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Teaching Note

Ref. No.: MEBE0005-1

Bhutan's Gross National Happiness: An Economic Reality or Wishful Thinking?

Prerequisite Conceptual Understanding

- Meaning of Utility
- Law of Diminishing Marginal Utility
- Indifference Curves
- Methods of Measuring National Income

Synopsis of the Case Study

The development matrix of Bhutan started undergoing a metamorphosis beginning with 1972 when its fourth king coined the concept of Gross National Happiness (GNH) to supplant Gross National Product (GNP). The Bhutanese experiment harks back to the days of British economist Jeremy Bentham, who advocated that maximisation of social happiness is the ultimate goal of a human society. But difficulties in quantifying happiness played the spoilsport. The shortcomings of Marshall's cardinal measure of well-being and the limited application of Hicks-Allen's ordinal measure tipped the balance of choice in favour of a proxy measure which could be quantified. Nation's well-being began to be measured in terms of GNP which was viewed to be the obvious – and by extension, the only – means to happiness. The data analysed by the experts during last few decades have, however, exposed the disconnect between national income and national happiness. Although there seems to be a positive relationship between income and happiness across individuals within a country, the same was, however, found missing in case of countries – both across space and time. It was then reasoned that absolute income's happiness-effect wears off over time thanks to adaptation while relative income plays its role in influencing intra-country cross-section happiness. Moreover, income is not the only, not even the most important, means of happiness. Compelled by this outward evidence and impelled by its own Buddhist ethos, Bhutan has opted – despite conceptual and operational difficulties – for the direct measurement of happiness that would, henceforth, guide its policy plank. A new study of the relevant data including that of the World Gallup Poll, however, points to a strong correlation between income and happiness. This sets the tenor of debate for the rest of the world: Whether to emulate a concept with which Bhutan has gone solo or to stick to the convenient, but imperfect, traditional yardstick? And, moreover, whether Bhutan's novel experiment will stand on sure legs or it will run aground?

This teaching note was written by Akshaya Kumar Jena under the direction of Saradhi Kumar Gonela, IBSCDC. It is only an illustrative orchestration of the case study 'Bhutan's Gross National Happiness: An Economic Reality or Wishful Thinking?'. It is never meant to limit the learning outcomes.

Pedagogical Objectives

The case study can be used:

- To understand the various concepts of national income and their interconnectedness and to analyse the shortcomings in national income accounting
- To understand the concept of national well-being and debate on its constituents
- To analyse the difficulties in the measurement of a nation's well-being
- To study the various concepts underpinning income and well-being relationship.

Assignment Questions

I Critically examine the national income accounting along with the inter-connectedness of various concepts of national income.

II What are the various constituents of well-being?

III Analyse the difficulties in measuring well-being.

IV What are the concepts that underlie the relationship between income and well-being?

Teaching Plan

The Teaching Note and Structured Assignment of the case study follow a specific Teaching Plan **[Annexure (TN)-I]**.

Case Analysis

I. Critically examine the national income accounting along with the inter-connectedness of various concepts of national income.

I suggest to begin the class by asking the students: How is the progress of a country measured? Which one is greater GDP or GNP? GDP refers to the money value of final goods and services produced in a year within a country regardless of who produce these. Thus contributions of both nationals and foreigners to production in the domestic country are taken into account in the case of GDP.

(a) GNP = **g**oods produced by **n**ationals within the **d**omestic country (*gnd)* + **g**oods produced by **n**ationals **a**broad (*gna*)

(b) GDP = **g**oods produced by **n**ationals within the **d**omestic country (*gnd*) + **g**oods produced by **f**oreigners within the **d**omestic country (*gfd*)

(c) The common factor between GNP and GDP being *gnd,* the difference between the two is obviously the difference between *gna* and *gfd*, which represents Net Factor Incomes from Abroad (NFIA). Thus, GNP – GDP = NFIA. Now, if NFIA is positive, GNP is greater than GDP. If NFIA is negative, GNP is smaller than GDP. If NFIA is nil, GNP and GDP become equal.

(d) When the cost on account of wear and tear of capital equipment, called depreciation, is deducted from GNP, the result is NNP (Net National Product).

(e) NDP (Net Domestic Product) is related to GDP in the same way as NNP is related to GNP.

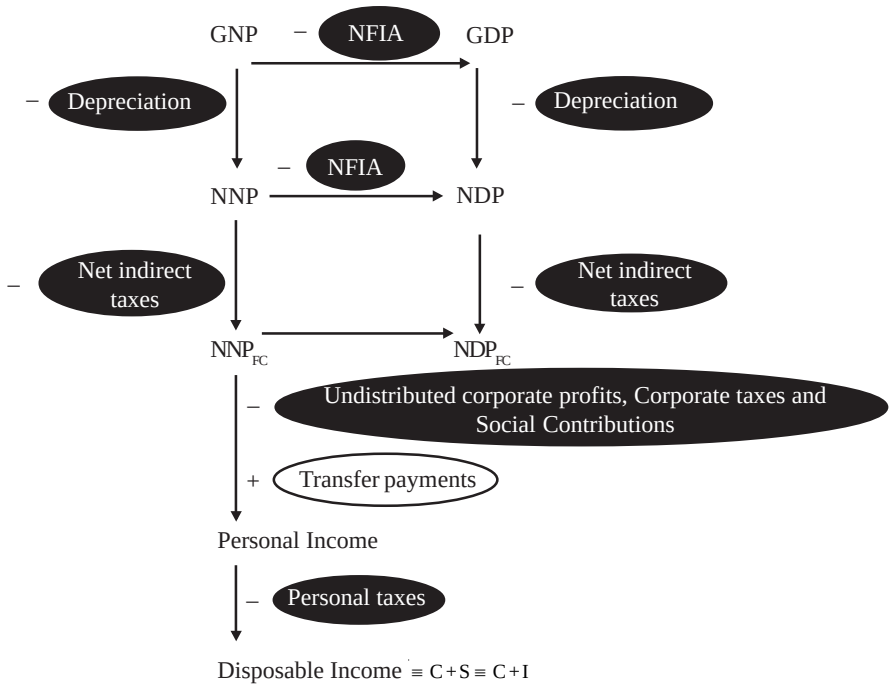
(f) GNP, GDP, NNP and NDP are subscripted to be at market price or factor cost depending upon whether or not they include net indirect taxes, which stand for indirect taxes minus subsidies.

(g) When undistributed corporate profits, corporate taxes and social contributions are deducted from NNP at factor cost and transfer payments are added to it, Personal Income (PI) is arrived at.

(h) Lastly, Disposable Income (DI) is figured out by deducting personal direct taxes from PI.

Disposable income is split into two uses, namely Consumption of goods (C) and Saving (S). S funds Investment (I), which helps in further production of goods. And these goods will eventually be consumed. Thus ultimate use of disposable income is thus satisfaction of human wants now or in the future. The inter-connectedness of the various concepts of national income is graphically illustrated for a quick understanding **[Exhibit (TN)-I]**.

Exhibit (TN)-I
Inter-connectedness of the Various Concepts of National Income



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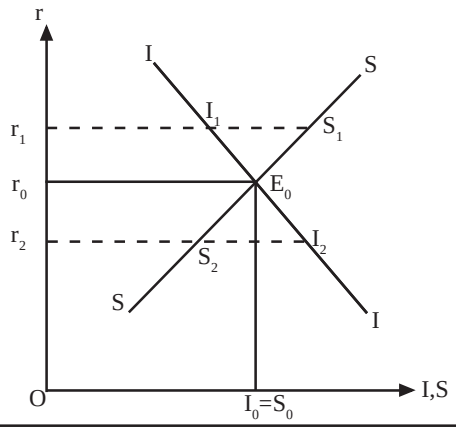
I suggest explaining the distinction between 'ex-ante' sense and 'ex-post' sense. Then the equilibrating mechanism. According to classical economists, S and I are brought into equality by the mechanism of interest rate (r). They visualised S as a positive function of the reward r and I as a negative function of the cost r **[Exhibit (TN)-II]**. The r where these two functions intersect becomes the equilibrium r. Corresponding to this equilibrium r, S and I remain equal. If at any r, S > I, r will be bid down by the savers till the falling S strikes equality with rising I. Analogously, if at any r, S < I, r will be bid up by the investors till rising S strikes equality with falling I.

Exhibit (TN)-II
Saving-Investment Equilibrium: Classical



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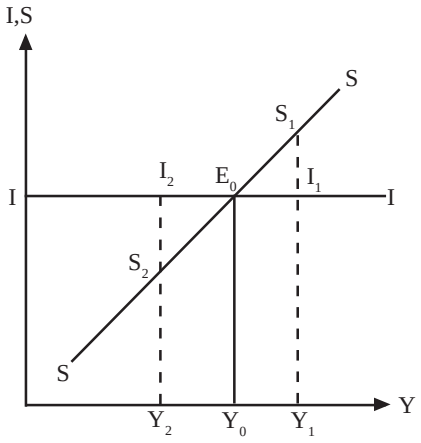
According to Keynesians, S primarily being a function of Income(Y), its equality with I is ensured by the mechanism of Y **[Exhibit (TN)-III]**. As Y rises, S also rises; therefore, S is a positive function of Y. I is autonomous of Y and drawn as a line parallel to the income axis at a level which is pre-determined exogenously by liquidity preference (i.e., demand for money) and supply of money. A look at the diagrams in **Exhibits (TN)-II and III** shows the perception of classicists and Keynesians pertaining to equilibrating mechanism behind S and I equality.

Exhibit (TN)-III
Saving-Investment Equilibrium: Keynesian



Prepared by the author

I suggest dividing the class into two groups on the basis of their show of approval and disapproval for national income as the measure of national progress. The disapproving group could be asked to give the reasons. The shortcomings in measurement of national income can be attributed at two levels. First, it is an inadequate and misleading measure of well-being; and secondly, it is an inadequate measure even of final goods and services.

National income accounting does not take into account the composition of national output and distribution of national income among its citizens. Two countries having same national income will register hugely different levels of well-being if one country's national output consists of a much larger quantity of war material compared to that of the other country. Similarly, two countries having same national income will record widely different levels of well-being if income-distribution of one country is very even and that of the other is much skewed.

Various social costs emerge as by-products of the production process in the form of pollution of atmosphere, degradation of natural environment and depletion of non-renewable resources. These costs are not deducted from the national income even though they cause much harm in the long run. On the other hand, individuals derive satisfaction not only from the consumption of goods and services but also from leisure. But leisure is not included in national income.

Even national income does not count consumption of all goods and services. Non-marketed goods and services such as the services of housewives are excluded from national income accounting. But this gives rise to an anomalous situation. For instance, if a man employs a maid-servant and pays her for the household work she does, this payment will appear as a positive item in national income. Now, if that man marries his maid-servant who continues to perform the same household services, the real amount of goods and services remains unchanged even though no payment is effected from the husband to the housemaid-turned-wife. But national income would record a decline!

II. What are the various constituents of well-being?

To begin with the concept and constituents of well-being, I propose asking three inter-related questions: What according to you is happiness? Is it static or dynamic? When do you think GNH can be adopted?

Well-being is a very comprehensive term. The holistic view of well-being addresses two broad needs of people – physical and psychological. Satisfaction of physical needs involves meeting the material needs through use of products whose macro-aggregate is nothing but national income. Satisfaction of psychological needs involves meeting the emotional needs such as love, friendship, recognition, etc., and the spiritual needs such as practice of faith, peaceful atmosphere, harmony, etc.

Referring to the case study, a hint about Bhutan's proposal to adopt a metric of well-being encompassing seven areas of wellness **(Exhibit XII of the case study)** can be shown to the class. Bhutan has also identified nine GNH indicators **(Exhibit XIII of the case study)**. All these offer an insight to various constituents of well-being.These constituents may sometimes overlap since it is difficult to categorise the complex and often inter-dependent reactions of brain. But figuring out the various constituents helps in thinking out various steps that can enhance happiness. It also helps in devising the broad parameters. Bhutan, for instances, has formulated four such broad parameters. These are called four pillars of GNH **(Exhibit VI of the case study)**. Students' reponses on prerequisites for GNH adoption may be discussed by asking certain questions. **[Exhibit (TN)-IV]**.

Prof. Cahit Guven's views can be shared **[Exhibit (TN)-V]**. That can be followed by the question: Is it correct to identify want-satisfaction with happiness or well-being? Abraham Maslow's Hierarchy of Needs theory **(Exhibit IV of case study)** may be deployed in relating with two broad constituents of happiness.

Then, the class may be asked: Is happiness derived by having what you want or wanting what you have? The test conducted by two psychologists, Jeff Larsen of Texas Tech University and Amie McKibban of Wichita State University, can be referred to. Their test showed both to be instrumental in generating happiness even though the correlation between the two was not perfect.

Exhibit (TN)-IV
Students' Responses on Pre-requisites for GNH Adoption

(a) When religious faith acts as a dominant force and people strive not for temporal pursuits but for sublime bliss

(b) When the country is not a part of the Global Village

(c) When income disparities are not abysmal

(d) When there are few social classes

(e) When the governed and those who govern work in tandem

(f) When the population is less and the composition of population is not complicated

(g) When the country's priorities are clear and focused.

Prepared by the author

Exhibit (TN)-V
Prof. Cahit Guven on Numeric Scale of Verbal Degree of Happiness

1. Can happiness really be quantified in absolute numbers?

Ans: I think we can have different measures for happiness. This can be some numbers but also percentages. It can be the percent of people who answered above say 3. Absolute numbers are not perfect but give logical correlations with various variables. .

2. Relative numbers or index values like 1, 2 and 3 may be assigned respectively to 'not too happy', 'pretty happy' and 'very happy'. But in this case, is a very happy person three times as happy as the not too happy person? If the answer is negative, would it be meaningful to add the happiness of individuals to arrive at social happiness?

Ans: Yes. We assume that a very happy person is three times as happy as the not too happy person. First of all, this can be tested statistically (in our paper, we show that this is the case). But it does not mean that it will be the same in every country. If the answer is negative, it will not be meaningful to add these happiness variables but instead we can use percentages to arrive at social happiness (such as percent of people who said they are 'very happy'.)

Source: Interview with Prof. Cahit Guven

The constituents of well-being having been discussed and the ways and means of defining well-being having been explored, the discussion can move on to difficulties in measuring GNH.

III. Analyse the difficulties in measuring well-being.

The discussion can begin with a question: Which country is our case study showcasing and why? The obvious answer would be that the country is Bhutan and the reason is its switch from GNP to GNH as the measure of the national progress. Further the class may be asked: Didn't people earlier know this simple fact that happiness or well-being of the citizens is the true measure of national progress? The conventional

measures like GNP and GDP have been used as proxy measures to sidestep the difficulties in measuring national well-being. Incorporating the responses of the class pertaining to the difficulties in measuring well-being, the faculty may proceed with the following discussion.

Well-being, being a psychological concept, can be measured only by knowing the beneficiary's response. Alfred Marshall tried to measure well-being in numeric or cardinal terms by asking the beneficiary how much money a person is willing to pay for the products from which he derives well-being. Critics have, however, exposed two shortcomings in this method. First, money cannot be a measuring index of well-being since the marginal utility of money itself is changeable. Secondly, interpersonal comparison is inappropriate since a particular amount of money for different individuals holds different importance and expresses different levels of well-being. Now if interpersonal comparison in money terms is inappropriate, it is also inappropriate to add the well-being of different individuals.

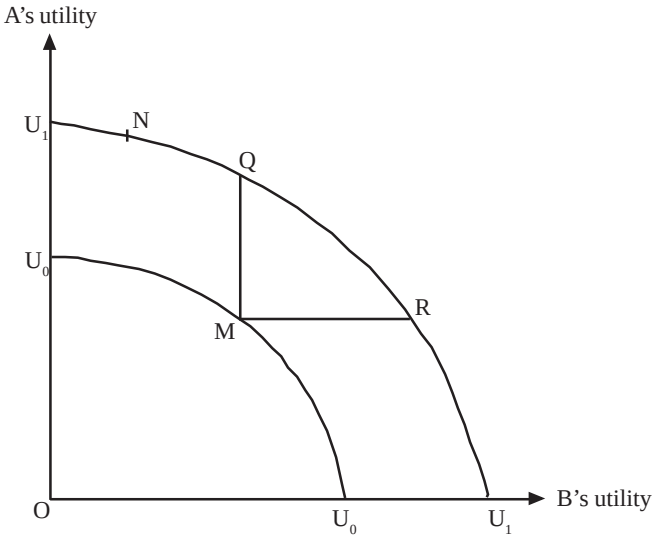
Hicks and Allen proposed well-being in ordinal terms through indifference curves. An indifference curve represents different bundles of goods and services conferring the same level of satisfaction or well-being. A higher indifference curve gives higher level of well-being and a lower indifference curve gives lower level of well-being. Through ordinal measure, the change in people's well-being can be indicated by direction and not by magnitude. Hence it is applicable only in a situation when some people's well-being is increased while rest others' is not decreased or vice versa. Thus, ordinal measurement at best indicates whether a policy measure has achieved Pareto optimality or not. And the situation in which it is impossible to increase some people's well-being without impairing others is called Pareto optimality.

Economists Nicholas Kaldor, J.R. Hicks and Scitovsky made efforts to evaluate changes in well-being in situations where Pareto optimality criterion is silent. Kaldor-Hicks criterion states that a change is an improvement if the gainers evaluate their gain at a higher figure than the one at which the losers affix their losses, so that the gainers can compensate the losers and still be better-off. Diagrammatically, Pareto optimality criterion says that Q or R or any point between them on the utility possibility curve U_1U_1 reflects more well-being than point M on U_0U_0 **[Exhibit(TN)-VI]**. However, it is silent about point M vs point N. According to Kaldor and Hicks, N is better than M since, by redistribution of income, movement can be made from N to Q and individual A can compensate individual B and still gets more well-being**.** Tibor Scitovsky pointed out that a contradictory result is possible if the two utility possibility curves intersect **[Exhibit (TN)-VII]**. A change from M to N is better since, by redistribution, movement can be done from N to R and individual A can compensate individual B, and still gets more well-being. Paradoxically, a change from N back to original position M also indicates an increase in social well-being since, by redistribution of income, movement can be made from M to Q and individual B can compensate individual A, and still gets more well-being.

To rule out this contradictory result, Scitovsky presented a criterion which incorporates a denial of reverse Kaldor-Hicks criterion. According to him, a change is an improvement if it satisfies Kaldor-Hicks criterion and the movement back to the original position does not satisfy the criterion. Kaldor-Hicks-Scitovsky criterion was blasted by Prof. Baumol since it is based, although implicitly, upon interpersonal comparison of well-being on a money basis. If individual A's gain is worth $1,000 and individual B's loss is worth $150, we cannot conclude that social well-being has increased, for marginal significance of a dollar might have been far greater to individual B than to individual A.

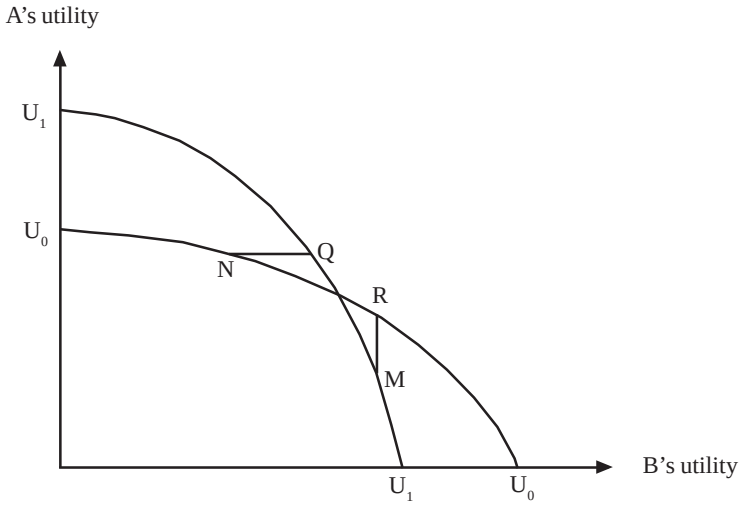
The only way to overcome this limitation is to squarely face the problem of interpersonal comparison through explicit value judgement by the society. This is done by constructing a social welfare function as proposed by Prof. Abram Bergson. However, Prof. Kenneth Arrow has proved in his 'Impossibility Theorem' that it is impossible to obtain social welfare function by democratic voting, which is the best means of explicit value judgement. Majority voting leads to intransitive choice pattern and inconclusive value judgement, called Voting Paradox **[Exhibit (TN)-VIII]**.

Exhibit (TN)-VI
Kaldor-Hicks Criterion



Compiled by the author from Baumol W.J., "General Equillibrium and Welfare Economics", *Economic Theory & Operation Analysis*, 2nd Edition 1970, pages 377–380

Exhibit (TN)-VII
Contradiction in Kaldor-Hicks Criterion



Compiled by the author from Baumol W.J., "General Equillibrium and Welfare Economics", *Economic Theory & Operation Analysis*, 2nd Edition 1970, pages 377–380

Exhibit (TN)-VIII Voting Paradox			
Individuals	**Choice ranking for policy alternatives**		
	X	**Y**	**Z**
A	1st	2nd	3rd
B	3rd	1st	2nd
C	2nd	3rd	1st
Prepared by the author			

Suppose the policy proposals to be voted are X, Y and Z and the voting citizens are A, B and C. Given their rankings, X is preferred to Y by the majority A and C and Y is preferred to Z by the majority A and B. Then X should have been preferred to Z by the majority. But the majority B and C prefer Z to X!

This discussion can be followed up with: Why direct measurement of well-being was abandoned even though it had been known as the true yardstick of progress long before the Bhutanese concept of GNH came into being. National income has been used as a proxy measure on the assumption that it is the most obvious and perhaps the only means of achieving well-being. In this way, means have got identified with the end and the end was being measured by means. However, the experts have found that whereas the income levels of countries like the US and Japan have increased manifold since the 1960s, their happiness levels have not correspondingly increased. Although income-happiness relationship holds good for within-country cross-sections, it does not operate at the country level across space and time, except for a very low income range that is required to meet the basic material necessities of life. Thus, income is an imperfect measure because it does not reflect the emotional and spiritual aspects of wellbeing. Even all the material aspects are not counted by income measure. Only those which undergo marketing and have a price tag are considered.

This snap in relationship between income and happiness prompted Bhutan to opt for the latter as the direct yardstick for a country's progress. The old problems concerning measurement of happiness were bypassed by resorting to self- reported happiness method where people will indicate their verbal degree of happiness on a numeric scale. Verbal degrees are assumed to be proportional to their respective numeric weights. This fact as confirmed through an internet interview with Prof. Cahit Guven **[Exhibit (TN)-IX]** may be plugged in.

Self-reported happiness method has two approaches – Census approach and Sample approach. Though the former takes into consideration the whole population and therefore is more accurate, it is very costly and time consuming and often impractical. Sample approach is resorted to because of cost effectiveness. But one must be mindful that it is less accurate and needs much care in choosing the sample. The students may be apprised of a recent medical innovation in measuring happiness, called fMRI method, developed by Prof. Richard Davidson of Wisconsin University. Through this method, the activities of the brain are scanned and the happiness quotient is detected. Davidson showed a smiling healthy baby and a seriously deformed baby separately to a group of individuals and recorded their brain activities. The brain activities that occur during the sight of the smiling healthy baby are identified as the experience of happiness and the brain activities that occur during the sight of the seriously deformed baby are identified as the experience of sadness. Happy feelings correspond to brain activity in the left side of pre-frontal cortex and sad feelings to that in the right side of the pre-frontal cortex **(Exhibit XI of the case study)**.

This may be followed up by the obvious question: Why is Bhutan not adopting this more-scientific method and why are other countries not going for direct measurement of well-being that this method paves way for? Hints may be given that though this method seems to be the most accurate, it is cost-prohibitive and impractical on a macro level. The class can be divided into five teams and can be asked to come up with an approach to quantify happiness.

Exhibit (TN)- IX
Prof. Cahit Guven on Numeric Scale of Verbal Degree of Happiness

1. Can happiness really be quantified in absolute numbers?

Ans: I think we can have different measures for happiness. This can be some numbers but also percentages. It can be the percent of people who answered above say 3. Absolute numbers are not perfect but give logical correlations with various variables. .

2. Relative numbers or index values like 1, 2 and 3 may be assigned respectively to 'not too happy', 'pretty happy' and 'very happy'. But in this case, is a very happy person three times as happy as the not too happy person? If the answer is negative, would it be meaningful to add the happiness of individuals to arrive at social happiness?

Ans: Yes. We assume that a very happy person is three times as happy as the not too happy person. First of all, this can be tested statistically (in our paper, we show that this is the case). But it does not mean that it will be the same in every country. If the answer is negative, it will not be meaningful to add these happiness variables but instead we can use percentages to arrive at social happiness (such as percent of people who said they are 'very happy'.)

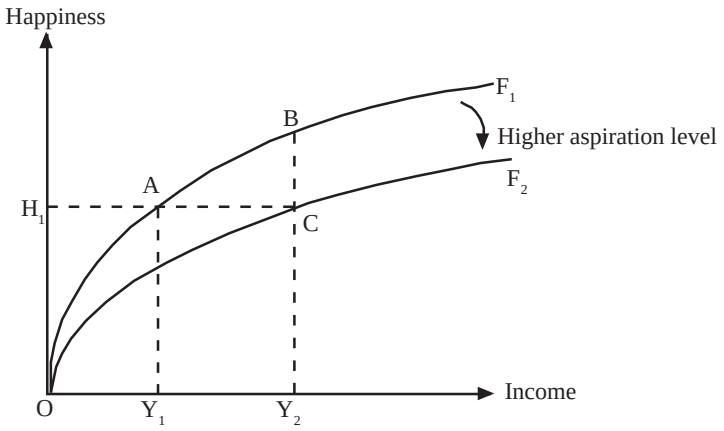
Source: Interview with Prof. Cahit Guven

IV. What are the concepts that underlie the relationship between income and well-being?

Revisiting the previous question, it can be reasoned that the need for a direct method of measuring happiness would arise if there a disconnect between income and well-being. Various concepts underlying the relationship between income and well-being such as Easterlin's Paradox, aspiration treadmill, relative income hypothesis, satiation point and externalities can be pointed out here. Prof. R.A. Easterlin's three propositions may be juxtaposed to show a Paradox as regards the relationship between income and happiness. The first proposition is: Within a country, people having more income experience greater happiness compared to people having less income. The second is: A country having more income does not tend to experience greater happiness compared to a country having less income. The third is: As a country's income increases over time, the total happiness of the people of that country does not tend to increase.

The first proposition hints at a positive link between income and happiness while the second and third propositions point to no such link. The first proposition is explained through relative income hypothesis. As income of some people compared to that of others in the same society increases, the former experience more happiness since they get the feeling that they are luckier and better placed than the latter. The second proposition is explained by the fact that relative income hypothesis does not operate between countries. The people of a country compare amongst themselves; they do not compare themselves with people of other countries. The third proposition is explained by aspiration treadmill. As incomes of the people of a country increase over time, they get used to it very soon. This quick adaptation hikes their aspiration level, which means that from the existing income level they begin to derive less happiness. Hike in aspiration level shifts their income-happiness function from F_1 level down to F_2 level whereby increase in income from Y_1 to Y_2 does not lead to increase in happiness from H_1 to H_2 **[Exhibit (TN)-X]**. The potential happiness effect of increase in income gets undercut over time.

Exhibit (TN)-X
Aspiration Treadmill



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After explaining Easterlin's Paradox, which involved two important concepts such as relative income hypothesis and aspiration treadmill, satiation point can be explained. Satiation point marks the demarcating point between presence and absence of the positive correlation between income and happiness. Up to the satiation point, material happiness can be coaxed out of income. After this, income becomes irrelevant. A second piece of nail-cutter, a third set of TV, a fourth pair of spectacles and a fifth band of wrist watch would hardly add to the existing well-being. Rather, they may clutter the shelves and detract from well-being. Diagrammatically, this can be shown through a total well-being curve TU, which is concave to the income axis to reflect the dictum of diminishing marginal utility **[Exhibit (TN)-XI]**. When income keeps on increasing from Y_1 to Y_2, happiness level will keep on rising from H_1 to H_2. Satiation point is reached at Y_2 level of income corresponding to which marginal well-being is zero and total well-being is maximum i.e. H_2. Thereafter, additional income yields negative marginal well-being and total well-being starts declining. It may, of course, be argued that negative marginal happiness may not be experienced if one is not compelled to consume the products. The income-rich countries, notably the US and Japan, have long since reached their satiation point and, therefore, the level of their happiness hardly rises with the rise in their GDP.

Further I suggest to explain the externalities. Externalities may be positive or negative. Positive externalities emerge when the activity of an economic unit creates benefits for others for which it does not receive any payment. Negative externalities emerge when the activity of an economic unit inflicts costs on others for which it is not required to pay. Positive externalities drive a wedge between social and private benefits while negative externalities, between social and private costs.

The existence of externalities prevents achievement of maximum national well-being. When an externality is present, the private production is either less or more than the social optimum depending upon whether the externality is positive or negative. In case of positive externalities, the sum of well-being of citizens

does not add up to the maximum feasible national well-being. An amount of potential national well-being is forgone. In case of negative externalities, the national well-being eventually falls short of the sum of expected well-being of citizens. Diagrammatically, positive externalities shift down social cost curve (S_1S_1) away from the summed up curve of private costs (SS). The actual amount produced being OQ instead of socially required OR, there is under- production to the tune of QR and forgoing of national welfare to the tune of FEE_1 **[Exhibit (TN)-XII]**. Negative externalities shift up social cost curve (S_1S_1) away from the summed up curve of private costs (SS). The actual amount produced being OQ instead of socially required OR, there is over- production to the tune of RQ and incurring of national welfare to the tune of FE_1E **[Exhibit (TN)-XIII]**.

Before rounding up this section, two questions on relative income hypothesis, taken up in an interview with Prof. Cahit Guven **[Exhibit (TN)-XIV]**, may be asked to the class to drive home the point as to how culture is an important variable in influencing happiness.

Exhibit (TN)-XI
Satiation Point

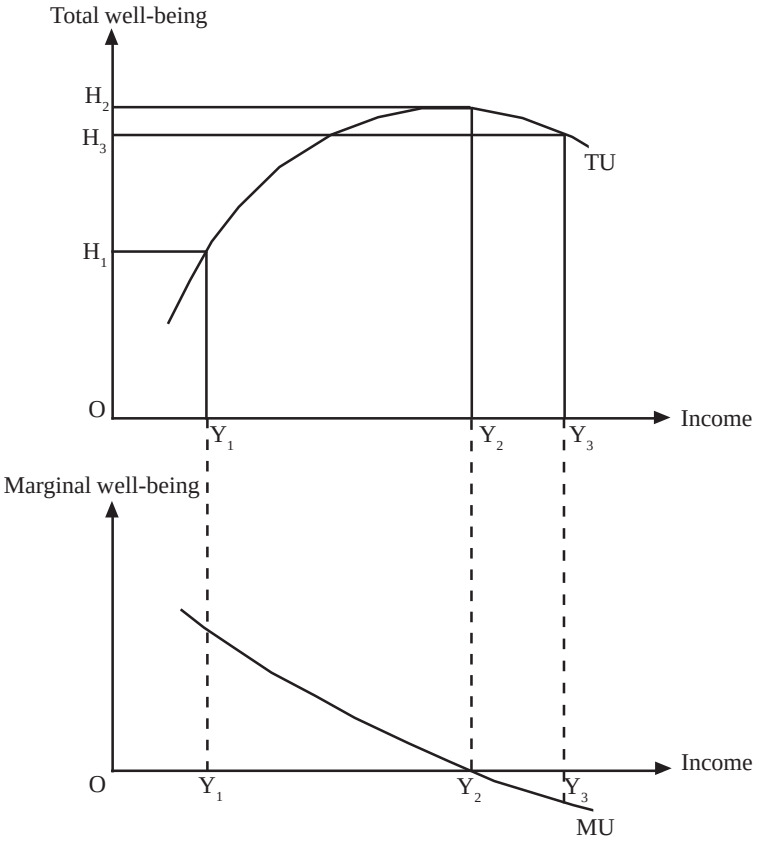

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Exhibit (TN)-XII
Positive Externalities

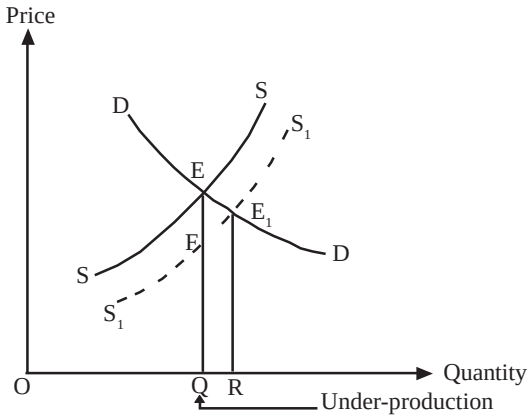

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Exhibit (TN)-XIII
Negative Externalities

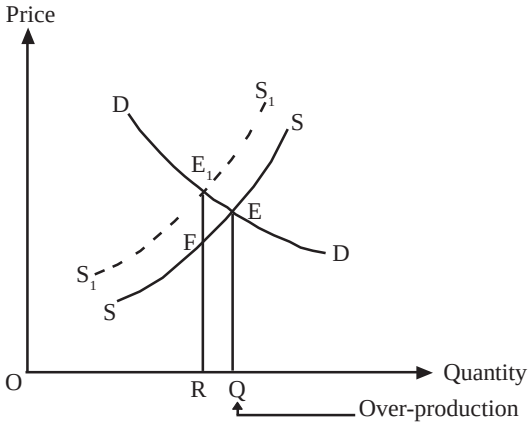

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Exhibit (TN)-XIV
Prof. Cahit Guven on Relative Income Hypothesis

1. It is pointed that there is asymmetric structure of externalities as propounded in relative income hypothesis. While making comparisons, people look upwards and think they are unlucky compared to the richer and feel unhappy. Thus, the rich impose negative externality on the poor. But is it not also a fact that people look downward and think themselves lucky compared to the poor and thereby, feel happy?

Ans: Well, this can be also important but it depends on the culture. Most of these works studying the role of relative income have been using the data from the developed countries. Individualism has been much more important in these countries. Besides, the role of spirituality and religion is very different in these developed countries than developing countries. I think, looking downward or upwards while comparing to other people depends on culture and countries. If we have studies using data from different cultures and countries, we may see that people in those countries look downward and think themselves lucky compared to the poor.

2. If relative income hypothesis doesn't work in both the directions, it can be proved that positive income-happiness association across persons of a country will translate into negative income-happiness association of a country across time. Supposing, a country has two persons X and Y, having income of $10 each and each getting 8 units of happiness. Subsequently, when X earns additional income of $5, it reduces happiness of Y, by say 2 units. However, X's happiness does not change at all. Thus, X the richer person, gets 8 units of happiness and Y the poorer gets 6 units of happiness. The country's income-happiness combinations will then show a negative relationship i.e., $20 and 16 units of happiness compared to $25 and 14 units of happiness. How far is this appreciable?

Ans: I think it is not always true. This really depends on culture.

Source: Interview with Prof. Cahit Guven

The Big Picture

- Traditionally the progress of a nation is measured through various macroeconomic aggregates using National Income Accounting Concepts. However, should these traditional measures be replaced with GNH?

Final Thoughts

Happiness being the ultimate goal of human beings, the identification of the factors leading to it is of utmost importance. And this is possible if happiness is measurable in quantifiable terms. For, it can then be made unambiguously attributable to the factors that cause it. Bhutan's endeavour to directly measure happiness is a step in the right direction. But how far its methodology is error-proof and amenable to universal acceptance, that only time will testify.

Additional Readings

- Kringelbach Morten L., "Searching the Brain for Happiness", http://news.bbc.co.uk/2/hi/programmes/happiness_formula/4880272.stm, May 2nd 2006
- Rudin M., "The Science of Happiness", http://news.bbc.co.uk/2/hi/programmes/happiness_formula/4783836.stm, April 30th 2006

Annexure (TN)-I
Teaching Plan

Sl. No.	Analysis Section	Expected Learning Objectives	Forward Linkage	Ideal Duration (mins)
1.	National Income	• National income accounting – rationale, concepts and shortcomings • GNP and GDP • NNP and NDP • Personal income and disposable income • Means to want-satisfaction	Well-being and its Constituents	20
2	Well-being and its Constituents	• Is want satisfaction same as well-being? • Physical (or material)well-being • Psychological(or emotional and spiritual) well-being • Attainment of psychological well-being and the Bhutanese philosophy of life • Differences between the Western and the Bhutanese way of life • Variations in definition of life's goals	Measurement of well-being	20
3	Measurement of Well-Being	• Cardinal measure • Ordinal measure • Illegitimacy of interpersonal comparison • Pareto optimality • fMRI method • Self-reported method (implemented in Bhutan) • Is that applicable to all countries?	Income-Happiness relationship	25
4	Income-Happiness Relationship	• Easterlin's Paradox • Aspiration treadmill • Relative income hypothesis • Satiation point • Externalities.		25

Prepared by the author