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GDP GROWTH AND HUMAN WELLBEING: A BRIEF LOOK AT WHY WE NEED A BETTER MEASURE OF PROGRESS

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Abstract

Economics textbooks typically list the 'standard' criticisms of GDP as a measure of national progress: its failure to take into account that which is produced in a subsistence agriculture or at home; its exclusion of the quality of the environment; its neglect of the amount of leisure time available to citizens and its indifference to the degree of inequality of income between the rich and poor of a nation. A closer consideration of some of these weaknesses of the GDP measure, such as is appearing in a new and growing body of literature (see, for example, Eckersley 1998 and Cobb et al., 1995) leads us to some conclusions which are far-reaching and uncomfortable, for those of us who have been teaching economics for some years. This paper attempts a brief introduction to some of these new ideas. The underlying message is that what we need in economics is not the continued and unquestioned acceptance of GDP growth as the over-reaching aim of social endeavour; but a willingness to look more honestly at both the negatives and the positives contained within this indicator. In particular we need to listen to the important message behind the efforts of those searching for a 'Genuine Progress Indicator' to replace the Gross Domestic Product.

1. Introduction: Economic Growth and GDP

The economic textbooks tell us that economic growth may be defined as the expansion of an economy's long-term capacity to produce goods and services. Graphically it can be represented as the gradual outward movement of the production possibilities frontier.

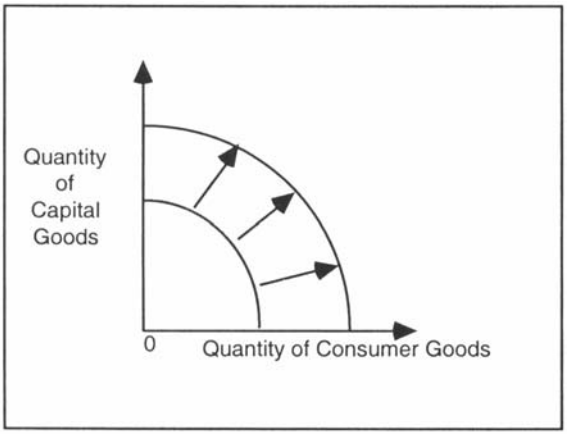

Figure 1: Economic Growth.

The widely accepted measure of economic growth is the change in the level of **real GDP** in the economy over a given period of time - most commonly an annual or quarterly (three monthly) period.

Gross Domestic Product is defined (Mankiw 1998: 480-482) as the:
Market value
(as indicated by the prices of goods and services exchanged in markets)
of all final
(that is, not the intermediate inputs or raw materials which are used in the manufacturing process)
goods and services
(both tangible goods (e.g. clothing, CDs) and also intangible services such as haircuts, doctor's visits)
produced
(that is, not sold second hand)
within a country
(not earned outside the country)
in a given period of time
(usually within the interval of a year or three months)

Real GDP takes the measure of GDP as defined above and adjusts it to remove the effects of inflation.

Defining real GDP thus, the textbooks then point to the limitations of the measurement. Usually it is pointed out that GDP does not measure the value of production done at home (e.g. preparing meals) or in the subsistence sector of a developing country (i.e. where goods are produced, exchanged and consumed but not with money changing hands). It is also stated, usually in fairly brief terms, that GDP 'does not take into account the environment' and also that it does not take into account how the output that was produced over the time period was distributed; that is, how much of it went to rich people and how much to poor people. It is also usually mentioned that GDP does not indicate how much leisure time a nation had whilst producing the goods and services that went into GDP.

All of these limitations of GDP are important and absolutely correct. What is wrong, according to the arguments of this paper, is that the analysis of the limitations does not go far enough. In this paper, we will look mainly at the failure to 'take into account the environment' and the important implications of this. We do also look very briefly at some other difficulties with GDP and try to explain, with a short digression on the origins of national accounting, why it is that some of these problems have arisen. A recent attempt to develop a better indicator is described briefly in the final section.

2. Environmental Negatives Appear as Positives in GDP

On a closer analysis, it is not just that GDP 'excludes the quality of the environment' (Mankiw 1998: 489) but that the depletion or destruction of the environment appears as a 'plus' in GDP. The more the nation depletes its natural resources, the more GDP increases.

This happens for two reasons: first, whenever damage is done to the environment, for example by way of an oil spill, contamination of a site or pollution of a waterway, the resources brought into action to ameliorate the effects of the damage will pass through the market system. The labour, machinery and raw materials required will register as economic activity and so GDP will rise. The second reason why such a perverse result occurs is because GDP falls to record when stocks of natural capital (such as forests or fish in the sea) are run down. The activity of running them down, that is logging the trees or catching the fish, is recorded, because these products will be sold on the market for a price. So GDP will rise even though the stock of natural capital has been run down. Furthermore, it would continue to do so right up until the point where the natural capital (e.g. fish stocks) were exhausted, as has happened in some parts of the world. We can draw an analogy there with a bank account. If you have $100,000 in a bank account then you might choose to live off the interest of your account (say $10,000 a year) and not run the balance down in order to enable you to continue earning this income and to preserve your standard of living (at $10,000 a year). If you did withdraw more than the interest earned each year then the next year you would earn less interest and your standard of living in the future must drop. If you continued to run down the capital, eventually of course you will no longer be able to earn an interest income at all. The analogy is useful because what GDP does, effectively, is just record the amount of the *withdrawals* without distinguishing between what was interest and what was capital.

Irrespective of whether you withdrew too much (i.e. started to run down your capital) it would still all appear as a 'good thing' to do (i.e. a higher GDP). In fact, GDP would continue to show only positive growth, without warning, right up until the point (analogously) where your original $100,000 had been completely withdrawn so that the following year you could earn nothing.

A real world example is given by Cobb et al., (1995: 10):

> When the United States fishes its cod population down to remnants, this appears on the national book as an economic boom - until the fisheries collapse. As the former World Bank economist Herman Daly puts it, the current national accounting system treats the earth as if it were a business in liquidation

If a private sector business was to spend money fixing up a machine which had been damaged or simply worn out with use, this would appear in the accounts of that business as a cost, not a revenue. The difficulty, then, with the national accounts is that there is no such distinction. All economic activity adds to GDP whether it is replacement or a net addition to goods and services.

Another analogy can be drawn here (Cobb et al., 1995:8) as follows: suppose the local mayor was to announce that 'activity on the streets' in your local township or suburb has risen. Your first reaction would be to ask 'OK, but what type of activity? Tree planting and landscaping or shop window breaking and car vandalism? Was it good activity or bad activity?' Analogous questions should be asked when we are advised that economic activity (GDP) has risen.

3. A Brief History of National Accounting

The question, which naturally arises, is how and why has this fundamental problem with GDP occurred?

Some answers can be found if we look briefly to the history of the development of national accounting. (This is described in more detail in Cobb et al., 1995: 5-8, 12-13). The first estimates of national accounts in the western world were made in 1665 by Thomas Petty. Petty's main aim was to assess the taxable capacity of the nation. The original concepts were further developed by Adam Smith and then revised significantly by Alfred Marshall in the earlier 20th century. Along the way, the effects of economic activity on the environment were omitted. As Cobb et al., (1995:5) say:

> Long ago this omission was understandable. In Adam Smith's day the portion of life called 'the market' occupied a very small part of physical and social space. The habitat seemed to have an infinite capacity to absorb such wastes as the industry of the day might dump.

During the 20th century however, it is becoming clearer all the time that the assumption that the environment can be ignored can no longer be made.

The modern form of the national accounts was developed in the 1930s. Cobb et al., (1995:6) describe the story:

> In 1931 a group of government and private experts were summoned to a congressional hearing to answer basic questions about the economy. It turned out they couldn't: the most recent data were for 1929, and they were rudimentary at that. In 1932, the last year of the Hoover Administration, the Senate asked the Commerce Department to prepare comprehensive estimates of the national income. Soon after, the department set a young economist by the name of Simon Kuznets to the task of developing a uniform set of national accounts. These became the prototype for what we now call the GDP.

Together with the new economic theories supplied by John Maynard Keynes, Kuznets' national accounts became an exceptionally effective war-planning too], where the main objective was to locate unused capacity and apply it to maximise war production. The accounts enabled production levels that conventional opinion thought possible to be greatly exceeded. Cobb et al., make the comment that:

> ... to their great surprise, American investigators learned after the war that Hitler had set much lower production targets, partly for the lack of sophisticated national accounts.

The success of national accounting in maximising war production levels generated a post-war enthusiasm for retaining these accounting principles and now transferring efforts to maximise (peace-time) production. High levels of activity were good for the war effort so, equally, high levels of activity would be good in a post-war economy. As Cobb et al., (1995: 8) state eloquently, consumption of goods and services was seen as the 'drive train of prosperity' and spending became:

> ... a solemn national duty ... Our young men had marched off to war; now Americans were marching off to the malls that eventually covered the land.

Economists were elevated to the 'ultimate authorities' on public policy and for the next fifty years, politicians in the United States, in Australia, the United Kingdom and elsewhere extolled the virtues of rising GDP levels. In 1998, Prime Minister Howard delivered a speech to the World Economic Forum in which he stated that:

> The overriding aim of our agenda is to deliver to Australia an annual growth rate of over four per cent on average during the decade to 2010.

As Hamilton (1999:2) notes:

> This and a thousand similar statements express the deepest belief of all sides of politics: more economic growth is good for us.

Simon Kuznets, might have had some premonition of what was to come because he wrote even at the time he developed the accounts that the welfare of a nation could scarcely be inferred from a measurement of national income' such as he had defined. His concerns grew deeper over the next thirty years as he watched the stature to which GDP was being elevated. By 1962 Kutznets was saying that national accounting needed to be fundamentally rethought and that:

> Distinctions must be kept in mind between quantity and quality of growth, between its costs and return, and between the short and the long run. Goals for more' growth should specify more growth of what and for what.

With regard to developing countries, Kuznets tried to point out that it was absurd to use GDP to measure these economies since so much of the production of these economies takes place in the subsistence or household sector. The danger in proposing development strategies targeted to rising GDP, said Kuznets, was that this would undermine the household economy, destroy the natural habitat and diminish the well being of the people. Notwithstanding that it was Kuznets himself putting these arguments, it appears that he had little success in convincing people by that time that change was necessary.

4. Other Negatives in the GDP which Appear as Positives

There are other 'negative' transactions in the economy which boost the GDP. Most notably, there is the need to purchase sophisticated crime prevention equipment these days which does little to raise our standards of living but nevertheless raises the GDP (e.g. car and home security systems). Other aspects of crime, such as the need for increased police and the costly legal proceedings which accompany it, will all also cause GDP to grow. Cobb et al., (1995: 12) comment as follows on the O.J. Simpson trial:

> When 'The Wall Street Journal' added up the Simpson legal team ($20,000 a day), network news expenses, O.J. statuettes, and the rest, it got a total of about $200 million in new GDP, for which politicians will be taking credit in 1996. ...

> One begins to understand why politicians prefer to talk about growth rather than what it actually consists of, and why Prozac alone adds more than $1.2 billion to the GDP, as people try to feel a little better amid all this progress.

Perhaps more controversially, some aspects of what those on the more conservative side of politics would call 'social breakdown' register as an increase in GDP. Divorce is one example cited by Cobb et al., (1995: 9):

> Divorce, for example, adds a small fortune in lawyers' skills, the need for second households, transportation and counselling for kids, and so on. Divorce lawyers alone take in several billion dollars a year, and possibly a good deal more. Divorce also provides a major boost for the real estate industry.

5. Positives which Appear as Positives

Although we have mentioned here some of the negative aspects of GDP growth, it is important to point out that there is much in the GDP measurement which is positive. Higher GDP levels are almost always also associated with longer life expectancy, higher literacy rates, better nutrition and health care and considerably more and better avenues for communications (e.g. telephones and television sets). These are vitally important factors affecting people's welfare. However, what we need in our indicator of welfare is a distinction between those activities, which do genuinely increase our standards of living, and those activities which we must purchase or undertake just to maintain our existing standards of living.

6. An Australian Genuine Progress Indicator

Some work on an alternative indicator of welfare has commenced in Australia. Hamilton (1998) has constructed a Genuine Progress Indicator (GPI) for Australia. The GPI adjusts personal consumption for, among other things, changes in income distribution, the value of household work, the costs of unemployment and various social and environmental costs.

The components of the Australian GPI, those items which enter negatively and those which enter positively are listed in Table 1. (For more details please see Hamilton 1998: 77-88).

Figure 2 below shows the results of the calculations of Hamilton's GPI per capita and how it compares with the growth of per capita GDP over the period 1950 to 1995.

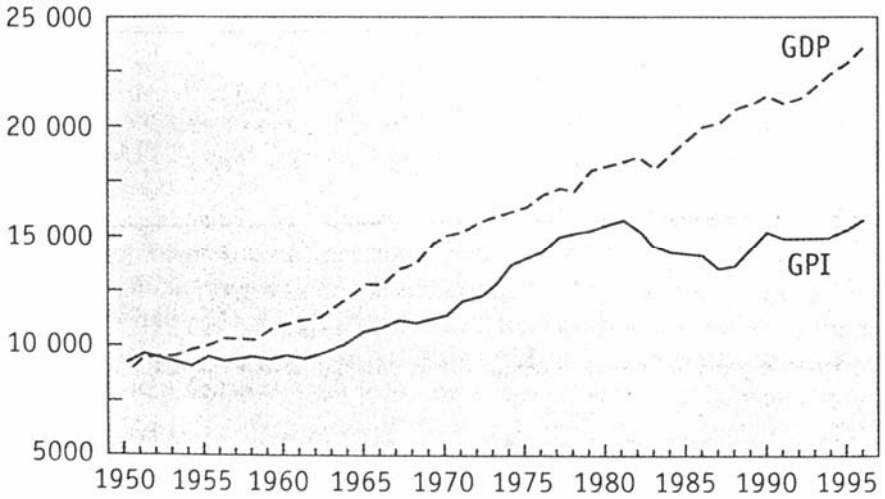

Figure 2: GDP and GPI 1950-1995 (constant 1990 prices).

Source: Hamilton (1998: 89)

The calculations show that between 1950 and 1995 the GDP per head increased from a little over $9000 to over $23,000. The implication of this, according to the politicians, is that we are now more than twice as 'better off now than we were in the 1950s. By contrast with the GDP measurement, the GPI per person shows that from the late 1970s almost no increase has occurred past $15,000 with the indicator actually dipping downwards for sustained periods during the 1980s.

Table 1: The Components of the Genuine Progress Indicator

Column name		Description of indicator
A Personal consumption	+	Private final consumption expenditure
B Income distribution		Share of lowest quintile in total income
C Weighted personal consumption		Personal consumption weighted by index changing income distribution
D Public consumption expenditure (non- defensive)	+	Value of non-defensive government spending
E Value of household and community work	+	Hours of household and community work performed each year valued by the housekeeper replacement method
F Costs of unemployment	-	Value of hours of idleness of the unemployed
G Costs of underemployment	-	Value of hours of idleness of part-time employees who want to work full-time
H Costs of overwork	-	Value of hours of work done involuntarily
I Private defensive spending on health and education	-	Health and education spending that offsets declining conditions
J Services of public capital	+	Contribution of public investment in non defensive works (e.g. roads)
K Costs of commuting	-	Time spent commuting valued at opportunity cost
L Costs of noise pollution	-	Excess noise levels valued by cost of reducing noise to acceptable level
M Costs of transport accidents	-	Costs of repairs and pain and suffering
N Costs of industrial accidents	-	Costs of am and suffering etc.
0 Costs of irrigation water use	-	Damage to environment measured by the opportunity cost of environmental flows
P Costs of urban water pollution	-	Damage to environment measured by the control cost of improving water quality
Q Costs of air pollution	-	Damage to humans and environment from noxious emissions measured mainly by health costs
R Costs of land degradation	-	Costs to current and future generations from soil erosion etc. measured by forgone output
S Costs of loss of old-growth forests	-	Environmental values denied to future generations measured by willingness to pay
T Costs of depletion of non-renewable energy resources	-	Costs of shifting to renewables for oil and gas
U Costs of climate change	-	Annual emissions valued by future impacts n humans and environment
V Costs of ozone depletion	-	Annual emissions valued by future impacts n humans and environment
W Costs of crime	-	Measured by property losses and household spending on crime prevention
X Net capital growth	+	Growth in net capital stocks per worker
Y Net foreign lending	-	change in net foreign liabilities

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It is inevitable that some value judgements (that is, judgements about what is good and what is bad) must be made when designing a new indicator such as Hamilton's GPI. This has often been the strongest criticism of those reluctant to change the present system. The way we present the accounts now is, they argue, 'more objective'. However, it is not, in fact, 'objective' to imply that all increased economic activity is good. Surely it would be better to make the judgements to decide exactly what activities we want to see grow and which do contribute to our welfare and those which do not. We can then present these judgements publicly for open debate to see where some consensus might be. As Hamilton (1999: 5) writes:

> The principal function of government in a post-growth society should be to protect, expand and enrich our human, social, cultural and natural capital. This demands an epoch-making transformation of political and social thinking, one that transcends the 19th century belief that economic growth and material consumption mark out the path to happiness.

or in the somewhat blunter terms of Cobb et al., (1995: 26):

> ... economics must be about more than just the production and consumption of stuff; and that we need larger goals and better ways to measure our achievements as a nation.

REFERENCES

Cobb, C., Halstead, T. and Rowe, J. 1995. 'If the GDP is up, why is America down?' *Atlantic Monthly, October.*

Daly, H. and Cobb, J. 1989. *For the Common Good,* Green Print, London.

Diesendorf, M. and Hamilton, C. (eds) 1997. Human Ecology Human Economy, Allen & Unwin, Sydney.

Douthwaite, R., 1993. *The Growth Illusion,* Council Oak Books, Tulsa.

Eckersley, R. 1998. *Measuring Progress,* CSIRO Publishing, Melbourne.

Hamilton, C. 1998. 'Measuring changes in economic welfare: the Genuine Progress Indicator for Australia'. In: *Measuring Progress., R.* Eckersley (ed), CSIRO Publishing, Melbourne, pp.69-92.

Hamilton, C. 1999. 'Economic growth: The dark side of the Australian dream', paper presented to the *Horizons of Science Forum,* University of Technology, Sydney.

Mankiw, N. 1998. *Principles Of Economics,* The Dryden Press, Fort Worth.