PAPER 3: GLOBAL INEQUALITY

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ABOUT GLOBAL TRANSITION 2012

Global Transition 2012 is a collaborative initiative between Stakeholder Forum and nef (new economics foundation) that focusses on the Green and fair Economy theme towards the UN Conference on Sustainable Development in 2012 (UNCSD), also known as 'Rio+20' and 'Earth Summit 2012'.

GOAL

To achieve an outcome from the UNCSD 2012 that catalyses a 'Global Transition' to an economy that maximizes wellbeing, operates within environmental limits and is capable of coping and adapting to global environmental change.

PURPOSE

To build a global civil society and stakeholder movement to promote alternative models of economy that can deliver sustainable development to people, countries and generations that builds on the three pillars of sustainable development: social, environmental and economic.

THE INITIATIVE CONSISTS OF THE FOLLOWING ACTIVITIES:

- Research and Thinking and Policy and Advocacy: to **commission** and **publish** a series of research reports and think-pieces that will provide the evidence based analysis and address critical components of a Global Transition and translating research and thinking into key policy outputs towards Rio+20 and beyond and organising workshops with governments to discuss policy options; and **building capacity** and **developing tools** for countries to institute policies and systems that move towards a Global Transition;
- Coalition Building and Dialogue: **building a coalition** of actors and organisations from the global North and South committed to the principles and objectives of a Global Transition;
- Submissions: making **official submissions** to the Rio+20 process based on think pieces and dialogue;
- Information and Resources: publishing informative **guides** and **briefings** on aspects of the green economy; in particular developing a 'how to guide' for the green economy Roadmap work that is underway in a range of sectors and contexts.

ABOUT STAKEHOLDER FORUM

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ABOUT nef

nef (the new economics foundation) is an independent think-and-do tank that inspires and demonstrates real economic well-being. nef aims to improve quality of life by promoting innovative solutions that challenge mainstream thinking on economic, environment and social issues. We work in partnership and put people and the planet first.

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If you would like to provide feedback on this paper, get involved in the Global Transition 2012 initiative, or put yourself forward to write a paper/blog, please contact Kirsty Schneeberger, Senior Project Officer at Stakeholder Forum: **kirstys@stakeholderforum.org**

PAPER SUMMARY

In the following paper we propose the establishment of a “plenty line” as a counterpart to the poverty line, as a means of focusing public and political attention on the issue of over-consumption. In other words, is there a level of income such that people with incomes above this level have minimally greater well-being than those with incomes at this level?

While our analysis is complicated by the nature of the data available (viz. its reliance on self-reporting of income, and more specifically self-attribution to a limited range of income bands) and the relatively small sample sizes in most relevant surveys, we find indicative evidence for the existence of “plenty lines” ranging between household incomes of $35,000 and $107,000 in six Western European countries (and at $20,000 in one Eastern European country), where well-being is defined in terms of life satisfaction. While the reliability of these findings for individual countries is limited by the sample sizes, the fact that in only one of 22 countries (Switzerland) do the data appear clearly inconsistent with the existence of an (overall income) plenty line at some level of income would appear to suggest that such a line exists in at least some European countries. So, while we cannot yet identify where the plenty line lies with great precision, it seems clear that there is one. This is consistent with research in the United States which showed that there was no increase in well-being (defined in terms of affect) once household incomes reached $75,000 (Kahneman & Deaton; 2010).

This suggests a case for policies designed to limit the growth of incomes beyond societal plenty lines – primarily higher incomes in developed countries (but also those of elites, particularly in highly unequal middle-income developing countries). However, the implications of the plenty line concept potentially reach much further. By highlighting – and potentially allowing us to quantify – the divergence between total income and societal well-being, the plenty line has the potential to provide a basis for a whole new economics, directed towards the achievement of our ultimate goals as society and not merely the maximisation of total production.

INTRODUCTION

We know we need to reduce carbon emissions significantly to avoid catastrophic and irreversible climate change in the coming decades. We also know that global emissions have increased at an accelerating rate since 1990, pushing us ever further off the course required to limit global warming to 2°C from pre-industrial levels – itself an alarming prospect. At the same time, it is becoming increasing clear that known and anticipated technological solutions will be insufficient to the task, as well as having unknown and potentially serious knock-on effects (Simms et al, 2010). It seems that to avoid catastrophic climate change we will need to constrain the growth rate of the global economy. We consume too much.

However, the global economic system as it currently operates depends critically on economic growth for poverty reduction; and, even before the financial and fuel crises, a substantial majority of the world population lived on incomes so low as to shorten their life expectancy significantly (Edward, 2006; World Bank, PovCalNet database). This majority consumes too little.

In other words we face two critical problems: over-consumption and under-consumption, or more briefly, inequality.

Global concern with under-consumption is embodied in the concept of a "poverty line"; and the establishment of the "$1-a-day" poverty line, for all its serious faults and limitations (Woodward, 2010), has been critical in putting poverty onto the global political map, for example through the Millennium Development Goals.

In this paper, we propose the establishment of a "plenty line" as a counterpart to the poverty line, as a means of focusing public and political attention on the issue of over-consumption. This should be established at a level of income at which further increases provide minimal additional benefit to the individual concerned to offset the associated costs to everyone else. These costs, as we will see, are both environmental and social.

The evidence that a plenty line exists

The first question is whether a plenty line so defined exists – in other words: is there a level of income such that people with incomes above this level have minimally greater well-being than those with incomes at this level?

The relationship between income and well-being is fundamental to orthodox economics and the declining marginal utility of income is one of its oldest assumptions. It is also one of the clearest findings from well-being studies. Layard, Mayraz & Nickell (2007) is one of many studies reporting a broadly logarithmic relationship between income and well-being.[3] This means that it is not a one dollar increase in income but a one per cent increase that gives the same increase in well-being to everyone. In other words, a $1,000 increase in income gives as much extra well-being for someone earning $10,000 a year as an extra $100,000 for someone earning $1,000,000 a year.

If the relationship is indeed logarithmic – or more generally if the extra well-being generated by a dollar is progressively reduced as income increases – then we must eventually reach a point where the benefit to well-being of an extra dollar becomes minimal, however, we define it. In other words, there will inevitably be a plenty line, as we have defined it, even if this is above the top of the income distribution.

However, a logarithmic function alone does not allow for a clear plenty line to be defined – a point in the income spectrum where one could suggest there is some qualitative shift.

Such a point has been found, however, by Kahneman and Deaton (2010), who have carried out one of the largest studies in this area. Based on a sample of over 450,000 respondents in the US, they found a point where even the logarithmic relationship between household income and well-being breaks down - $75,000. Beyond that point, no increases in well-being could be detected, when well-being was measured in terms of positive and negative affect and stress.

However, as well-being theorists are beginning to agree, affect is only one aspect of experienced well-being – the other key aspect which has attracted consensus is normally measured in terms of life satisfaction.[4] [5] While

[3] Layard R, Mayraz G & Nickell S (2007) 'The marginal utility of income' SOEP papers, DIW Berlin.

[4] Diener E, Kahneman D, Tov W & Arora R (2010) 'Income's association with judgements of life versus feelings' in E Diener, J Helliwell & D Kahneman (eds) *International Differences in Well-being* (New York: Oxford University Press).

Kahneman and Deaton did not attempt to measure this aspect, they did consider the somewhat different issue of life evaluation; and here, they did not find any point where the logarithmic relationship broke down. However, by asking people to compare their life with the 'best (and worst) possible life', life evaluation is believed to encourage respondents to focus disproportionately on status-related aspects of their life, including income.

The authors of this paper are currently carrying out analysis based on overall life satisfaction, the standard measure of the evaluative aspect of experienced well-being using data from the European Social Survey (see Annex A for more details). This analysis attempts to evaluate 'inflection points' where the logarithmic relationship between income and well-being changes, either substantially reducing in strength, or becoming entirely flat.

In 15 out of 23 countries, inflection points were identified where the relationship between income and well-being appeared to 'switch off' completely. Although these points ranged from a household income of only $4,700 per year in Iceland (calculated at purchasing power parity) to $120,000 in Luxembourg, most in Western Europe fell between $30,000 and $80,000 (including those for Germany, France and the Netherlands). Spain and several Eastern European countries, including Poland and the Czech Republic had lower plenty lines, between $15,000 and $35,000

A necessary conclusion from the principle of diminishing returns is that, *ceteris paribus,* a more equal distribution of incomes should result in higher average well-being. However, it doesn't say how much higher. In principle, the analysis presented here could allow us to estimate just how much higher well-being would be with such a redistribution, as well as providing an empirically founded point in the income distribution which can be identified as a plenty line.

The implications of the plenty line in the United States

The US plenty line estimated by Kahneman and Deaton is about 5% greater than mean US household income in the same year ($71,500), and around one-third of US households have incomes above this level. Based on 2000 data (the latest available) from the World Bank's World Development Indicators data, the top one-third of the income distribution in the US accounts for something over 60% of total income, suggesting that a similar proportion of the proceeds of economic growth goes to those with incomes above the plenty line, even without any increase in inequality.

In practice, however, income inequality in the US has increased very considerably, as income growth has been heavily concentrated at the top of the income distribution. The richest 1% of the population alone are estimated to have accounted for no less than 58% of the proceeds of economic growth between 1976 and 2007, and 65% in 2002-07, compared with an income share of 9% at the beginning of the period and 23% at the end (Atkinson et al 2009). While similar estimates for the top 30% are not readily available, it is clear that their share in growth will be considerably greater, as the regressive nature of US economic growth spans the income distribution: based on definitive US income distribution data (from the official Current Population Survey), Stevenson and Wolfers (2008) report income growth for the top fifth of the income distribution between 1972 and 2006 as three to four times that of the bottom 60% (59% cumulatively compared with 15-20%), with the intervening 20% in between (30%).

Taking Atkinson et al's estimates as a starting point, and assuming (conservatively) that the share in the proceeds of growth of the top-third excluding the top 1% were limited to their share income of the of the population as a whole excluding the top 1%, this would suggest that something in the order of 85-90% of the proceeds of economic growth in the US are above the plenty line, and consequently do not increase the well-being even of the recipients.

Since the US accounted for some 25% of global economic growth before the financial crisis (2000-2007, based on World Development Indicators), this represents some 22-23% of global economic growth. Our preliminary findings of overall income plenty lines at lower income levels in a substantial number of Western European countries suggest that a significant proportion of the 30% of global growth accounted for by other developed countries also lies above an absolute income plenty line.

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5 A third aspect of well-being, labelled eudaimonic well-being, or psychological well-being, functioning or flourishing has also been identified (see for example Abdallah *et al*. (2011) *Measuring our Progress* (London: nef)), but sufficient data for detailed analysis has not been available until recently.

Absolute income, relative income and economic growth

Richard Easterlin presented data in 1974, which showed that average levels of well-being in the USA had not increased with GDP growth and, associated income increases.[6] Whilst there has recently been some debate about these findings,[7] it is clear from them, and more recent data,[8] that, if there is a relationship between GDP growth and increasing well-being, it is marginal. There are certainly clear examples, such as that of the USA, where economic growth has not led to increases in well-being.

At first sight this is paradoxical, since the evidence, as presented by Kahneman and Deaton, is that at least at incomes up to $75,000, more money *does* mean more well-being. What is more mean household income was well below this at the beginning of Easterlin's time series, and indeed, as we have seen, has still not quite reached it[9].

There are a number of possible explanations for the paradox but the most likely, we believe is that absolute and relative income have distinct impacts on well-being (for discussion see Annex B). Absolute income is simply income, but relative income refers to income relative to that of everyone else. Growth in GDP implies rising absolute average income, but if the tide is rising equally for everyone it has no impact on relative income. If, beyond a certain level, the relationship between income and well-being depends entirely on relative income, then GDP growth beyond this level will not increase well-being except through distributional knock on effects.

We might express this point by saying there are in fact two plenty lines: the total income plenty line, as measured by Kahneman and Deaton; and the absolute income plenty line, the level of income beyond which the well-being of the recipient does not increase unless his or her income also increases *relative to those of other people*. The Easterlin paradox would be explained if the majority of the US population had reached the absolute income plenty line 50 years ago.[10]

Why might relative income be more important at higher income levels? There are two possibilities. One is that there are certain goods the prices of which tend to rise in line with or faster than incomes: supply is fixed nd/or the productivity rises that drive growth do not compensate for increased demand. Examples include large gardens, holidays in exclusive locations, certain personal and professional locations and access to the best schools, whether this is paid for in fees or property prices. The ability to purchase these depends on relative income and it is possible that these matter to well-being, even when one is satiated with the kind of goods that growth that can deliver more cheaply. The second reason is that some goods are positional, that is the benefit from the good arises because other people don't have it. Examples include the higher social status which is provided by conspicuous consumption and greater political and personal influence, etc.

The significance of this is that GDP growth on its own is unlikely to increase well-being in developed countries. Of course GDP growth may facilitate redistribution, and this could increase well-being. However, as we know from recent experience, this is very far from guaranteed and would require government intervention.

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[6] Easterlin RA (1974) 'Does economic growth improve the human lot? Some empirical evidence' in David PA and Melvin WR (eds) *Nations and households in economic growth* (Palo, Alto, CA: Stanford University Press).

[7] Stevenson, Betsey and Justin Wolfers (2008) "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox". *Brookings Papers on Economic Activity*, Spring.

[8] Easterlin update 1995

[9] Nor does the failure of GDP growth to translate into rising median incomes in the US over the last 20 years explain this: the Easterlin data hold even for periods when median incomes were rising in line with mean incomes (or GDP).

[10] It is not suggested that everyone had reached this level. The Easterlin data measures average well-being, and is consistent with there being a large minority still below this level and which has failed to benefit from rising GDP, or with a small minority that was below this level and has benefited from rising GDP but is too small to have an impact on the average number.

What levels of income are optimal for society as a whole?

The next question is whether extra income for the best off actually damages society. What, we might ask, is the optimum maximum level of individual income if we are concerned with the well-being of society as a whole? Is there a point beyond which the well-being costs to others and to future generations outweigh the benefits to the well-being of the individual?

As already noted, there could be positive gains for society if the incentive effects of higher incomes led to significant economic efficiency gains. However, while incentives are no doubt necessary, there is little evidence on the level of inequality that maximises economic performance. Certainly there is no evidence that the level of inequality we suffer today is optimal: growth and inequality rates in the developed world over the last 50 years do not correlate. What is more there is plenty of qualitative evidence that financial incentives are largely about rank order rather than the absolute amount earned: what matters is winning, not the size of the prize. This implies high levels of inequality are likely to emerge over time but are socially inefficient.

First and foremost, of course, they are inefficient because the income in question would generate more well-being amongst the less well-off if redistributed. This is a simple consequence of the (rapidly) declining marginal utility of income. As we have seen a large part of global economic growth is accruing to people whose incomes are already so high that further increases do not improve their well-being, while the majority of humanity remains in such poverty that their lack of income is significantly shortening their lives.

Second, they have a negative impact on emissions. nef and the Centre for Analysis of Social Exclusion at the London School of Economics have also recently explored carbon emissions by income decile in the UK. Individuals in the top income decile were directly responsible for almost 3 times the GHG emissions of those in the bottom income decile, and 1.7 times the GHG emissions of those in the middle two deciles.[11] The postulations match cross-sectional data. Danny Dorling has found correlations between inequality and a range of environmentally damaging consumption figures, including meat and water. Of course increasing the incomes of the least well off will increase emissions: the point here is not that redistribution will reduce emissions (it won't, it may increase them), but that high incomes are in themselves particularly damaging – and do not generate well-being gains to compensate.

Thirdly there are negative social impacts of inequality that go beyond the loss of income to the less well off. Wilkinson & Pickett's *Spirit Level* presented an impressive array of data demonstrating a relationship between inequality and all sorts of social ills, including greater crime and incarceration rates, obesity, mental illness, and illegal drug use.[12] Meanwhile greater inequality was associated with lower levels of trust and societal cohesion.

At the heart of many of these correlations is the dissatisfaction and materialism engendered by the differences in lifestyles that different incomes can afford. Plenty of studies have shown that the mere existence in the world of luxuries that people saw to be exciting and desirable, but unaffordable, had reduced their satisfaction. [13] And the phenomenon exists at a global level. For example Indians who watch more American television overestimate the average levels of wealth in the USA, and consequently evaluate their own income levels less favourably, and have lower life satisfaction.[14] [15] You can call this envy if you like, but it is a fact.

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[11] Gough I, Abdallah S, Johnson V, Ryan-Collins J & Smith C (2011) 'The distribution of total greenhouse gas emissions by household in the UK, and some implications for social policy' Available at http://sticerd.lse.ac.uk/dps/case/cp/CASEpaper152.pdf

[12] Wilkinson, R. & Pickett, K. (2009). *The Spirit Level: Why More Equal Societies Almost Always Do Better* (London, Allen Lane).

[13] For example Solberg E, Diener E, Wirtz D, Lucas R & Oishi S (2002) 'Wanting, having, and satisfaction: Examining the role of desire discrepancies in satisfaction with income' *Journal of Personality and Social Psychology* 83:725–734.

[14] Yang H & Oliver MB (2010) 'Exploring the Effects of Television Viewing on Perceived Life Quality: A Combined Perspective of Material Value and Upward Social Comparison' *Mass Communication and Society* 13:118-138.

[15] Yang H, Ramasubramanian S & Oliver MB (2008) 'Cultivation Effects on Quality of Life Indicators: Exploring the Effects of American Television Consumption on Feelings of Relative Deprivation in South Korea and India' *Journal of Broadcasting and Electronic Media* 52:247-267.

As has been documented by Tim Kasser and others, these drivers of dissatisfaction can in turn lead to greater materialism, which in turn leads to a similar spectrum of social ills as identified by Pickett & Wilkinson, including mental health problems, substance misuse and anti-social behaviour. [16] [17] Wanting what you can't have through legal means, can lead to attempts to get those things through illegal means, or by escaping reality through addictions. It can also lead to increasing indebtedness, purchasing goods which one feels obliged to have through credit.[18]

None of the above gives us any numbers - a precise level of income at which the social disbenefits outweigh the individual benefits of further increases. They do however suggest that there are good reasons for organising society to reduce inequality and minimise the level of incomes above plenty line.

CONCLUSION

All of this suggests an overwhelming case for policies designed to limit the growth of incomes beyond societal plenty lines – primarily higher incomes in developed countries (but also those of elites, particularly in highly unequal middle-income developing countries). Reallocating these incomes globally in such a way as to generate sustainable increases in income for those at the bottom of the global income distribution (not necessarily through direct redistribution) represents a much more viable means of eradicating poverty in a carbon-constrained world than relying on a "trickle-down" effect from increasingly unsustainable global growth – particularly in light of the very limited contribution of global growth to poverty reduction in recent decades (Woodward and Simms, 2006).

There are, of course, many barriers to this happening. The wealthy tend to resist redistributive measures – the Warren Buffetts of this world, who ask to pay more tax, are few and far between. Why this is (given the relatively small impact even of relative income at high levels), and why there should be such political resistance to redistribution, are important topics to which we at nef are hoping to return.

In the mean time, there are no barriers to the development of the plenty line concept itself. Indeed it is a potentially valuable tool in bringing about the shift in attitudes required to make such policies feasible.

The development and widespread dissemination of the "$1-a-day" global poverty line, for all its many shortcomings (Woodward, 2010) has played a critical role in highlighting the scandalous nature of global poverty and placing it firmly on the global political agenda. As our continued failure to deal effectively – or at all – with climate change confronts us with ever more inescapable and binding constraints on global growth, there is an urgent need to develop a corresponding "plenty line", to place the potentially devastating implications of ever-increasing over-consumption on the global agenda. Failure to do so will almost inevitably lead on the one hand to continued failure to bring climate change under control, and on the other to a wholly unwarranted shift of the burden of such adjustment as may occur from the North, where the responsibility clearly lies, to the South, where the ability to bear the costs its least.

However, the implications of the plenty line concept potentially reach much further. By highlighting – and potentially allowing us to quantify – the divergence between total income and societal well-being, the plenty line has the potential to provide a basis for a whole new economics, directed towards the achievement of our ultimate goals as society and not merely the maximisation of total production.

ANNEX A

Tracing the relationship between income and well-being

In a forthcoming paper, we explore the income/well-being relationship empirically using data from the European Social Survey. We hypothesise that there are a number of separate causal pathways between income and well-being which reach satiation at different income levels. If this is the case, one would expect the relationship between income and well-being to be best modelled with multiple functions, each 'switching off' at a different income level. We modelled this by introducing functions that do just that. We use an exploratory stepwise

[16] Kasser T (2002) *The high prices of materialism* (Cambridge, MA: MIT Press)

[17] Kasser T, Ryan R, Couchman C & Sheldon K (2004) 'Materialistic values: Their causes and consequences' in T Kasser & A Kanner (eds) *Psychology and consumer culture: The struggle for a good life in a materialistic world* (Washington, DC: American Psychological Association).

[18] Lawlor E, Kersley H & Steed S (2009) *A bit rich: Calculating the real value to society of different professions* (London: nef).

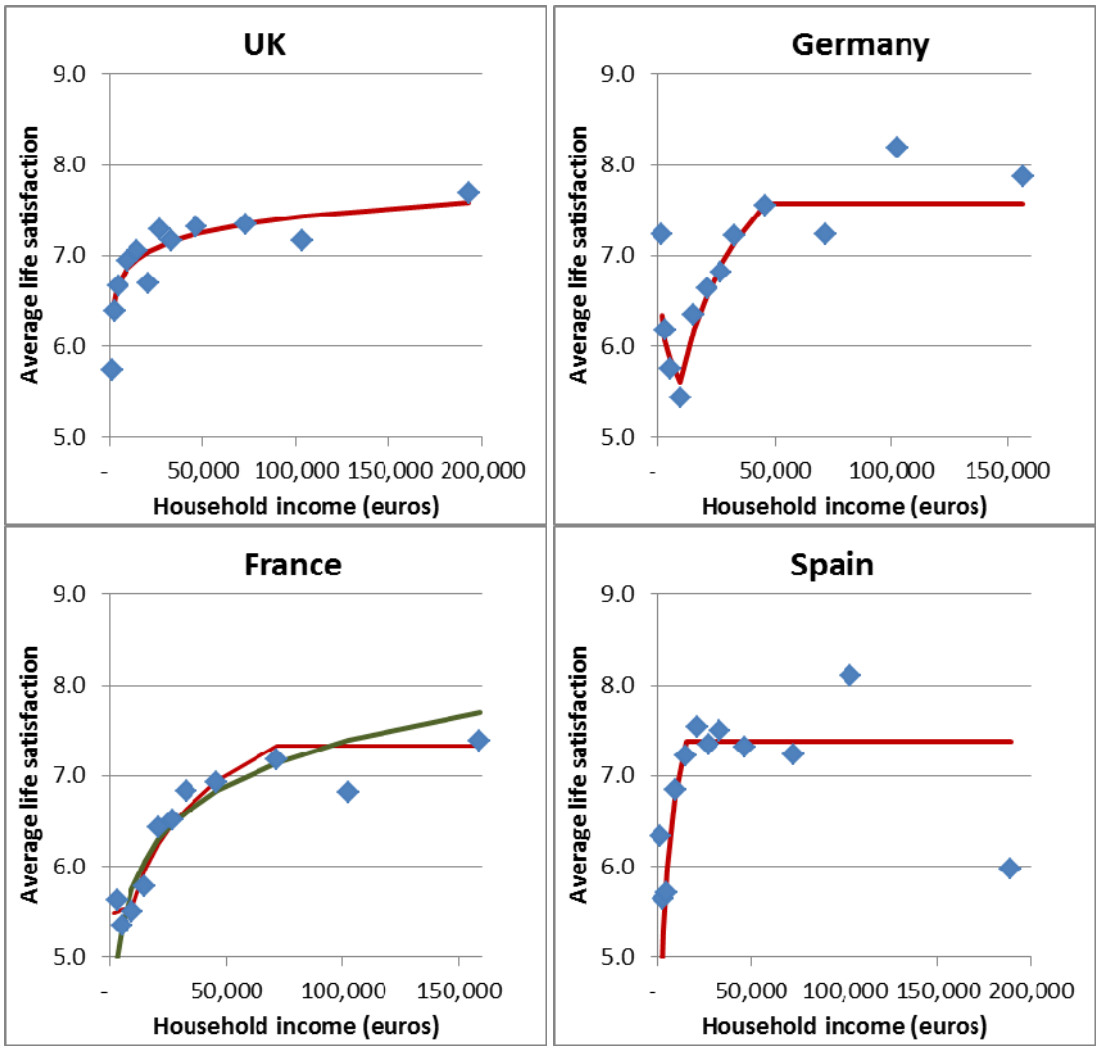
regression methodology, whereby these functions are tested simultaneously against a simple logarithmic relationship between income and well-being.[19] [20] The set of functions which best explain the data is then selected.

Out of 23 countries, the data for 15 were better explained with functions that switched off somewhere along the income distribution.

However, there is a risk that by introducing lots of possible functions we are sacrificing parsimony to get a more accurate match with the data. To control for this, we used the Akaike's Information Criterion to determine whether the greater predictive power resulting from introducing the extra parameters is worth this loss. In all cases we compared the 'switching off' function with a standard logarithmic relationship.

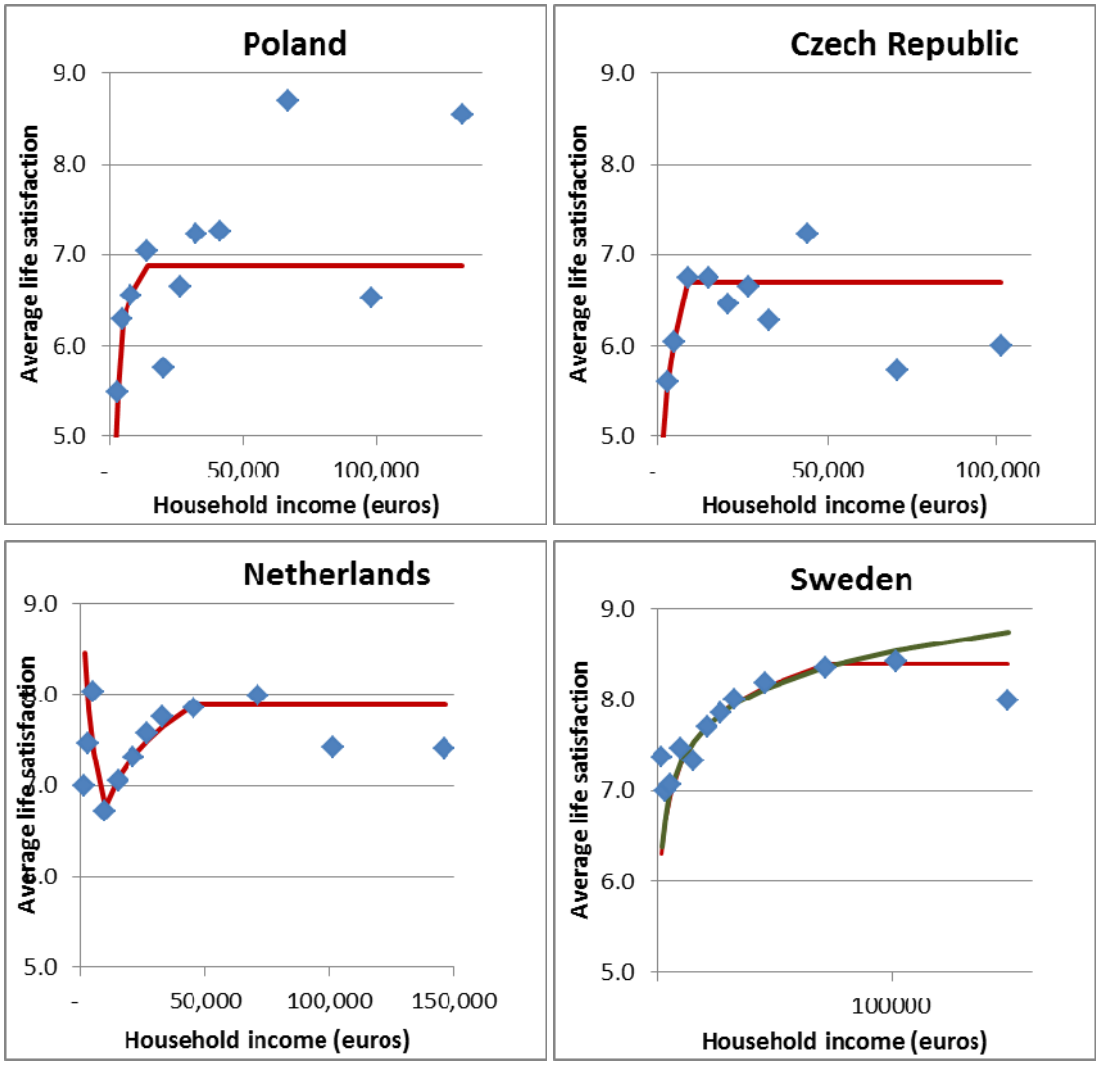
This is a conservative test. In 5 out of 15 cases (including Germany, Spain and the Netherlands), the switching off function is significantly better than the standard function, such that we can be 95% sure that it is the correct model. In a further 3 cases, we can be 90% sure it is the correct model. In the other 7 cases (including France and Poland), the possibility that the more complex model is correct ranges from 50% to 80%.

Figure 1 shows the graphs for 8 European countries. In the cases where it is not clear which model is correct, we have plotted both the switching off function (in red) and the logarithmic function (in green).



[19] Note that all the components of the functions used were logarithmic. Linear functions are never as effective with this data.

[20] The statistics package we used (SPSS) includes a stepwise regression function which tests a range of predictor variables (in this case the income variables and their recoded versions) and determines which predicts the dependent variable (in this case well-being) best. It then tests all remaining predictor variables to see which best explains the rest of the variation in the dependent variable, adding one variable at a time until none of the remaining possible variables explains a significant amount of variation.



As noted earlier, the point at which the function switches off (the 'plenty line') varies dramatically from country to country, and probably should only be taken as indicative of a general phenomenon, rather than some concrete point. It is also worth noting that in some cases, there appears to be a negative aspect to the function operating at lower incomes – i.e. those with the very lowest incomes have higher well-being than those a little richer.

ANNEX B

Explanations of the Easterlin Paradox

As paradoxes go, the Easterlin Paradox is relatively easy to explain. Indeed, the problem is that there may be too many explanations. Easterlin's preferred approach is to understand the difference in findings in terms of the 'ecological fallacy': that a pattern at the level of the individual does not necessarily imply one at any larger level. The key factor at play is the issue of relative and absolute incomes. The higher life satisfaction of those with higher income within a given country is merely down to their higher status *relative* to others in the country.[21] [22] As a result, if everyone's incomes were to increase by the same amount, nobody's relative position would change and, as such, nobody's life satisfaction would increase.

A related approach, but with quite different implications, is to unpick the difference between the null result over time, and the significant relationship when looking at a cross-section of the population. This approach refers to the so-called "hedonic treadmill".[23] According to this interpretation, an increase in consumption leads to an immediate increase in satisfaction; but over time we adapt to this higher level of consumption, so that our satisfaction returns progressively towards its original level. In effect, our satisfaction is determined, not by our absolute consumption, but by our level of consumption relative to our expectations of what is normal. An increase in consumption, if sustained, raises our expectations; so, if our consumption does not increase further, our satisfaction will decline. In order for satisfaction to be sustained, consumption must continue to increase. For satisfaction to be increased, consumption must increase enough to off-set the negative effect of the increase in expectations associated with past consumption increases. The implication is that the effects of growth on well-being will be at least partly, and may be entirely, temporary, depending on the extent of adaptation.

A third approach starts from examining the list of countries that Easterlin analysed in his study. All of them were relatively rich countries. Perhaps growth is important for happiness for some countries but, once a certain income level is reached, it has little impact? This is the explanation favoured by sociologist Ronald Inglehart[24] and economist Andrew Clark[25] amongst others, who proposes a curvilinear relationship between growth and income, as shown in Figure 1. The income level at which economic growth seems to have little effect has been put by different authors at $10,000 and $15,000 per capita, based on cross-sectional data.[26] However, Easterlin has since argued that the Easterlin Paradox holds for developing countries as well as richer ones.

[21] Fred Hirsch (1976) *The Social Limits to Growth* (London: Routledge & Kegan Paul).
[22] Thorstein Veblen (1899) *The Theory of the Leisure Class* (New York: Modern Library).
[23] Brickman P and Campbell D T (1971) 'Hedonic relativism and planning the good society' In Apley M H (ed) *Adaptation-Level Theory: A Symposium* (New York: Academic Press).
[24] Inglehart R, 2008
[25] Clark A Frijters P & Shields M(2006) "Relative Income, Happiness and Utility: An Explanation for the Easterlin Paradox and Other Puzzles." Journal of Economic Literature 46, no. 1: 95-144.
[26] Frey and Stutzer (2002) *op. cit.*; Layard (2005) *op. cit.*

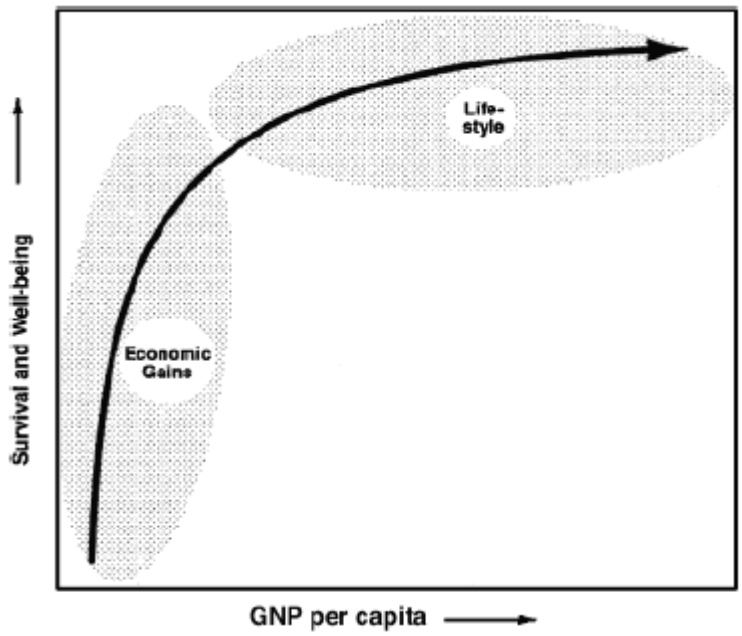


Figure 1: From Inglehart et al. (2008)

A fourth explanation has recently been put forward by the Italian economist Stefano Bartolini. This explanation accepts that economic growth may have a minimal positive impact on well-being, but that this is far outweighed by the negative impact on well-being of declining social capital. Furthermore, this decline in social capital is directly related to the increase in market activity and therefore should be considered the rule, rather than the exception.

Of course, a fifth explanation is possible – that Easterlin simply did not have enough data. Stevenson & Wolfers (2008) have collected more data since Easterlin's original paper and argue that a relationship does indeed exist, at least in some countries.

However, Easterlin and others have refuted this explanation. Most importantly, Stevenson & Wolfers do not distinguish between short-term fluctuations in GDP and the overall increasing trend. Easterlin, Angelescu and colleagues argue that, whilst there is a relationship between short-time fluctuations and well-being, there is no relationship over the long-term. [27] In forthcoming analysis, we have highlighted that Stevenson & Wolfers' attempts to explain away the lack of relationship in the USA are unsatisfactory.

[27] Easterlin R, Angelescu L, Switerk M & Sawangfa O & Smith J (2010) 'The happiness-income paradox revisited' *Proceedings of the National Academy of Sciences*

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