well-being that included many different types of well-being questions. Some of these are about happiness while some others are about interest, purpose, autonomy. The first question that we ask is a simple happiness question as in your Japanese Quality of Life Survey and second is a hedonic measure of life satisfaction which is more reflective. Psychologists think that these two variables are different but actually the distribution is extremely similar across the two variables.

However, there is no standard definition of eudaimonia. We used two different definitions available in the psychological literature. Here are six questions individuals are asked. If you are flourishing, you agree with the first two and at least three of the last four. These questions cover feelings of optimism, of interest in your life, and of meaning in your life. The second measure comes from the new economics foundation who proposed three separate indices; first is of vitality, second covers your own self image, and last is a series of questions regarding activities the individual carries out and how he feels about them.

Now, we have six well-being measures, two of them hedonic and four eudaimonic. Our

key question here is how different are these from each other. The table shows that they are all positively and significantly correlated in a simple correlation matrix. Indeed, someone who is satisfied with their life is more likely to be flourishing and to have positive functioning than someone who is less satisfied. Turning to regression analysis, regression tells which part of well-being we can explain and, hence, can affect by policy. Our question here is to see whether the same kinds of explanatory variables influence both hedonic and eudaimonic well-beings. For this, we ran six separate regressions on each one of the well-being measures.

To find the similarity between six regressions, I compared estimated coefficients using individual level variables. There are 17 individual sociodemographic variables. The result shows these variables affect all measures of well-being in similar way, and there are only few oppositions between hedonic measures and eudaimonic measures. The same individual level variables typically produce the same kinds of well-being, be they hedonic or eudaimonic.

Sociologists say that you should not do cross-country comparisons, and comparing across countries, we find little agreement between hedonic and eudaimonic measures. In most countries, these scores seem to go in very different directions. This shows the importance of different cultures across European countries. The analysis result shows some correlation coefficients between these sets of estimated coefficients. For example, 0.961 shows that variables that cause happiness are similar to variables that cause life satisfaction. Equally, happiness variables are strongly correlated with eudaimonic well-being variables. One exception is resilience that seems to be a separate concept. Since this is a new literature, we do not know many things.

Unlike criticism of well-being measures, economists are not interested in what people say, but in what they do. Which well-being measures best predict what people do? The first piece of evidence refers to a recently published paper on hypothetical choices. For example, students are asked how happy a choice will make them. Additionally, they are also asked a series of other evaluations about that choice. Hence, the goal of this paper is to predict individual's choices between.

In regression analysis, 0.38 of the variation in choice is explained purely by the level of happiness that the choice brings. When we add the 11 non-happiness measures to the regression, the R squared rises but by a small amount from 0.38 to 0.41. This indicate

that most choices are driven purely by own happiness, but some choice pairs revealed a larger role for non-happiness elements.   The authors argue that for important real life choices that students face, eudaimonic elements were important in explaining the choice.   Hence, the relative importance of hedonic and eudaimonic well-being may depend on the thing we are trying to explain.   First one concerns what people choose in a hypothetical setting.

Second and more important is we would like to know when you will die.   We can carry out this analysis using data from English Longitudinal Study of Aging (ELSA).   It is a panel survey consisting of six waves, one carried out every 2 years.   At some of these waves like the Wave 2 in 2004, individuals are asked a wide variety of subjective well-being questions.   Hence, we can follow people from Wave 2 and see what happened to them in future.

The name ELSA suggests we are considering older people only.   The initial sample in Wave 1 were all aged 50 or over in 2002.   In Wave 2, they were asked a series of questions about their hedonic well-being and also about eudaimonic well-being.   The research is to take the individuals from Wave 2 questions and see how many are still alive by Wave 5 in 2010-2011.   Around 15% of the sample of Wave 2 had died by Wave 5.   Therefore, which measures of well-being of Wave 2 best predicted death by Wave 5?   In a recent work by Andrew Steptoe and his colleagues, one well-being question asked was the one that psychologists believe is increasingly important, enjoyment.   We can use enjoyment of Wave 2 to predict who dies by Wave 5.   The result shows the death rate amongst highest enjoyment group was three times smaller compared to lowest enjoyment group.   This is a very strong predictor of death.   In ELSA, we can also carry out identical analysis with other well-being measures.   Another result shows life satisfaction at Wave 2 also predicts death by Wave 5, but in a lesser way than the measure of enjoyment.

Some individuals of Wave 2 were also subject to EMA.   They were asked the same set of questions (how happy, excited, anxious, worried, and tired they were) four times during a typical day; upon waking up, twice during the day, and when they went to bed. These questions are similar in intent to question 7 of the Quality of Life Survey.   The questions in ELSA come from many interviews during the same day whereas in the Quality of Life Survey, it comes from their average feelings over the past few weeks. The result shows that EMA measures of well-being are also strong predictors of survival

in ELSA. Unfortunately, ELSA report does not list the results where death is predicted by eudaimonia at Wave 2.

In conclusion, there is much existing information in Japanese surveys that corresponds to the question addressed here, but there is also information in the existing surveys covering well-being, material deprivation, and neighborhood deprivation as Conchita described.

Question and Answer Session

Q： Eudaimonia is a very difficult word for the Japanese. Is it a common word in the European continent or a technical term?

A： We have had the same discussion with journal editors who did not know the word at all. A good synonym would be a meaningful life rather than a happy life.

Q: In your survival analysis, have you drawn causality that enjoyment affects survivability?

A : The causal interpretation of Cox regression is that the initial level of well-being is causing subsequent morbidity and mortality.

Q: In hazard regression, is health being controlled for since health status may affect level of enjoyment as well as survivability?

A : I cannot fully defend this because it is not my own work but some of the survival analyses here are pure bivariate correlations while others are multivariate. There is additional information in well-being that is not only health related. Hence, we should measure both health and subjective well-being if we wish to understand important events like mortality.

Dr. Andrew Clark (L)