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Does Wealthier Imply Healthier and Happier?

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Abstract: Human Development and well being go way beyond per capita GDP but at the same time it would be incorrect to exclude per capita GDP from the list of its determinants. A cross country correlation between a) per capita GDP and life expectancy, b) per capita GDP and World Happiness Index is attempted separately to explore the linkages and patterns emerging. The cross country analysis of distinct time periods is also compared to bring out some general or secular trends if any. Some plausible explanations for the patterns observed are tendered along with the caveats that must be kept in mind while carrying out such an analysis.

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I) INTRODUCTION

Ironically, Human Beings themselves have not been central to measuring economic development that was supposed to be attained by them and attained for them. Historically, development has been reduced to what Amartya Sen has critically called, the 'commodity fetishism' (Sen, 1984). This can be seen from the focus of Development Economics as a discipline since the post World War II years. Any increase in the aggregate of goods and services available to the people was considered to be the end that Development Economists strived for. Though the means varied from the focus on increasing saving to enhancing productivity but the end goal was firmly fixated to increasing the GDP per capita. Improvements on this narrow idea of well being came in the due course with the focus widening to include distribution of the GDP, measuring poverty and especially the "Basic Needs Approach" (ILO, 1976) which focused on the provisioning of the basic goods to the entire population, especially the poor. Advancements though they were, they still could not venture beyond attributing command over certain goods as the be all and end all of human developmental endeavors. The 'Capability Approach' developed by (Sen, 1983) and the UNDP Human Development Report 1990 represent a tectonic shift in terms of conceptual advancement in understanding development and its application to measuring development across nations respectively. Goods and services were now looked as means of increasing the capabilities of human beings to live a 'long, healthy and meaningful life' (Sen, 1983).

Beyond the usual pros, cons and shortfalls of the concept and its application for measurements, it brought Human Beings to the foreground of developmental discourse while simultaneously pushing goods and services backstage. Within the same tradition, well being is now being expanding beyond HDI (health, education and access to goods) to include ***'subjective measures'*** of well being. Though there are certain shortcomings of these subjective and self reporting measures, which we would return to later, these measures are increasingly gaining attention, rapidly expanding their research coverage and steadily improving their tools of analysis (benefiting from disciplines like Psychology).

This paper focuses on the two extensions of the traditional concept of development, Human Development Index (primarily health outcomes) and subjective reported well being i.e. Happiness Index. The interaction of these two measures with the conventional measure i.e. GDP is discussed. **Section II** deals with some of the existing literature on the interaction of GDP per capita with the other two measures (Health and Happiness) and also states the methodology used in this paper. **Section III** deals with the first relationship i.e. between 'wealth' (measured by per capita GDP) and health (measured by life expectancy). **Section IV** explores the second link i.e. between 'wealth' (measured by per capita GDP) and happiness (measured by Gallup Polls and World Happiness Report 2016). **Section V** has some shortcomings of the methods used and some conclusions that can be drawn in spite of these shortfalls.

II) LITERATURE REVIEW AND METHODOLOGY

Elizabeth A. Stanton has documented the history of the idea of well being with a neo-classical imprint all over it along with its measurement via GDP at macroeconomic level (Stanton, 2007). The origins of the Capability Approach is to be found in the writings of Amartya Sen wherein he stresses 'capabilities and entitlements' over national product(Sen, 1983) and the subsequent

development and critiques of this approach are formulated by David A. Clarke (Clarke, 2006). The idea of looking at correlations between health outcomes and per capita GDP can be found in Samuel Preston's cross sectional analysis of IMR with GDP per capita and Life Expectancy per capita where he concludes that income affects both the level of health outcomes and their change over time (Preston, 1973). Lant Pritchett and Lawrence H. Summers have investigated the two links through which income affects Health Outcomes i.e. via a) increased availability of goods and services, b) increased Government resources (Pritchett & Summers, 1996).

Richard A. Easterlin, using time series data for over 30 years 'Happiness Surveys' in post World War II USA, conclude that 'increasing the level of income for all does not lead to an increase in happiness for all' because of the 'relative utility effect' (Easterlin,1994). His findings have been challenged by Michael R. Hagerty and Root Veehoven who believe that rising incomes do lead to increasing Happiness with the 'needs effect' dominating the 'relative utility effect' (Hagerty & Veehoven, 2002).

For the relationship between Wealth and Health, cross sectional data for Life Expectancy and Per GDP of different countries is presented for the years 1994, 2004 & 2014 separately. The source is World Bank data sets. Also, some outliers in the correlation are also discussed along with a separate relationship between Life Expectancy and Government Spending on Health. For analyzing the link between Wealth and Happiness, data from World Happiness Report 2016 and World Gallup Polls is used. A cross country analysis between Happiness Index and Per Capita index for the year 2015 is attempted along with correlation between GINNI coefficients of countries and their Happiness Index for the same year. Also the standard deviations of Happiness index and changes in GINNI coefficients are compared with the underlying question that whether there is any correlation between increasing inequality of incomes within the countries and the increased variability of happiness in these countries.

Raw data from World Bank data sources and World Happiness report is used to construct Scatter Plots in 'Stata 8' for the analysis.

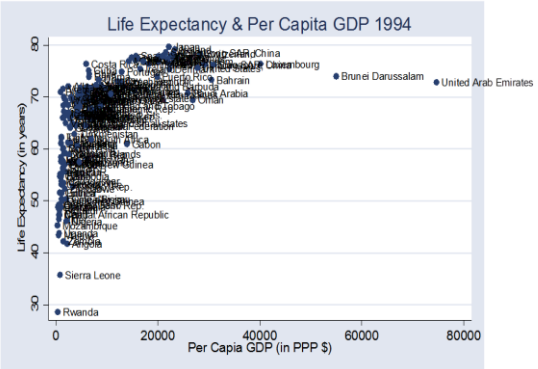
III) WEALTH AND HEALTH

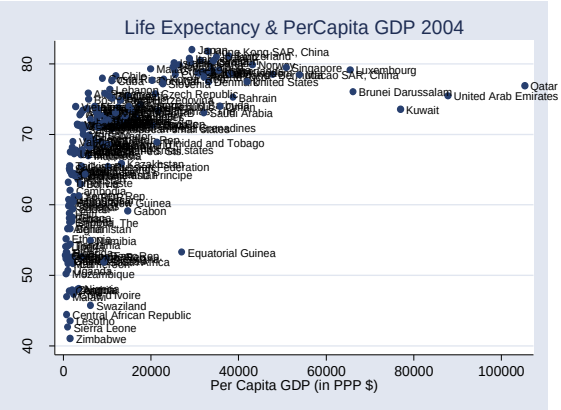
It is almost convenient and common sense to assume that wealthy countries would be healthy countries. This was further cemented by the famous 'Preston Curve' comparing life expectancy and per capita GDP across countries at distinct points of time till the 1960s (Preston, 1975) . A positive correlation between per capita GDP and life expectancy that smoothens out as per GDP reaches uppermost levels was seen as the testimony of the fact that health and wealth are related to each other as intuition would tell us. But, to the more questioning mind, it was merely a correlation which required further reasoning for causal connection and linkages between the two phenomenons. Pritchett and Summers, for example, assert that the increased per capita GDP leads to increased life expectancy by both directly and indirectly while positing an income elasticity of infant mortality to be -.02 (Pritchett & Summers, 1996). More goods and services are there for people to consume with increasing per capita GDP along with the greater resources that Government could deploy to further the cause of better health care for the marginalized and left out.

The rest of this section attempts to do two main tasks. Firstly, an analysis similar to Preston is made for the years 1994, 2004 & 2014. Secondly, changes from 1994 to 2014 in life expectancy are analyzed with respect to changes in per capita GDP and Government Health Expenditure (as % total expenditure on Health) respectively to supplement the first section and add qualifications to it.

A) The Recent 'Preston Curves'

World Bank data for Life Expectancy at birth and GDP per capita in purchasing power parity terms from 194 countries is used to construct 'Preston Curves' for the years 1994, 2004 & 2014.





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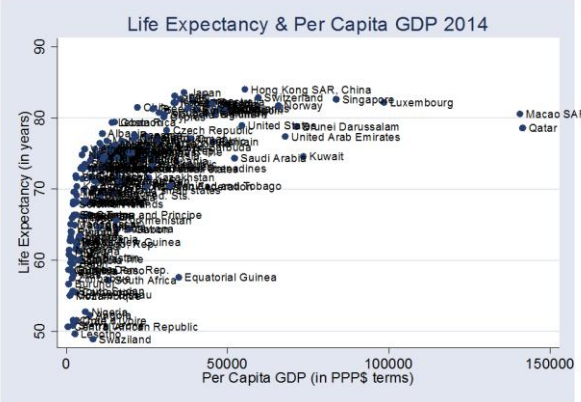

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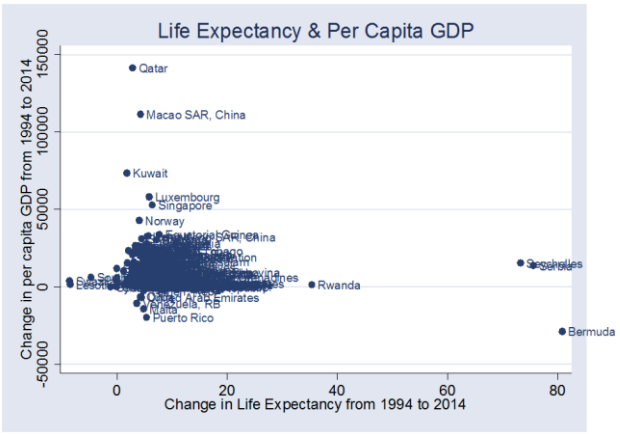
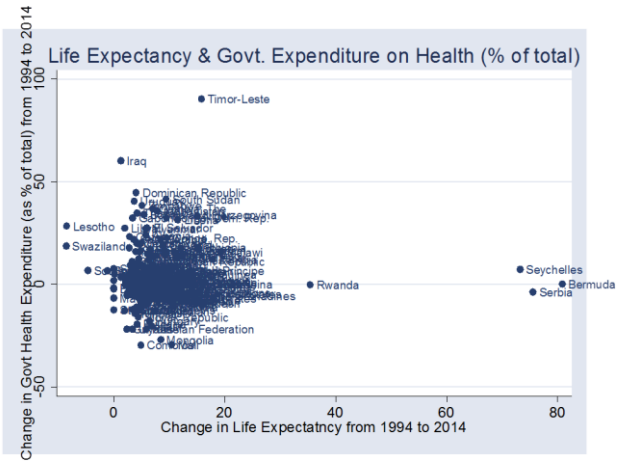
The result are on 'expected lines' as life expectancy increases sharply as we move from low per capita GDP countries to high per capita GDP countries at all three cases. The increase in life expectancy across countries tapers off at higher per capita levels with additional increase in per capita GDP across countries not leading to any significant increase in life expectancy. Another trend is the secular increase in life expectancy across all countries from 1994 to 2014. The cluster of dots could be seen moving up along the y axis as we move from 1994 to 2014 with the introduction of more and more countries in the above 80 range.

B) Measuring Change over time

The above analysis is a static one and does not tell anything about the dynamic process of reaching either higher life expectancy or higher per capita. It could well be the case that increased life expectancy precedes the increased per capita incomes in which case the policy implication for the developing countries would be entirely different and the focus would not be on Economic Growth predominantly. That would also mean that the predominant determinants of life expectancy lie outside the domain of GDP per capita.

In what follows, we look at the correlation between changes in life expectancy of different countries between 1994 & 2014 and changes in their a) per capita GDP, b) Government expenditure as proportion of total expenditure on Health separately. The idea is to simply analyze which of two correlations, a) changes in life expectancy and changes in per capita GDP or b) changes in life expectancy and changes in Government spending on Health, has been a stronger one.





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X axis: Life Expectancy in 2014 – Life Expectancy in 1994

Y axis: Per Capita GDP in 2014 – Per Capita GDP in 1994 & Govt. Spending on Health in 1994- Govt. Spending on Health in 1994 respectively.

Although not much conclusive can be said from a simple scatter plot but ignoring the outliers due to lack of incomplete data, it is clear that the changes in Government Spending vary more in sync with changes in life expectancy. Focusing on the middle cluster of dots in the above figures, it seems that countries improving more in their life expectancy (in 0-20 range) are countries whose Government Health Expenditure as proportion of total Health Expenditure went up more. On the other hand, this is not the case with Per Capita GDP as can be seen from the flat cluster of dots in the first figure of the previous page representing the range of 0-20 in improvements in life expectancy. Again, one must be cautious because we are merely comparing state budgets at two points of time and not during the entire period under consideration. Also mere enhanced budgets do not translate into better outcomes as there are issues relating to implementation and efficiency of expenditure.

IV) WEALTH AND HAPPINESS

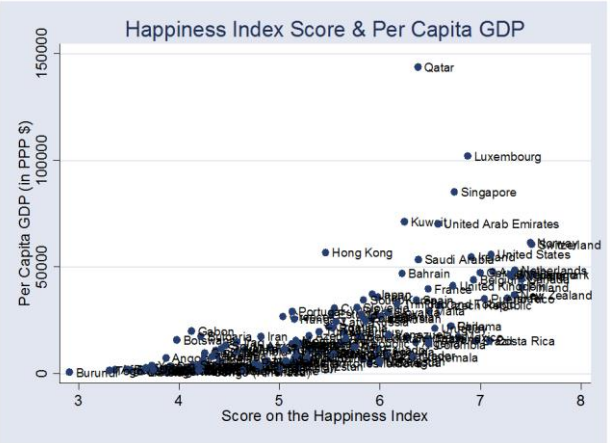
Subjective measures of well being do not have a formal academic measurement history as their objective counterparts like per capita GDP or Poverty Index enjoy. Still, one such self-reporting based attempt is the Gallup World Polls, conducted for USA since a considerable period of time and being expanded across the Globe off late. The second major effort is the World Happiness Report which is being published since 2012 using the earlier data available from the Gallop World Polls as well as following the almost similar methodology across the Globe for comparisons. Gallup uses the 'Cantril Self-Anchoring Scale', also called the 'Cantril ladder', developed by pioneering social researcher Dr. Hadley Cantril (1965), consisting of the following:

- *Please imagine a ladder with steps numbered from zero at the bottom to 10 at the top.*
- *The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you.*
- *On which step of the ladder would you say you personally feel you stand at this time? (ladder-present)*
- *On which step do you think you will stand about five years from now? (ladder-future)*

The measurements in subjective well being have been aided and improved by improvements in psychology (World Happiness Report, 2016). A prominent and impactful study on the correlation between happiness and wealth for USA between 1971 &1991 has concluded that "raising the income of all might not lead to increased 'well being' for all" because people value happiness while comparing themselves to their fellow citizens and when incomes of all go up proportionately, happiness might not follow the same trend (Easterlin, 1995). This study has been criticized for insufficient data and an alternative link between increased GDP and increased happiness has been established stating that the fulfillment of needs by additional income overcomes the 'relative utility' explanation of Easterlin (Hagerty & Veehoven, 2003).

In what follows, we take the three year average (2012-15) and standard deviation of the 'Cantril ladder' score of 3000 individuals of a country. This is done for all 154 countries under considerations and then cross country comparisons are made with Per Capita GDP and GINI Index. The GINI Index is defined by the World Bank as the area between the Lorenz curve and the line of perfect equality measured as a percentage of the total area under the line of perfect equality. Greater value of the Index means greater level of inequality in the society.

A) Happiness Index and Per Capita GDP

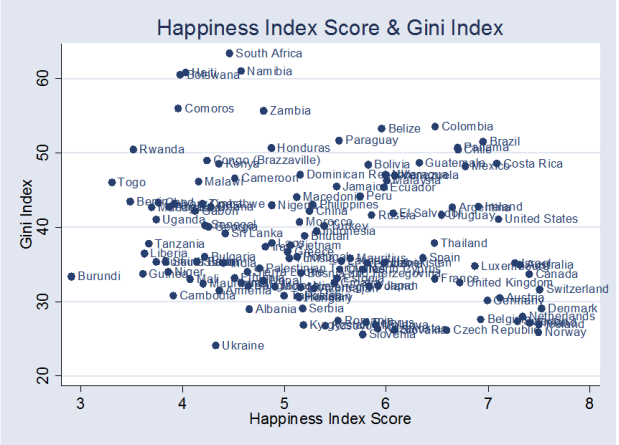


(Source: http://www.gallup.com/poll/122453/understanding-gallup-uses-cantril-scale.aspx)

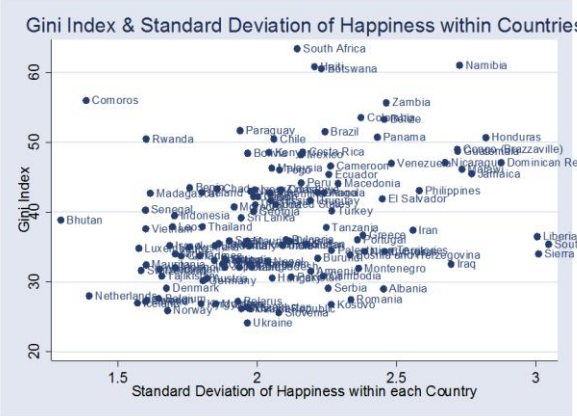
This shows up the usual positive correlation between Per Capita GDP and Happiness Index. Usually, people with more material goods in their possession report themselves happier than those without them. The steep and sudden rise of the cluster of dots beyond a certain GDP per capita level suggests that both material goods and ethereal happiness are equally skewed positively towards a handful of countries. Also, the low level of happiness reported by countries like Qatar, UAE, Kuwait, Saudi Arabia and Hong Kong might point to the low levels of freedom of choice that is exercised by people in these countries.

B) Inequality and Happiness

Countries that are more unequal materially should be less happy on an average and should have greater variation (or standard deviation) of happiness within them. With these two relationships in mind we compare, a) GINI Index and the Happiness Index and b) GINI Index and the Standard Deviations of Happiness across countries. The results are documented below.



Comparisons between Happiness Index and GINI Index do not throw up any visible patterns. Scandinavian countries like Norway, Denmark along with Continental European countries like Switzerland, Germany, and Czech Republic show very happiness levels combined with comparatively low inequality. Other notable exception is the countries like USA and Brazil who show high levels of happiness when compared with several other countries of comparable or low levels of inequality. Some African countries report low levels of Happiness because of the intermittent strife among different groups and the resulting political instability. Perhaps an important part of the reported happiness could be attribute be to national socio-cultural differences.



The inequality within countries is directly correlated with the variability of happiness which means that there is a huge gap between the reported levels of happiness of the 'haves' and 'have nots' of the country. This is another facet of the impact of inequality on the lives of those on the receiving end of the persisting inequality. Their valuation of life and purpose of existence are both left redundant in their own evaluation by the persisting inequality. This gives us one more reason of attacking inequality apart from ensuring material welfare, i.e. to restore human dignity, self worth, meaning of life and happiness.

V) CONCLUSION

The subjective measures of well being are subject to several criticisms. In our case, though the geographical coverage was extensive, the total observations were too few to draw conclusions even after adding weights according to population shares as compensation. The methodology of 'Cantril ladder' is too simplistic and subject to fluctuations periodically even though there studies reporting to the contrary. There is always a non verifiable element in the evaluation which does not satisfy quite a few analysts. Despite of all these criticism, subjective well being measures are still a work in progress. Comparing GDP per capita with life expectancy too has its problems stated in Section III.

To sum up, 'wealth' might be found coexisting with health and happiness in quite a few geographical pockets if one surveys the Globe at any point of time as this paper has done. But again, mere presence of wealth does not guarantee the health and happiness. Health can be achieved in spite of 'wealth' with countries like Cuba & Sri Lanka serving as examples in this regard and Health could indeed be an input and precondition for 'wealth'. Similarly, the distribution of 'wealth' within a country and other historical socio-cultural factors also affect happiness as powerfully as 'wealth' if not more.

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